

# PTE PREDICTION FILE



**SEPT-OCT 2024**

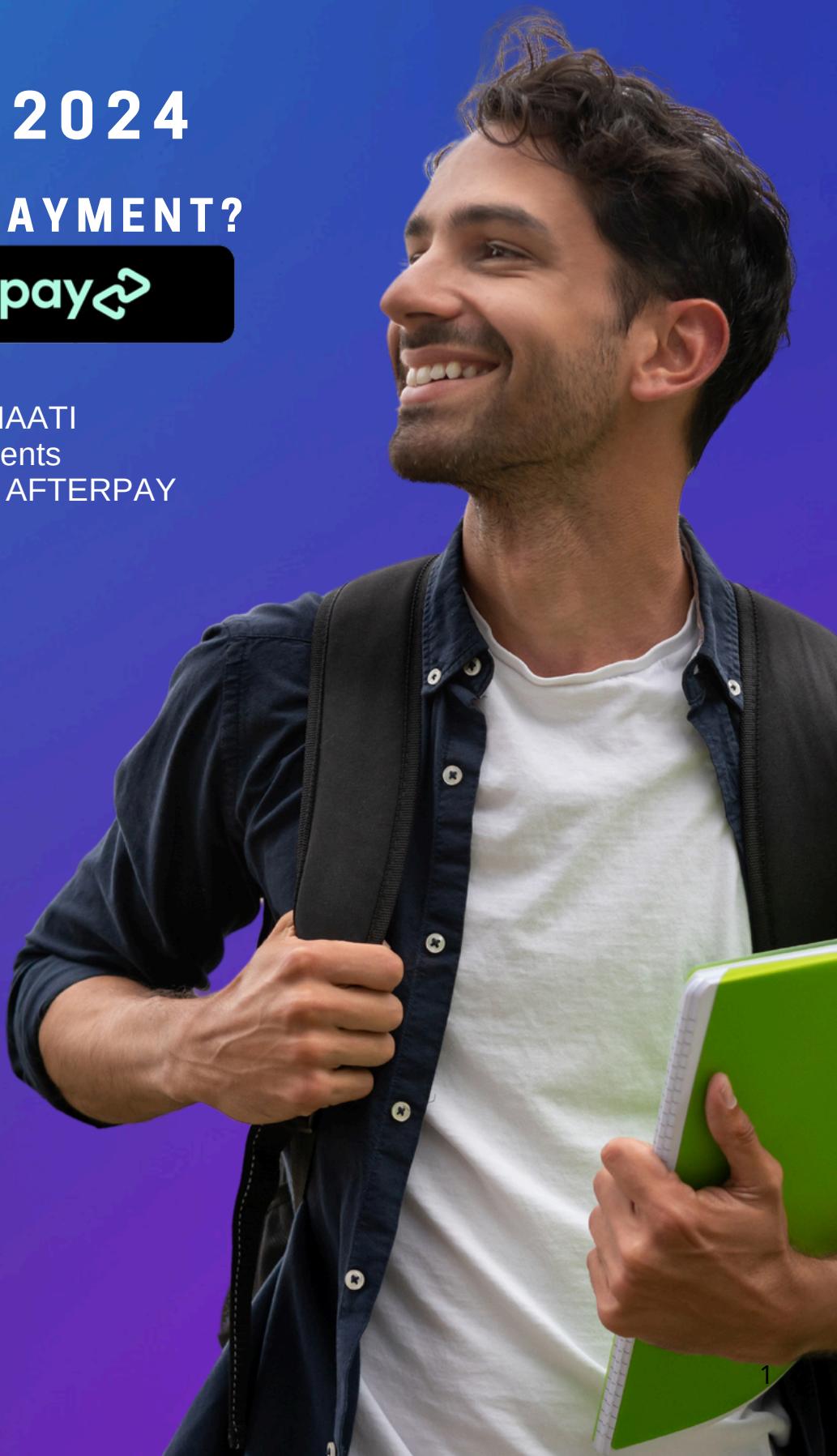
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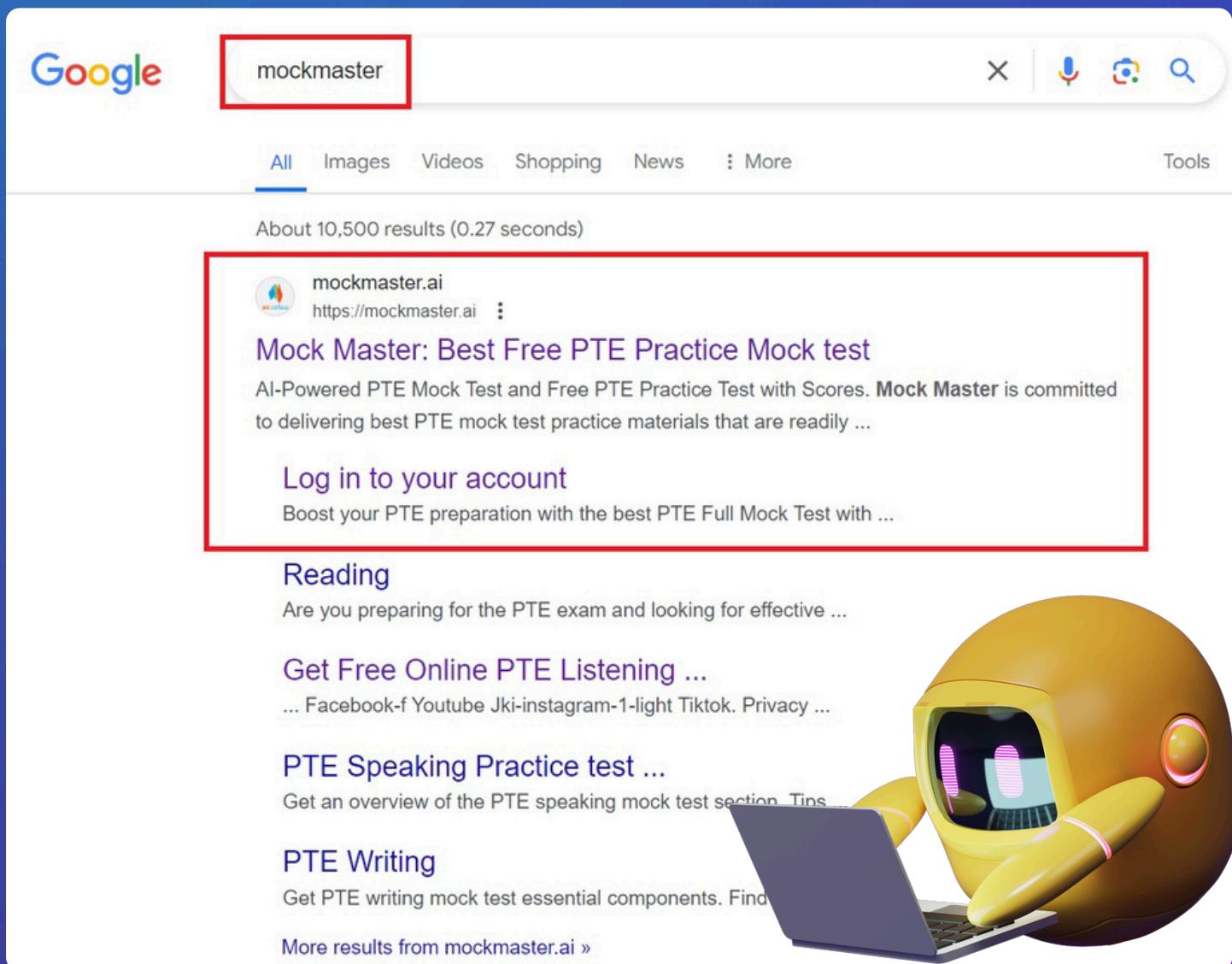
## FILE INCLUSIONS

- READ ALOUD
- REPEAT SENTENCE
- DESCRIBE IMAGE
- RETELL LECTURE
- ANSWER SHORT QUESTIONS
- SUMMARIZE WRITTEN TEXT
- WRITE ESSAY
- RE-ORDER PARAGRAPH
- READING FIBS
- READING AND WRITING FIBS
- SUMMARIZE SPOKEN TEXT
- WRITE FROM DICTATION



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# **SPEAKING MODULE**





# SPEAKING

## READ ALOUD



1. The internal clocks of grizzly bears appear to keep ticking through hibernation, according to a genetic study. This persistence highlights the strong role of circadian rhythms in the metabolism of many organisms including humans. The genetic study confirmed observational evidence that bears' energy production still waxes and wanes in a daily pattern even as they slumber for several months without eating.
2. Contrary to the commonly-held view, the brain does not have the ability to rewire itself to compensate for the loss of sight, an amputation or stroke, for example, say scientists. The researchers argue that the notion that the brain, in response to injury or deficit, can reorganize itself and repurpose particular regions for new functions, is fundamentally flawed -- despite being commonly cited in scientific textbooks.
3. Work and personal lives underwent enormous disruption during the pandemic, with people working from home experiencing increased loneliness and a range of mental health issues. Under normal circumstances, the younger generations of workers need additional support from their managers and that was exacerbated during the pandemic, when we saw that relative newcomers to the workforce did not cope as well under the pressures of remote working.
4. A recent study, co-authored by a researcher from Tulane University, has found evidence suggesting that violence was a prevalent aspect of life within ancient hunter-gatherer communities. The study examined skeletal remains dating back 10,000 years from burial sites in northern Chile, specifically looking for signs of trauma. These findings provide insights into the historical prevalence of violence among early human societies.
5. A novel approach has been developed that enables researchers to track gene expression during the development of bacterial

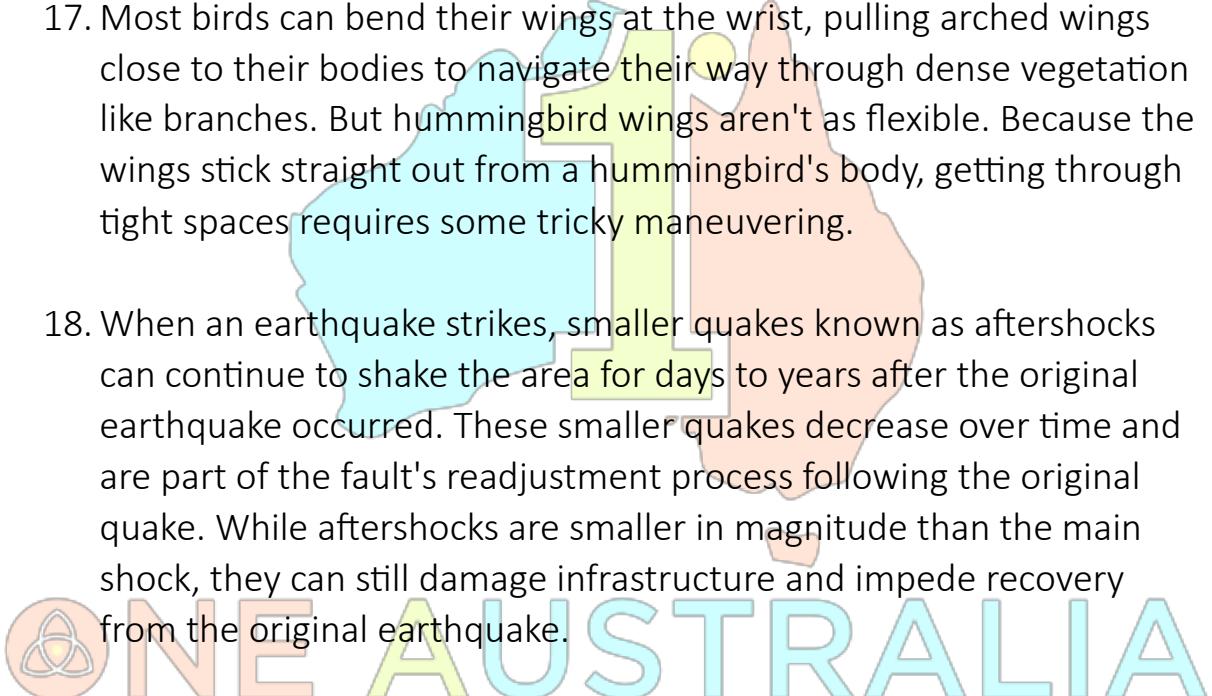
communities over time and space. Using this cutting-edge technique, scientists have demonstrated for the first time that bacteria collaborate and exchange nutrients across generations when they form communities.

6. Societies face numerous challenges, including inequality, discrimination, and social injustice. It's important to recognize these issues and work towards building a more equitable and compassionate society. By raising awareness, supporting marginalized communities, and advocating for social justice, we can work towards creating a better future for all.
7. Some 160,000 people have some form of dementia in Sweden, Alzheimer's disease being the most common, a figure that is rising with our life expectancy. At the same time, many new diagnostic methods and early-intervention therapies have been developed in recent years, which foregrounds the need to identify more risk factors for the disease.
8. In mice, there is some evidence that an unusual phenomenon in mammals called genomic imprinting impacts parenting behavior. Mammals inherit two copies of each gene -- one from each parent -- and usually, each copy is expressed equally in the cell. With imprinted genes, however, only one copy is expressed, either the one inherited from the father or the mother.
9. When it comes to engineering human skin, hair may at first seem superfluous. However, hair follicles are quite important: They produce sweat, helping regulate body temperature, and they contain stem cells that help skin heal. Hair follicles are also an entry point for topical drugs and cosmetics, making them an important part of dermatological testing.
10. Increasing levels of obesity, poor diet, and increased sedentary behavior are driving a rapid rise in the number of cases of type 2

diabetes worldwide. In 2021, 537 million adults were estimated to have diabetes worldwide, with an increasing number diagnosed at younger ages.

11. A recent study demonstrates that strawberries, consumed daily for 12 weeks, can improve memory and reduce depressive symptoms in middle-aged, overweight adults. This improvement is attributed to the anti-inflammatory effects of anthocyanins in strawberries, highlighting the fruit's role in cognitive health.
12. A study from UCL and the University of Sydney shows that substituting just a few minutes of daily sitting with moderate exercise can greatly benefit heart health. It also showed the benefit of light activity, standing, and sleeping compared with sitting. This finding, part of research involving more than 15,000 individuals, underscores the significant health impact of even small changes in daily physical activity.
13. Japanese researchers at Nagoya University have uncovered new aspects of the interaction between mast seeding plants like bamboo and field mice. Their study reveals that mice behavior, influenced by species, environment, and season, plays a crucial role in seed dispersal and forest ecosystem health, challenging existing theories about seed storage and consumption.
14. Recent trends in raw food diets overlook the fact that some vegetables are more nutritious when cooked. Cooking methods like steaming or roasting can enhance the availability of essential nutrients in vegetables such as asparagus, mushrooms, and spinach. This process releases important vitamins and antioxidants, which are sometimes trapped within the vegetables' cell walls.
15. Normally, heat is what gets evaporation going, causing water molecules in the liquid to jostle more vigorously. That extra energy can break some of the bonds between molecules in the liquid,

allowing molecules to escape as water vapor. Based on how much heat goes in, scientists can calculate the amount of evaporation expected.

16. Individuals that tended to engage in cooperative behavior within their group were more likely to interact with bonobos in the other group that had the same tendency. This cooperation doesn't appear to be solely motivated by immediate reciprocation, the researchers say. For instance, during the study, only 14 percent of bonobos that shared food with a partner in the other group had the deed reciprocated.
17. Most birds can bend their wings at the wrist, pulling arched wings close to their bodies to navigate their way through dense vegetation like branches. But hummingbird wings aren't as flexible. Because the wings stick straight out from a hummingbird's body, getting through tight spaces requires some tricky maneuvering.
18. When an earthquake strikes, smaller quakes known as aftershocks can continue to shake the area for days to years after the original earthquake occurred. These smaller quakes decrease over time and are part of the fault's readjustment process following the original quake. While aftershocks are smaller in magnitude than the main shock, they can still damage infrastructure and impede recovery from the original earthquake.  

19. Pancreatic cancer is tricky to manage because it spreads easily and early, and the tumors have a unique biological makeup. But, researchers made a breakthrough by learning about the genetic changes that occur during tumor migration -- and also found a drug that can obstruct the process.
20. In the creative condition, the students were told to think of a friend who did something special and think of them as their "creative friend" who could help them solve any problem. This type of

creativity training is called perspective-shifting, in which the kids look at a problem through the eyes of someone else.

21. As the world strives to cut greenhouse gas emissions and find sustainable transportation solutions, University of Houston energy researchers suggest that hydrogen fuel can potentially be a cost-competitive and environmentally friendly alternative to traditional liquid fuels, and that supplying hydrogen for transportation in the greater Houston area can be profitable today.
22. The largest terrestrial carbon sink on Earth is the planet's soil. One of the big fears is that a warming planet will liberate significant portions of the soil's carbon, turning it into carbon dioxide (CO<sub>2</sub>) gas, and so further accelerate the pace of planetary warming.
23. 3D printing is advancing rapidly, and the range of materials that can be used has expanded considerably. While the technology was previously limited to fast-curing plastics, it has now been made suitable for slow-curing plastics as well. These have decisive advantages as they have enhanced elastic properties and are more durable and robust.
24. Dairy products such as ice cream and yogurt have relied on natural vanilla for many years, McBride points out. In the U.S., Food & Drug Administration rules state that vanilla ice cream must get its flavor from natural vanilla. If the flavor comes partially or fully from another source, the company must stamp "vanilla flavored" or "artificial vanilla" on the front of the package, a likely turnoff to consumers.
25. Changing temperatures shift the energy balance of ecosystems - from plants that produce energy from sunlight to the animals that consume plants and other animals - subsequently altering the sensory worlds that animals experience. It is likely that climate

change will challenge all of their senses, from sight and taste to smell and touch.

26. The hardness of materials is determined by the strength of the chemical bonds that are formed between the electrons of the neighboring atoms. For example, the bonds in diamond are very strong, so it is one of the hardest materials known. The bonding is rooted in the laws of quantum mechanics.
27. Around 1% of the adult population are defined as psychopaths, meaning they possess no conscience, shame, guilt, or ability to experience love for or feel empathy towards other people. Dr Boddy will discuss how they appear as potentially effective leaders, how they get to the top and what they do once they have achieved leadership.
28. Conventional theories about black holes, based on Einstein's theory of General Relativity, typically explain how static or spinning black holes can exist on their own, isolated in space. Black holes in pairs would eventually be thwarted by gravity attracting and colliding them together. However, this is true if one assumes the Universe is standing still. But what about one which is constantly moving?
29. Paul Goddard, an assistant research scientist in the Department of Earth and Atmospheric Sciences at the College of Arts and Sciences at Indiana University , has stated that even if the world manages to achieve the ambitious goal of limiting global warming to 1.5 degrees Celsius above pre-industrial levels, which we are currently not on track to do so, there will still be a significant rise in sea levels.
30. Liquid metals hold the potential to revolutionize the chemical industry and address its environmental impact. By testing a new technique, researchers aim to replace the energy-intensive chemical engineering processes that have been in use since the early 20th century. This innovative approach offers a promising solution to

"greening" the industry by reducing its carbon footprint and minimizing resource consumption.

31. According to Benjamin Alessio, an undergraduate researcher in the Department of Chemical and Biological Engineering, many biological inquiries share a common theme of exploring how complex patterns and shapes develop from a spherical cluster of cells. The study employs a basic physical and chemical mechanism to account for a complex biological phenomenon.
32. Although it is unclear how often neuropsychiatric events occur in children in the United States as a result of influenza, the use of a commonly prescribed antiviral medication for treating flu in children has become a subject of controversy that has raised concerns among parents and medical professionals alike.
33. It may not be very well known, but the Arctic Ocean leaks enormous amounts of the potent greenhouse gas methane. These leaks have been ongoing for thousands of years but could be intensified by a future warmer ocean. The potential for this gas to escape the ocean, and contribute to the greenhouse gas budget in the atmosphere, is an important mystery that scientists are trying to solve.
34. Sociologists are interested in a wide range of topics, from the micro-level interactions between individuals to the macro-level structures of society. They seek to identify patterns and trends in social behavior, and to develop theories that explain these phenomena. Through their research, sociologists aim to contribute to our understanding of society and to help address social problems.
35. In the 1980s, geophysicists made a startling discovery: two continent-sized blobs of unusual material were found deep near the center of the Earth, one beneath the African continent and one beneath the Pacific Ocean. Each blob is twice the size of the Moon

and likely composed of different proportions of elements than the mantle surrounding it.

36. Extratropical forests are globally significant because they store vast quantities of carbon in vegetation and permafrost soils.

Approximately 91 per cent of these forests in the northern hemisphere are underlain by permafrost. When fires occur in these regions, they emit large amounts of carbon dioxide (CO<sub>2</sub>) and other greenhouse gases compared to other regions.

37. A new analysis of lice genetic diversity suggests that lice came to the Americas twice once during the -- first wave of human migration across the Bering Strait, and again during European colonization.

Marina Ascunce, currently at the USDA-ARS, and colleagues, report these findings in a new study published November 8 in the open-access journal PLOS ONE.

38. Like their lumbering grazers, most cycads have gone extinct. Their disappearance from their prior habitats began during the late Mesozoic and continued into the early Cenozoic Era, punctuated by the cataclysmic asteroid impact and volcanic activity that mark the K-Pg boundary 66 million years ago. However, unlike the dinosaurs, somehow a few groups of cycads survived to the present.

39. Why do we dream? A product of our brain's neurophysiology, dreaming is a complex experience that can take on many emotional tones and simulate reality to varying degrees. As a result, there is still no clear answer to this question. A study compared the dreams of two forager communities, in Tanzania and the Democratic Republic of Congo, with those of individuals living in Europe and North America.

40. Research indicates that over billions of years, surface water has been transported deep into the Earth by descending, or subducted, tectonic plates. Upon reaching the core-mantle boundary, about

1,800 miles below the surface, this water triggers a profound chemical interaction, altering the core's structure.

41. A 10-week muscle-building and dietary program involving 50 middle-aged adults found no evidence that eating a high-protein diet increased strength or muscle mass more than consuming a moderate amount of protein while training. The intervention involved a standard strength-training protocol with sessions three times per week. None of the participants had previous weightlifting experience.
42. An international study led by the University of Granada (UGR) has provided the first scientific proof for how many steps you need to take per day to significantly reduce the risk of premature death: 8,000. Given the average length of a human stride (76 centimeters for men and 67 centimeters for women), taking 8,000 steps is equivalent to walking approximately 6.4 kilometers a day.
43. Theories have long proposed that icy pebbles forming in the cold, outer regions of protoplanetary disks -- the same area where comets originate in our solar system -- should be the fundamental seeds of planet formation. The main requirement of these theories is that pebbles should drift inward toward the star due to friction in the gaseous disk, delivering both solids and water to planets.
44. When we talk about unwritten rules, we refer to the informal norms and expectations that guide social interactions. They are not explicitly stated but are understood by members of a particular group or community. Unwritten rules can relate to behavior, communication, dress, and other aspects of social interaction. They are often learned through observation and experience rather than formal instruction.
45. Virtual reality (VR) is not only a technology for games and entertainment, but also has potential in science and medicine.

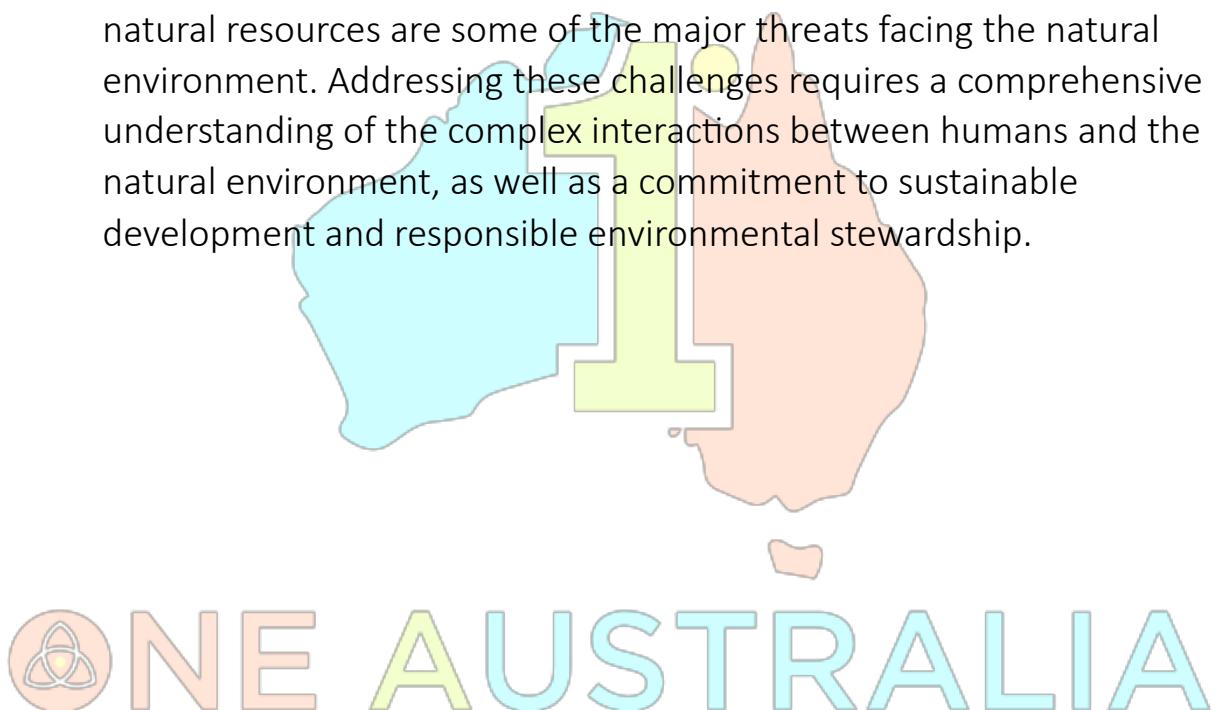
Researchers at Ruhr University Bochum, Germany, have now gained new insights into human perception with the help of VR. They used virtual reality scenarios in which subjects touched their own bodies with a virtual object.

46. When we engage in social interactions, like shaking hands or having a conversation, our observation of other people's actions is crucial. But what exactly happens in our brain during this process: how do the different brain regions talk to each other? Researchers provide an intriguing answer: our perception of what others do depends more on what we expect to happen than previously believed.
47. Bookkeepers are strategic partners in financial management. They possess a deep understanding of financial systems, risk management, and regulatory compliance. Bookkeepers provide valuable insights into financial performance, contribute to strategic planning, and assist in the formulation of financial policies. They collaborate with stakeholders across the organization to ensure transparency and accountability in financial reporting.
48. Elephants, belonging to the family Elephantidae, are large terrestrial mammals known for their remarkable intelligence and social behavior. They are characterized by their long trunks, tusks, and large ears. Elephants are herbivores, primarily feeding on grasses, leaves, and fruits. They play a crucial role in shaping their ecosystems as seed dispersers and vegetation modifiers.
49. A group of researchers from the University of Cologne, in partnership with scientists from the Leibniz Institute for Food Systems Biology in Freising , has made an intriguing finding regarding the presence of a bitter taste receptor in twelve distinct species of cartilaginous fish, including sharks and rays. This newly discovered receptor falls under the category of taste receptors type 2 (T2R).

50. The evaluation and identification of potential hazards in the workplace is a crucial process known as hazard assessment. This systematic examination involves a comprehensive analysis of work environments, equipment, and processes to determine potential sources of harm to workers. Hazard assessment is a fundamental component of occupational health and safety programs, and it is a legal requirement in many jurisdictions.
51. Spanish is known for its phonetic pronunciation, with consistent spelling and pronunciation rules. It has a relatively simple verb conjugation system compared to French. On the other hand, French is renowned for its complex verb conjugations and intricate pronunciation, with many silent letters and liaisons. French also has a rich literary tradition and is widely spoken in various parts of the world, particularly in Europe and Africa.
52. The integration of robotics with artificial intelligence and machine learning enables robots to adapt and learn from their surroundings, improving their capabilities and flexibility. However, the widespread adoption of robotics in manufacturing raises concerns about job displacement and the need for reskilling workers. It is crucial to strike a balance between automation and human labor to ensure sustainable employment and equitable economic development.
53. Research has shown that regular meditation can reduce stress, anxiety, and depression, as well as improve sleep quality, cognitive function, and immune system response. Meditation is also associated with increased feelings of compassion, empathy, and self-awareness. By cultivating a regular meditation practice, individuals can enhance their overall health and well-being.
54. Eagles are found throughout the world, inhabiting diverse ecosystems such as forests, mountains, and coastal regions. They play a crucial role in maintaining the balance of their ecosystems by regulating prey populations. Many species of eagles are threatened

by habitat loss, hunting, and pollution highlighting the need for conservation efforts to protect these magnificent birds and their ecological contributions.

55. The development of hearing in babies is a complex and fascinating process. From the moment they are born, infants possess the ability to hear and distinguish various sounds in their environment. The auditory system undergoes rapid development during the first years of life, with critical periods for the acquisition of language and speech perception.
56. Climate change, deforestation, pollution, and overexploitation of natural resources are some of the major threats facing the natural environment. Addressing these challenges requires a comprehensive understanding of the complex interactions between humans and the natural environment, as well as a commitment to sustainable development and responsible environmental stewardship.





# SPEAKING



## REPEAT SENTENCE



# ONE AUSTRALIA

- May I record our lecture today with a video camera?
- Fear of essay writing stems from not learning it properly.
- Some health staff believe elderly people can't grasp new things.
- Your thesis passed after the committee talked with your advisor.
- To find the library, walk straight ahead, then turn left.
- Persist through life's obstacles; don't give up when challenges emerge.
- Currently, Facebook ranks among the world's most visited websites globally.
- To avoid evening traffic, we should leave before it gets busy.
- The program operates solely on financial contributions from private benefactors.
- A smart doctor invented the game of basketball many years ago.
- Chemistry test scores will be put up on our school website.
- As more students enroll, universities should also employ additional staff.
- Swimming uses more of your body's muscles than other sports.
- Nowadays, most believe in wind power as a strong energy source.
- The Soviet Union sent the very first human into space.
- She had a sandwich for her meal and also drank some juice.
- Active people often live longer and don't get seriously ill.
- Prepare your PowerPoint presentation for the crucial team meeting tomorrow.
- The lecture hall is right on the first floor inside the building.
- We have lessons every Thursday during the school term.
- Chapter 9 focuses on recent significant developments in the field.
- Delegate fees cost less, and some people can get scholarships too.
- The course looks at tough ethical questions in our society.
- Every day, all students can use computers without any problems.
- We won't accept assignments that are turned in after Friday's deadline.
- If you have questions about exam techniques, ask the student welfare officer.
- Smoke played a big role in making air pollution worse.
- Our guest professor will give a geology lecture very soon.
- Jonathan is often late when he goes to different places or events.
- Trade finance helps businesses a lot by managing money for their operations.
- Psychology looks at how we think and act in different situations.
- It's fine to save some research questions for later investigation.

- Most American volcanoes hide beneath the ocean's surface, out of sight.
- These changes frequently lead to tough situations for individuals involved.
- Making workplace changes can often bring significant challenges to the forefront.
- Other countries help English become important all over the world today.
- He started his tutorial presentation on time, without any delay.
- Sometimes, ads make people confused instead of telling them the right stuff.
- The gallery recently showcased numerous traditional Chinese paintings of great beauty.
- It's surprising, some people like watching TV ads because they're fun.
- Email usage raises the risk of miscommunication significantly in correspondence.
- There's a major art auction scheduled for next year featuring his works.
- Friends help with feelings, but how much depends on each person.
- All students must return the books to the college library before the end of the term.
- Newspapers around the country are reporting the stories of the president.
- Today's lecture is canceled because the lecturer is ill.
- Social work is not the only subject in sociology.
- Collaboration is a feature of a successful company.
- A man who suffered serious brain damage during an operation is suing the hospital.
- The officer was suffering from stress brought on by overwork.
- The students were worried that they would fail in the final exam.
- The service works as a software application that is accessed via the internet.
- Students can borrow books and other materials from the library for free.
- The nursing assistant was in charge of getting the tool for the doctor.
- Students are afraid of writing an essay, because they have learned nothing about it.
- As the project progresses, a written document will become very useful.
- Time management is essential for balancing academics and extracurricular activities.
- There are opportunities for you to go abroad as part of your undergraduate studies.
- Technology has transformed the way we work, learn, and communicate. The healthcare industry is facing numerous challenges, including rising costs and access issues.
- hypothesis is the first step before an idea becomes a theory.
- The higher rates have been a hindrance to economic recovery.
- She has been collecting material for her latest novel for more than a month.
- Every student must participate in the exercise program as a requirement.

- Graduates from this course generally find jobs in the insurance industry.
- The strike had already led to cuts in electricity and water supplies.
- You must read every single page in this book and study it carefully.
- Suggested by her mother, she will take a diploma in management studies.
- The cell is the unit of which all living organisms are composed.
- Children enjoy a healthy lifestyle when they live in a healthy family.
- The campus gym has state-of-the-art exercise equipment.
- There is a fitness center next to the student union.
- Social media has changed the way we communicate and connect with others.
- The team is developing original projects with new ideas and inspirations.
- All the works you consult need to be mentioned in the bibliography.
- The business world is constantly evolving, and staying up-to-date is essential.
- You have to tackle a range of challenging problems by yourself.
- I have not received an acknowledgement of my application yet.
- He seemed to take it for granted that he should speak as a representative.
- Getting involved in volunteering opportunities helps to develop your leadership skills.
- Several universities in our city have rigid rules about student conduct.
- The university's football team has won several national championships.
- The key findings seem to contradict our initial hypothesis.
- I'm glad you discovered what you were looking for and feel satisfied.
- There is a need to sharpen the focus of this discussion.
- I must meet him before he flies to London for a week.
- I was granted permission to visit the palace last week.
- I wrote to them last month and I'm still waiting for a reply.
- The energy that we absorb from food can help us prevent the cold and become warmer.
- The university's research facilities are among the best in the country.
- It's a great place for swimming, but beware dangerous currents.
- We are aware of the potential problems and have taken every precaution.
- Students in need can attend a study skills seminar for assistance.
- His research fascinates due to his natural curiosity and inquisitiveness.
- Many patients are not getting the medical treatment that they need.
- There are no restrictions on the amount of money you can withdraw.

- They had faced one difficulty after another with great determination.
- The university's career center provides resources for job searching and career development.
- Make sure to include a list of your sources in assignments.
- He was suffering from exposure and shock but his condition was said to be stable.
- You have to do well academically to get into medical school.
- Urbanization is a global trend that presents both opportunities and challenges.
- He is a hard worker and a skilled gardener who is about to retire.
- He filled out the form correctly and submitted it for review.
- Glass is not a typical solid; it doesn't have a crystal structure.
- Students are asked to prepare material in advance of each weekly seminar.
- You have to wait until the drugs have passed out of your system.
- She cut across the parking lot and strolled through the main entrance.
- Meteorology is a detailed study of earth's atmosphere.
- The campus library is a valuable resource for research and studying.
- The teacher made me move my seat to the front of the classroom.
- Scientists have found all parts of science.
- He has failed to win a seat on the board of the company.
- The marketing department has always played a subsidiary role to the sales department.
- The rules at this middle school had been very strict.
- It's possible that in the course of time a cure for cancer will be found.
- You can find your enrollment details, results, and fees online.
- Studies have indicated that there is a relationship between diet and cancer.
- We believe that finances should never be a barrier to university.
- In the future, pay increases will be related to productivity.
- When I was in school, I faced many of the same challenges.
- The government has to find some way to balance these two needs.
- It takes a lot of practice to master a foreign language.
- The relation between national health and social care services is very important.
- All filed assignments should have a full list of bibliography.
- Mental health is important at every stage of life, from childhood through adulthood.
- Her house was only a few doors down from her daughter's apartment.
- Regular servicing can guarantee the smooth operation of the engine.

- Thousands of people paid good money to watch the band perform.
- The concept of sustainable development is crucial for future prosperity.
- I don't like sandwiches with cheese and tomatoes on white bread.
- Please note, submission deadlines are only negotiable in exceptional circumstances.
- This new platform makes it easy to get the information you need.
- Most of the student advisors are extremely helpful.
- His lecture was illustrated with slides taken during an expedition.
- The university's main campus could be closed for today's activities.
- Climate change is a pressing issue facing our society today.
- The program depends entirely on private funding.
- The company doesn't typically hire people with no work experience.
- The trip promises to be a great mixture of the ancient and modern.
- The patients were observed over a period of several months.
- I didn't understand the author's point of view on immigration.
- The support and advice of lecturers within the department has been invaluable.
- He tried to shift the blame for his mistakes onto his colleagues.
- The verdict depends on which side was more convincing to the jury.
- preliminary bibliography is due the week before the spring break.
- Our degree is built to prepare you for your career at sea.
- She was disappointed not to be accepted into the netball club.
- The real reason for global hunger is not the lack of food, but poverty.
- Anatomy examines both internal and external structures of the human body.
- Thank you for representing our department at this event; we appreciate it.
- The forest has provided nesting places for a wide variety of birds.
- A demonstrated ability to write clear, correct and concise English is obligatory.
- You can apply for multiple scholarships in one simple application.
- Each student has been given their own email address by the school.
- The student deserves a prize for his good behaviour at school.
- The campus art museum features work from renowned artists around the world.
- Eating a healthy breakfast can provide energy throughout the day.
- The old Olympic Games were religious festivals filled with celebrations and rituals.
- The campus bookstore sells textbooks and school supplies to students.
- A long disquisition can take students several months to complete.

- The university offers a wide range of programs to suit different interests.
- Research shows that early detection methods are very important and significant.
- Children today are brought up on a diet of television cartoons and soap operas.
- Each library assistant was given a specific section of the library to distribute books.
- During the childhood development, the importance of education is stronger than ever.
- Our professor will host a business development conference next week.
- Today we have a guest speaker who is visiting from Canada.
- Most countries tend to impose some sort of tax on alcohol and tobacco.
- Technically you can use many methods to solve these math problems.
- I missed yesterday's lecture. Can I borrow your notes?
- Her designer clothes were from the pages of a fashion magazine.
- The company has every intention of keeping the share price high.
- You will have the flexibility to choose your own path as a marine engineer.
- New legislation on the sale of drugs will be introduced next year.
- Pioneers of new ideas often face similar struggles and hardships.
- Our university has set a minimum English Language proficiency level.
- Historians can't agree on the first clock's invention date precisely.
- We need to develop a coordinated approach to the problem.
- The temporary library will be closed in the winter break.
- Immigration policy is a complex issue that requires careful consideration.
- The famous professor is now illustrating the theory of financial accounting.
- Poverty, not a lack of food, is the main cause of global hunger.
- Academic funds can only be spent on purchasing things for the classroom.
- The fashion industry has a significant impact on the environment.
- Muscular aches and pains can be soothed by a relaxing massage.
- Students' papers should be about a current social issue.
- A copy of the letter was posted on the noticeboard.
- The teacher asked the students to check their work for any errors.
- The book provides some valuable information on recent economic trends.
- The business school offers internships and networking opportunities.
- You'll be able to see the latest fashion and beauty news on this website.

- They want to bring the new legislation into force before the end of the year. • Some benefits relate directly to the mental health of the teenagers • People who live near airports tend to suffer from noise.
- He developed his own program in partnership with an American expert.
- The free banking system has been in operation since the early eighties.
- We offer many programs and resources to help you thrive at university.
- I feel that not enough is being done to protect the local animal life.
- The student government organizes events and advocates for student interests.
- He entered the password correctly and was able to log in to the system.
- The cafeteria is open on Monday and Thursday.
- The analytical and communication skills are essential to accounting and finance.
- She went to the mall to buy a new dress for her interview.
- The application for a new business licence has been denied.
- Reserve collection of books can be borrowed for up to three hours.
- The media plays a critical role in shaping public opinion.
- They were very curious about the people who lived upstairs.
- It's a great privilege to welcome our guest speaker to our college.
- The money was distributed among schools in this rural area.
- If you forgot your student number, you should contact Jenny Brice.
- The teacher tried to gain her student's attention by clapping her hands loudly.
- It would be better to transport the goods by rail rather than by road.
- Please read the article that was given out yesterday.
- A high wall separated our back yard from the playing field.
- The name was changed to avoid confusion with another firm.
- We know that dolphins use sound to communicate with each other.
- The job encompasses a wide range of responsibilities, so it is very challenging.
- This project has liberated industry from dependence on running water.
- Banks will check your identification before allowing you to withdraw money.
- This academic year, students need to complete several short coursework assignments.
- There are many different religions across the world.
- Some claim that chocolate can reduce your chance of a heart attack.
- A radio signal normally has both electrical and magnetic properties.
- She has successfully balanced a career and bringing up a family.

- Your studies will be guided by your own interests at our university.
  - Education is a powerful tool for promoting social mobility and economic opportunity.
  - The campus dining hall serves a variety of healthy meals.
  - She ate her sandwich alongside several other office workers taking their break.
  - The university hosts a wide range of events both on and off campus.
  - For the past three years they have been leading totally separate lives.
  - This will be the first art exhibition to be held by the university.
  - We must let clients know about upcoming price increases in advance. • The fire ruined many plants in that place, causing severe destruction.
  - A good education helps you recognize yourself and your strengths.
  - You can gain entry to the club only through a member.
  - In the course of my everyday life, I had very little contact with teenagers.
  - Students had to choose one elective from the choices of art, music and computers.
  - The professor has promised to put his lecture notes online.
  - What's going on can help patients leave their fears at the door.
  - It might be time for me to make some changes to my life.
  - A tutor is a teacher that usually specializes in one particular subject.
  - A vibrant and growing economy does not improve everyone's quality of life.
  - Anatomy is the study of internal and external body structures.
- 
- 39.5% California residents speak a language other than English at home.
  - This dissertation is an extended piece of research on a topic of your interest.
  - Sleep is believed to play a critical role in storing memories.
  - The university's online courses provide flexible learning options for students.
  - Climate change is a pressing issue that requires global cooperation and action. • Learning a second language can open up new opportunities and perspectives.
  - These services are available for those experiencing academic concerns.
  - We have specially assigned staff to help you find appropriate work placements.
  - The customers are required to rate the extent of their satisfaction.
  - It is generally accepted that people are motivated by success.
  - We have a range of on-campus accommodation available to students.
  - He plans to get a degree in economics and then work abroad for a year.
  - The cost of attending a private university is unaffordable for some students.

- The signal will be converted into digital code by the computer.
- A university is an educational institution aiming to provide academic knowledge.
- I will check the map to make sure we are going the right way.
- Statistics indicate that depressed patients are more likely to become ill than others.
- Tuesday is the final day for students to submit their assignments without any penalty.
- The company didn't disclose how much it expects to gain from the deal.
- Set knives and forks next to spoons when setting the table.
- A letter was sent out to inform clients about the change in service prices.
- Our university has organized a visit to the tallest building in the world.
- In consultation with your supervisor, your thesis is approved by the faculty committee.
- They opened a new store in Europe to test out the market.
- To understand its entity, we need to go back to its origin.
- You don't have to tell lies to get people to like you.
- .
- You can't expect to learn a foreign language in a few months.
- The economy should be organized to serve the interests of all the people.
- These seafront amusements have been attracting visitors from big cities.
- Most of our employees get posted abroad at some certain stages.
- The workman expects to lose his job in the next few weeks.
- The interview only took ten minutes, but it felt like hours.
- The man is probably the best-known painter in the world.
- Our university has campuses in the three distinct regions of Texas.
- The food industry is facing numerous challenges related to health.
- Most supermarkets in this country sell a range of organic products.
- The professor will share his lecture notes online as promised.
- I think that to raise the issue and to talk about it is great.
- Campus life can be challenging, but it is also an exciting time of growth.
- Basketball was created in 1891 by a physician and physical education instructor
- The time has come for action if these animals are to survive.
- The team carried out a thorough inspection of the project.
- This system has imposed additional financial burdens on many people.
- One of the first mass transit systems was located in France.
- The university celebrated the Earth Day by planting trees.

- Dirty soil and changing weather might make things worse in the future.
- This is a new system for assessing personal tax bills.
- Getting career advice while you're at university eases the transition from study to work.
- Governments can help reverse this economic trend by offering technical and financial aid.
- There was a stream at the bottom of the garden.
- The whole class were told to stay behind after school.
- I wanted to work somewhere where I could serve the community.
- The rules at this middle school had been very strict.
- This course belongs to the academic degree curriculum of communication postgraduates.
- They are collecting information in preparation for the future talk.
- He lives quietly in the country in a village near the sea.
- He had to spend about six months in a class with younger students.
- Unfortunately, she didn't have enough money to buy the car she wanted.
- He shared his own way to quickly adjust to college life.
- To be accepted to the university, you must have passed certain tests.
- He balanced his budgets by rigid control over public expenditure.
- Mental health resources are available for students who need support.
- Which one actually dictates our future, academic degree or capability?
- An important factor that separates ordinary photographs from good ones is the lighting.
- She has picked only one elective for the next semester.
- Readers have been invited to write in with their comments.
- He studies and observes the behavior of babies and has written many articles about it.
- Due to rising enrollment for courses, universities should increase their staff.
- The judge said the punishment would serve as a warning to others.
- The university marked Earth Day by planting trees to celebrate.
- The tension between the two countries is likely to remain.
- The price of oil should remain stable for the rest of the year.
- College homework has been demanding for most of the students.
- Parents should beware of imposing their own interests on their children.
- We went to the store to look for cosmic books for our children.

- Computer viruses may erase all of my crucial files and data.
- Have you talked to your parents about the problems you're having?
- Our business is built on the network of alumni, friends and partners.
- The project modules are specified as modules of the control system.
- Kids are not allowed in chemical labs due to safety concerns.
- Put your name and ID number on the application form.
- Online learning has become increasingly popular in recent years.
- Each student at the university has a guide that helps them select their classes.
- The study abroad program allows students to experience new cultures and perspectives.
- Our support services include health and wellbeing and career guidance.
- We offer many express delivery options for a small additional charge.
- The report mentions that this company has overspent on marketing.
- At the end of the day, people want to profit from return on their investment.
- Scientists use genetic engineering to protect tomatoes against the effects of freezing.
- Renewable energy sources are becoming increasingly important for reducing carbon emissions.
- The history of our society is complex and fascinating.
- Many students worry about writing essays because they lack experience.
- At the university he made rapid progress, especially in the study of history. The teacher asked the students to check their answers before handing in their homework.
- She's been in the library for a very long time.
- The academic magazine was full of tips for both teachers and students.
- Mental health awareness is essential for promoting well-being and reducing stigma.
- The study's results will be published in the upcoming month.
- His comments only made this issue more confusing for us to solve.
- Tomorrow's lecture has been cancelled due to the power cut.
- The university offers scholarships to help students with financial need. The economics department studies the production and distribution of goods and services.
- Unfortunately, the two most interesting economics electives clash on my timetable.
- Agriculture was based on the family as a unit in the past.
- The bibliography needs to be removed prior to the publication.
- Marketing is applied to everything these days, and books are no exception.

- Social justice is an important topic in today's society.
- Income inequality is a major challenge facing many societies today.
- Please register your student email account as soon as possible.
- I need to find a tutor to help me with my science studies.
- Modern knowledge companies have fewer repetitive, mechanical tasks in their operations.
- If you are worried about your work, you should see a study counselor.
- In today's lecture the focus will be on tax structures within the European Union.
- Researchers have observed that family plays a crucial role in the success of individuals.
- Biodiversity is essential for the processes that support all life on Earth, including humans.
- The prospect of living in a city does not appeal to me.
- He built up the business over a period of ten years.
- Our collections are available digitally in a number of ways.
- Submit your portfolio to the internal review office by Tuesday at the latest.
- Fire has caused severe damage to the contents of the building.
- Test the new hypothesis through a controlled experiment for verification.
- Diversity and inclusion are essential for creating strong and resilient communities.
- The professor plans to discuss issues in the news that reflect concepts taught in class.
- The medicines you are currently taking could be affecting your balance.
- Some of California residents don't use English as their home language.
- Economic recovery can't be sustained unless more jobs are created.
- History gives us the tools to analyze and explain problems in the past.
- A good education not only teaches you skills but also helps you broaden your horizons.
- Overeating can lead to numerous health problems and should be avoided.
- You can easily pick up your student card at the reception desk.
- Many people faced crowded and dirty living conditions in their daily lives.
- People with an active lifestyle are less likely to die early or to have a major illness.
- Business bank accounts were being kept separate from personal ones.
- He performed the experiment correctly and has obtained accurate results.
- An office assistant is to help the attorney organize all of his case files.
- I have lectures on Tuesday from nine o'clock until two o'clock.

- You still have heaps of time to complete this task before its deadline. They agglomerated many pieces of research into a single large study.
- I'll show you how to stop reactions using acid effectively and safely.
- He made the joke on purpose, knowing it would annoy her.
- Residence Hall is closed prior to the academic building closing time in the semester.
- The seminar will include speakers willing to share their experiences of marketing.
- He hoped they would not feel disappointed if they were not invited.
- Students can borrow this book for a maximum of one day.
- Small businesses play an important role in local communities.
- It is important to take gender into account when discussing the figures.

- The topic next week on colonialism will be the nuclear disarmament.
- Remember to sign the attendance sheet before leaving the lecture hall.
- Compiling a bibliography can present a major challenge for some students.
- When you have finished typing, remember to save your document.
- Students who study overseas can significantly improve work chances.
- Hunger is the body's signal that levels of blood sugar are too low.
- To earn the best grade, you must achieve a high score.
- High-earning parents are more likely to live in a good neighborhood for raising children.
- He went to the university as a student of philosophy last year.
- Volunteer work can be a rewarding way to give back to the community.
- This could mean the closure of thousands of small businesses.
- All laboratory equipment will be provided in class.
- The first person in space was from the Soviet Union.
- She went to the mall to buy a new dress for her interview.
- The high price is a major hindrance to potential buyers.
- A visit to the museum will take you back in time to the last century.
- Effective management is key to establishing and maintaining intellectual leadership.
- We can discuss education in the tutorial next week.
- Several students raised different examples.
- Please make an appointment with your tutor about work after holiday.
- Remember your essay should have less than two thousand words.

- The university policy on plagiarism can be viewed on the website.
- The website has probably the most attractive designs and layouts.
- Soil erosion can be caused by increasing rainfall and changes in plant growth.
- A public relation exercise improves the relationship between the public and an organization.
- There is no point in designing efficient cars if we use them more and more.
- The geography assignments must be submitted by the midday of Friday.
- Students should take advantage of the online help system before approaching their lecturers.
- Young children need education and organized activities.
- The brain is our central computer of our bodies.
- Read the safety instructions before using the equipment during the workshop.
- Exercise is important for mental and physical health.
- We have three distinctive libraries which are nationally acclaimed.
- Parking permits can be collected through the student service office.
- Tuesday sessions will last for approximately two hours.
- Everyone should get access to art galleries no matter where they live.
- Until you complete the form, you cannot attend.
- There is too much information on this topic.
- Presentation skills are important to both universities and workplaces.
- Major sports on campus include rugby, soccer and tennis.
- It is clear that the effects of climate change will damage the world economy.
- The framework will help pose more research questions systematically.
- Experience would be an advantage for this managerial role.
- The library is located on the north side of the campus.
- I would like the assignment less than 2000 words.
- Biographical information should be removed prior to the publication of the results.
- The United States is the largest chocolate manufacturing country.
- If you forget your password, you need to contact the student center.
- The course comprises twenty hours of lectures, seminars and tutorials each week.
- To get further extension, you need to call the education executive on 401.
- Those students have to retake the module if their marks are too low.
- There won't be any space for me in the car.

- Read the fitness center instructions before attempting to use the equipment.
- The books are filled with drawings of machines invented when he was a student.
- Our tutorial will take place on the second floor in room one.
- If you want to receive the reimbursement, you must submit the original receipts.
- Students can download the lecture handouts from the course website.
- Being a vegan means not consuming any animal products.
- Students should take advantage of the internet before attending the lecture.
- I would like an egg and tomatoes on white sandwich bread with orange juice.
- Applicants for the course preferably have a degree in English or journalism.
- Trainees should be invited to relate new ideas to their past experiences.
- Make sure to hand in all assignments by the end of the week.
- Almost all of the students want to acquire the academic award.
- Please make sure you use the standard form of quotation.
- Social events and training days are arranged for all the staff.
- In many ways, our social statistics exaggerate the degree of hardship.
- The urban impoverished often resided in incredibly tight living spaces.
- Each student can determine their own pace in this class.
- She has been in the library for a long time.
- Information looks familiar so readers can understand it more easily.
- Many students have insufficient science background to gain entrance to engineering school.
- The test includes subjects from each chapter in this semester's material.
- A liberal arts curriculum can be very broad and diverse.
- Key aspects of this investigative paradigm may prove useful in other spheres.
- The paper has the potential to transform life science.
- The content of the course depends on what the students would like to study.
- The medicine always made him feel sleepy and unable to concentrate.
- The verdict depends on which side convinces the jury more.
- Professors at the university teach many different courses including biology and geography.
- The government took another step on the road to political reform.
- The library is located at the other side of the campus behind the student center
- The chemistry building is located near the entrance of the campus.

- Living in the twenty first century is increasingly stressful.
- Please remain seated until the aircraft has come to a halt.
- I'm glad that you've got it.
- The doctor will check your blood pressure to see if it is normal.
- Our future prosperity depends on economic growth to some extent.
- Include a bibliography at the end of your filed assignments.
- The organization has distributed food to the families in need.
- Animal behavior appears to contain both similar and distinct aspects to that of humans.
- The university can help connect you to local cultural groups and organizations.
- Don't forget to explore the library during your first week here.
- All the assignments should be submitted by the end of this week.
- The invention would have a wide range of applications in industry.
- The university's MBA program is ranked among the top in the world.
- The history department is part of the College of Arts and Sciences.
- The college operates on a system of continuous assessments.
- You will be able to develop your literacy skills through this project.
- Two leading law firms are to prepare legal actions against tobacco companies.
- His lack of experience was balanced by a willingness to learn.
- The new policy shifted the emphasis away from fighting inflation.
- I have established a good working relationship with my boss.
- Recent technological progress has been significant and fast-paced in various fields.
- You have to be able to describe things in a form that users can understand.
- The system is able to run more than one program at the same time.
- An engine has many parts, each performing a different function.
- Portfolio is due to the internal review office no later than Tuesday.
- His work stands out as groundbreaking and innovative to everyone.
- The tutor is there for help, so do ask if you don't understand anything.
- The company plans to sponsor television programs as part of its marketing strategy.
- Most schools are unwilling to cut down on staff in order to cut costs.
- The man has been fighting his addiction to alcohol for months.
- This institution was built to help people with psychological illnesses.

- We provide a number of services to ensure a good experience for our students. These new laboratories enhance the ability of researchers to make new discoveries.
- The result of the experiment indicates that further research is needed.
- The Museum has been awarded a grant by the Humanities Research Council.
- The government is taking emergency action to deal with a housing crisis.
- By logging in, you agree to all terms and conditions regarding your enrollment.
- These professionals will offer you the opportunity to discuss issues with them.
- The professor ran over her notes before giving the lecture.
- The dining hall provides a variety of meal options for students with different dietary needs.
- The new system is the focus of controversy among the public.
- Renewable energy sources are now used to produce electricity.
- The university has a diverse student body from around the world.
- We are constantly seeking competitive advantages that allow us to make more profits.
- The original Olympic Games were celebrated as religious festivals.
- I think it's a shame that some foreign language teachers were able to graduate from college without ever having studied with a native speaker.
- The assessment of this course will begin next week.
- They appointed a new manager to coordinate the work of the team.
- The young girl is very knowledgeable about plants diseases and the causes.
- Most adults require between seven and nine hours of nightly sleep.
- They were living well, in comparison with people elsewhere in the world.
- This course introduces you to the study of teaching as a profession.
- The program affords young people the chance to gain work experience.
- Campus parking is still tough, even with a valid permit.
- The company saw the visit as an important signal of financial support.
- The new model combines a telephone and a fax machine.
- The campus has many buildings, including classrooms, dorms, and offices.
- Guidance on presentation focus will be more specific this time.
- The company has been performing poorly over the past six years.
- The object is to gather as great a diversity of genetic material as possible.
- Even my friends often confuse me and my twin sister.
- Students are asked to circle the words on this list that they recognize.

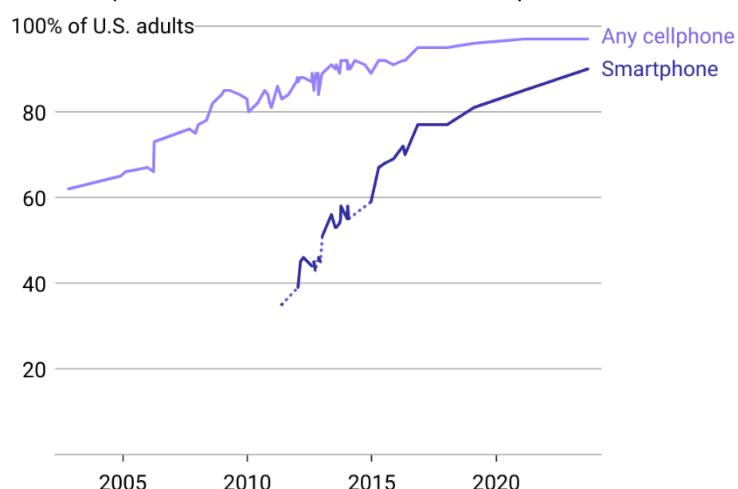
- Please bring back all library books by the end of the week.
- Students will not be given credits for assignments submitted after the due date.
- She has failed to complete her degree in international business.
- A study skill seminar is on for the students who require assistance.
- Can you pass these materials to students next to you?
- Unfortunately, my schedule conflicts with several interesting economics classes this semester.
- The campus is located in a bustling urban area.
- You will need a great deal of money to purchase the valuable painting.
- A moderate earthquake struck the United States early on Saturday.
- The staff should make sure the kids have an enjoyable and educational day.
- The waiter answered the customer's question patiently and provided helpful information.
- In the past, students had to deal with very long writing assignments.
- The teaching of history should not be limited to dates and figures.
- Please register your student email account at your earliest convenience.
- Distance learning has become far more popular these days.
- Has he been boring you with his stories about his trip?
- This method has accuracy issues that need to be dealt with promptly.
- The amount of money you have to spend will limit your choice.
- He left England with the intention of traveling in Africa.
- He has been awarded a research grant because of his excellent work.
- In the history curriculum, the class will be studying Egyptian culture.
- Many California residents use a different language when they're at home.
- Speaking one or more foreign languages will be useful in your career.
- No more than four people can be in the lab at once.
- A balanced diet will help you study more effectively.
- She used her family's history as a base for her novel.
- The teacher imparted his knowledge of social relationship onto his students.
- It is difficult for young people to find jobs around here.
- There is no requirement for attendance in this research course.
- Our capacity to serve the community is a vital part of our role.
- I could not save my work as my computer got crashed.

# SPEAKING

**DESCRIBE IMAGE**

## The rise of the smartphone

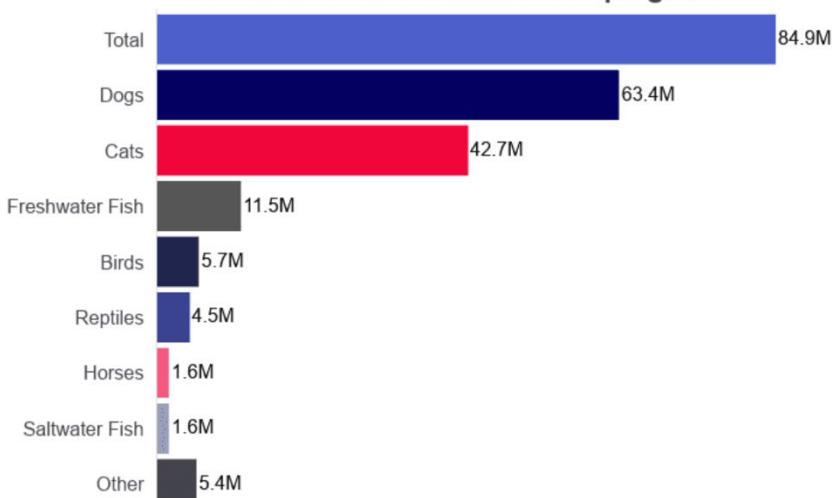
Most cellphone owners in the U.S. have smartphones.

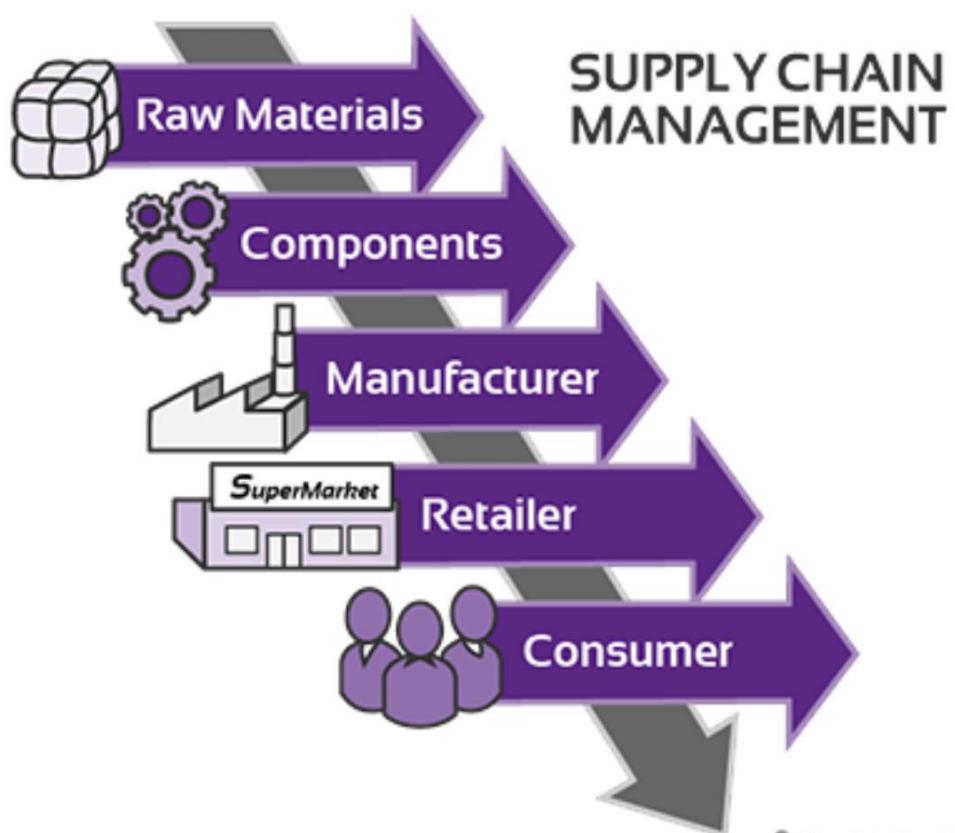
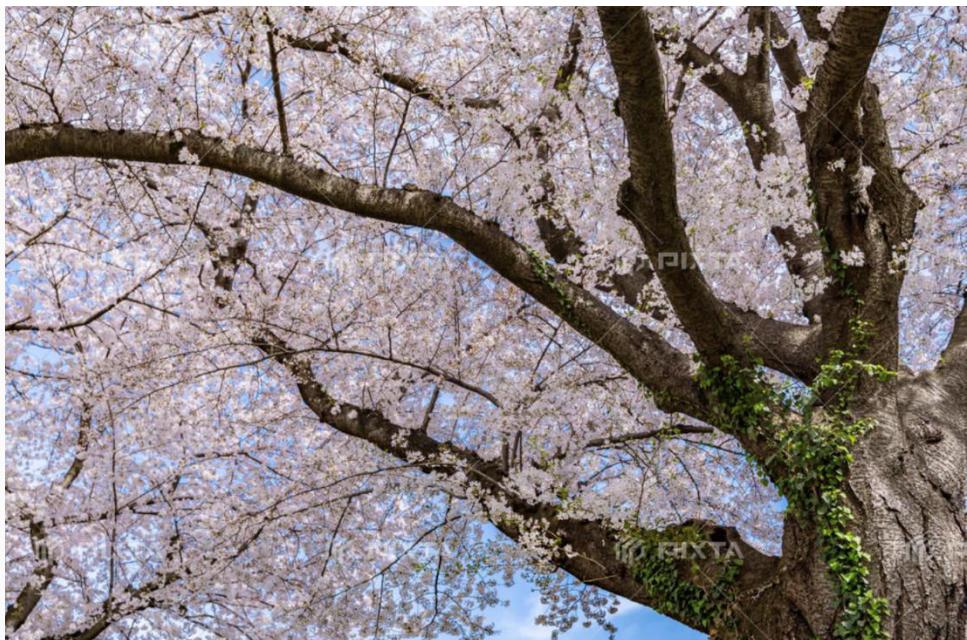


Note: Before 2023, surveys were conducted over phone. 2023 responses were collected via web and mail.

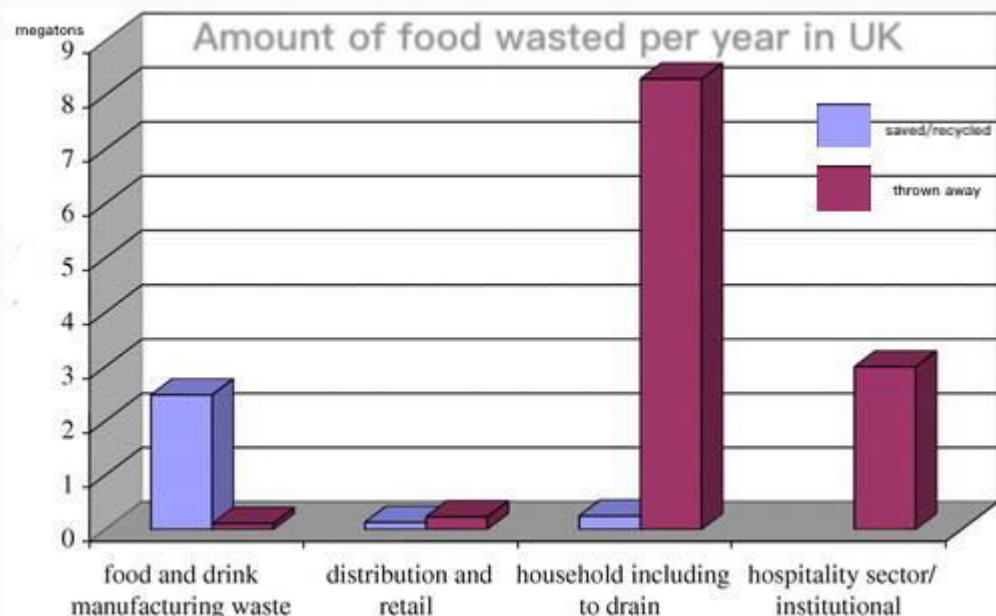
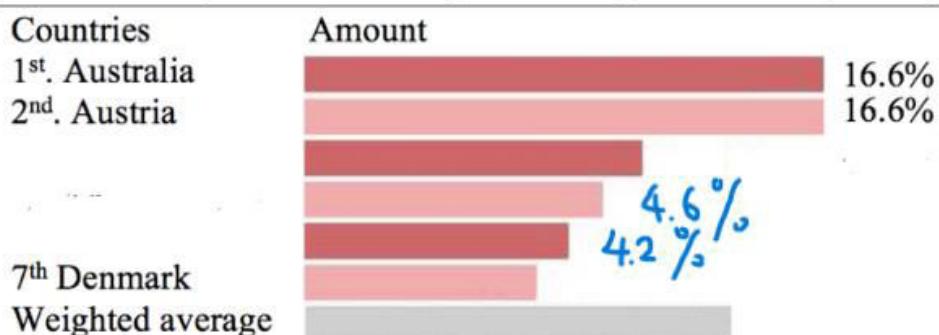
Data source: Pew Research Center

## Number of U.S. Households Keeping Pets



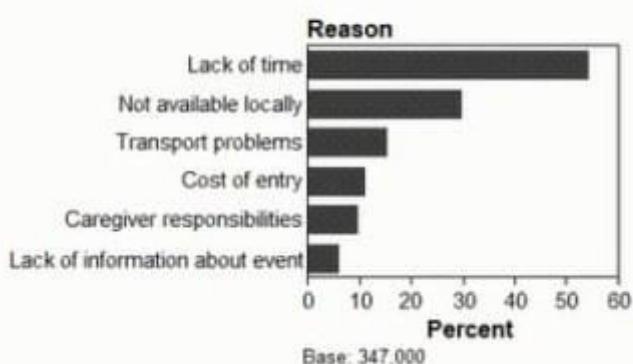


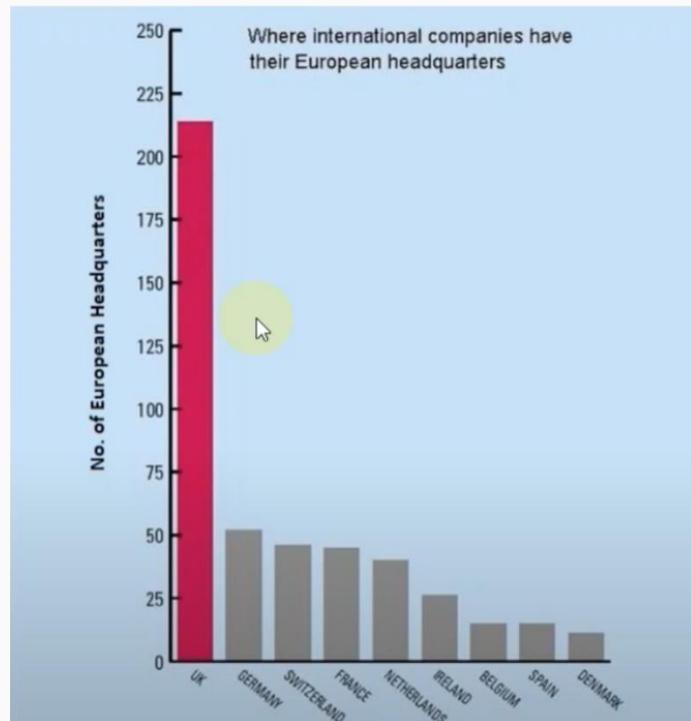
## The taxation by countries → Payroll and superannuation (recent years) xxx



### Barriers to Visiting Museums or Art Galleries

Proportion of adults unable to visit more often



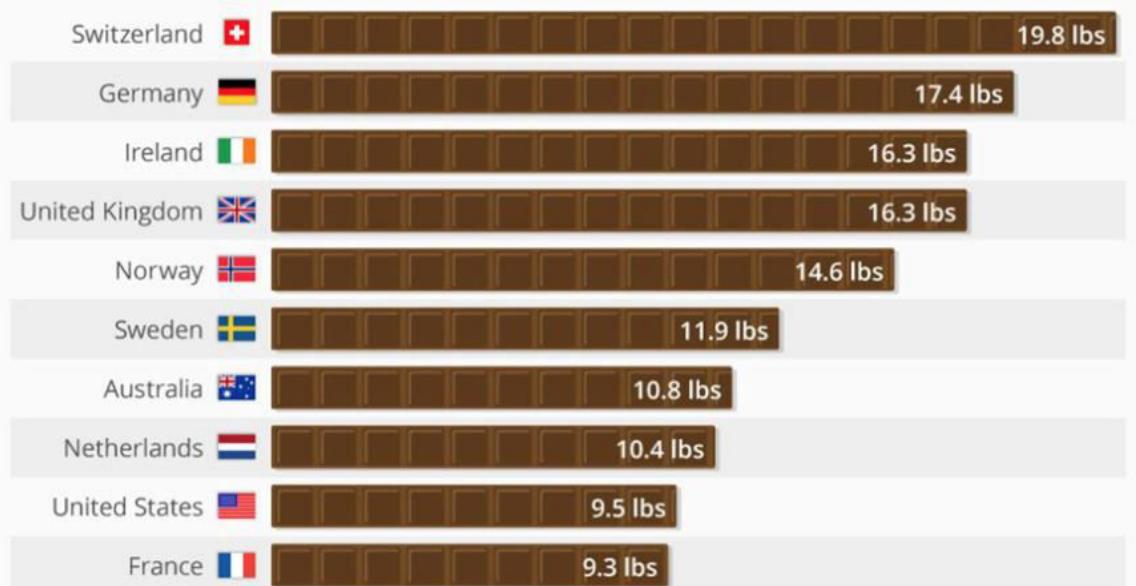




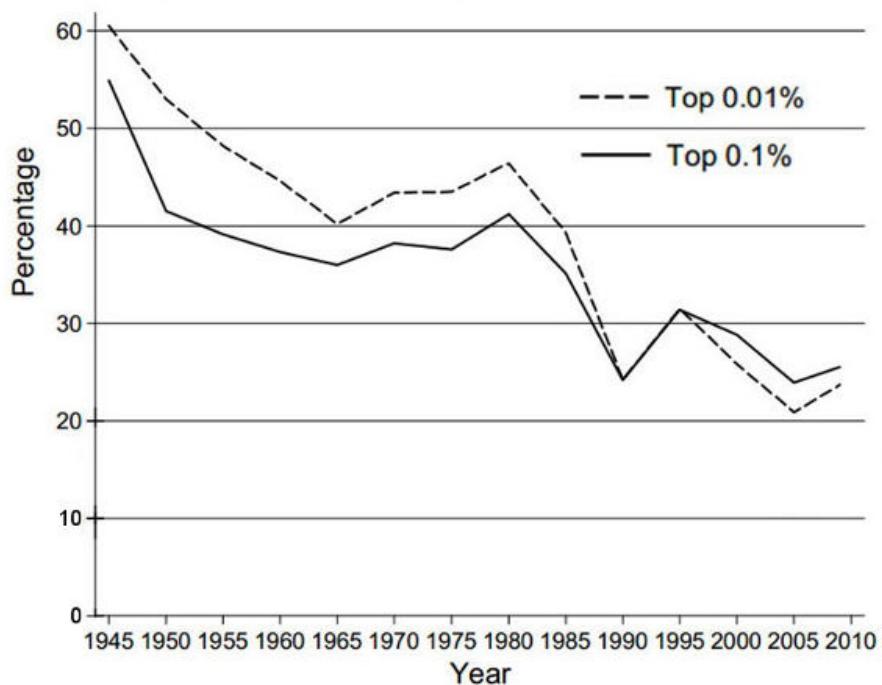
Apartment Floor Plan [←](#)

## The World's Biggest Chocolate Consumers

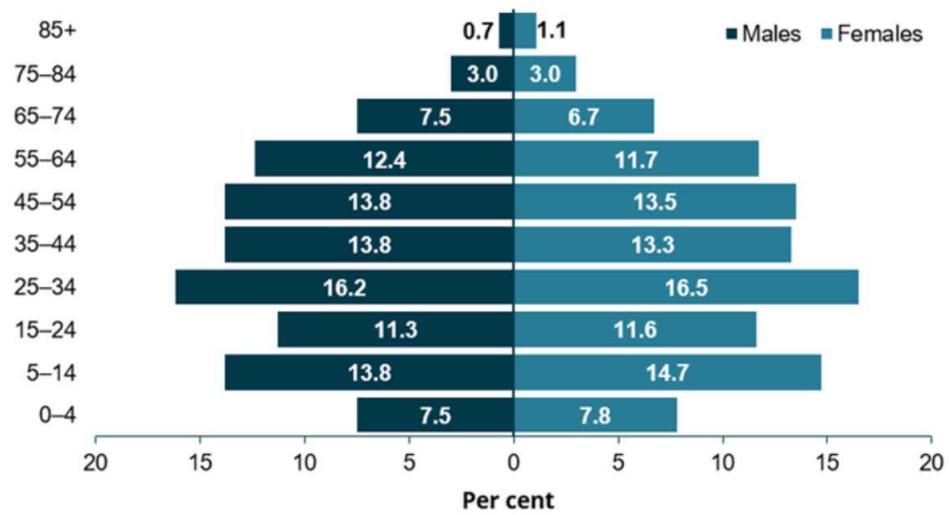
Pounds of chocolate consumed per capita each year



## Average Tax Rates for the Highest-Income Taxpayers, 1945-2009



### Age group

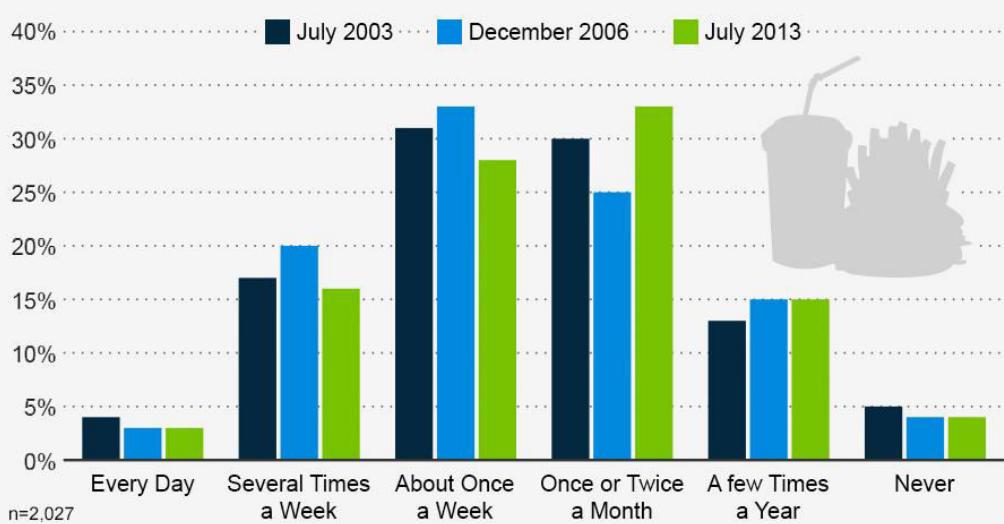


## Weekly Household Spending, Ireland, 2015-16



### 1 in 5 Americans Eat Fast Food Several Times a Week

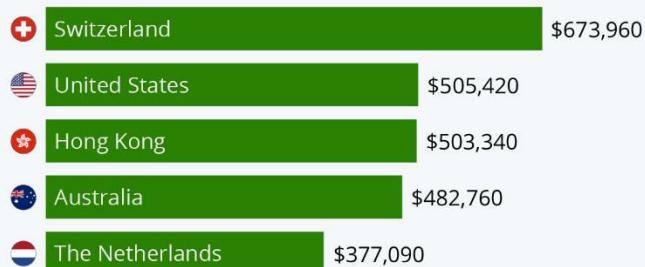
Frequency of dining at fast food restaurants among Americans



# Which economy Are Really the Richest?

Countries/regional economies with the biggest average and median wealth\* per capita (2020)

## Average wealth



## Median wealth



Excludes Iceland, Luxembourg, Monaco and others because of unreliable data

\* Gross assets

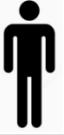
Source: Credit Suisse Global Wealth Report



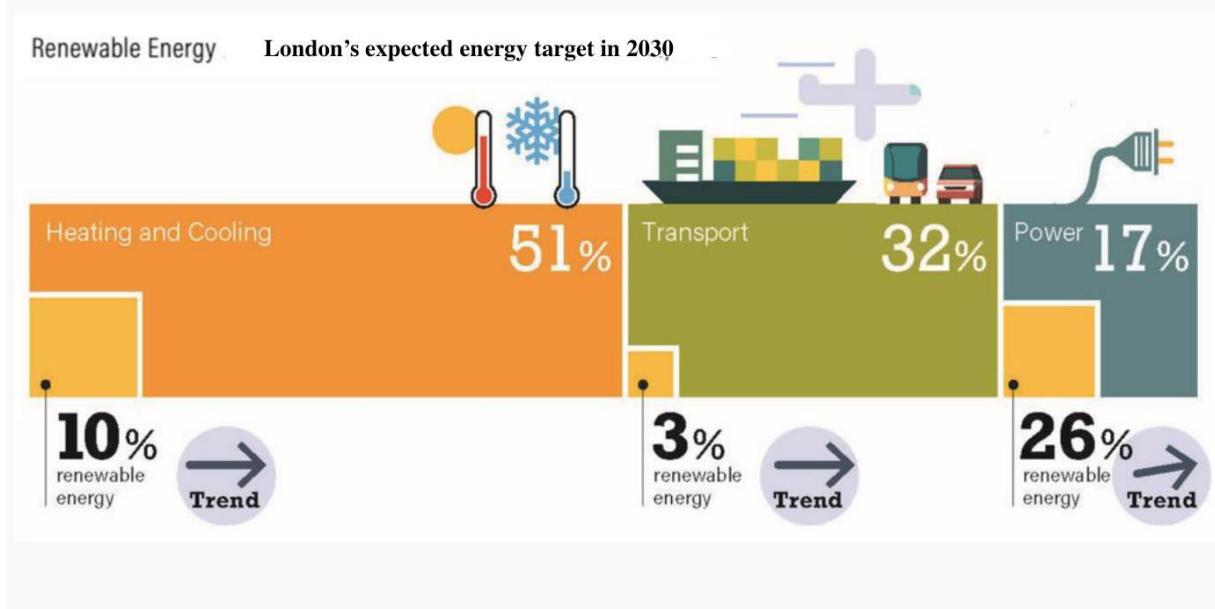
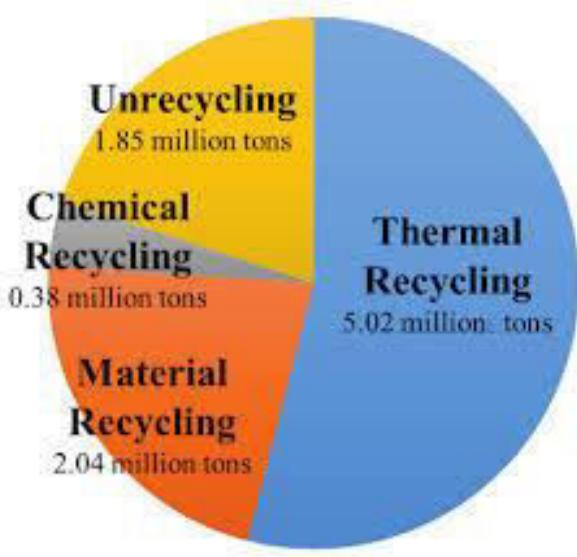
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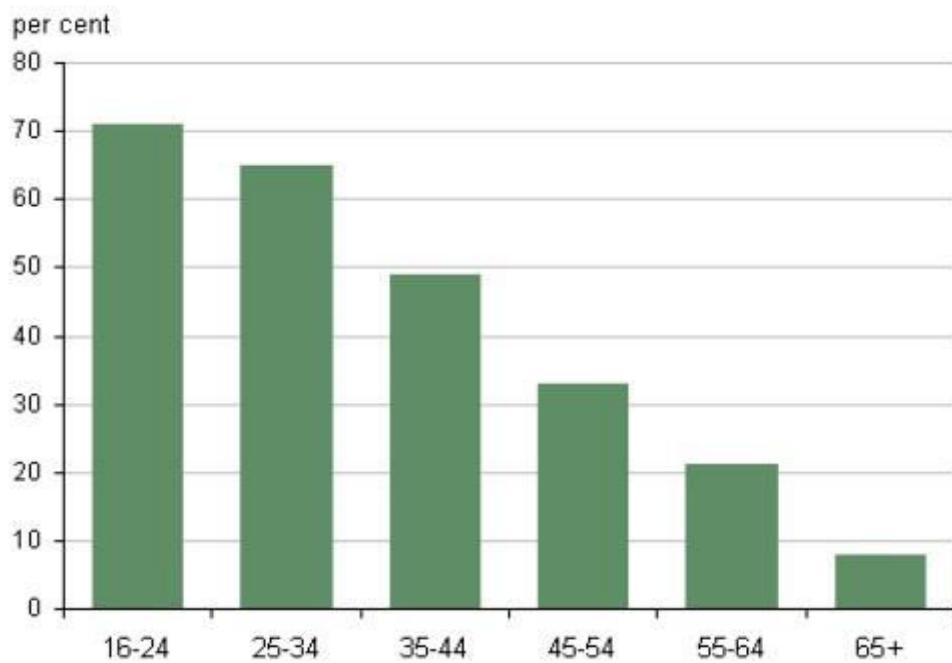


Main Hall	
Office	Male Toilet 
Kitchen	Female Toilet 
	Handicapped 

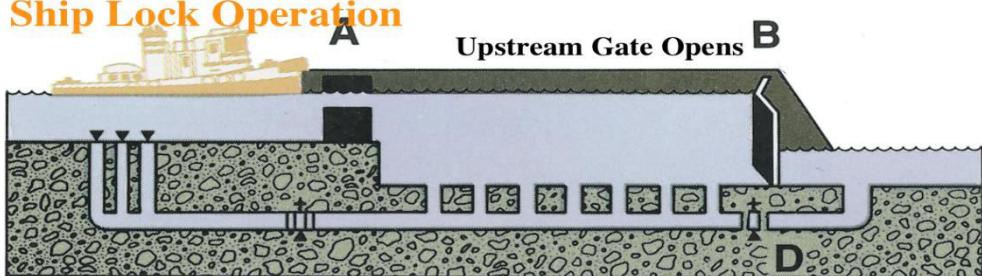




**Internet users who accessed via a mobile phone, GB, 2011**

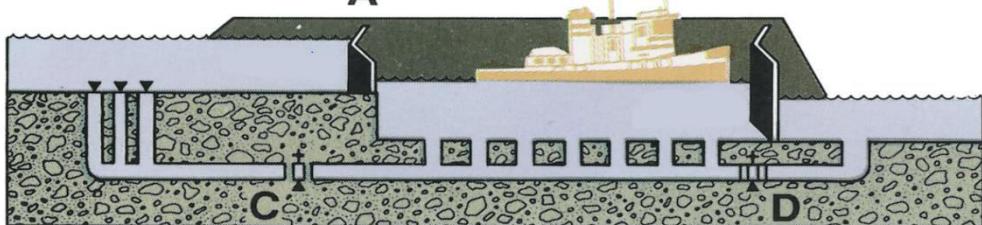


**Ship Lock Operation**



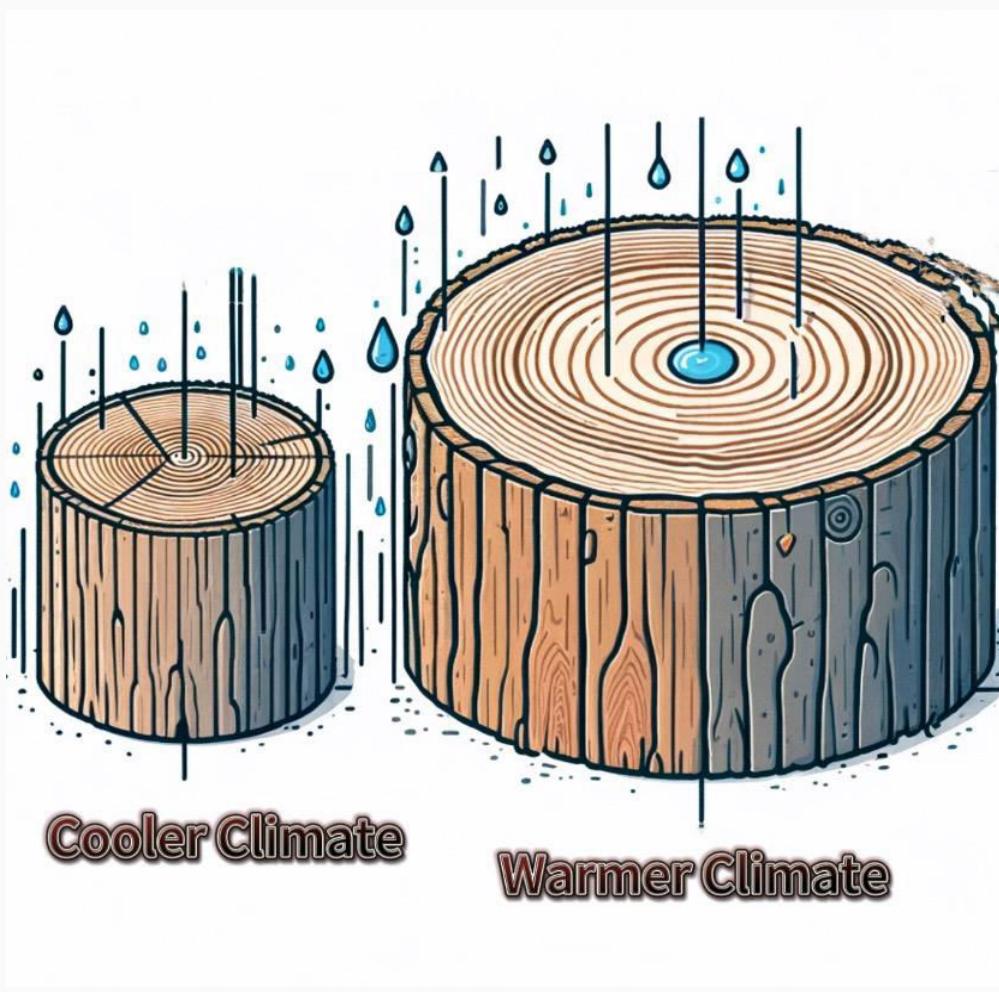
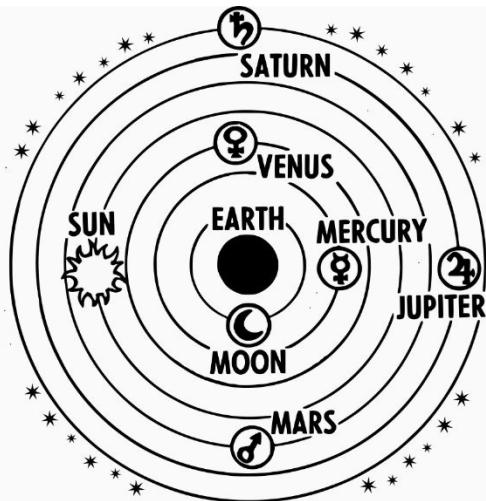
**A Upstream Gate Opens B**

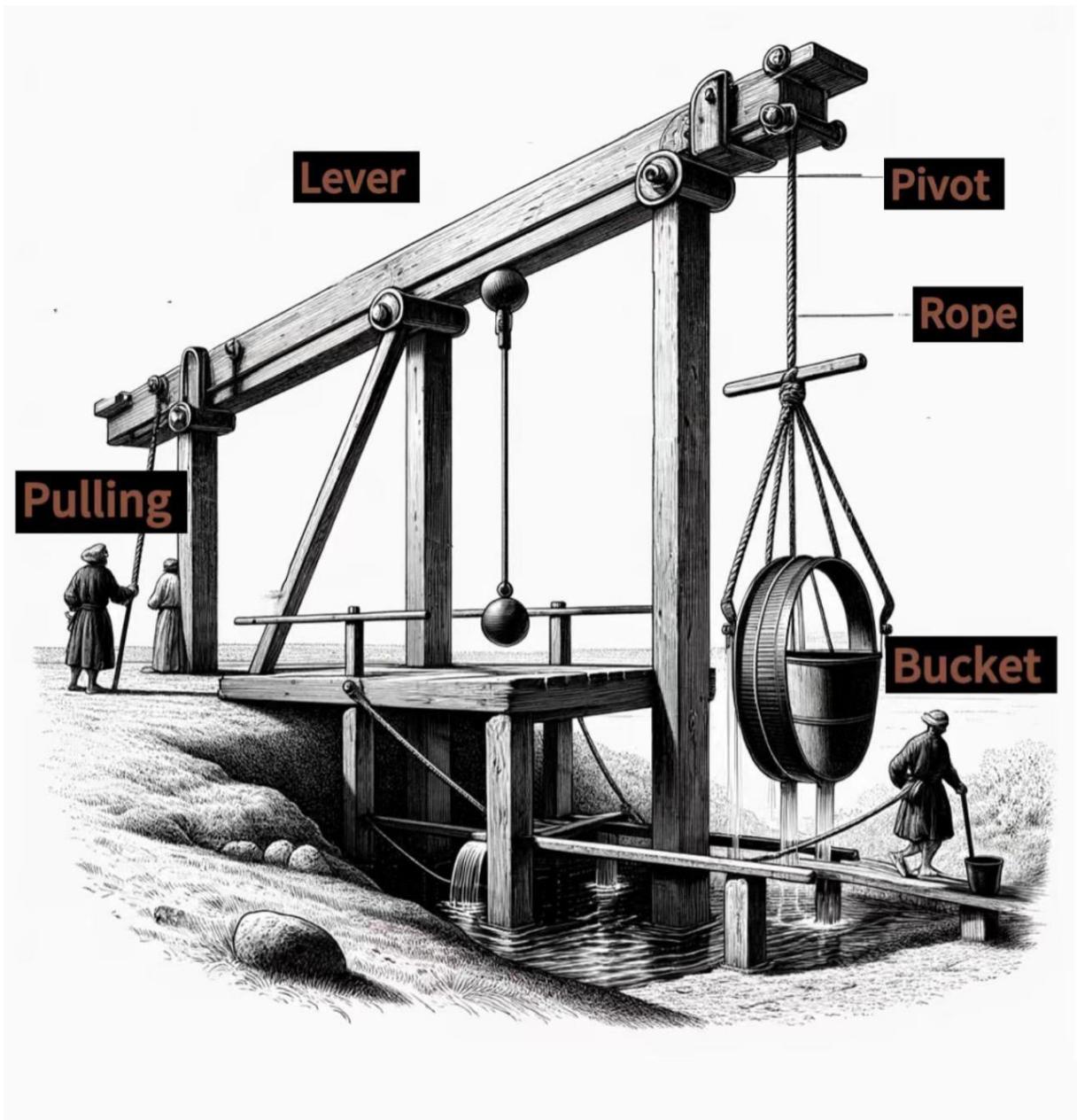
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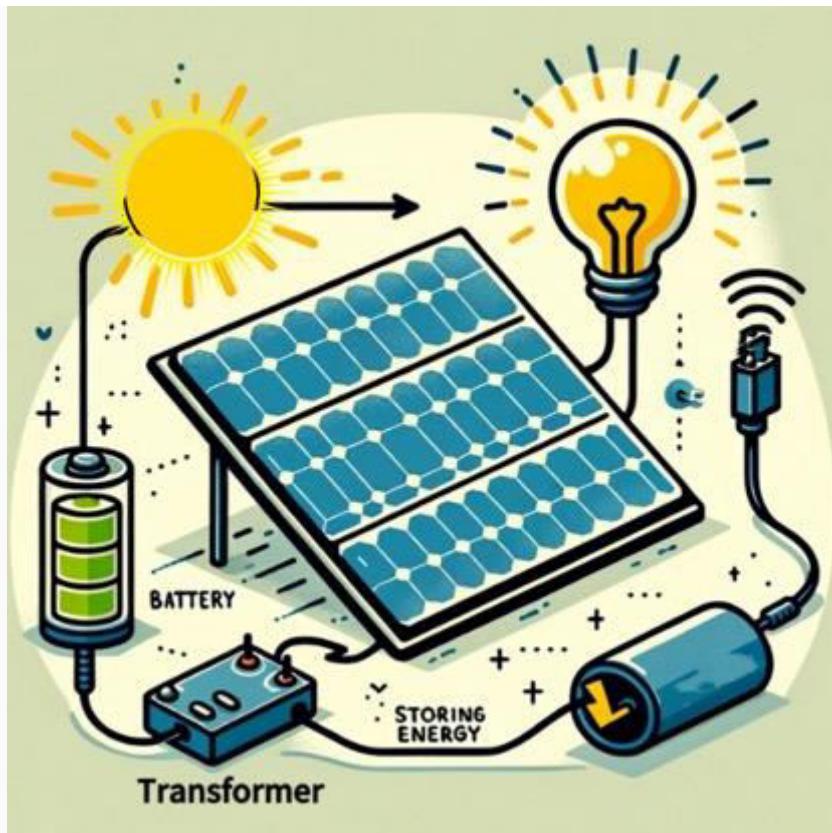


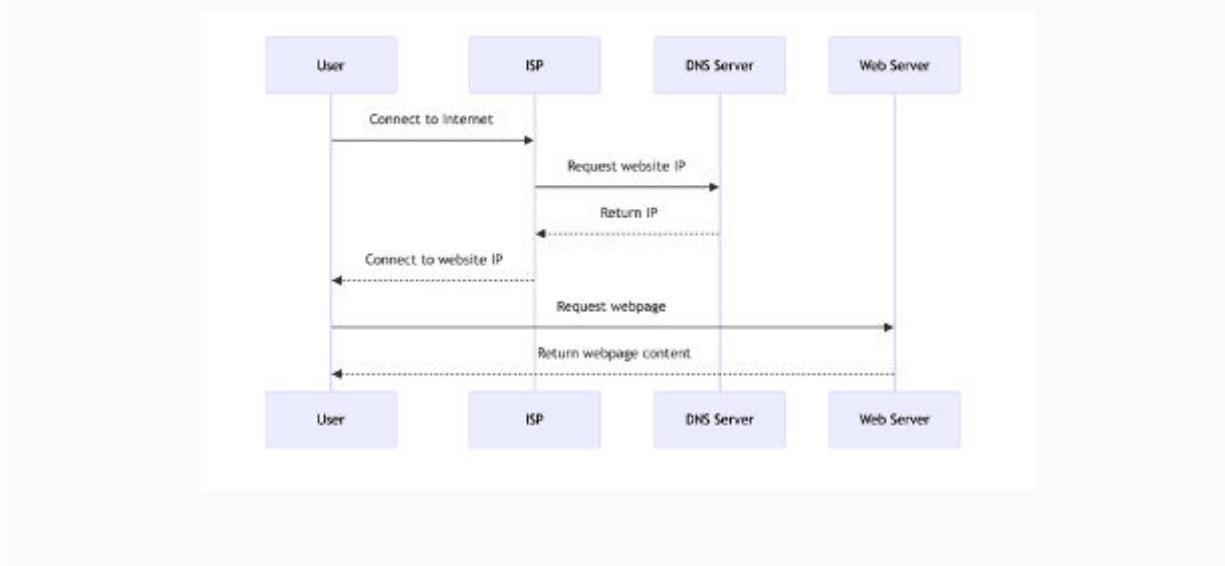
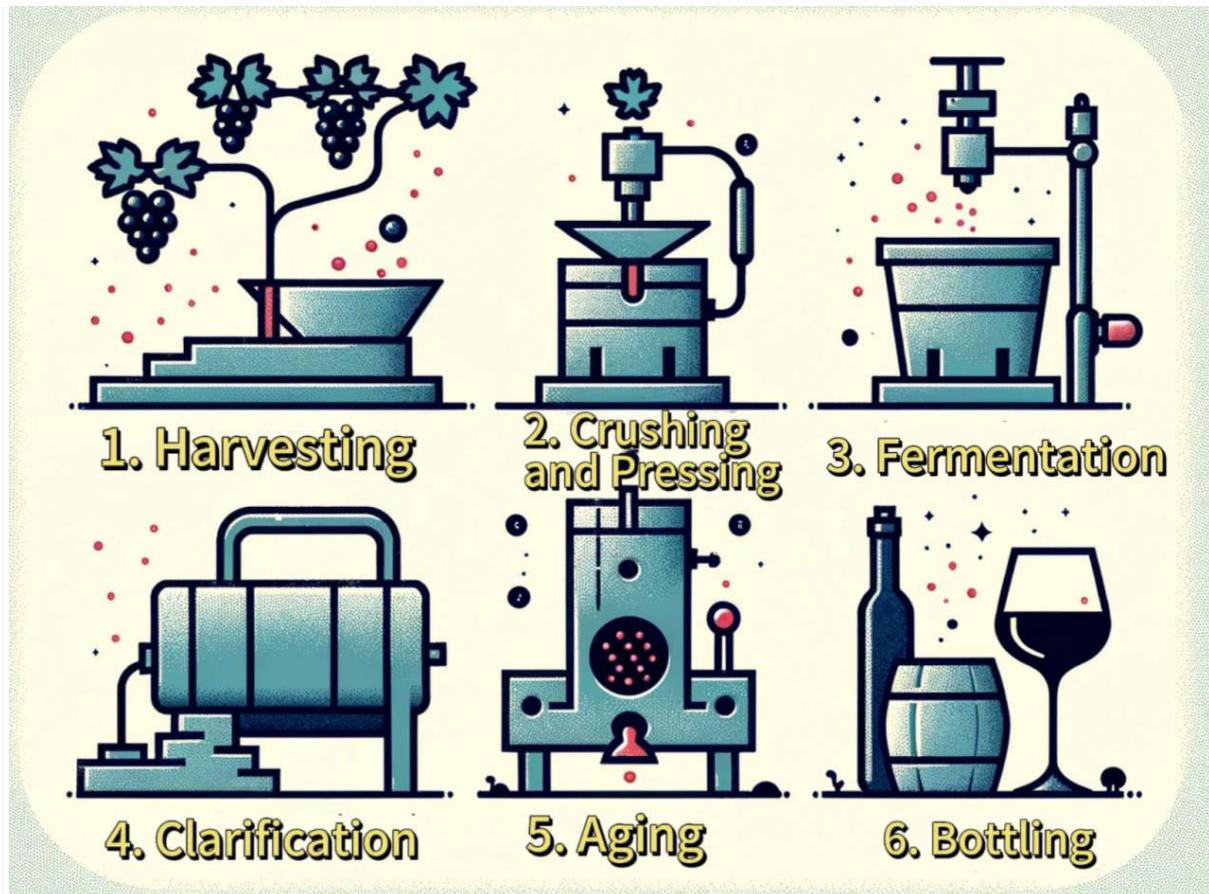
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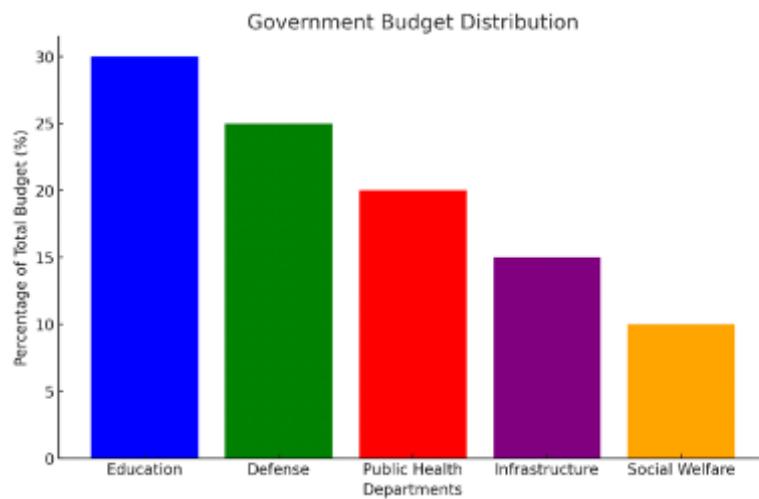




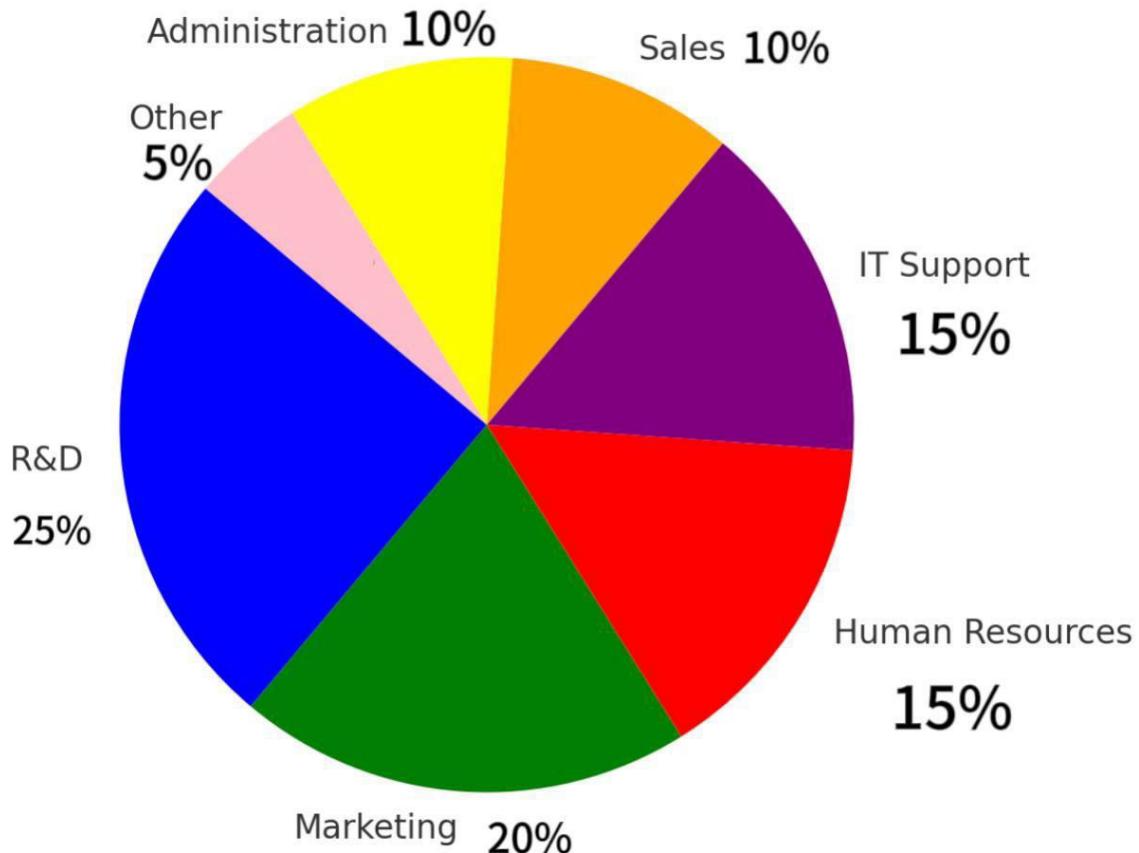


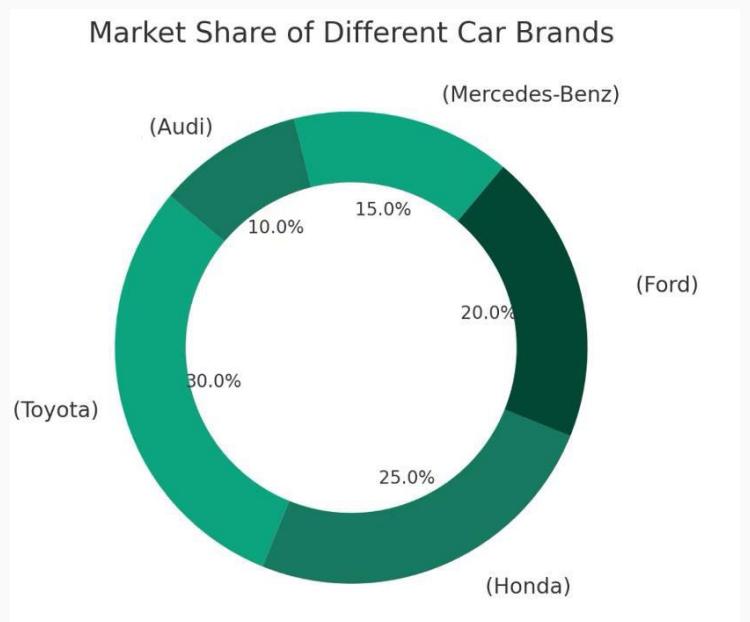
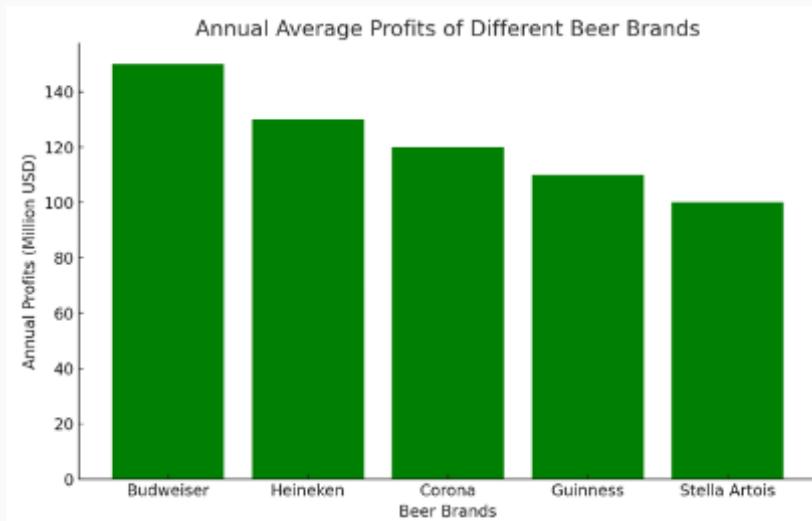




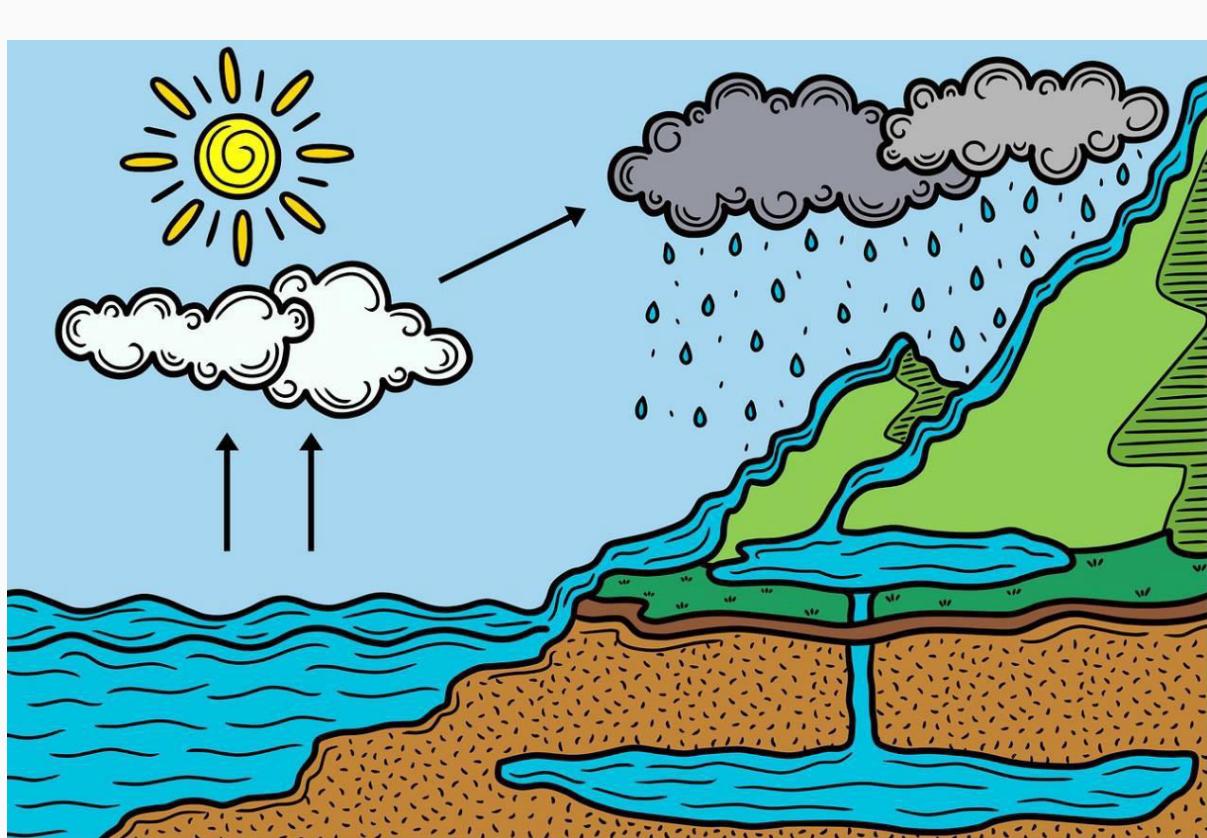


## Corporate Budget Distribution









# SPEAKING



## RETELL LECTURE



ONE AUSTRALIA

Embracing cultural diversity is integral to enriching our university experience. It cultivates an environment where learning extends beyond textbooks, into the realms of personal interactions and shared experiences. This diversity introduces a multitude of perspectives, challenging us to think critically and broaden our understanding of the world. Engaging with ideas that differ from our own fosters innovation and problem-solving. For instance, group projects benefiting from diverse viewpoints often yield more creative solutions. Additionally, cultural diversity on campus prepares us for the global workforce. As the business world becomes increasingly interconnected, cultural competence is not just an asset but a necessity. It enables us to navigate cross-cultural communications and collaborations effectively. In conclusion, cultural diversity is not just about coexistence but about the synergetic fusion of ideas that prepare us for life beyond university walls.

Imagine a world where the lush green canopies of the Amazon no longer teem with life, where the coral reefs are silent, bereft of their colorful denizens. Our planet's natural habitats are in peril, and their preservation is imperative, not just for the flora and fauna that call them home, but for humanity itself. Each ecosystem plays a critical role in the delicate balance of nature. Forests act as the earth's lungs, purifying the air we breathe, while oceans regulate the climate. The loss of these habitats leads to the extinction of species, each a thread in the intricate web of life. Once gone, these threads cannot be rewoven. As inheritors of the earth, the onus is on us, the educated youth, to be the vanguards of conservation. Simple actions like supporting sustainable products and reducing waste contribute to a larger collective effort. In safeguarding nature's sanctuaries, we secure the future for generations to come.

In this global village, 'Cultural Empathy' emerges as a beacon of unity amidst our diverse backgrounds. It is the heartfelt understanding that the world is a mosaic of cultures, each piece as significant as the other. Encountering a culture different from our own can be like stepping into a new world. It's the subtle art of listening and the quiet humility of learning that bridges the gap. When we travel or interact with international students, we're not just exchanging words; we're sharing pieces of our heritage. Moreover, cultural empathy extends beyond mere tolerance. It's about celebration and participation. It's one thing to

acknowledge festivals from around the world; it's another to dance to the rhythm of foreign melodies and taste the spice of exotic cuisines. This is how we weave the threads of understanding and respect into the fabric of our everyday lives. Let us, as students and future leaders, champion the cause of cultural empathy, for it is the path to a more cohesive, compassionate, and peaceful world.

Today we delve into the essence of Adaptability - a trait not just desirable but essential in our fast-paced world. The ability to adapt is what enables us to navigate the unpredictable tides of life, particularly in our university years, which are a microcosm of the larger journey ahead. Imagine adaptability as a muscle - the more we exercise it, the stronger it becomes. Engaging with diverse cultures and perspectives on campus strengthens this muscle, equipping us with the flexibility to appreciate and assimilate varying viewpoints. It turns the unfamiliar into the familiar, fostering an environment where innovation thrives. Furthermore, adaptability enhances our resilience. It's not the strongest of species that survives, nor the most intelligent, but the one most responsive to change, as Darwin posited. As we learn to pivot rather than pause in the face of change, we build a foundation for not just surviving but thriving in our chosen fields post-graduation. Let's embrace adaptability, not as a challenge, but as the key to unlocking a world of possibilities.

I'd like to illuminate a topic that resonates with each of us, yet often dwells in the shadows of our bustling lives: Mental Health Awareness. In our pursuit of academic and professional excellence, we frequently sideline the very engine of our aspirations - our mental well-being. A study from the American Psychological Association revealed that one in three college students experience significant difficulty due to depression, and over 40% feel overwhelming anxiety. These aren't just numbers; they're a reflection of silenced struggles that many among us endure. < Moreover, the veil of stigma that shrouds mental health issues can lead to isolation. By fostering open conversations, we dismantle this stigma. We empower those grappling with mental challenges to seek support, be it through counseling, peer discussions, or mindfulness practices. After all, the strength of a community is gauged by how it uplifts its most vulnerable members. As we stand on the cusp of our futures, let us pledge to prioritize mental health with the

same vigor we apply to our academic endeavors. For in nurturing our minds, we don't just better ourselves - we create a ripple effect that enriches our entire community.

There is a picture, sort of artist's impression, before the space age of what Venus might be like on its surface and so this was looking at the planet Venus, it was science fiction and science fact all the way up to 56 before the start of the space age but it wasn't completely disproved, this idea of a really sort of lush environment on Venus until 1967, which is when the first measurements in detail were done at Venus. So Mariner four and Mariner five confirmed the feeling from an earlier space mission that in fact the surface of Venus was not like this at all, but extremely hot and, and also that the clouds were made of sulfuric acid so there wasn't a nice water cycle like is going on in this picture and so, that it had to wait for these in situ measurements by space craft to actually do that and so Venus turned out not to be quite as Earth like as we thought and I'll sort of tell you about some of the latest results from Venus Express, which, which they actually there are some Earth like features, but to a large extent, it's not like the Earth.

Okay. So this is the... this is the big benefit of a universal philosophy. It says it applies to everybody. Well, looks that doesn't, you know, 205 or 206 countries in the world. And you've got something that applies to everybody. That's a bit strange, isn't it? No, says liberal theory. There are same value structures that apply to all of us. You couldn't have the United Nations without it. It couldn't tell you that the Universal Declaration of Human Rights without this idea of values that apply to all of us just because we are humans. Now, the idea is to test that as well. Why is sport universal? Why does everybody play football? It's because the values are specified at a very thin level at the top. There are these rules and we all have to abide by just these rules. But there are lots of things about football that aren't rules specified. So Brazilian football is different from Italian football, from British football, from German football, from Spanish football. It's culturally specific, but acknowledges that there are these universal general rules to apply to everybody.

It's rare to find an adult who actively still wonders what their parents think. But that isn't to say that we aren't wondering about our value in more general terms. It's just that we may without noticing, have taken the question somewhere else and very often, to particularly harsh modern figures of authority: media and social media. To this pitiless arena, the self-doubting person now directs all their fears of unworthiness and panicked desire for reassurance. To a system set up to reward sadism and malice, they constantly raise their phones and implicitly ask: Do I deserve to exist? Am I OK? Am I beautiful or respectable enough? And, because social media is built on the troubles of the individual soul, the verdict is never a reliable yes. One is never done with cycles of fear and reassurance-seeking. Every time their spirits sink, which is often, the self-doubting sufferer picks up their phone and begs to know whether they have permission to go on. If this might be us, we should grow curious about, and jealous of, people who are free. They are so because someone long ago settled the question of what they were worth and the answer has seemed solid ever since. Social media is a roar in the next valley, not a mob in their own mind. Learning from these calm souls won't just involve deleting a few apps, we will have to go further upstream, back to the baby self, whose alarmed enquiries we must quiet once and for all with ample doses of soothing, and till-now absent kindness.

Take a look outside a window. What is the season where you are? How do you know? Most likely, you looked at a tree or plant and noticed details about its leaves and assessed the qualities of sunlight streaming outside. Observing the timing of biological events in relation to changes in season and climate is called "phenology". When you notice the daffodil buds are poking through the snow and think spring is on its way, you're using phenology. When you see leaves turn from green to red, and watch migrating birds fly past, and realize that summer is over, autumn is here, you're using phenology. Literally meaning, "the science of appearance", phenology comes from the Greek words *pheno*, "to show or appear, and *"logos*, " to study. Humans have relied on phenology since the time of hunters and gatherers. We've watched changes in seasons to know when to plant and harvest food and when to track migrating animals. Scientists observe and document seasonal changes in nature and look for patterns in the timing of seasonal events. Timing of these natural signs has remained consistent until recently. Increasing global temperature is causing rhythms of nature to shift. Bud burst, the day when a tree or plant's leaf or flower buds open, is occurring earlier in the year for some species. For every one degree Celsius rise in temperature,

bud burst happens five days earlier than usual. Differences in timing affect not only plants, but the insects and birds that depend on the plants for food.

Carbon dioxide, or CO<sub>2</sub>, is the main greenhouse gas in climate change. So how does CO<sub>2</sub> get into our atmosphere? Well, carbon is part of a cycle. It starts with the sun, which heats the Earth's surface with more energy in one hour than the whole world uses in a year. Plants, which are kind of like biological chefs, take that sunlight, and then suck in some CO<sub>2</sub> from the air, mix them together, and BAM! They create a stored form of energy, in the form of carbohydrates such as glucose and sucrose. The process is called photosynthesis. When animals like us eat those plants our stomachs convert that food back into energy for our own growth. Greenhouse gases are a byproduct of this process, and are released through waste. If those plants die, they decompose, and tiny microorganisms break down those carbohydrates and again, release greenhouse gases as a byproduct. As you see, energy originates from the sun. It is then transferred as it moves through the food chain. But sometimes, carbon based organisms like plants or animals get stuck in the earth. When this happens, they're compressed under tons of pressure, and turned into carbon-based fossil fuels like oil, coal or natural gas.

The major currency of our reward system is dopamine, an important chemical or neurotransmitter. There are many dopamine receptors in the forebrain, but they're not evenly distributed. Certain areas contain dense clusters of receptors, and these dopamine hot spots are a part of our reward system. Drugs like alcohol, nicotine, or heroin send dopamine into overdrive, leading some people to constantly seek that high, in other words, to be addicted. Sugar also causes dopamine to be released, though not as violently as drugs. And sugar is rare among dopamine-inducing foods. Broccoli, for example, has no effect, which probably explains why it's so hard to get kids to eat their veggies. Speaking of healthy foods, let's say you're hungry and decide to eat a balanced meal. You do, and dopamine levels spike in the reward system hot spots. But if you eat that same dish many days in a row, dopamine levels will spike less and less, eventually leveling out. That's because when it comes to food, the brain evolved to pay special attention to new or different tastes.

While a written word might have multiple definitions, we can usually determine its intended meaning through context. In speech however, a word can take on additional layers of meaning. Tone of voice, the relationship between speakers, and expectations of where a conversation will go can imbue even words that seem like filler with vital information. This is where "um" and "uh" come in. Or "eh" and "ehm," "tutoa" and "öö," "eto" and "ano." Linguists call these filled pauses, which are a kind of hesitation phenomenon. And these seemingly insignificant interruptions are actually quite meaningful in spoken communication. For example, while a silent pause might be interpreted as a sign for others to start speaking, a filled pause can signal that you're not finished yet. Hesitation phenomena can buy time for your speech to catch up with your thoughts, or to fish out the right word for a situation. And they don't just benefit the speaker - a filled pause lets your listeners know an important word is on the way. Linguists have even found that people are more likely to remember a word if it comes after a hesitation. Hesitation phenomena aren't the only parts of speech that take on new meaning during dialogue. Words and phrases such as "like ""well" or "you know" function as discourse markers, ignoring their literal meaning to convey something about the sentence in which they appear.

Last week we talked about how people recognize objects and really how well people recognize objects, given how difficult the problem is, given how objects can be seen in all different sorts of illumination, in different positions, in different angles. And yet we are able to extract that information, we are able to take the visual stuff out there, interpret it in a way that allows us to recognize all the different things that we can see in our environment. Today we're gonna kind of carry on looking at that, but we gonna look at what's really a special class of objects. That's the human face. So we gonna look at how we recognize human faces and how we do it quite as well as we do. We're really expert at recognizing faces. So again we can think about how do we take that visual information and how do we transform it into a form which allows us to put a name to a face, and to do all the other clever things that we can do with faces. So I'm gonna start off again by just pointing out that it's a hard problem. Face recognition is a hard problem, and it's a clever thing we do. If you think about all the different types of faces you can recognize, and all the different types of information you can get

from the face, you kind of start to appreciate how well we can do face recognition.

Why can't we transplant brains? First of all, we should look at what the brain actually does. This thing inside our skulls that weighs on average about 3.3 pounds is larger in humans than any other vertebrates when compared to body weight. That's why we are so brainy. The busy brain is our command center for our nervous system, which takes in data from our body and gives directions to our muscles. In fact, it does so much work, it requires about 20 percent of our energy to run it. When we are brain dead, we no longer have any neurological activity. With the help of machines, we can be kept alive for a short time, but within a week, the body will not be able to function. While we may still be alive in some sense for that week, we are technically dead when the brain is dead. Some good news is that during the time we are kept alive, some of our other organs can be donated. But why can't we accept someone else's brain? When we transplant something such as a heart, surgeons use a mechanical pump to keep blood flooding through the body while the new heart is being put in. The new heart is then connected to the major blood vessels, and this might take several hours. You'll stay in the hospital for one to two weeks, and if your body doesn't reject its new heart, it's said 87 out of 100 people make it through the year, and 60 out of 100 get through another decade. So, wouldn't it just be possible to open the skull and connect a new brain where the removed brain was connected? This question was asked to a Professor of Neurosurgery at Yale in 2013. He actually did say that one day this operation might be successful, but right now we are not even close. The reason is because it's just too darn difficult to connect nerve fibers from the new brain to the native spinal cord. This, he said, is why spinal cord injuries can be so devastating. If we could transplant brains, we would likely not have so many people that are disabled due to spinal injuries.

But what exactly happens to your body when you're in a coma? First we have to be clear that comas are very different from sleep. Despite the fact that the origin of the word comes from the Greek for Koma, or deep sleep, comas are not sleep however and are instead various forms of unconsciousness that render a person unable to respond to any external stimuli. You can play the loudest, heaviest

death metal in the world right next to someone who's comatose, and you won't succeed in doing anything except really annoying the neighbors. Likewise you can even physically hurt people in a coma and they will remain completely oblivious and unresponsive. In times not too distant past, this was sometimes used as treating, with doctors trying to shock their victims back into consciousness. Everything was tried from exposing parts of the body to open flames to severely dropping the body's temperature with ice, to even bloodletting from the head directly. One treatment even included wholly emptying the stomach, we guess because the doctors thought that if a patient got hungry enough, the body would force them to wake up. Or maybe they really were just throwing everything including the kitchen sink at the problem, which we're sure was also tried. Comas can occur as a result of serious trauma or as a deliberate medical treatment by doctors. They are typically brought on by traumatic head injury, and it's believed that it's the brain's way of shutting down so it can focus on repairing itself. They can also however be brought on by a stroke, a brain tumor, drug or alcohol abuse, or an illness such as diabetes or an infection. Most of the time a coma only lasts a few weeks though, but past this period the patient can enter a persistent vegetative state that severely lessens their chances of ever coming back out of one.

We've all heard the phrase "Laughter is the best medicine." But why do we laugh in the first place? It seems that laughing might be a little more hard-wired into us than you might think. Infants laugh very early in life, usually learning how to laugh before they can speak. Not only that, but people that are born blind and deaf can still exhibit laughter. One study found that the laughter produced from deaf participants was fundamentally similar to that produced by normally hearing individuals, backing up the idea that laughter is grounded in human biology. It's also been theorized that laughter predates human speech by potentially millions of years, being a simpler form of communication. Laughter is thought to have likely helped earlier people negotiate group dynamics and establish hierarchy. I can't even imagine trying to explain that I'm a little goofball using only laughter! So if laughter actually is instinctually part of humans, then why do people laugh? It seems like laughter is more of a way for people to better handle stress and make situations feel less threatening than laughter only being about things that we find to be funny. In practice, with a study of 1,200 people that laughed spontaneously in their natural environments, only about 10-20 percent of the laughing episodes followed anything the researchers found to be

joke-like. Finding something funny still seems to play a part in why we laugh some of the time, but laughing to make yourself feel better about your next difficult exam might be just as probable as cracking up over that joke you just heard.

Well, according to the American Psychiatric Association, addiction is a complex condition of the brain where a person has compulsive substance use despite there being harmful consequences. People with addiction tend to have an intense focus on what they're addicted to, to the point where it takes over their life. What makes it so hard to break an addiction is that it can change the way your brain is wired, giving you harsh cravings that make it difficult to stop. Studies of brain imaging have even shown changes in areas of the brain that relate to judgement, decision making, learning, memory, and behavior control. So is this what's happening with Facebook and social media? It's hard to say for sure. That being said, we are starting to give more credit to an addiction that might be pretty similar: video games. That's because the American Psychiatric Association includes Internet Gaming Disorders as disorders that require further research, but that can result in clinically significant impairment or distress. The World Health Organization has also added Gaming disorders to their International Classification of Diseases, which is used by medical practitioners around the world to diagnose conditions. Now online video games are obviously not the same as a site like Facebook, yet they do have similar social aspects. It's possible that in the future we'll see health organizations also classifying social media as a type of addiction or disorder. Still, sites like Facebook do have quite a few qualities that make you want to come back to them. Through constant feeds that go on forever and giving you push notifications on your phone, social media sites try their best to keep you on their app or website, and if you leave they want you to come back as quickly as possible. Google and Facebook further their reach by also being commonly used to sign into other sites. Social media sites also seem to have a significant impact on how you feel, furthering your connection to them.

Tattoos have often been presented in popular media as either marks of the dangerous and deviant or trendy youth fads. But while tattoo styles come and go, and their meaning has differed greatly across cultures, the practice is as old

as civilization itself. Decorative skin markings have been discovered in human remains all over the world, with the oldest found on a Peruvian mummy dating back to 6,000 BCE. But have you ever wondered how tattooing really works? You may know that we shed our skin, losing about 30-40,000 skin cells per hour. That's about 1,000,000 per day. So, how come the tattoo doesn't gradually flake off along with them? The simple answer is that tattooing involves getting pigment deeper into the skin than the outermost layer that gets shed. Throughout history, different cultures have used various methods to accomplish this. But the first modern tattooing machine was modeled after Thomas Edison's engraving machine and ran on electricity. Tattooing machines used today insert tiny needles, loaded with dye, into the skin at a frequency of 50 to 3,000 times per minute. The needles punch through the epidermis, allowing ink to seep deep into the dermis, which is composed of collagen fibers, nerves, glands, blood vessels and more. Every time a needle penetrates, it causes a wound that alerts the body to begin the inflammatory process, calling immune system cells to the wound site to begin repairing the skin. And it is this very process that makes tattoos permanent.

So the idea I'd like to propose today is this: one of the most effective ways of building strong fundamentals in students and preparing them for the future, ironically enough is by looking to the past through the teaching of Latin. Latin will help students think more logically, communicate more effectively and have a more comprehensive understanding of the world around them, no matter how technologically advanced that world may become. To begin with, let's address a common misconception that Latin is a dead language spoken by ancient European 2000 years ago, holding no relevance whatsoever for people living in the 21st century. There's even an old poem that expresses the point of view . Latin is a language, as dead as dead can be. First it killed the Romans and now it's killing me. Now students may feel this way sometimes but the ... this simply is not true, the reality is that Latin never died, and never came to a crashing end with a death of a single tragic figure. It's simply evolved gradually over time and developed into the other languages. Moreover classic Latin is still very much alive and well in government, art, religion, literature, medicine, law and science. It's not a dead language. It's an eternal language.

This kind of approach is kind of the way some students approach preparing for standardized tests. In order to get test scores to go up, teachers will end up teaching to the test. Now, that approach can work; test results often do go up. But it fails the fundamental goal of education: to prepare students to succeed over the long term. So given these obstacles, what can we do to transform the way we transform organizations? So rather than being exhausting, it's actually empowering and energizing? To do that, we need to focus on five strategic imperatives, all of which have one thing in common: putting people first. The first imperative for putting people first is to inspire through purpose. Most transformations have financial and operational goals. These are important and they can be energizing to leaders, but they tend not to be very motivating to most people in the organization. To motivate more broadly, the transformation needs to connect with a deeper sense of purpose. Take LEGO. The LEGO Group has become an extraordinary global company. Under their very capable leadership, they've actually undergone a series of transformations. While each of these has had a very specific focus, the North Star, linking and guiding all of them, has been Lego's powerful purpose: inspire and develop the builders of tomorrow. Expanding globally? It's not about increasing sales, but about giving millions of additional children access to LEGO building bricks.

Now, why are companies embracing the reentry internship? Because the internship allows the employer to base their hiring decision on an actual work sample instead of a series of interviews and the employer does not have to make that permanent hiring decision until the internship period is over. This testing out period removes the perceived risk that some managers attach to hiring relaunchers and they are attracting excellent candidates who are turning into great hires. Think about how far we have come. Before this, most employers were not interested in engaging with relaunchers at all. But now, not only are programs being developed specifically with relaunchers in mind but you can't even apply for these programs unless you have a gap on your resume. This is the mark of real change of true institutional shift because if we can solve this problem for relaunchers we can solve it for other career transitioners too. In fact, an employer just told me that their veterans return to work program is based on their reentry internship program. And there's no reason why there can't be a retiree internship program. Different pool, same concept.

But if I were to ask you a similar question: "What percentage of the population do you think is capable of truly mastering calculus, or understanding organic chemistry, or...or being able to contribute to..to cancer research?" A lot of you might say, "Well, with a great education system, maybe 20, 30 percent." But what if that estimate is just based on your own experience in a non-mastery framework, your own experience with yourself or observing your peers, where you're being pushed at this set pace through classes, accumulating all these gaps? Even when you got that the a 95 percent, what was that five percent you missed? And it keeps accumulating-all the way you get to an advanced class, all of a sudden you hit a wall and say, "I'm not meant to be a cancer researcher; not meant to be a physicist; not meant to be a mathematician." I suspect that that actually is the case, but if you were allowed to be operating in a mastery framework, if you were allowed to really take agency over your learning, and when you get something wrong, embrace it - view that failure as a moment of learning that number of, of, - the percent that could really master calculus or understand organic chemistry, is actually a lot closer to 100 percent. And this isn't even just a "nice to have." I think it's a social imperative.

But for these things that we actually do really care about and do experience profound regret around, what does that experience feel like? We all know the short answer. It feels terrible. Regret feels awful. But it turns out that regret feels awful in four very specific and consistent ways. So the first consistent component of regret is basically denial. When I went home that night after getting my tattoo, I basically stayed up all night. And for the first several hours there was exactly one thought in my head. And the thought was, "Make it go away!" This is an unbelievably primitive emotional response. I mean, it's right up there with, "I want my mommy!" We're not trying to solve the problem. We're not trying to understand how the problem came about. We just want it to vanish. The second characteristic component of regret is a sense of bewilderment. So the other thing I thought about there in my bedroom that night was, "How could I have done that? What was I thinking?" This real sense of alienation from the part of us that made a decision we regret. We can't identify with that part. We don't understand that part. And we certainly don't have any empathy for that part - which explains the third consistent component of regret, which is an intense desire to punish ourselves. That's why, in the face of our regret, the thing we consistently say is, "I could have kicked myself." The fourth component here is that regret is what psychologists call perseverative. To

perseverate means to focus obsessively and repeatedly on the exact same thing. Now the effect of perseveration is to basically take these first three components of regret and put them on an infinite loop. So it's not that I sat there in my bedroom that night, thinking, "Make it go away." It's that I sat there and I thought, "Make it go away. Make it go away. Make it go away. Make it go away." So if you look at the psychological literature, these are the four consistent defining components of regret.

An ant is pretty stupid. It doesn't have much of a brain, no will, no plan, and yet, many ants together are smart. An ant colony can construct complex structures. Some colonies keep farms of fungi, others take care of cattle. They can wage war or defend themselves. How is this possible? How can a bunch of stupid things do smart things together? This phenomenon is called emergence, and it's one of the most fascinating and mysterious features of our universe. In a nutshell, it describes small things forming bigger things that have different properties than the sum of their parts. Emergence is complexity arising from simplicity, and emergence is everywhere. Water has vastly different properties to the molecules that make it up, like the concept of wetness. Take wet fabric, If you zoom in far enough, there is no wetness. There are just molecules sitting in the spaces between the atoms of the cloth. Wetness is an emerging property of water. Something new only created by a lot of individual interactions between water molecules. And this is sort of it. Many things interact under a certain set of rules, creating something above and beyond themselves.

So then begs the question, what if we cover the entire desert with solar panels? How much energy would we actually be able to produce and how would this change our planet? Let's take a deep dive. For starters, let's begin here. This is the where's that solar power station in Morocco, the world's largest concentrated solar power plant currently in existence in a marvel of modern engineering. Once fully completed and operational, the plant will take up an area of 25 square kilometers and be capable of producing 582 megawatts of electricity. It will even be capable of storing solar energy in the form of superheated molten salt, which allows for further production of electricity even into the night. After investing more than 9 billion dollars into their solar energy objective, Morocco aims to create 4 additional plants similar to this one in the

Sahara that will collectively create more than 2000 megawatts of electricity production which will be enough to provide for roughly 38% of all of Morocco's annual electricity needs. This project will transform Morocco into the world's leading solar energy state, and as the only African country that currently has a power cable linked to Europe, much of this energy will be exported for profit to the countries of the European Union. But all of this energy is created from just five relatively small plants.

Sometimes ignorance is preferable to the detailed truth. Maybe, we only care about truth in so far as it empowers us: knowing and thinking about all of the details of every orange tree would just be a psychological burden for the most of us. I'll take illusion over the reality. But I can't help but ask, "Is it possible that the mind is actually accessing a deeper kind of truth?" Maybe, the mind is separating the signal from the noise. But, what constitutes signal versus noise? Our values. A farmer that values knowing all the details of an orange tree will view it differently than a regular person. Well, where do our values come from? Here's Nietzsche's view from Beyond Good and Evil: "Behind all logic and its seeming sovereignty of movement, there too stand valuations or, more clearly, physiological demands for the preservation of a certain type of life." For Nietzsche, our values come from our physiological demands, and what does our physiology demand? Power. It wants to survive and thrive. What does it mean to thrive? To imagine the world a certain way and to be able to make that illusion a reality. Someone could try to contest this idea, by saying that they don't seek power or want to thrive, they won't eat or drink anything to prove this point. But, they would "still" be seeking a kind of power, they imagine a world in which they prove the idea wrong and they seek to bring "that" world into fruition, even at their own expense.

You could argue this kind of digital detox would be beneficial. We'd take our eyes off our screens then strike up real-life conversations with each other. We've discovered that our smartphones can actually make phone calls. We bring back fax machines and start making notes by hand. Well, maybe not fax machines and hey, we'd still have TV to entertain us the world would not fall apart. In fact, with almost 4 billion people having no access to the Internet worldwide, half of humanity wouldn't notice a difference in the short term. But not you, mighty

internet user. You would notice right away. If the internet suddenly flatlined, social media users would start calling each other on the phone overloading the working telecommunication systems, unless cell phone towers and telephone lines were also shut down. Then you'd go back to writing letters and sending them via post. Forget about Wireless file transfers with no Wi-Fi. You'd have to use a physical cable to connect to computers or a CD. Remember this? Now think about the economy with financial data generally stored on a server banking services largely depend on the Internet. Each transfers would be impossible. Your credit card and debit card would become a useless piece of plastic.

Nowadays we have more ways to communicate than ever. Apart from good old fashion vocal cords, e-mails are the most common form of communication with 74 trillion sent every single year. That's 202 billion per day, 2 million per second, and all of them somehow end up in your mailbox. Next to email, you have Whatsapp, with 36 trillion whatsapp messages per year. Then you've got 14 trillion Wechat messages, 7 trillion texts, 200 billion tweets, 109 billion Zoom calls, about 5 Yahoo Messenger calls and somehow, 17 million telegrams. Yes, you heard me right. The world still sends millions of telegrams every single year. There is a few questions like who, what, when, where, why, and how. Four of those are pretty easy to answer. Telegrams. Telegrams. The world and Now. But the remaining two, who and why, are a little more complicated. To explain why such an old and outdated technology has managed to stick around while so many others like pagers, dial-up modems in the iPhone 12 have all that disappeared. You need to understand just how influential and widespread telegraph system really work. You see, when telegrams became publicly available, they were a big deal.

After many iterations working with experts, medical health professionals and the women themselves, I should say it was not an easy process at all, but we had a simple and beautiful design. For a dollar more than what the existing product was offered for, at three dollars, we were able to deliver "Janma," a clean birth kit in a purse. Janma, meaning "birth," contained a blood-absorbing sheet for the woman to give birth on, a surgical scalpel, a cord clamp, a bar of soap, a pair of gloves and the first cloth to wipe the baby clean. All this came packaged in a beautiful purse that was given to the mother as a gift after all her hard work,

that she carried home with pride as a symbol of prosperity. One woman reacted to this gift. She said, "Is this really mine? Can I keep it?" The other one said, "Will you give me a different color when I have my next baby?" Better yet, a woman expressed that this was the first purse that she had ever owned in her life. The kit, aside from its symbolism and its simplicity, is designed to follow globally recommended medical protocol and serves as a behavior-change tool to follow steps one after the other. It can not only be used in homes, but also in institutional settings. To date, our kit has impacted over 600,000 mothers and babies around the world. It's a humbling experience to watch these numbers grow, and I cannot wait until we reach a hundred million.

I'm a researcher at the MIT Media Lab, part of the Opera of the Future group, and my research focuses on the relationship people have with their own voice and with the voices of others. I study what we can learn from listening to voices, from the various fields, from neurology to biology, cognitive sciences, linguistics. In our group we create tools and experiences to help people gain a better applied understanding of their voice in order to reduce the biases, to become better listeners, to create more healthy relationships or just to understand themselves better. And this *<* really has to come with a holistic approach on the voice. Because think about all the applications and implications that the voice may have, as we discover more about it. Your voice is a very complex phenomenon. It requires a synchronization of more than 100 muscles in your body. And by listening to the voice, we can understand possible failures of what happens inside. For example: listening to very specific types of turbulences and nonlinearity of the voice can help predict very early stages of Parkinson's, just through a phone call. Listening to the breathiness of the voice can help detect heart disease. And we also know that the changes of tempo inside individual words is a very good marker of depression.

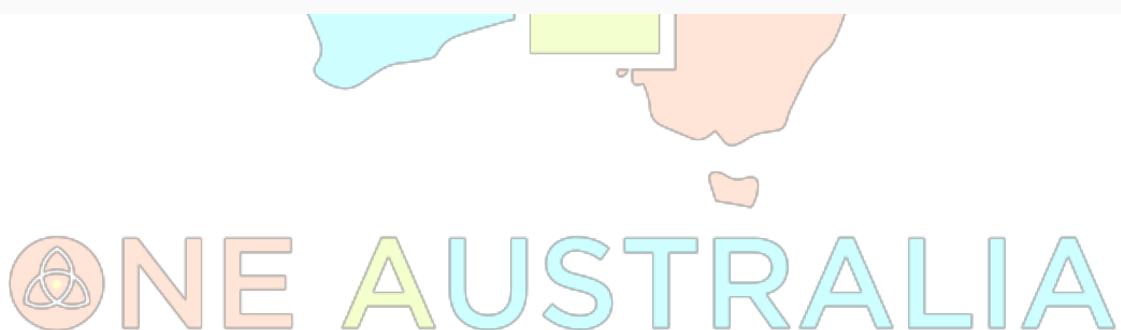
As an individual caught selling a large quantity of drugs in my late teens, I knew firsthand the power of opportunity as opposed to the wrath of the criminal justice system. Along the way, with the help and guidance of my district attorney, my supervisor and judges, I learned the power of the prosecutor to change lives instead of ruining them. And that's how we do it in Boston. We helped a woman who was arrested for stealing groceries to feed her kids get a

job. Instead of putting an abused teenager in adult jail for punching another teenager, we secured mental health treatment and community supervision. A runaway girl who was arrested for prostituting, to survive on the streets, needed a safe place to live and grow - something we could help her with. I even helped a young man who was so afraid of the older gang kids showing up after school, that one morning instead of a lunchbox into his backpack, he put a loaded 9-millimeter. We would spend our time that we'd normally take prepping our cases for months and months for trial down the road by coming up with real solutions to the problems as they presented. Which is the better way to spend our time? How would you prefer your prosecutors to spend theirs? Why are we spending 80 billion dollars on a prison industry that we know is failing, when we could take that money and reallocate it into education, into mental health treatment, into substance abuse treatment and to community investment so we can develop our neighborhoods?

For too long, discussions about climate change have been about sacrifice. I am here to tell you that climate solutions actually make a better city and a better quality of life for everyone. This is only the first of five lessons we have learned on our journey to become an emission-free city. And I think these lessons can be applied almost anywhere. So I like to share them. So lesson number one, confronting climate change is about creating better cities and better quality of life for everyone, including those kids in the kindergarten, that don't have to share their days with noisy excavators. The second lesson is about being ambitious. In 2015, the city council set a target of reducing greenhouse gas emissions by 95 percent by 2030 without purchasing any carbon offsets. So aiming for real reductions. Commitment to this goal changed our mindset. If we were going to reach this target, every department had to get active, figure out measures and finding out how to implement them. So second lesson, be ambitious. A target measured in years, not decades, provides no excuse for inaction.

Probably the most interesting fact about human development is the frontal cortex is the last part of the brain to fully maturity. It's not completely online until you're about 25 years old, which is mind-boggling to think about. What does that explain? That explains why adolescents are adolescent in their

behavior. The sensation-seeking and the risk-taking, and the highs are higher and the lows are lower. Because the steady frontal cortical hang there isn't fully up to speed yet and everything else is a gyroscope, out of control. And that's where the impulsivity is from, and that's where the extremes of behavior, and that's why most crime is committed by people at a stage whose frontal cortex is not fully developed yet. That is why most people who do astonishing wondrously self-sacrificial things; don't have a frontal cortex. That's fully in gear yet either, and is not in a position to convince them yet at somebody else's problem, look the other way. That's why young adults are, exactly how they are. Because the frontal cortex isn't quite there yet, and what you have, as a result, is more adventurousness and more open to novelty and more likelihood of seeing somebody who is very different as in fact not to being that different after all, and more likely to grab a cudgel and smash in somebody's skull who happens to seem like of them, and everything just the tone of everything is pushed up. One incredibly, important implication of that is, if the frontal cortex is the last part of the brain to fully mature, that means it's the part of the brain that is most sculpted by environment and experience and least constrained by genes, and it's the most interesting part of the brain.



# SPEAKING



## ANSWER SHORT QUESTIONS

What do we call the component of a camera that should be developed in darkness?

**Answer:** Negative / film

What are breakfast, lunch, and dinner examples of?

**Answer:** Meal

What do we call a collection of large quantity ?

**Answer:** Bulk

What is the process of removing abnormal heartbeat?

**Answer:** Defibrillation

How many days does it take for a full moon to occur?

**Answer:** Thirty

What do we call the behavior of not buying products from an exact company as a way of protesting?

**Answer:** Boycott

What do we call a small soft creature with a hard round shell on its back that moves very slowly?

**Answer:** Snail

What is the term for a large, luxurious car, often driven by a chauffeur?

**Answer:** Limousine

What is the term for a journey, especially a long one, involving travel by sea or in space?

**Answer:** Voyage

What do we call a short trip taken for pleasure, usually lasting a day?

**Answer:** Excursion

What is the term for a piece of land surrounded by water?

**Answer:** Island

What is the term for a steep-sided, often circular, depression in the ground formed by volcanic activity?

**Answer:** Caldera

What is the term for a large crack or opening in the earth's surface?

**Answer:** Crevice

What is the term for an intense snowstorm with high winds and low visibility?

**Answer:** Blizzard

What do we call the sudden occurrence of intense high winds, often with rain, snow, or hail?

**Answer:** Storm

What is the name of the atmospheric layer closest to Earth's surface, where most weather occurs?

Answer: Troposphere

What is the term for an extended period of armed conflict between nations or states?

Answer: War

What is the term for a formation of troops, ships, or aircraft?

Answer: Squadron

What do you call the vehicle used in combat with heavy armor and typically armed with a large cannon?

Answer: Tank

What is the term for a large painting or decoration, created either directly on a wall or ceiling or on a canvas attached to the wall?

Answer: Mural

What is the term for a symbol that represents an unknown quantity in an equation?

Answer: Variable

What do we call the sum of the lengths of the sides of a polygon?

Answer: Perimeter

What do you call a part of a line that has a fixed starting point but no end point?

Answer: Ray

What is the term for the middle number in a sorted list of numbers?

Answer: Median

What do we call the point where two lines meet?

Answer: Vertex

What do we call the number obtained by dividing one number by another?

Answer: Quotient

What is the name for a structure consisting of a roof supported by columns or piers, usually attached to a building as a porch?

Answer: Portico

What do you call a large, luxurious apartment in a city?

Answer: Penthouse

What do we call a horizontal structural member that supports the load over an opening such as a door or window?

Answer: Lintel

What is the term for an outdoor area for dining or relaxing that is adjacent to a building?

Answer: Patio

What do we call a group of mountains such as the Himalayas?

**Answer:** range

In winter, what activities do people usually do on Snow Mountains by standing on long, thin boards?

**Answer:** skiing

What is the adjective opposite to 'rural'?

**Answer:** urban

What is the star that gives heat and light to the Earth? :

sun

What is the main building of a large company or an organization?

**Answer:** headquarters

Where do passengers wait for airplanes?

**Answer:** terminal / airport

What do we call a long narrow piece of land almost completely surrounded by water?

**Answer:** peninsula

What do you call a statue or a building that is dedicated in memory of someone?

**Answer:** Monument / memorial

What kind of food that vegetarians do not eat?

**Answer:** meat

In the sentence: "He has been quite upset since he went back to school." Which word uses a past tense?

**Answer:** went

There are three eggs, what is the location of the special egg?

**Answer:** on the right

What is this instrument?

**Answer:** telescope

What do you call a list in a book which outlines the structure of the book?

**Answer:** table of contents

What is the opposite of north?

**Answer:** south

What is the line where the sky meets the land?

**Answer:** horizon / skyline

What clothing do people wear, such as students or nurses, to show that they belong to the same organizations?

**Answer:** uniform

In what room do scientists usually do experiments?

**Answer:** laboratory

What do we call the subject that studies weather and temperature?

**Answer:** meteorology / climatology

What are the first three letters of the English alphabet?

**Answer:** abc

What will you hear after a flash of lightning?

**Answer:** thunder

What do we call a baby cat?

**Answer:** Kitten / kitty

How many years are there in a bicentennial?

:

**Answer:** two hundred

What is the horizontal line that separates the globe into two halves?

**Answer:** equator

What is the nominal form of the wide?

**Answer:** width

If you have a toothache, who will you go to?

**Answer:** dentist

What is the legal document protecting someone's intellectual property?

**Answer:** patent

What is at the top of an eyebrow?

**Answer:** forehead

What thing do postgraduate students have that undergraduate students don't?

**Answer:** bachelor degree

What do people hold overhead when it is raining?

**Answer:** umbrella

What is the process where the color becomes lighter and lighter when exposed to sunlight for a long time?

**Answer:** fade

How do you call someone with no hair?

**Answer:** bald

What do we call the ship that runs underwater?

**Answer:** submarine

What subject involves the study of the Periodic Table? **Answer:** chemistry  
What is the name of male sheep?

**Answer:** ram

What do we call the industry connected with getting valuable minerals from the ground? **Answer:** Mining

What do we call a vehicle equipped for carrying the injured or sick?

**Answer:** Ambulance

What do we call apartment, flat and house?

**Answer:** Properties

What do we call the act of saying goodbye to someone ?

**Answer:** Farewell

What is the opposite of 'appreciate'?

**Answer:** Depreciate

What object has three legs and can support a camera?

**Answer:** Tripod

What is the way animals conserve energy to survive the winter?

**Answer:** Hibernation

What does the color green help for?

**Answer:** Sight / eyesight

What do we call a young dog?

**Answer:** Puppy

What do we call the chair a king or a queen sits in?

**Answer:** Throne

What is the upper part of a leg?

**Answer:** Thigh

What do we call the bags that contain possessions and people take with when traveling?

**Answer:** Luggage / baggage / suitcase

What do you call the brother of your father or mother?

**Answer:** Uncle

What shows how many people can be in a place like an apartment?

**Answer:** Capacity

What do we call a person who writes biographies of others?

**Answer:** Biographer

What do we call a document sent by email?

**Answer:** Attachment

What is the top surface inside the room?

**Answer:** Ceiling

Where do marine animals live?

**Answer:** Sea / ocean

What do you call your cousin's father?

**Answer:** Uncle

What is the opposite of 'guilty'?

**Answer:** Innocent

What is the barrier that can prevent floods from damaging our home?

**Answer:** Dam

What is the antonym of 'entrance'?

**Answer:** Exit

What includes everything in the world such as stars and planets?

**Answer:** Universe / cosmos

What does the word 'T V' stand for?

**Answer:** Television

What do we call a room just below the roof of a house, often used for storing things? **Answer:** Attic / loft

What do we describe an event which happens once every year?

**Answer:** Annual



What is the device that shows the time of the day according to the shadow of sunlight? **Answer:** sundial

Tomorrow's lecture has been cancelled. If today is Tuesday, then on which day is the lecture cancelled?

**Answer:** Wednesday

How do you call the doctor who treats sick animals?

**Answer:** vet / veterinarian

What are the two holes in your nose to breathe?

**Answer:** nostrils

What's the color of the medal that a champion gets?

**Answer:** Golden / gold

What do we call the northernmost and southernmost parts of the earth?

**Answer:** Pole / poles

How many wheels does a bicycle have?

**Answer:** two

How do you call the two siblings born by a mother at the same time?

**Answer:** twins

**Answer**

If you want to read tragedies or comedies, what kind of book do you read? **Answer:** fiction books / novels

What do you use to test the body temperature? **Answer:** thermometer  
Before airplanes were invented, how did people travel from America to Europe?

**Answer:** by ship

Who is a physician who performs surgical operations?

**Answer:** surgeon

In the word ‘postgraduate’, what does the ‘post’ mean?

**Answer:** after

What natural resource is used by a carpenter?

**Answer:** wood / timber

If you invented something, what can you apply for to prevent others copying your invention?

: patent

How do you describe the type of magazine that is published four times a year?

**Answer:** quarterly

**Answer**

Who sits in the cockpit of an airplane?

**Answer:** pilot

What will snow become after it melts?

**Answer:** Water

Which part of your leg can make it possible to bend?

**Answer:** knee

Oral English is different from academic English. Which is the best term to describe academic English: tolerant or rigorous?

**Answer:** rigorous

What type of plant does the mint belong to?

**Answer:** Herb

The instructions that tell you how to cook food?

**Answer:** recipe / recipes

What is one half of 100% ?

**Answer:** fifty

What is the opposite of positive?

**Answer**

**Answer:** negative

What are the strings on shoes?

**Answer:** shoelace / shoelaces

What's the 26th alphabet in English?

**Answer:** z

What is the name of the student who has not completed his course?

**Answer:** undergraduate student

A dozen is a grouping of which number?

**Answer:** twelve

What does a sundial measure?

**Answer:** Time

What is the ceremony called for marriage?

: wedding

How many times a year is a quarterly journal published?

**Answer:** four

How many years are there in a decade?

**Answer:** ten years

**Answer**

What kind of liquid do mammals feed their babies?

**Answer:** milk

What is the economic sector that deals with farming?

**Answer:** agriculture

Some calendars begin the week on Sunday, what is the other day which commonly starts a week?

**Answer:** Monday

What do we call the piece of paper that proves you have bought an item?

**Answer:** Receipt

How many years does it typically take to finish undergraduate study?

**Answer:** three years / four years

In a recession, does economic activity increase or slow down?

**Answer:** slow down

What is the term used for a professional who practices law?

**Answer:** Lawyer / attorney

**Answer**

If telescopes are used to locate distant objects, what instrument is employed to magnify minuscule objects?

**Answer:** Microscope / microscopes

If a figure is hexagonal, how many sides does it have?

**Answer:** Six

What are winter, spring, summer and autumn?

**Answer:** Seasons

How many years does a millennium have?

**Answer:** One thousand

What do we call the study of living things?

**Answer:** Biology

Where can people go to borrow books?

: Library / bibliotheca

**Answer**

How many days are in a leap year?

**Answer:** three hundred and sixty six

What special document do most people need to carry when they travel between countries?

**Answer:** passport

What do you call the very long essay that students have to write for a doctoral degree?

**Answer:** Thesis / dissertation / discourse / paper

A business doesn't want to make a loss - what does it want to make?

**Answer:** profit / profits

What is the source of solar energy?

**Answer:** sun

What kind of equipment is used to protect motorbike riders' brains from injury ?

**Answer:** helmet

Which is the longest: a decade, a millennium or a century?

**Answer:** millennium

What is the name of ceremony in which two people get married?

**Answer:** wedding

Which one word is used for a brother or sister?

**Answer:** sibling

What do we call a book that contains lists of words with their meanings?

**Answer:** dictionary

How many hemispheres does the equator divide earth into?

**Answer:** Two

What is the collection of pictures called?

**Answer:** album

How many extra days in February in a leap year?

**Answer:** One

In statistics, what is a circle divided into many parts called?

**Answer:** pie chart

How do you call a student that has finished his first year?

**Answer:** sophomore

Which one is quicker? Running, jogging or walking?

**Answer:** running

What does the sun do during dawn?

**Answer:** sunrise

What do we call a festival which is held every four years gathering people together as a sporting event?

**Answer:** the olympic games

What is the feature that guitars and violins have in common?

**Answer:** string / strings

Would letter or email be the fastest way to get a message to your professor? **Answer:** Email

What can be added to a drink to cool it down on a hot day? **Answer:** Ice  
Cash usually includes banknotes and?

**Answer:** coins

What's the job title of a person who has the overall responsibility for the design of a large building?

**Answer:** Architect

Where would you go to watch a film? an art gallery or a cinema?

**Answer:** Cinema

When you accelerate a car, what does your foot step on?

**Answer:** Gas pedal / accelerator / acceleration pedal

What special document do most people need to carry when they travel between countries?

**Answer:** Passport

Whose job is it to treat people that are ill or have an injury at a hospital?

**Answer:** Doctor

What do we call a set of answers to exercises or problems?

**Answer:** Key

What is the verb that describes traveling on boat?

**Answer:** Cruise / voyage / sail

Where do passengers stand waiting for a train in the railway station?

**Answer:** Platform

What is the process of choosing a person for a position by voting?

**Answer:** Election

What is the opposite of horizontal?

**Answer:** Vertical

What do we call a bicycle with two seats and two pairs of handles?

**Answer:** Tandem

What fruit category includes orange, mandarin and lemon?

**Answer:** Citrus

What do we call a person who pays rent to the landlord?

**Answer:** Lessee / tenant

What device tells us time?

**Answer:** Watch / clock

A compilation of songs or photos is also called what?

**Answer:** Album

What is a list of historical events arranged in time order?

**Answer:** Chronology / timeline

Which is the last month of the year?

**Answer:** December

In which century, did the automobile become manufactured on a mass scale?

**Answer:** The twentieth century

Who flies an airplane?

**Answer:** Pilot

What do we call a person who leaves college before finishing the studies?

**Answer:** Dropout

What do we call a political institution or body that is responsible for a country? **Answer:** Government

What is 'BA' for, such as history and literature?

**Answer:** Bachelor of arts

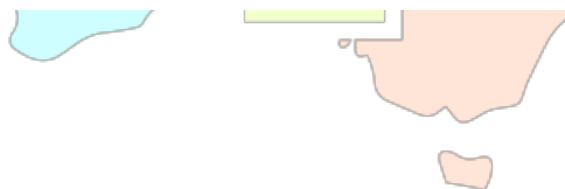


# **WRITING MODULE**

# WRITING



## SUMMARIZE WRITTEN TEXT



ONE AUSTRALIA

In recent years, the field of medical technology has witnessed remarkable advancements that are revolutionizing the healthcare industry. These innovations are not only improving patient outcomes but also enhancing the efficiency of healthcare delivery. In this article, we will explore some of the key developments in medical technology and their impact on healthcare.

One of the most exciting breakthroughs in medical technology is the development of artificial intelligence (AI) and machine learning algorithms. These AI systems can analyze vast amounts of medical data, from patient records to medical images, and identify patterns and trends that may not be apparent to human clinicians. This capability is leading to more accurate diagnoses and personalized treatment plans, ultimately improving patient care.

Telemedicine is another area where technology is making a significant impact. With the widespread availability of high-speed internet and smartphones, patients can now consult with healthcare providers remotely. This has proven especially crucial during the COVID-19 pandemic, as it allows for safe and convenient healthcare access without physical contact

Advancements in surgical technology have also been transformative. Minimally invasive surgical techniques, such as robotic surgery, have reduced recovery times and post-operative pain for patients. Surgeons can now perform complex procedures with greater precision, leading to better surgical outcomes.

Furthermore, the development of wearable health devices and mobile health apps has empowered individuals to take control of their health. From fitness trackers that monitor activity levels to apps that help manage chronic conditions, these technologies are enabling people to make more informed decisions about their well-being.

In conclusion, the ongoing advancements in medical technology are reshaping the landscape of healthcare. AI and machine learning are improving diagnosis and treatment, telemedicine is increasing access to care, and innovative surgical techniques are enhancing surgical outcomes. Additionally, wearable devices and mobile apps are promoting proactive health management. These innovations are not only transforming

healthcare but also promising a healthier and more connected future for all.

In the heart of rural India, a technological revolution is unfolding, one that promises to reshape the landscape of healthcare delivery. Telemedicine, the remote diagnosis and treatment of patients through telecommunications technology, has emerged as a beacon of hope in areas traditionally plagued by healthcare access challenges. Historically, India's rural populations have grappled with limited access to healthcare facilities. The reasons are manifold: geographic isolation, inadequate healthcare infrastructure, and a scarcity of medical professionals. However, the advent of telemedicine is turning the tide. By leveraging the power of digital technology, medical expertise is being transported beyond urban centers, reaching the most remote villages.

One of the most compelling aspects of this technological marvel is its ability to provide timely medical consultations. Patients in remote areas can now connect with doctors and specialists hundreds of miles away, receiving diagnoses and medical advice without the need for extensive travel. This not only saves time but also reduces the financial burden on families who would otherwise incur significant travel expenses. Furthermore, telemedicine is playing a pivotal role in managing chronic diseases and providing preventive care. Regular virtual check-ups and monitoring have made it easier for patients to manage conditions like diabetes and hypertension, which require consistent medical attention. This is particularly important in India, where the prevalence of chronic diseases is on the rise.

The impact of telemedicine extends beyond patient care. It's also a tool for empowering local healthcare workers. Through virtual training and support, these workers are upskilled, enabling them to provide better care in their communities.

In conclusion, telemedicine is not just a technological advancement; it's a transformative force in rural India, bringing quality healthcare to the doorsteps of those who need it most. Its continued integration into India's healthcare system promises to bridge the urban-rural divide, heralding a new era of health equity and accessibility.

The profound impact of physical exercise on mental health is an area of increasing interest in both medical and psychological fields. Regular

exercise is not only beneficial for physical fitness and combating diseases; it also plays a significant role in enhancing mental well-being and alleviating symptoms of mental health disorders. Exercise has been shown to release endorphins, often referred to as the body's natural mood lifters. These chemicals in the brain enhance our sense of well-being and can reduce the perception of pain. Beyond endorphins, exercise also stimulates the release of neurotransmitters like serotonin and norepinephrine, which can alleviate feelings of depression and anxiety. Studies have consistently demonstrated that regular physical activity can significantly reduce symptoms of depression. For some individuals, it can be as effective as antidepressant medication. Moreover, exercise is linked to better sleep, reduced stress and anxiety levels, improved memory, and higher self-esteem.

Exercise doesn't have to be intense or time-consuming to be effective. Even moderate activities like walking, yoga, or gardening can make a difference. The key is regularity and finding an activity that is enjoyable, which increases the likelihood of sticking to a routine. However, it's important to note that while exercise can be a powerful tool in managing mental health, it's not a standalone cure. It is most effective when used in conjunction with other treatments such as therapy and medication.

In conclusion, the connection between exercise and mental health is undeniable. Incorporating regular physical activity into our daily routine can significantly improve mental health outcomes, offering a simple, accessible, and cost-effective tool to enhance mental well-being and enrich overall quality of life.



Elizabeth Blackwell's journey to becoming the first woman to receive a medical degree in the United States is a story of resilience and determination in the face of immense obstacles. Born in 1821 in Bristol, England, Blackwell moved to the United States with her family at a young age. Her interest in medicine was sparked by a dying friend who expressed that a female physician would have made her medical experience less traumatic.

Despite widespread prejudice against women in medicine at the time, Blackwell was undeterred. She applied to several medical schools, facing rejection after rejection. Finally, she was admitted to Geneva Medical

College in New York, where she graduated first in her class in 1849, breaking barriers for women in the field of medicine.

Blackwell's contributions extended beyond her personal achievements. She was an ardent advocate for women in medicine, establishing the New York Infirmary for Women and Children with her sister, Dr. Emily Blackwell, and Dr. Marie Zakrzewska. This institution not only provided medical care to the underserved but also offered training and experience for women medical practitioners.

Blackwell also authored several books, including "The Laws of Life with Special Reference to the Physical Education of Girls," advocating for women's health and education. Her efforts paved the way for generations of women in medicine, challenging societal norms and opening doors for future female physicians.

Elizabeth Blackwell's legacy is one of courage, tenacity, and dedication to advancing the role of women in medicine. Her groundbreaking achievements serve as a testament to the power of perseverance and the importance of challenging the status quo in pursuit of equality and progress in healthcare.

Jonas Salk's legacy as the developer of the polio vaccine marks a monumental milestone in medical history. Born in 1914 in New York City, Salk's journey in medicine was driven by a deep-seated desire to alleviate human suffering. His work revolutionized the field of virology and transformed public health.

Salk's early career was marked by his interest in influenza, leading him to develop techniques for vaccine creation. However, his focus shifted to the poliovirus in the 1940s, a time when polio epidemics were a source of widespread fear, primarily affecting children. Salk embarked on a mission to develop a vaccine, working tirelessly at the University of Pittsburgh.

In 1955, after years of research and clinical trials, Salk's polio vaccine was declared safe and effective. It was a moment of global celebration. The vaccine not only offered protection against the crippling disease but also represented hope and progress in medical science. Salk's refusal to patent the vaccine, making it freely available, demonstrated his commitment to humanity over personal gain.

Salk's contribution went beyond polio. He founded the Salk Institute for Biological Studies in 1963, fostering scientific research and innovation. His vision was for a collaborative environment where researchers could explore the complexities of life and disease.

Despite his achievements, Salk remained humble, often saying, "The reward for work well done is the opportunity to do more." He passed away in 1995, leaving behind a legacy of compassion, dedication, and groundbreaking medical advancements.

If women are so far ahead of men, why are they so far behind? Reports from both sides of the Atlantic show that female students dominate university courses, yet women still do not make it to the top. A report on inequality in the UK said last week that girls had better educational results than boys at 16, went to university in greater numbers and achieved better degrees once they got there. "More women now have higher education qualifications than men in every age group up to age 44," the report said.

In the US, 57 per cent of college graduates in 2006-07 were women. Women form the majority of all graduates under 45. Yet few women make it to the boards of companies in either country. In the UK, the proportion of women on FTSE 100 boards rose fractionally from 11.7 per cent to 12.2 per cent last year, according to the Cranfield University School of Management, but that was only because of a fall in the size of the boards.

In the US, women accounted for 15.2 per cent of board seats on Fortune 500 companies, according to Catalyst, the research organization, which said the numbers had barely budged for five years. The hopeful way of looking at this is that the rising generation of female graduates has yet to reach director age. Give it 10 years and they will dominate boards as they do universities. If that were true, however, we would surely see the number of women director numbers moving up by now. The first year that women college graduates outnumbered men in the US was 1982. These graduates must be entering their 50s – prime director age.

Currently, Americans only eat about 16 grams of fiber — the parts of plants that can't be digested — per day. That's way less than the 25 to 30 grams that's recommended. There are so many reasons why, from fast-food marketing to agriculture subsidies, but one contributing factor is the slow death of cooking, and the rise of the restaurant meal. Americans now

spend more on food at restaurants than they do at grocery stores, but restaurant food tends to have even less fiber than the food we would otherwise eat at home. One problem seems to be that restaurant meals aren't typically loaded with two of the best sources of fiber, unprocessed fruits and vegetables. A revealing study from 2007, in which researchers interviewed 41 restaurant executives, showed that restaurants think fruits and vegetables are too expensive to feature prominently on the menu, and "61 percent said profits drive menu selections." They also opposed labeling certain menu items as healthier choices, saying that would be "the kiss of death." So people like to eat out, and when they do, they prefer mushy, fiber-free comfort foods, but that's a pretty dangerous road to go down.

As we begin the twenty-first century, technological, economic, political, and social forces have created a new era. Technological advancements and lower trade barriers have paved the way for the globalization of markets, bringing intense competition to the U.S. economy. Political systems and movements around the world are having a profound impact on our national security, as well as on our human security. The increasing diversity of our workplaces, schools, and communities is changing the face of our society. To confront the twenty-first century challenges to our economy and national security, our education system must be strengthened to increase the foreign language skills and cultural awareness of our students. America's continued global leadership will depend on our students' abilities to interact with the world community both inside and outside our borders.

Most schools have not responded adequately to these challenges of the twenty-first century, and thus many American students lack sufficient knowledge of other world regions, languages, and cultures. Only about one-third of seventh to twelfth grade students — and just five percent of elementary school students — study a foreign language. Few students study the less-commonly taught "critical languages" that are vital to national security. State high school graduation requirements often include only minimal course work in international studies. At the postsecondary level, fewer than ten percent of college students enroll in a foreign language and only one percent of undergraduates study abroad

Scientists in the United Kingdom and China have announced plans to use artificial intelligence on chicken farms in order to combat the problem of

antibiotic resistance in both farm animals and humans. The new initiative will use machine learning to find ways to track and prevent disease on poultry farms, reducing the need for antibiotic treatment in chickens and therefore lowering the risk of antibiotic-resistant bacteria transferring to people.

Now, antibiotic resistance is a worldwide problem and it's getting worse and worse. Some of these superbugs are resistant to everything. On farms, superbugs are not confined to animals. They spread to humans and to the environment, which is an exponential spread.

And antibiotics work by disrupting function in certain parts of a bacterial cell. Bacteria become resistant to antibiotics through genetic mutations that alter those areas of the cell, meaning the medication can no longer target them. The more a strain of bacteria is exposed to an antibiotic, the more likely it is to become resistant. Large numbers of people and animals are given antibiotics when they don't need them, so reducing unnecessary consumption is crucial in the fight against so-called superbugs.

With a large-scale data set, the human mind can't cope with it, and it's too complex. So we need the machine that is able to understand the relationship across a big amount of information.

In the last five to 10 years, scientists have begun to understand that platelets play a role in promoting unwanted clotting and inflammation in other diseases such as HIV, psoriasis, lupus, and rheumatoid arthritis. These tiny round blood cells serve one major purpose: to stop bleeding by binding to a damaged blood vessel and forming a clot. With that in mind, Jeffrey Berger, director of New York University Langone's Center for the Prevention of Cardiovascular Disease, and a team of researchers set out to investigate what role the platelets might play in COVID-19.

In a study published in *Science Advances*, the researchers showed that the virus can enter megakaryocytes, the bone marrow cells that make platelets. The infected cell then alters the genetic material in the platelets so that they become more active and give off protein signals that make the lining of the blood vessels sticky and inflamed. This makes the vessels prone to developing clots that can spread throughout the body.

Scientists also learned that the virus weakens connections in the tissue that lines blood vessels, making them leaky instead of sealing them up, as you might expect when clots are present.

Leaky vessels allow blood and other chemicals in the body to spill into places they're not supposed to go — including the air sacs of the lungs and the tissues of other organs. That can have a cascade of downstream effects, from the flooded lungs seen in many severe COVID-19 cases to complications of the liver, kidneys, and, of course, the heart.

While thinking of extroverts, we imagine a character who is assertive, approachable, cheerful and charming. We are taught to admire these traits early on. Kids are often encouraged to interact, play and communicate with other children. It seems at times as though children are made to embrace a more outgoing lifestyle, with some people becoming pseudo-extroverts – introverts who mimic extrovert behaviour. While externally they may seem to enjoy the company of others, or being in the limelight, they can still become over-extended in intense social situations.

So, while the positive aspects of being an extrovert are plain to see, what are the benefits of introversion? While extroverts thrive on social interaction, introverts are more comfortable with levels of isolation. According to Dr Berit Brogaard, a professor of philosophy, extreme solitude, such as times like the recent lockdown, does not affect introverts as much as extroverts. Lack of social contact, something extroverts thrive on, can lead to depression, loneliness, and even premature death.

But it's not just in an extreme situation that the pros of being an introvert shine through. These people seem to have more time for contemplation and introspection and thus can become more balanced. They also tend to be good listeners and think before they speak, meaning they could become great friends. Finally, introverts are often fantastic observers, as sitting out of the focus can give you more time to watch the behaviour of others. So, whatever your personality, either introvert or extrovert, there are clear advantages to being either, and if you meet an introvert, you might just end up with an amazing friend.

First and foremost, being bored motivates you to search out something less boring to do. Feeling bored at work, for example, could inspire you to explore a change of career. Or if you decide there's nothing worth

watching on TV, you might choose to switch off and make your own entertainment by taking up a new hobby.

This, according to researchers at the University of Central Lancashire, can explain why the lockdown of the past two years saw a surge in creativity among people stuck at home. From banana-bread-making to picking up a paintbrush for the first time since childhood, many of us realized there are only so many times you can watch Tiger King on Netflix before you need to find other ways to amuse yourself.

But what about those times when you have no choice but to stick with the boring situation — carrying out a mundane task at work or waiting for a bus, for instance? The good news is that the boredom you're feeling now could spark your creativity and help you come up with some of your best ideas, says a 2019 study published in the Academy of Management Discoveries journal. People who'd taken part in a boring bean-sorting task later performed better at coming up with creative ideas than another group who'd been given something more interesting to do first.

If it seems like you're not getting enough sleep, you're not alone. People have evolved to sleep much less than chimps, baboons or any other primates studied so far, a new study finds. Charles Nunn and David Samson are evolutionary anthropologists. They study how humans have evolved to behave the way we do. Nunn works at Duke University in Durham, N.C. Samson works at the University of Toronto Mississauga in Canada. In their new study, the two compared sleep patterns in 30 different species of primates, including humans. Most species slept between nine and 15 hours daily. Humans averaged just seven hours of shut-eye. Based on lifestyle and biological factors, however, people should get 9.55 hours, Nunn and Samson calculate. Most other primates in the study typically sleep as much as the scientists predicted they should. Nunn and Samson shared their findings online February 14 in the American Journal of Physical Anthropology.

The researchers argue that two long-standing features of human life may play into our short sleep times. The first stems from when humans' ancestors descended from the trees to sleep on the ground. At that point, people probably had to spend more time awake to guard against predators. The second may reflect the intense pressure humans face to

learn and teach new skills and to make social connections. That has left less time for sleep.

As sleep declined, rapid-eye movement — or REM — sleep took on an outsize role in humans, Nunn and Samson propose. REM sleep is when we dream. And it has been linked to learning and memory.

"It's pretty surprising that non-REM sleep time is so low in humans," Nunn says. "But something had to give as we slept less."

Banks provide short-term finance to companies in the form of an overdraft on a current account. The advantage of an overdraft is its flexibility. When the cash needs of the company increase with seasonal factors, the company can continue to write cheques and watch the overdraft increase. When the goods and services are sold and cash begins to flow in, the company should be able to watch the overdraft decrease again. The most obvious example of a business which operates in this pattern is farming. The farmer uses the overdraft to finance the acquisition of seed for arable farming, or feed through the winter for stock farming and to cover the period when the crops or animals are growing and maturing. The overdraft is reduced when the crops or the animals are sold.

The main disadvantage of an overdraft is that it is repayable on demand. The farmer whose crop fails because of bad weather knows the problem of being unable to repay the overdraft. Having overdraft financing increases the worries of those who manage the company. The other disadvantage is that the interest payable on overdrafts is variable. When interest rates increase, the cost of the overdraft increases. Furthermore, for small companies there are often complaints that the rate of interest charged is high compared with that available to larger companies. The banks answer that the rates charged reflect relative risk and it is their experience that small companies are more risky

If you are inspired to take concrete action for global peace and development, take a look at the United Nations Volunteers (UNV) program. Every year, up to 8,000 qualified and experienced women and men of some 160 different nationalities volunteer at least six months of their lives to help others. These UN Volunteers work in some 130 countries promoting peace, responding to disasters, empowering communities and helping to build sustainable livelihoods and lasting development. UN Volunteers come from dozens of professional backgrounds but all of them

are catalysts of positive change. They are encouraged to be creative and entrepreneurial, and foster volunteerism for peace and development both within and beyond their assignments. They work at the heart of communities in partnership with governments, United Nations entities and civil society. Being a UN Volunteer is not a career (you are currently limited to four years of service), but it is rich with opportunities and experience and offers huge personal rewards. As a UN Volunteer you receive a Volunteer Living Allowance (VLA) which covers basic needs, housing and utilities. Additionally, UNV will provide a settling-in-grant, life, health, and permanent disability insurance, return airfares and a nominal resettlement allowance.

Assessment is a central process in education. If students learned what they were taught, we would never need to assess; we could instead just keep records of what we had taught. But as every teacher knows, many students do not learn what they are taught. Indeed, when we look at their work, it is sometimes hard to believe that they were in the classroom. In fact, it is impossible to predict with any certainty what students will learn as the result of a particular sequence of classroom activities. And because we cannot teach well without finding out where our students are starting from, we have to assess. Even if all our students started out at the same point (a highly unlikely situation!), each of them will have reached different understandings of the material being studied within a very short period of time. That is why assessment is the bridge between teaching and learning—it is only through assessment that we can find out whether what has happened in the classroom has produced the learning we intended.

Of course, assessment is also used for other purposes in education, which makes the picture much more complicated. In all countries, assessments of the performance of individual students are used to determine which students are, and which students are not, qualified for subsequent phases of education, and also to decide which kinds of education students should receive.

Carbon dioxide, mostly produced by human activities, is the most significant one of greenhouse gases and has caused the rise of the global temperature and the sea level, so businesses should take responsibilities to tackle the problems inherited in the business models, and World Wildlife Fund partners with companies should ensure the sustainability of the entire market.

Ten years ago, Barsky and Purdon (2006) discovered that social networks which are expanding communication through social media are becoming popular and the costs involved are getting further reduced. Yet, library executives did not see how such a phenomenon could become a part of library and information services. They felt that the users should be left to their social media while the library carried on with its traditional roles (De Rosa et al., 2007). This was also the case when Charnigo and Barnett-Ellis (2007) conducted a survey of 126 academic librarians and concluded that 54% of the librarians surveyed did not believe that there was an academic purpose for Facebook. The rationale behind these librarians' belief was that the social media was a space where students interact with each other, hence, the librarian was not welcome as their coming in might be viewed as an invasion of space. But time has proved that as the technology of the social media became more popular, users and librarians acquired digitally literacy, and libraries, seeing an explosion of social media around it, were forced to reconsider their stance. In a survey involving 497 international librarians, Taylor & Francis (2014) discovered that over 70% of librarians now feel that the use of social media is important. Though the wave began with public libraries (Mon, 2015), today, libraries of every type either have a social media presence or they are seriously considering it. Hence, the use of social media by libraries has become mainstream.



In 1953 B.F. Skinner visited his daughter's maths class. The Harvard psychologist found every pupil learning the same topic in the same way at the same speed. A few days later he built his first "teaching machine", which let children tackle questions at their own pace. By the mid-1960s similar gizmos were being flogged by door-to-door salesmen. Within a few years, though, enthusiasm for them had fizzled out.

Since then education technology (edtech) has repeated the cycle of hype and flop, even as computers have reshaped almost every other part of life. One reason is the conservatism of teachers and their unions. But another is that the brain-stretching potential of edtech has remained unproven.

Today, however, Skinner's heirs are forcing the sceptics to think again (see article). Backed by billionaire techies such as Mark Zuckerberg and Bill Gates, schools around the world are using new software to "personalize"

learning. This could help hundreds of millions of children stuck in dismal classes—but only if edtech boosters can resist the temptation to revive harmful ideas about how children learn. To succeed, edtech must be at the service of teaching, not the other way around.

The conventional model of schooling emerged in Prussia in the 18th century. Alternatives have so far failed to teach as many children as efficiently. Classrooms, hierarchical year-groups, standardized curriculums and fixed timetables are still the norm for most of the world's nearly 1.5bn schoolchildren.

Humans love to complain to each other. It helps us feel less alone. Think about what happens when a family member or friend is going through a tough time; they call up someone who will listen to their tale of woe. Unfortunately, negative bonding is the default for many groups.

In some families, complaining is the only way to get attention. When one person says, I had a bad day; the other person has to top it, "You think you had a tough day. I had to do three TPS reports!" The same thing happens at work and social settings. "Your child didn't sleep through the night until 6 months? Mine was a full year old before she went over six hours." It's a race to the bottom, and the worst situation wins.

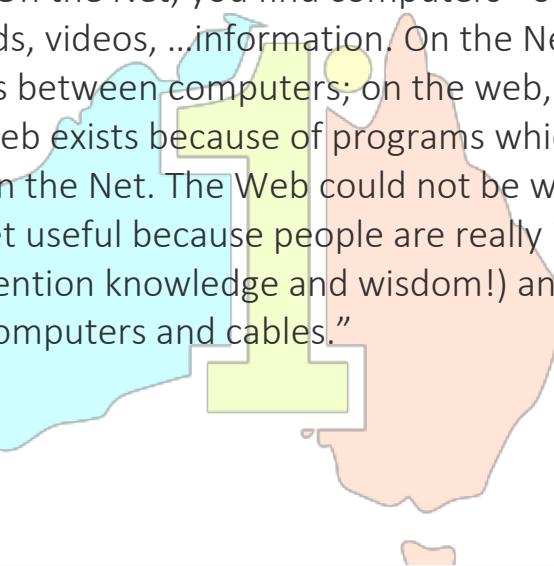
In *Bitching is Bonding, A Guide To Mutual Complaint*, Irene S. Levine, Ph.D., a professor of psychiatry at the NYU Langone School of Medicine says, "The reason why these conversations feel good is because we feel understood."

People raised in negative environments learn early on. Being positive gets you thrown out of the club. When family dinner is a complaint fest, you're not going to risk alienation saying, "Wow, I had an awesome day. Don't you just love life?"

Translate this into a work setting: people, often unconsciously, believe being positive keeps you out of the cool club. When negativity provides bonding, humans are reluctant to abandon the behavior that brings them comfort.

By 1984, the internet had grown to include 1,000 host computers. The National Science Foundation was one of the first outside institutions hoping to connect to this body of information. Other government, non-

profit, and educational institutions followed. Initial attempts to catalogue this rapidly expanding system of networks were simple. Among the first was Archie, a list of FTP information created by Peter Deutsch at McGill University in Montreal. However, the greatest innovation in the Internet was still to come, brewing in an MIT laboratory in Cambridge, Mass. The World Wide Web, or the Web, is often confused with the Internet. In fact, it is just one part of the Internet, along with email, video conferencing, and streaming audio channels. In 1989, Tim Berners-Lee, now a scientist at the Massachusetts Institute of Technology, introduced a new system of communication on the Internet which used hyperlinks and a user-friendly graphical interface. His slice of the Internet pie camera to be known as the World Wide Web. Berners- Lee says, "The Web is an abstract (imaginary) space of information. On the Net, you find computers –on the Web, you find documents, sounds, videos, ...information. On the Net, the connections are cables between computers; on the web, connections are hypertext links. The Web exists because of programs which communicate between computers on the Net. The Web could not be without the Net. The Web made the Net useful because people are really interested in information (not to mention knowledge and wisdom!) and don't really want to know about computers and cables."



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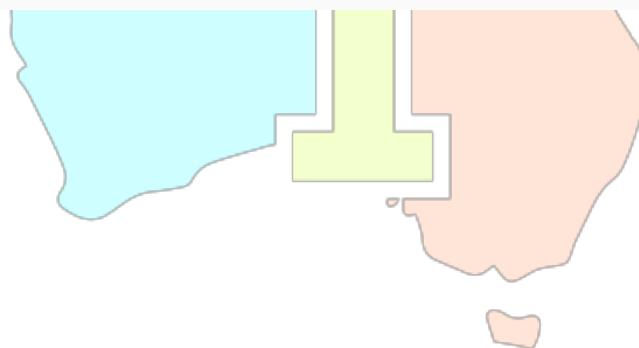
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It's very easy to forget about what's in the ground beneath our feet and why it's so important to protect it. One tablespoon of soil contains more organisms than there are people on Earth; billions of bacteria, fungi and other

microorganisms combine with minerals, water, air and organic matter to create a living system that supports plants and, in turn, all life. Healthy soil can store as much as 3,750 tons of water per hectare, reducing the risk of flooding, and the International Panel on Climate Change (IPCC) has said that 89% of all agricultural emissions could be mitigated if we improved the health of our soil.

Good soil management also increases disease resistance in livestock and ultimately drives profits for farmers -

yet soil and its impact on the health of our animals has, over recent decades, been one of the most neglected links in UK agriculture. Over the last 50 years' agriculture has become increasingly dependent on chemical fertilizers, with applications today around 10 times higher than in the 1950s. Farmers often think the chemical fertilizer NPK (nitrogen, phosphorous and potassium) provides all the nutrition a plant requires, but it also has a detrimental effect on the long-term health of the land: research suggests there are fewer than 100 harvests left in many of the world's soils.



**ONE AUSTRALIA**

# WRITING



## WRITE ESSAY

ONE AUSTRALIA



- Artificial Intelligence is good in the teaching field. To what extent do you agree with this?
- What can make learning a new foreign language unimportant? Give your example and explanation.
- Some people claim that competition improves the quality of our private and professional lives. Others believe that hyper competition is bad for individuals and for society in general. What is your opinion?
- Some believe the value of travel is overrated.

'One brilliant scholar never leaves the home bases.' People argue whether travel is or not a necessary component of quality education. To what extent do you agree with it?

- In the company, some people think the employers should involve the workers in decision making. Discuss the advantages and disadvantages.

- While artificial intelligence becomes so advanced, people can use computers to translate foreign languages. That makes learning a foreign language unnecessary. To what extent do you agree with it ?

- Some people prefer to live in cities, while some people prefer to live in the countryside. Which is better for you? Give your reasons or experience.

- In our technological world, the number of new inventions has been increasing. Please make an example with its impact on our life, and explain if it is beneficial or detrimental

- What are the advantages and the disadvantages of being over-competitive to individuals and society?

- Some people say there should be a maximum wage for high-paying jobs. Do you support that ? Can you give your point of view or your own experience ?

- It is harder for children growing up in the 21st century than it was in the past. How far do you agree with this statement? Give your opinions.

- More and more countries spend large amounts of money on the restoration of historic buildings instead of on modern housing. To what extent do you agree or disagree with this analysis? What are advantages and disadvantages of this? Support your writing with your experience or examples.

- Some people think learning a foreign language at school should be compulsory. To what extent do you agree with it? Use your experience or examples to support your viewpoint

- Unemployment among young people is a serious problem. One solution has been suggested is to shorten the working week. What do you think are the advantages and disadvantages? Do you think this policy should apply to just young workers or the whole workforce?
- “In the future, people will work fewer hours at their jobs than they do now.” Do you agree with the statement? Please support your opinion with your own experience.
- Television serves many useful functions. It helps people to relax. Besides, it can also be seen as a companion for the lonely. To what extent do you agree with this? Explain why with your own experience
- In our technological world, the number of new inventions has been evolving on a daily basis. Please describe a new invention and determine whether it brings beneficial or detrimental impact to society.
- Nowadays, more and more people engage in dangerous activities, such as sky diving, skiing and extreme motorcycling. Are you in favor of such activities or not? Why?
- For a less developed country, the disadvantages of tourism are as great as the advantages. What is your opinion?
- Some people think human behavior can be changed by laws, while others think laws have little effect. What is your opinion?
- Should marketing in companies which produce consumer goods, like food and clothing, place emphasis on the reputation of the company or short-term strategies like the discounts and special offers? Why?
- Imagine you have been assigned on the study of climate change. Which area of climate change will you choose and why? Use examples.
- It is often argued that studying overseas is overrated. There are many scholars who study locally. To what extent do you agree with this?
- There are many global problems. What is the most pressing problem? What solutions would you suggest?

- What are the advantages and problems of cheaper public transportation? Give your opinion from your own experience
- Effective study requires time, comfort and peace. It is impossible to study with employment because one may distract the other. To what extent do you think the statements are realistic? Give your opinion with examples.

- Experience is the best teacher. Some people think life experiences teach people more effectively than books or formal education can. How far do you agree with this statement? Give your reason or provide your personal experience.

- In a cashless society, people in more and more situations use credit cards instead of cash. Cashless society seems to be a reality. How realistic do you think it might be? What are the benefits or problems of this phenomenon?

- Age restrictions can be seen everywhere. It is believed that people should not do things until they reach the right ages, such as getting married, driving, voting, buying certain products, and doing particular things. Select one activity and state the minimum age that you think. Support with your own experiences.

- With the increase of new digital media available online, the role of the library has become obsolete. Therefore universities should only procure digital materials rather than constantly update textbooks. Discuss both the advantages and disadvantages of this position and give your own point of view

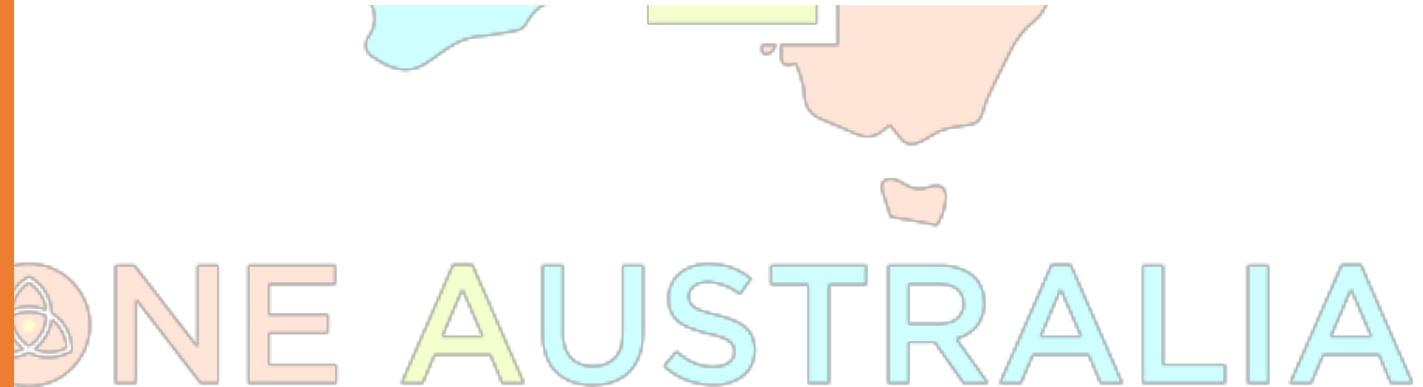
- Tourism is good for some less developed countries, but also has some disadvantages. Discuss it.
- Do you think the design of buildings affects positively or negatively where people live and work?
- Some people point that experiential learning (i.e. learning by doing it) can work well in formal education. However, others think a traditional form of teaching is the best. Do you think experiential learning can work well in high schools or colleges?

- Nowadays television has become an essential part of life. It is a medium for disseminating news and information, and for some it acts as a companion. What is your opinion about this?
  - In your opinion, what are the advantages and disadvantages of extreme or adventure sports?
  - Many education systems assess students using formal written examinations. Those kinds of exams are a valid method. To what extent do you agree or disagree? Give examples with your own experience.
  - Nowadays, work leaves little time to people's personal life. How widespread do you think it is? How can we solve the problems caused by the shortage of time?
  - Climatic change is a concerning global issue. Who has responsibilities to solve the problem, governments, big companies, or individuals?
  - Employers involve workers in decision-making process about products and services. What are the advantages and disadvantages of such a policy?
  - It is argued that getting married before finishing studying or getting established in a good job is foolish. To what extent do you agree or disagree?
-

# **READING MODULE**

# READING

## REORDER PARAGRAPH



A ONE AUSTRALIA EDUCATION GROUP (PTE, NAATI & IELTS COACHING)  
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- 1) Its principal tributaries are the White Nile and the Blue Nile.
- 2) Then these two tributaries meet in Sudan, near the capital city of Khartoum, and then flow north through Egypt to the Mediterranean Sea.
- 3) The most famous river that flows north is also the longest river in the world: the Nile, which passes through 11 different countries in northeastern Africa.
- 4) The former is the stretch of river that begins at Lake No in South Sudan, while the latter is the stretch of river that begins at Lake Tana in Ethiopia.

Answer: 3,1,4,2

- 1) Absolute location refers to a specific, fixed point on the Earth's surface as expressed by a scientific coordinate system.
- 2) It is more precise than the relative location, which describes where a place is located using other places nearby.
- 3) This software uses the Global Positioning System (GPS) to deliver precise information about the location of any GPS receiver on Earth.
- 4) In contrast, a relative location can be as general as "west of the highway".
- 5) Nowadays, finding your absolute location at any given time can be done using geolocation software, which is found in most smartphones.

Answer: 1,2,4,5,3

- 1) For example, one syllable is always stressed in Russian words containing two or more syllables.
  - 2) Russian has a reputation for being a tricky language to learn, but it doesn't have to be.
  - 3) One very helpful tip is to pay attention to Russian grammar from the beginning.
  - 4) This means that it is pronounced in a stronger tone and with a longer sound.
- Answer: 2,3,1,4

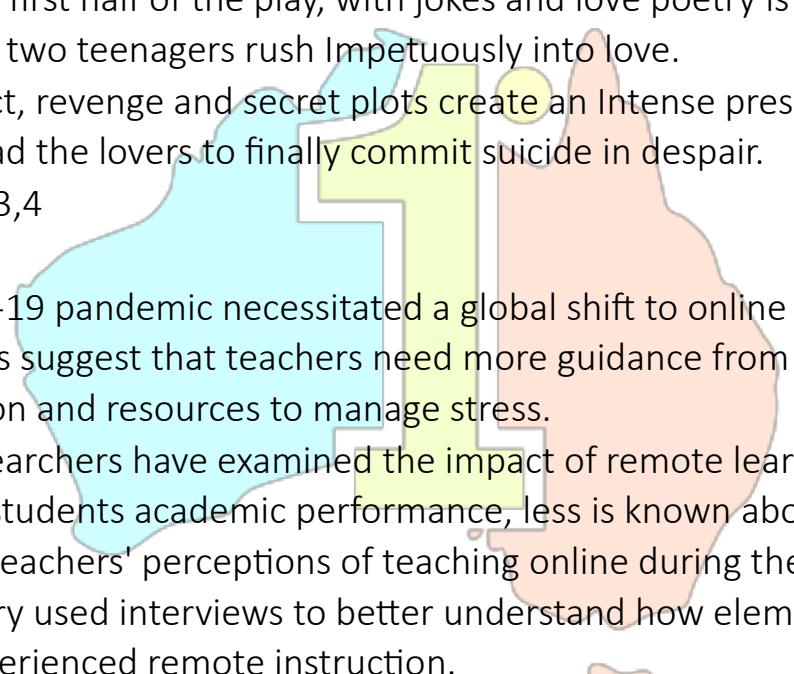
- 1) The first emperor was Napoleon, and at times he ruled vast swathes of the European continent.
- 2) The borders of France and the states ruled by France grew during the wars of the French Revolution and the Napoleonic Wars.

- 3) On May 12th, 1804 these conquests received a new name: the Empire, ruled by a hereditary Bonaparte Emperor.
- 4) By 1810 it was easier to list the regions he didn't dominate: Portugal, Sicily, Sardinian, Montenegro, and the British, Russian and Ottoman Empires.

Answer: 2,3,1,4

- 1) Shakespeare's play Romeo and Juliet is the world most famous romantic tragedy.
- 2) In this play, a long lasting dispute between the Montague and Capulet families from the city of Verona causes the death of Romeo and of Juliet. 3) The first half of the play, with jokes and love poetry is more like a comedy: the two teenagers rush impetuously into love.
- 4) But conflict, revenge and secret plots create an intense pressure on them and lead the lovers to finally commit suicide in despair.

Answer: 1,2,3,4

- 
- 1) The Covid-19 pandemic necessitated a global shift to online learning.
  - 2) The results suggest that teachers need more guidance from administration and resources to manage stress.
  - 3) While researchers have examined the impact of remote learning on elementary students academic performance, less is known about elementary teachers' perceptions of teaching online during the pandemic.
  - 4) One Inquiry used interviews to better understand how elementary teachers experienced remote instruction.

Answer: 1,3,4,2



Far From Content

- 1) Your first draft is complete, but your paper is far from finished.
- 2) The next step is to revise your paper: strengthen the content.
- 3) Start this at least a week before your paper is due.
- 4) In fact, you don't need to wait until you have a complete first draft to start revising.

Answer: 2,1,3,4

Panda

- 1) People didn't know pandas well.

- 2) Now, people can attach a GPS to them.
- 3) This GPS can transmit data every couple of hours for up to two years.
- 4) Then it is found five pandas' habitats sometimes overlap.

Answer: 4,1,2,3

- 1) But when calculating destruction, the earthquake took second place to the great fire that followed.
- 2) The fire, lasting four days, most likely started with broken gas lines (and, in some cases, was helped along by people hoping to collect insurance for their property—they were covered for fire, but not earthquake, damage).
- 3) At 5:12 a.m. on April 18, 1906, the people of San Francisco were awakened by an earthquake that would devastate the city.
- 4) The main tremor, having a 7.7-7.9 magnitude, lasted about one minute and was the result of the rupturing of the northernmost 296 miles of the 800-mile San Andreas fault.

A-3,4,1,2

- 1) They can be surprised by the results.
- 2) But a growing number of companies are setting up schemes to recruit young workers.
- 3) They are sceptical about young people's skills and their readiness for work.
- 4) Employers are often reluctant to hire young people, even though there are more than 850,000 unemployed 16 to 24-year-olds and UK businesses are struggling to fill one in five vacancies because of skills shortages.

A-4,3,2,1

- 1) Second, and more important, the Arcelor Mittal deal demonstrates Europe's deepening integration into the global economy.
- 2) The story tells us two things about European business, both positive.
- 3) First, shareholder activism is increasing in a continent where until recently it was depressingly rare.
- 4) It was taken over by Mittal, a Dutch-registered company run from London by its biggest single shareholder, Lakshmi Mittal, an Indian who started his first business in Indonesia.

5)The takeover battle raged for six months before Arcelor's bosses finally listened to shareholders who wanted the board to accept Mittal's third offer.

A-4,5,2,3,1

1)They think it is like a small lecture where the tutor gives them information.

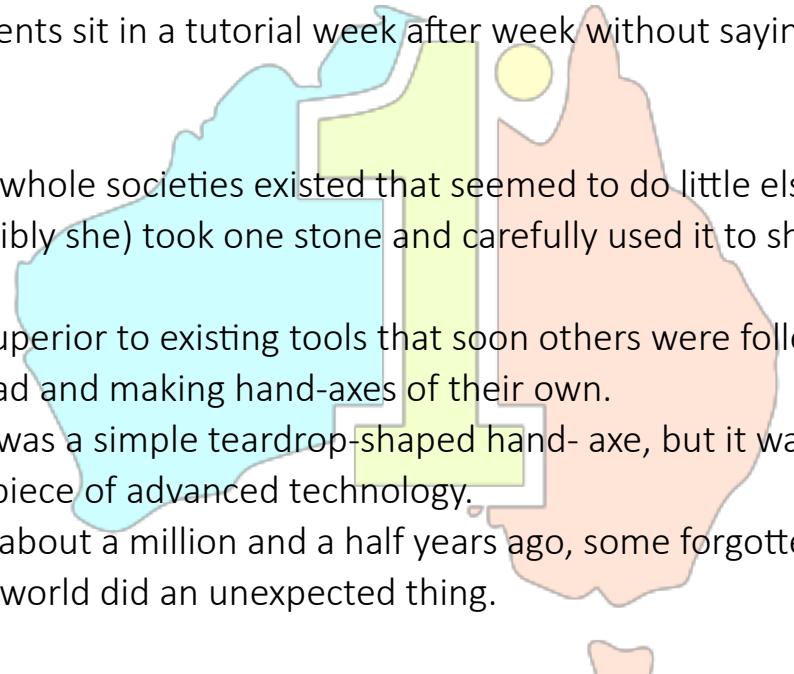
2)Maybe they do not know the purpose of a tutorial.

3)Why is that?

4)Even if students do know what a tutorial is for, there can be other reasons why they keep quiet.

5)Many students sit in a tutorial week after week without saying anything.

A-5,3,2,1,4



1)Eventually whole societies existed that seemed to do little else. 2)He (or very possibly she) took one stone and carefully used it to shape another.

3)It was so superior to existing tools that soon others were following the inventor's lead and making hand-axes of their own.

4)The result was a simple teardrop-shaped hand-axe, but it was the world's first piece of advanced technology.

5)Sometime about a million and a half years ago, some forgotten genius of the hominid world did an unexpected thing.

A-5,2,4,3,1



1)Many think the best way to make foreigners understand is to be chatty and informal.



2)Anyone wanting to get to the top of international business, medicine or academia (but possibly not sport) needs to be able to speak English to a pretty high level.

3)This may seem friendly but, as it probably involves using colloquial expressions, it makes comprehension harder.

4)Equally, any native English speaker wanting to deal with these new high achievers needs to know how to talk without baffling them.

5)Because so many English-speakers today are monoglots, they have little idea how difficult it is to master another language.

A-2,4,5,1,3

- 1)Unlike Barnes' previous books, Mother of Storms has a fairly large cast of viewpoint characters.
- 2)But even the Evil American Corporate Magnate is a pretty likable guy.
- 3)They're not all necessarily good guys, either, although with the hurricanes wreaking wholesale destruction upon the world's coastal areas, ethical categories tend to become irrelevant.
- 4)This usually irritates me, but I didn't mind it here, and their interactions are well-handled and informative, although occasionally in moving those about the author's manipulations are a bit blatant. (Especially when one character's ex-girlfriend, who has just undergone a sudden and not entirely credible change in personality, is swept up by a Plot Device in Shining Armor and transported directly across most of Mexico and a good bit of the States to where she happens to bump into another viewpoint character.)

A-1,4,3,2

- 1)Art historians compare different time periods in art history.
- 2)The study includes painting, sculpture, architecture, ceramics, furniture, and other decorative objects.
- 3)Art history is the history of different groups of people and their culture represented throughout their artwork.
- 4)Art history is the study of objects of art in their historical development and stylistic contexts.
- 5)As a term, art history (its product being history of art) encompasses several methods of studying the visual arts; in common usage referring to works of art and architecture.

A-4,2,3,1,5

- 1)In 1992 a retired engineer in San Diego contracted a rare brain disease that wiped out his memory.
- 2)Studies of this man led scientists to a breakthrough: the part of our brains where habits are stored has nothing to do with memory or reason.
- 3)Every day he was asked where the kitchen was in his house, and every day he didn't have the foggiest idea.

4) Yet whenever he was hungry, he got up and propelled himself straight to the kitchen to get something to eat.

5) It offered proof of what the US psychologist William James noticed more than a century ago that humans 'are mere walking bundles of habits'.

A-1,3,4,2,5

1) During the process, individuals may forget the source of the information.

2) False memories are constructed by combining actual memories with the content of suggestions received from others.

3) Of course, because we can implant false childhood memories in some individuals in no way implies that all memories that arise after suggestion are necessarily false.

4) This is a classic example of source confusion, in which the content and the source become dissociated.

5) Put another way, although experimental work on the creation of false memories may raise doubt about the validity of long-buried memories, such as repeated trauma, it in no way disproves them.

A-2,1,4,3,5

1) One way researchers can limit the scope of a study is by using a specific sampling method.

2) For example, the researcher could decide to only observe subjects every morning for an hour,

3) These intervals could be random or specific.

4) The most common sampling method is time sampling, which means the researcher will observe subjects at different intervals of time.

5) This will enable them to gather a representative sample of data on the subjects behavior without having to observe everything the subject does at all times.

Answer: 1,5,4,3,2

1) But in fact, it is just one of many Chinese languages.

2) Thus, Mandarin is commonly referred to as 'Chinese'.

3) Even in one province, there can be multiple languages spoken. For example, in Fujian province, you can hear Min, Fuzhouinese, and Mandarin being spoken, each being very distinct from the other.

- 4) Depending on the region, Chinese people also speak Wu, Hunanese, Jiangxinese, Hakka, Min, and many other languages
- 5) Mandarin is the most common language in the world as it is the official language of Mainland China, Taiwan, and one of the official languages of Singapore.

Answer: 5,2,1,4,3

- 1) The St. Johns River is the longest river in Florida, running up the eastern coast of the state from St. Johns Marsh to the Atlantic Ocean.
- 2) The earliest people to live along the river were likely the hunter-gatherers known as Paleo-Indians, who inhabited the Florida Peninsula over 10,000 years ago.
- 3) The mission was named San Juan del Puerto (St. John of the Harbor), giving the river its name.
- 4) It was Spanish missionaries who later established a mission at the mouth of the river.

Answer: 1,2,4,3

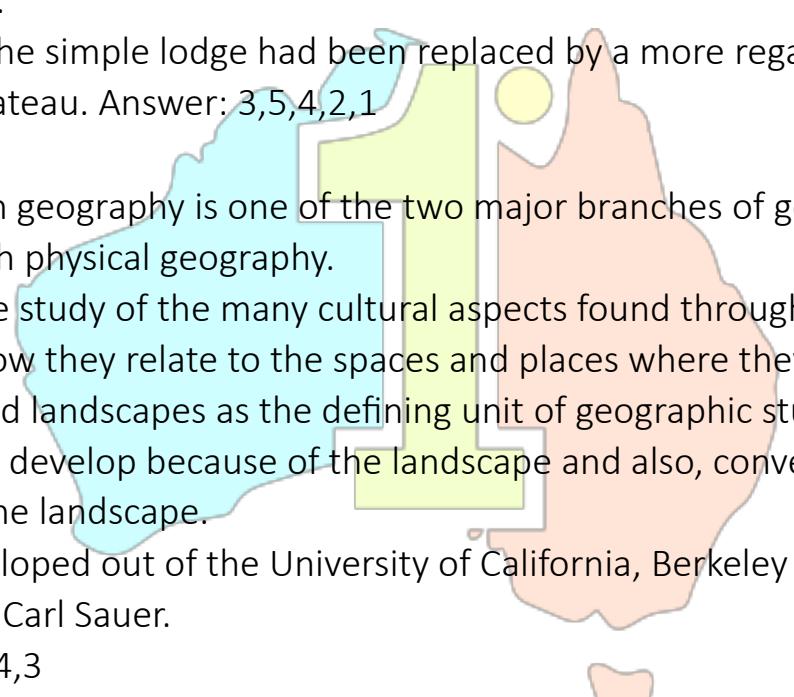
- 1) A geodetic datum is a tool used to define the shape and size of the earth. 2) True geodetic data, however, are only those which appeared after the 1700s.
- 3) They can also define the reference point for the various coordinate systems used in mapping the earth.
- 4) Prior to that, the earth's ellipsoidal shape was not always taken into consideration, as many still believed it was flat.

Answer: 1,3,2,4

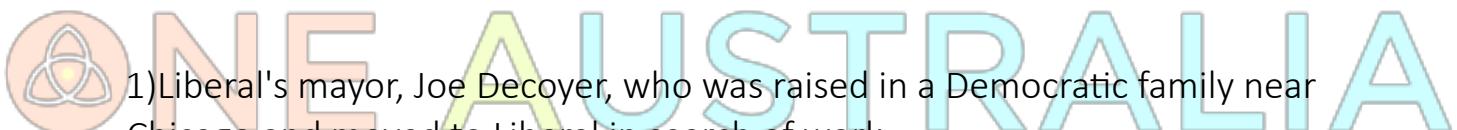
- 1) If the numbers become lower as you move toward the center of an area, they represent the site of a depression and have hash marks on them to distinguish them from hills.
- 2) These lines connect points that are at the same level, so you know that when you travel from one line to another, you are either going up or down in elevation.
- 3) Topographic maps use contour lines to represent elevation. 4) The lines also have numbers on them, specifying which elevation is represented by the points connected by that line.

Answer: 3,2,4,1

- 1) By 1677, Louis XIV had begun to lay the foundation for a more permanent move.
- 2) When he came of age, Louis began work on the family hunting lodge, ordered the addition of kitchens, stables, gardens, and residential apartments.
- 3) In 1624, King Louis XIII ordered the construction of a simple, two-story hunting lodge in dense woodlands about 12 miles outside of Paris. 4) Louis XIII died in 1643, leaving the monarchy in the hands of the fouryear-old Louis XIV.
- 5) By 1634, the simple lodge had been replaced by a more regal stone and brick chateau. Answer: 3,5,4,2,1

- 
- 1) Human geography is one of the two major branches of geography, together with physical geography.
  - 2) It is the study of the many cultural aspects found throughout the world and how they relate to the spaces and places where they originate.
  - 3) He used landscapes as the defining unit of geographic study and said that cultures develop because of the landscape and also, conversely, help to develop the landscape.
  - 4) It developed out of the University of California, Berkeley and was led by Professor Carl Sauer.

Answer: 1,2,4,3



- 1) Liberal's mayor, Joe Decoyer, who was raised in a Democratic family near Chicago and moved to Liberal in search of work.
- 2) Liberal is conservative in a moderate Midwestern kind of way which is changing fast due to big National Beef Packing plant which relies on Hispanic migrants, and thus four-fifths of the children in Liberal's public-school system are Hispanic.
- 3) The town of Liberal is said to have been named for an early settler famous among travelers for being free with drinking water.
- 4) Mr. Decoyer voted for Mr. Trump by being impressed by his promise, though he thinks it unlikely that the president will keep his promises.

5) This should make the town receptive to Democrats, but Mr. Trump easily won the county of which it forms a part.

A-3,2,5,1,4

1) One of the Tibetan names for this mountain translates as "Mountain So High That No Bird Can Fly Over It". It was first measured in 1852 and was called Peak XV until 1865, when it was named after the British Surveyor of India, Sir George Everest.

2) About 200 million years ago, the Indian subcontinent broke away from a vast southern super-continent called Gondwanaland. It drifted northeast across the sea and collided with the Asian landmass. These two huge landmasses buckled, rather like cars in a head-on collision, and rose up to form the world's tallest mountain.

3) Mapping the Himalayas and Everest wasn't easy. Foreigners were not welcome, so Himalayan traders were recruited to infiltrate the area and gather enough information to allow accurate maps to be made.

4) Fossilized fish remains have been found high up on the slopes of Everest proving that the world's highest mountain once lay at the bottom of the sea. How did this happen?

A-4,2,1,3

1) After finishing first in his pilot training class, Lindbergh took his first job as the chief pilot of an airmail route operated by Robertson Aircraft Co. of Lambert Field in St. Louis, Missouri.

2) After a crash, he even salvaged stashes of mail from his burning aircraft and immediately phoned Alexander Varney, Peoria's airport manager, to advise him to send a truck.

3) He flew the mail in a de Havilland DH-4 biplane to Springfield, Peoria and Chicago, Illinois.

4) During his tenure on the mail route, he was renowned for delivering the mail under any circumstances.

A-1,3,4,2

1) Julia Bocking's Literacy and Dads (LADS) project aims to increase the number of fathers participating as literacy helpers in K-1 school reading programs at Quimbaya Primary Schools.

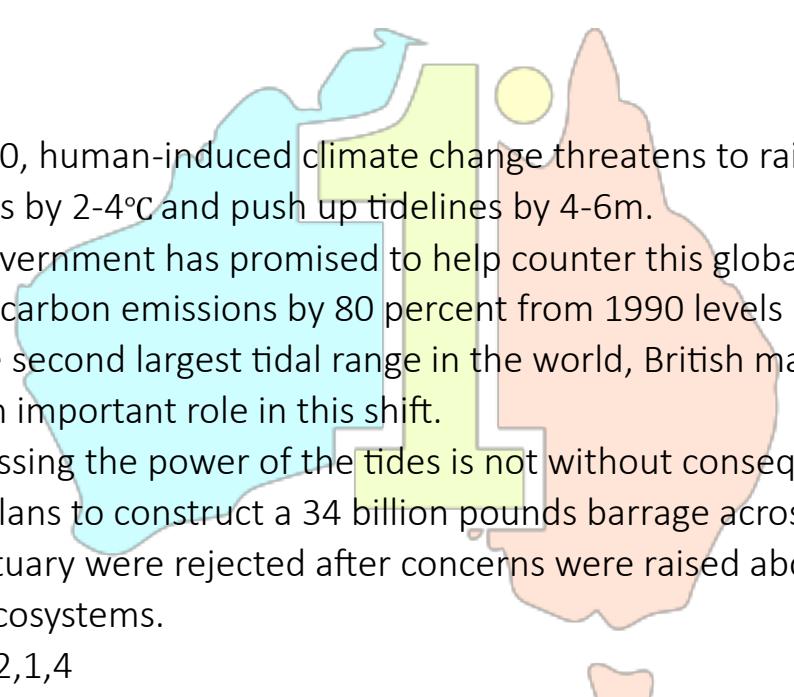
2) A University of Canberra student has launched the nation's first father-led literacy project, to encourage fathers to become more involved in their children's literacy.

3) Having worked as a literacy tutor with teenagers, she saw the need for good attitudes towards reading to be formed early on - with the help of more male role models.

4) 'A male that values reading sets a powerful role model, particularly for young boys, who are statistically more likely to end up in remedial literacy program', she said.

A-2,1,3,4

2100-2013

- 
- 1) By 2100, human-induced climate change threatens to raise temperatures by 2-4°C and push up tidelines by 4-6m.
  - 2) The government has promised to help counter this global trend by reducing UK carbon emissions by 80 percent from 1990 levels by 2050. 3) And with the second largest tidal range in the world, British marine energy could play an important role in this shift.
  - 4) But harnessing the power of the tides is not without consequence.
  - 5) In 2013, plans to construct a 34 billion pounds barrage across the Severn estuary were rejected after concerns were raised about its effect on local ecosystems.

Answer: 5,3,2,1,4



## History

- # ONE AUSTRALIA
- 1) The people and events of the past can only be understood when viewed within the larger context in which they existed.
  - 2) That is not possible when historical events or topics are isolated and extracted from the web of historic time to serve some other curricular purpose.
  - 3) The value of history also depends upon the chronological presentation of events through time.
  - 4) It is only through a chronological survey that students can begin to understand the process of social and cultural change, which is one of the principal purposes of history.

Answer: 3,4,1,2

### Research Report

- 1) So now that you've completed the research project, what do you do?
- 2) I know you won't want to hear this, but your work is still far from done.
- 3) In fact, this final stage – writing up your research – may be one of the most difficult.
- 4) Developing a good, effective and concise report is an art form in itself.
- 5) And, in many research projects you will need to write multiple reports that present the results at different levels of detail for different audiences. Answer: 4,2,1,5,3

### Mink

- 1) The American mink has been present in Iceland since the 1930's and despite heavy hunting since 1939 the species has become well established.
- 2) The ecosystem in Iceland is simpler than in other areas where mink is found; the only other mammalian predator is the arctic fox.
- 3) Direct competition between these species appears to be minimal although the arctic fox will sometimes chase mink and disturb them while foraging.
- 4) Iceland is therefore an ideal place to study undisturbed feeding behaviour and ecology of mink.

Answer: 1,3,4,2

### Turkey

- 1) If you want to visit Mars, visit Turkey.
- 2) That's where you'll find lakes so salty that the only bugs able to live there are species that could probably survive on Mars as well.
- 3) For that reason, microbiologists in Turkey have surveyed the array of species that inhabit the Acigol, Salda and Yarisli lakes.
- 4) They're hopeful that studying some of them will yield useful insights into the kinds of biology that could help microbes exist on Mars or other potentially habitable planets and moons. Answer: 3,2,4,1

### Child Temptation

- 1) A four-to-six-year-old child sits alone in a room at a table facing a marshmallow on a plate.
- 2) The child is told: if you don't eat this treat for 15 minutes you can have both this one and a second one.
- 3) Kids on average wait for five or six minutes before eating the marshmallow.
- 4) The longer a child can resist the temptation has been correlated with higher general competency later in life.

Answer: 4,2,3,1

### Essential Skill

- 1) Many of us happily drive a car without understanding what goes on under the bonnet.
- 2) So, is it necessary for children to learn how to program computers?
- 3) After all, some experts say coding is one of the human skills that will become obsolete as artificial intelligence grows.
- 4) Nevertheless, governments believe coding is an essential skill.

Answer: 1,3,2,4

### Children's Clothes

- 1) During the past few years, some of the world's biggest names in high-end fashion have begun to see children's clothes as a promising sideline with which to extract more value from their main business.
- 2) Jean Paul Gaultier, Chloe and John Galliano have all launched children's clothes lines.
- 3) But for France's Bonpoint, making kids' clothing is the main business.
- 4) Since Bonpoint was founded 40 years ago by clothes store owner MarieFrance and Bernard Cohen, children and babies have been at the centre of the brand's development.

Answer: 1,3,2,4

### Sojourner

- 1) More recent missions to Mars include the hugely successful Mars Pathfinder, which landed a small 'rover' called Sojourner on the surface to explore a region where there may once have been life.

2) Sojourner has now been effectively switched off, but lasted almost twelve times its expected lifetime. 3) Similarly, the lander, which imaged several areas around the landing site (dubbed the Carl Sagan Memorial site) and took atmospheric measurements, lasted a good deal longer than expected. 4) The only unfortunate thing to have arisen from the mission is the naming of the rocks at the landing site (including everything from Scooby Doo to Darth Vader).

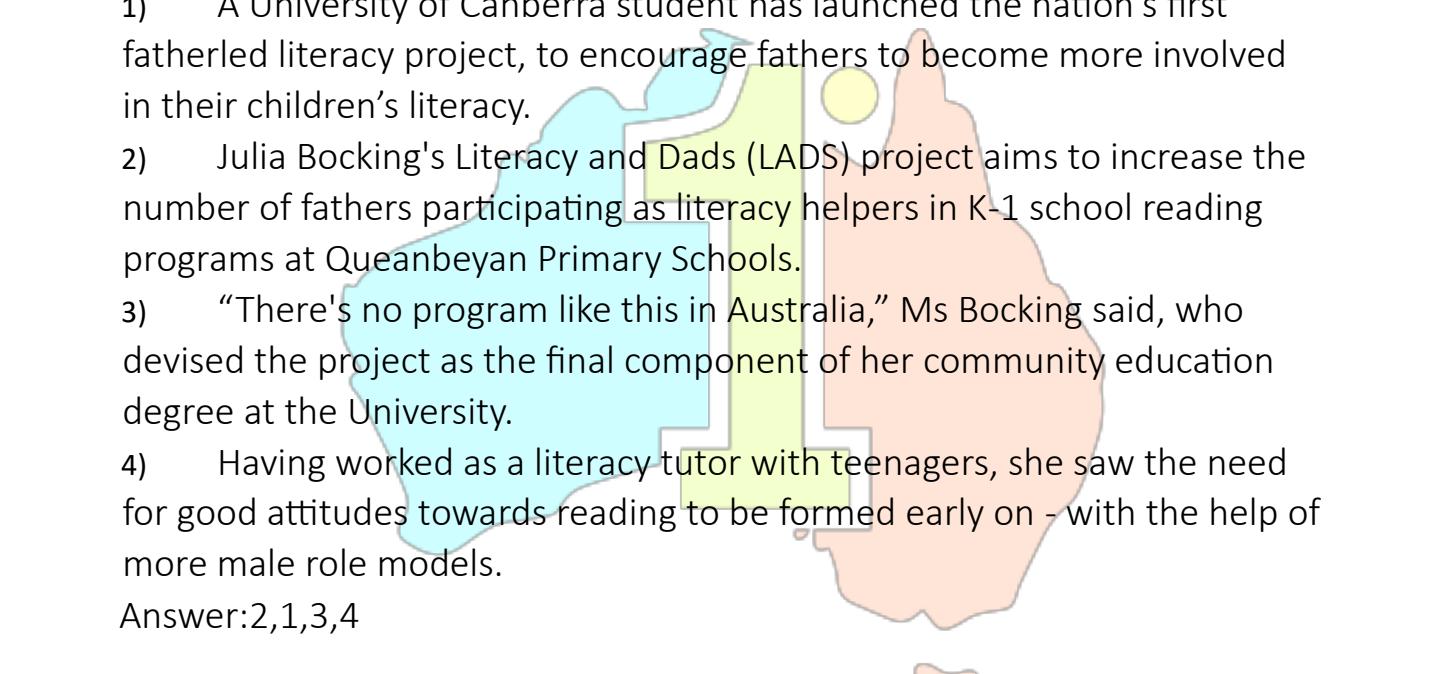
Answer:1,4,3,2

### Australia Role Models

- 1) A University of Canberra student has launched the nation's first fatherled literacy project, to encourage fathers to become more involved in their children's literacy.
- 2) Julia Bocking's Literacy and Dads (LADS) project aims to increase the number of fathers participating as literacy helpers in K-1 school reading programs at Queanbeyan Primary Schools.
- 3) "There's no program like this in Australia," Ms Bocking said, who devised the project as the final component of her community education degree at the University.
- 4) Having worked as a literacy tutor with teenagers, she saw the need for good attitudes towards reading to be formed early on - with the help of more male role models.

Answer:2,1,3,4

### Hottest Earth

- 
- 1) The Earth just had the hottest month in recorded history, and it's even worse than normal.
  - 2) The record comes in a run of unprecedently hot months.
  - 3) Not only does it break through the all-time record set a year before, it also continues a now 10-month long streak of months that are the hottest ever according to Nasa data.
  - 4) The National Oceanic and Atmospheric Administration calculates temperatures slightly differently.

Answer: 2,1,3,4

### Antarctic Ice

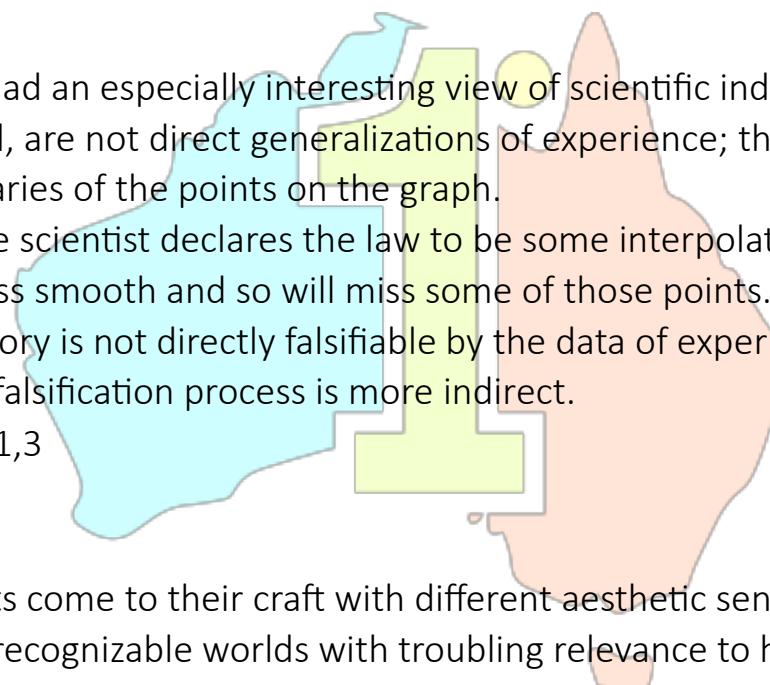
- 1) Scientists have known for over a decade that the West Antarctic Ice Sheet has been losing mass and contributing to sea level rise.
- 2) Its eastern neighbor is, however, ten times larger and has the potential to raise the global sea level by some 50 meters.
- 3) Despite its huge size and importance, conflicting results have been published on the recent behavior of the East Antarctic Ice Sheet.
- 4) A study led by a group of NASA scientists, that was published in 2015, suggested that this part of Antarctica was gaining so much mass that it compensated for the losses in the west.

Answer: 1,4,2,3

### Poincaré

- 1) Poincaré had an especially interesting view of scientific induction.
- 2) Laws, he said, are not direct generalizations of experience; they aren't mere summaries of the points on the graph.
- 3) Rather, the scientist declares the law to be some interpolated curve that is more or less smooth and so will miss some of those points.
- 4) Thus, a scientific theory is not directly falsifiable by the data of experience; instead, the falsification process is more indirect.

Answer: 2,4,1,3



### Playwrights

- 1) Playwrights come to their craft with different aesthetic sensibilities.
- 2) They create recognizable worlds with troubling relevance to human behavior and social themes.
- 3) Others dismiss the "illusion of the real" to engage us in political arguments or absurdist metaphors.
- 4) Thornton Wilder and Tennessee Williams, on the one hand, and Bertolt Brecht and Samuel Beckett, on the other, are playwrights with very different approaches to empathy and aesthetic distance.
- 5) However, these writers have in common their means of artistic expression – the play.

Answer: 4,1,3,2,5

### English Agricultural Revolution

- 1) Historians are now agreed that beginning in the 17th century and continuing throughout the 18th century, England witnessed an agricultural revolution.
- 2) English (and Dutch) farmers were the most productive farmers of the century and were continually adopting new methods of farming and experimenting with new types of vegetables and grains.
- 3) They also learned a great deal about manure and other fertilizers. 4) In other words, many English farmers were treating farming as a science, and all this interest eventually resulted in greater yields.

Answer: 3,1,4,2

### Locomotion

- 1) Researchers need to understand why different forms of locomotion evolved.
- 2) Long-held assumptions, such as the need for energy efficiency, have already been overturned.
- 3) For example, a mechanical ankle brace can improve the metabolic efficiency of human walking, implying that walking is inefficient8. 4) But variation of movement is important, too: such an ankle brace holds you back if you try to skip, gallop or skitter.
- 5) Similarly, legged robots struggle to deploy different gaits, just as roboticists struggle to enumerate them.

3,1,4,2

Answer: 3,2,5,4,1



### Mandarin

- 1) Mandarin is the most common language in the world as it is the official language of Mainland China, Taiwan, and one of the official languages of Singapore.
- 2) Thus, Mandarin is commonly referred to as 'Chinese'.
- 3) But in fact, it is just one of many Chinese languages.
- 4) Depending on the region, Chinese people also speak Wu, Hunanese, Jiangxinese, Hakka, Min, and many other languages.
- 5) Even in one province, there can be multiple languages spoken. For example, in Fujian province, you can hear Min, Fuzhounese, and Mandarin being spoken, each being very distinct from the other.

Answer: 5,2,1,4,3

## Mining Company

- 1) In 1844 the Mendip Hills Mining Company began work in the Charterhouse area.
- 2) The company employed Cornish miners with experience and expertise of working deep tin mines.
- 3) Initially, the aim was to exploit the ore at depth, which previous miners could not reach.
- 4) Four deep shafts were sunk, up to 108m deep.

Answer: 2,1,3,4

## Plato

- 1) Although usually remembered today as a philosopher, Plato was also one of ancient Greece's most important patrons of mathematics.
- 2) Inspired by Pythagoras, he founded his Academy in Athens in 387 BC, where he stressed mathematics as a way of understanding more about reality.
- 3) In particular, he was convinced that geometry was the key to unlocking the secrets of the universe.
- 4) The sign above the Academy entrance read: 'Let no-one ignorant of geometry enter here'.

Answer: 4,1,3,2

## Answering Question

- 1) You must take account of how many marks are available for each part when you answer it.
- 2) Even if you think you can write more, don't spend 15 minutes answering a part worth only 5 marks. Leave space at the end of your answer and come back to it if you have time to spare later.
- 3) And if you can't think of an answer to some part, leave a space and move on to the next part.
- 4) Don't write about something else if you don't know the correct answer — this is just a waste of your valuable time (and the examiner's).

Answer: 2,4,3,1

## O'Keeffe

- 1) O'Keeffe never formally recorded her theories about art.
  - 2) She did, however, leave a long trail of interviews and letters that reveal how she approached her painting practice—and the rituals, experiences, and environments that inspired her.
  - 3) Correspondence with her husband, photographer Alfred Stieglitz, in particular, offers a raw, honest glimpse into O'Keeffe's creative mind.
  - 4) The two exchanged 25,000 pages of letters between 1915 and 1946, during which time she found her voice as an artist: first, through her flower paintings, and later, through landscapes and surrealistic still life's inspired by her mountainous, skull-studded surroundings in New Mexico.
- Answer: 1,4,2,3

### Noise and Study

- 1) Some students say that they need complete quiet to read and study.
  - 2) Others study best in crowded, noisy rooms because the noise actually helps them concentrate.
  - 3) The point is, you should know the level of noise that is optimal for your own studying.
  - 4) However, one general rule for all students is that the television seems to be more of a distraction than music or other background noise, so leave the TV off when you are reading or studying. Also, don't let yourself distracted by computer games, email, or internet surfing.
- Answer: 2,4,3,1

### An Important Measuring

- 1) A review is a survey of what you have covered.
  - 2) It is a review of what you are supposed to accomplish not what you are going to do.
  - 3) Rereading is an important part of the review process.
  - 4) Reread with the idea that you are measuring what you have gained from the process.
- Answer: 4,2,1,3

### Selective Books

- 1) History is selective.
- 2) What history books tell us about the past is not everything that happened, but what historians have selected.

- 3) They cannot put in everything: choices have to be made.
- 4) Choices must similarly be made about which aspects of the past should be formally taught to the next generation in the shape of school history lessons. Answer: 4,3,2,1

- 1) Their ability to detect electrical impulses helps them locate prey even in murky waters.
- 2) Great white sharks are apex predators, known for their efficient hunting strategies.
- 3) Nevertheless, overfishing and habitat destruction are threatening their populations.
- 4) These human activities disrupt the delicate balance of marine ecosystems, posing a risk not only to great white sharks but also to the overall health of oceanic food chains.

Answer: 2,1,3,4

- 1) Today, he is celebrated as a pioneer of electrical engineering and his contributions have far-reaching impacts on modern technology.
- 2) Despite his numerous inventions, Tesla faced financial difficulties and recognition eluded him for many years.
- 3) His development of alternating current (AC) electrical systems formed the basis of modern electrical power distribution.
- 4) Nikola Tesla, born in present-day Croatia, was an inventor and engineer known for his work with electricity.

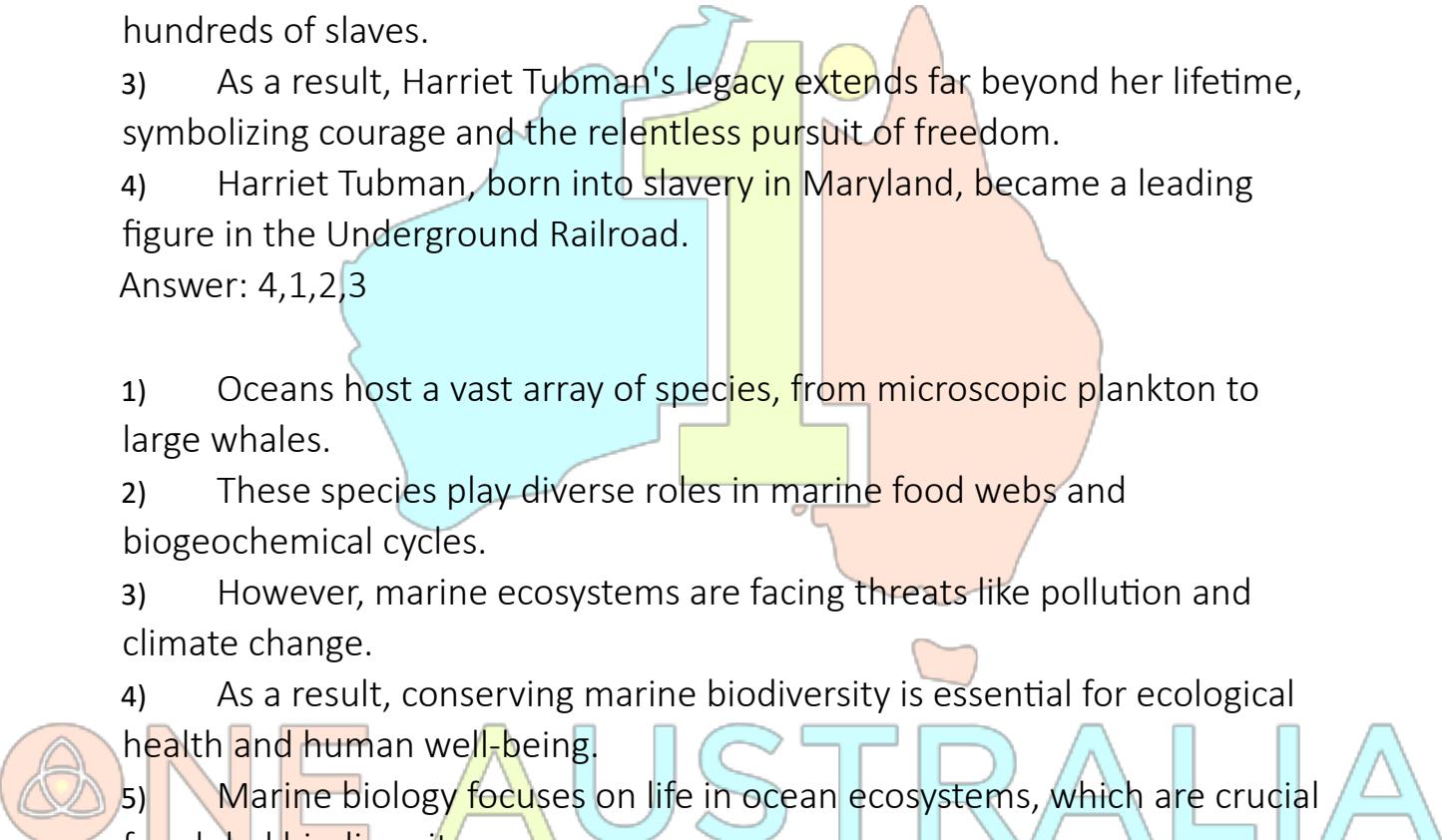
Answer: 4,3,2,1

- 
- 1) Specifically, her influence extends beyond the art world, inspiring individuals to embrace their challenges and channel them into creative expression.
  - 2) As such, Frida Kahlo's work has become a powerful symbol of personal expression and overcoming adversity.
  - 3) Frida Kahlo, a Mexican painter, is known for her unique style and selfportraits that express her life and physical struggles.
  - 4) Despite enduring severe injury and chronic pain, her artwork displayed resilience and strength.

Answer: 3,4,2,1

- 1) The colony comprises a single queen, many workers, and drones.
  - 2) While the queen's primary role is to lay eggs, workers perform various tasks like foraging and caring for larvae.
  - 3) Interestingly, this division of labor is not static but changes as bees age.
  - 4) Honeybees live in well-organized colonies, each with a distinct social structure.
- Answer: 4,1,2,3

- 1) After escaping slavery, she risked her life to help others gain their freedom.
  - 2) By doing this, her bravery and strategic skills led to the liberation of hundreds of slaves.
  - 3) As a result, Harriet Tubman's legacy extends far beyond her lifetime, symbolizing courage and the relentless pursuit of freedom.
  - 4) Harriet Tubman, born into slavery in Maryland, became a leading figure in the Underground Railroad.
- Answer: 4,1,2,3

- 
- 1) Oceans host a vast array of species, from microscopic plankton to large whales.
  - 2) These species play diverse roles in marine food webs and biogeochemical cycles.
  - 3) However, marine ecosystems are facing threats like pollution and climate change.
  - 4) As a result, conserving marine biodiversity is essential for ecological health and human well-being.
  - 5) Marine biology focuses on life in ocean ecosystems, which are crucial for global biodiversity.
- Answer: 5,1,2,3,4

- 1) Thus, natural selection drives the evolutionary process, leading to the diversity of life forms observed today.
- 2) It suggests that individuals with traits better suited to their environment are more likely to survive and reproduce.
- 3) Natural selection, a key mechanism of evolution, was first proposed by Charles Darwin.

- 4) Over time, these advantageous traits become more common in the population.

Answer: 3,2,4,1

- 1) Their thick fur and layer of fat provide insulation against extreme cold.
- 2) Despite these adaptations, global warming is reducing sea ice, their primary habitat.
- 3) As a result, polar bears are facing challenges in hunting and survival, highlighting the impact of climate change on Arctic species.
- 4) Polar bears have evolved to thrive in the Arctic's harsh climate.
- 5) Additionally, their large paws are adapted for swimming in icy waters.

Answer: 4,1,5,2,3

- 1) Dominant and recessive genes determine how these traits are expressed in an organism.
- 2) Genetics is the study of genes and inheritance, crucial for understanding biological traits.
- 3) These biological traits are passed from parents to offspring through genes, which are segments of DNA.
- 4) However, environmental factors can also influence genetic expression.

## LiDARs

- 1) Cameras help autonomous vehicles read street signs and the color of traffic lights.
- 2) But LiDARs, aka light detection and ranging systems, do the important work of sensing and helping cars avoid obstacles, whether that's a fallen tree, a drunk driver, or a child running out into the road.
- 3) Now, a startup called Luminar Technologies Inc., is unveiling a highresolution LiDAR sensor that was five years in the making.
- 4) The startup, which has raised \$36 million in seed-stage funding so far, built its LiDAR systems from scratch.

Answer: 2,3,1,4

## Echolocation

- 1) Vision and echolocation have many features in common.

- 2) One narrow range of radiation — light in the case of vision, ultrasounds in the case of echolocation — provides information relevant to a wide variety of cognitive and practical goals.
- 3) Why, then, is vision so common and echolocation so rare?
- 4) Because, in most environments, vision is much more effective. 5) Echolocation is adaptive only in an ecological niche where vision is impossible or badly impaired—for instance, when dwelling in caves and hunting at night, as bats do.

Answer: 4,5,1,2,3

## Big Five

- 1) Some psychologists believe that independent, peer-reviewed research in the decades since the MBTI was devised has provided something better than Myers-Briggs.
- 2) They champion the notion of the “Big Five” personality traits — openness, conscientiousness, extroversion, agreeableness and neuroticism. 3) Of these, only one trait is closely shared with the MBTI — extroversion. 4) Myers-Briggs does not focus on “neuroticism” or, indeed, any similarly negative trait, which may point to one of the reasons why the criticisms lobbed at the test by modern science have yet to undermine its popularity. 5) As Adam Grant says, ‘Going around telling people that they’re neurotic and disagreeable will not win you any friends.’

Answer: 3,1,2,5,4



## First Publication

- 1) To celebrate his first publication, Frost had a book of six poems privately printed; two copies of *Twilight* were made—one for himself and one for his fiancée.
- 2) Over the next eight years, however, he succeeded in having only 13 more poems published.
- 3) During this time, Frost sporadically attended Dartmouth and Harvard and earned a living teaching school and, later, working a farm in Derry, New Hampshire.

4) But in 1912, discouraged by American magazines' constant rejection of his work, he took his family to England, where he found more professional success. Answer: 4,1,2,3

## Photogrammetry

- 1) Photogrammetry involves taking hundreds of photos of an object at slightly different angles and 'stitching' them together to create an interactive digital 3D model.
- 2) The process is already being used by the University of Aberdeen's anatomy department to create digital models of organs and other body parts to aid teaching and learning for young doctors.
- 3) Now the same technology is being used to create virtual replicas of artifacts within the University's museum's collections, including an ancient Egyptian mummified cat, prehistoric skulls and ancient Greek pottery.
- 4) These artifacts are rarely handled as they are so fragile. 5)

Photogrammetry lets the public and students get to see them close-up and in very high detail.

Answer: 1,4,2,5,3

## Pidgin

- 1) In some areas, the standard chosen may be a variety that originally had no native speakers in the country.
- 2) For example, in Papua New Guinea, a lot of official business is conducted in Tok Pisin.
- 3) This language is now used by over a million people, but it began many years earlier as a kind of 'contact' language called a pidgin.
- 4) A pidgin is a variety of a language (e.g. English) that developed for some practical purpose, such as trading, among groups of people who had a lot of contact, but who did not know each other's languages.

Answer: 2,3,4,1

## German Books

- 1) This site contains a comprehensive listing of the works of Norbert Elias, a German sociologist.

- 2) The site lists not only his published books and articles but also manuscripts and oral communications, in a variety of media and including reprints and translations.
- 3) The material has been catalogued, cross-referenced and organized by date.
- 4) There is, however, no search facility.

Answer: 4,2,3,1

## Mobile Phone

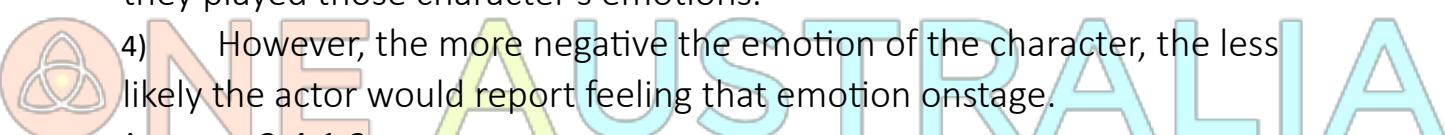
- 1) Bitcoin is an online money.
- 2) That's to say you need to download mobile phone app to use such money.
- 3) With above done it generates a bitcoin address.
- 4) This address can only be used once.

Answer: 4,1,2,3

## Actors' Performance

- 1) In a wonderful set of studies and subsequent book, Elly A. Konijn looked to the question of how much actors are aware of their performance as they perform it, and how much they let the character 'take over'.
- 2) She asked Dutch actors to rate their own emotions and the emotions of the characters they were playing across a range of affective states (from disgust and anxiety to tenderness and pleasure).
- 3) She found that positive emotions were often felt by the actors as they played those character's emotions.
- 4) However, the more negative the emotion of the character, the less likely the actor would report feeling that emotion onstage.

Answer: 3,4,1,2



## Understanding Differences

- 1) Around 1 billion people depend on water resources originating from the Hindu-Kush Karakoram Himalayan region, attributable to both rainfall and melting of snow and ice.
- 2) The wind in the valleys in the region plays an important role in transporting clouds and moisture and redistributing snow in the valleys, and so understanding what drives this wind is crucial.

- 3) Around the world, wind in valleys generally travels up the valley, and up the sides of mountains, during the day.
- 4) This is often driven by differences in pressure caused by the slopes of the mountains and the shape of the valleys.

Answer: 3,4,1,2

#### Brain Function

- 1) The brain is our most treasured possession.
- 2) It coordinates our movements, our words, our relationships, and the ability to pass on our genes.
- 3) Our body therefore protects the organ fiercely: The central nervous system polices particles traveling through the bloodstream and invites only the safest into our cognitive chamber.
- 4) This selective process occurs due to a proactive boundary known as the blood-brain barrier.
- 5) The barrier serves a vital role, but also poses a tremendous challenge for scientists developing drugs to treat brain-based disorders.

Answer: 1,2,4,5,3

#### DRM

- 1) Due to its ability to solve all main problems associated with digital goods, Digital Rights Management is the favorite option used by companies to tackle piracy.
- 2) The aim of this article is to discuss the consequences of DRM for consumers, firms and society.
- 3) The rationales of DRM are discussed and the expected benefits for firms are presented.
- 4) In contrast, consumers are shown to be likely to see few benefits in DRM.
- 5) The article concludes with some public policy recommendations.

Answer: 2,5,4,1,3

# READING



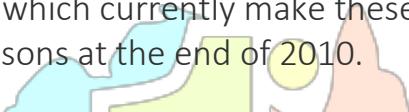
## READING & WRITING FIBS

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## READING FIBS

ONE AUSTRALIA

SpaceX's Falcon 9 rocket lifted off from Cape Canaveral, Florida, on Friday at 1845 GMT (1445 EDT), reaching orbit 9 minutes later. The rocket lofted an uncrewed (**Answer::** mockup) of SpaceX's Dragon capsule, which is designed to one-day carry both crew and cargo to orbit. 'This has been a good day for SpaceX and a (**Answer::** promising) development for the US human space flight program,' said Robyn Ringuette of SpaceX in a webcast of the launch. In a teleconference with the media on Thursday, SpaceX's CEO, Paypal co-founder Elon Musk, said he would consider the flight 100 percent successful if it reached (**Answer::** orbit). 'Even if we prove out just that the first stage functions correctly, I'd still say that's a good day for a test,' he said. 'It's a great day if both stages work correctly.' SpaceX hopes to win a NASA (**Answer::** contract) to launch astronauts to the International Space Station using the Falcon 9. US government space shuttles, which currently make these trips, are scheduled to be (**Answer::** retired) for safety reasons at the end of 2010.



Choices:

1. replication, mockup, setting, base
2. promising, hopefully, rapid, encouraging
3. track, orbit, circulation, trajectory
4. award, contract, case, bid
5. ceased, fixed, removed, retired

One distinguishing feature of business is its economic character. In the world of business, we interact with each other not as family members, friends, or neighbors, but as buyers and (**Answer::** sellers), employers and employees, and the like. Trading, for example, is often (**Answer::** accompanied) by hard bargaining, in which both sides conceal their full hand and perhaps (**Answer::** engage) in some bluffing. And a skilled salesperson is well-(**Answer::** versed) in the art of arousing a customer's attention (sometimes by a bit of puffery) to (**Answer::** clinch) the sale. Still, there is an "ethics of trading" that prohibits the use of false or deceptive claims and tricks such as "bait-and-switch" advertising.

Choices:

1. sellers, solicitors, tellers, traders
2. accompanied, customized, complimented, accomplished
3. engage, thrive, flourish, conduct
4. informed, staffed, known, versed
5. deal, motivate, make, clinch

Learning to write well in college means learning (or re-learning) how to write clearly

and plainly. Now that doesn't mean that plainness is the only good style, or that you should become a (**Answer::** slave) to spare, unadorned writing. Formality and ornateness have their place, and in (**Answer::** competent) hands complexity can take us on a dizzying, breathtaking journey. But most students, most of the time should (**Answer::** endeavor) to be sensibly simple to develop a baseline style of short words, active verbs and relatively simple sentence (**Answer::** carrying) clear actions or identities. It's faster, it makes arguments easier to follow, it increases the chances a busy reader will bother to pay attention, and it lets you (**Answer::** center) more attention on your moments of rhetorical flourish which I do not advise abandoning altogether.

Choices:

- 1.solder, person, staff, slave
- 2.helping, competent, comparative, heaving
- 3.commit, reject, endeavor, stick
- 4.concealing, carrying, defining, confining
- 5.rise, center, pin, span

The foreign policy of a state, it is often argued, begins and ends with the border. No doubt an exaggeration, this aphorism nevertheless has an (**Answer::** element) of truth. A state's relation with its neighbors, at least in the (**Answer::** formative) years, are greatly influenced by its frontier policy, especially when there are no (**Answer::** settled) borders. Empire builders in the past sought to extend imperial frontiers for a variety of reasons; subjugation of kings and princes to gain their (**Answer::** allegiance) (as well as handsome tributes or the coffers of the state), and, security of the core of the empire from external attacks by establishing a string of buffer states in areas (**Answer::** adjoining) the frontiers. The history of British empire in India was no different. It is important to note in this connection that the concept of international boundaries (between two sovereign states), demarcated and (**Answer::** delineated), was yet to emerge in India under Mughal rule.

Choices:

- 1.element, exertion, evidence, explanation
- 2.cultivating, early, formative, established
- 3.disputed, firmed, nether, settled
- 4.admittance, tranquility, allegiance, prestige
- 5.adjoining, adhering, having, declaring
- 6.delineated, divided, circled, deposited

DNA is a molecule that does two things. First, it acts as the (**Answer::** hereditary) material, which is passed down from generation to generation. Second, it directs, to a considerable extent, the construction of our bodies, telling our cells what

kinds of molecules to make and (**Answer::** guiding) our development from a single-celled zygote to a fully formed adult. These two things are of course (**Answer::** connected). The DNA sequences that construct the best bodies are more likely to get passed down to the next generation because well-constructed bodies are more likely to survive and (**Answer::** thus) to reproduce. This is Darwin's theory of natural selection stated in the language of DNA.

Choices:

- 1.acquired, familial, nutritional, hereditary
- 2.establishing, guiding, pushing, determining
- 3.supplanted, connected, paralleled, required
- 4.thus, yet, namely, nevertheless

Movement in painting that (**Answer::** originated) in France in the 1860s and had enormous influence in European and North American painting in the late 19th century. The Impressionists wanted to (**Answer::** depict) real life, to paint straight from nature, and to capture the changing effects of light. The term was first used abusively to (**Answer::** describe) Claude Monet's painting Impression: Sunrise (1872). The other leading Impressionists included Paul Camile, Edgar Degas, Edouard Manet, Camille Pissarro, Pierre-Auguste Renoir, and Alfred Sisley, but only Monet remained devoted to Impressionist ideas throughout his career. The core of the Impressionist group was formed in the early 1860s by Monet, Renoir, and Sisley, who met as students and enjoyed painting in the open air - one of the hallmarks of Impressionism. They met other members of the Impressionist circle through Paris café society. They never made up a formal group, but they organized eight group exhibitions between 1874 and 1886, at the first of which the name Impressionism was applied. Their styles were diverse, but all (**Answer::** experimented) with effects of light and movement created with distinct brush strokes and (**Answer::** fragments) of color dabbed side-by-side on the canvas rather than mixed on the palette. By the 1880s the movement's central impulse had dispersed, and a number of new styles were emerging, later described as post-impressionism. British Impressionism had a major influence on the more experimental and (**Answer::** progressive) British painters in the late 19th and early 20th centuries. Many of the painters were affected in the circle of Walter Sickert, who spent much of his career in France and was an influential figure who inspired many younger artists. His friend and exact contemporary Philip Wilson Steer is generally regarded as the most outstanding British Impressionist.

Choices:

- 1.originated, initiated, oriented, appreciated
- 2.deepen, depict, simplify, contrary
- 3.describe, descent, satirize, transcribe
- 4.experimented, supplemented, experienced, examined

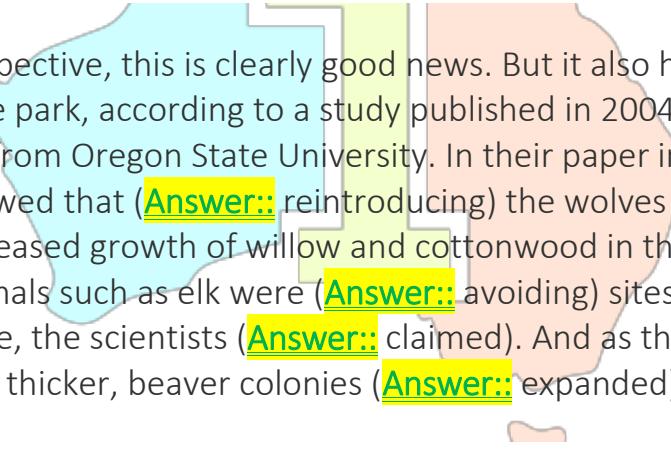
5.frigid, fragile, combination, fragments

6.progressive, stubborn, predictable, promoted

One city will start to attract the (**Answer:** majority) of public or private investment. This could be due to (**Answer:** natural) advantage or political decisions. This in turn will (**Answer:** stimulate) further investment due to the multiplier effect and (**Answer:** significant) rural-to-urban migration. The investment in this city will be at the (**Answer:** expense) of other cities.

Choices:

- 1.majority, minority, density, quality
- 2.fetal, natural, birth, neutral
- 3.push, operate, stimulate, give
- 4.significant, rather, not, so
- 5.experience, expanse, expense, exercise



From the wolf's perspective, this is clearly good news. But it also had beneficial effects on the ecology of the park, according to a study published in 2004 by William Ripple and Robert Beschta from Oregon State University. In their paper in BioScience, the two researchers showed that (**Answer:** reintroducing) the wolves was (**Answer:** correlated) with increased growth of willow and cottonwood in the park. Why? Because grazing animals such as elk were (**Answer:** avoiding) sites from which they couldn't easily escape, the scientists (**Answer:** claimed). And as the woody plants and trees grew taller and thicker, beaver colonies (**Answer:** expanded).

Choices:

- 1.reinforcing, reforming, retrofitting, reintroducing
- 2.concentrated, correlated, corrosive, collected
- 3.hiding, picking, avoiding, presenting
- 4.shouted, published, spoke, claimed
- 5.expansion, expanding, expanded, expending

A crime is generally a deliberate act that results in harm, physical or otherwise, toward one or more people, in a manner (**Answer:** prohibited) by law. The determination of which acts are to be considered criminal has varied (**Answer:** historically), and continues to do so among cultures and nations. When a crime is committed, a process of (**Answer:** discovery), trial by judge or jury, conviction, and punishment occurs. Just as what is considered criminal varies between (**Answer:** jurisdictions), so does the punishment, but elements of restitution and (**Answer:** deterrence) are common.

Choices:

- 1.prohibited, offended, obeyed, protected
- 2.exceptionally, historically, disproportionately, inappropriately
- 3.discovery, finding, creation, invention
- 4.rights, regulations, jurisdictions, obligation
- 5.endorsement, discipline, preventer, deterrence

A herbal is a book of plants, describing their appearance, their properties and how they may be used for preparing ointments and medicines. The medical use of plants is (Answer:) recorded) on fragments of papyrus and clay tablets from ancient Egypt, Samaria and China that date back 5,000 years but document traditions far older still. Over 700 herbal remedies were detailed in the Papyrus Ebers, an Egyptian text written in 1500 BC. Around 65 BC, a Greek physician called Dioscorides wrote a herbal that was (Answer:) translated) into Latin and Arabic. Known as 'De materia medica', it became the most influential work on medicinal plants in both Christian and Islamic worlds until the late 17th century. An illustrated manuscript copy of the text made in Constantinople (modern-day Istanbul) (Answer:) survives) from the sixth century. The first printed herbals date from the dawn of European printing in the 1480s. They provided valuable information for apothecaries, whose job was to make the pills and potions (Answer:) prescribed) by physicians. In the next century, landmark herbals were produced in England by William Turner, considered to be the father of British botany, and John Gerard, whose illustrations would inspire the floral fabric, wallpaper and tile designs of William Morris four centuries later.

Choices:

- 1.registered, recorded, memorized, discovered
- 2.moved, interpreted, translated, removed
- 3.preserves, revives, suffers, survives
- 4.presided, presented, prescribed, predominated

You have about 30 minutes to (Answer:) each question. You must take account of how many marks are (Answer:) available) for each part when you (Answer:) it. Even if you think you can write more, don't spend 15 minutes (Answer:) (Answer:)ing) a part worth only 5 marks. (Answer:) Leave) a space at the end of your (Answer:) and come back to it if you have (Answer:) time) to spare later. And if you can't think of an (Answer:) to some part, leave a space and move on to the next part. Don't write about something else if you don't know the correct (Answer:) — this is just a waste of your (Answer:) valuable) time (and the examiner's).

Choices:

- 1.marked, needed, taken, available

2.scoring, marking, **Answer:**ing, ignoring

3.Attend, Acquire, Leave, Focus

4.life, space, time, mind

5.available, valuable, useful, beneficial

Over the last ten thousand years there seem to have been two separate and conflicting building sentiments throughout the history of towns and cities. (**Answer:** One) is the desire to start again, for a variety of reasons: an earthquake or a tidal wave may have demolished the settlement, or fire destroyed it, or the new city (**Answer:** marks) a new political beginning. The other can be likened to the effect of a magnet: established settlements attract people, who (**Answer:** tend) to come whether or not there is any planning for their arrival. The clash between these two sentiments is evident in every established city (**Answer:** unless) its development has been almost completely accidental or is lost in history. Incidentally, many settlements have been planned from the beginning but, for a variety of reasons, no settlement followed the plan. A good example is Currowan, on the Clyde River in New South Wales, which (**Answer:** was surveyed) in the second half of the 19th century, in expectation that people would come to establish agriculture and a small port. But no one came.

Choices:

1.lt, What, One, That

2.highlights, starts, marks, protrudes

3.hesitate, ought, turn, tend

4.whereas, whatever, if, unless

5.has been surveyed, had surveyed, be surveyed, was surveyed

What is a country, and how is a country defined? When people ask how many countries there are in the world, they expect a simple **Answer:**. After all, we've explored the (**Answer:** whole) planet, we have international travel, satellite navigation and plenty of global organizations like the United Nations, (**Answer:** so) we should really know how many countries there are! However, the **Answer:** to the question varies according to whom you ask. (**Answer:** Most) people say there are 192 countries, but others point out that there could be more like 260 of them. So why isn't there a straightforward **Answer:**? The problem arises because there isn't a universally agreed definition of 'country' and because, for political reasons, some countries find it convenient to recognize or not recognize (**Answer:** other) countries.

Choices:

1.very, whole, only, total

2.for, while, but, so

3.Few, All, Most, Least

4.those, their, other, all

Egg-eating snakes are a small group of snakes whose (**Answer::** diet) consists only of eggs. Some eat only small eggs, which they have to swallow (**Answer::** whole), as the snake has no teeth. Instead, some other snakes eat bigger eggs, but it requires special (**Answer::** treatment). These snakes have spines that stick (**Answer::** out) from the backbone. The spines crack (**Answer::** open) the egg as it passes through the throat.

Choices:

- 1.food, meal, snack, diet
- 2.total, entire, whole, all
- 3.thinking, treatment, food, supplement
- 4.about, on, by, out
- 5.down, up, out, open

Australia and New Zealand have many common links. Both countries were recently settled by Europeans, are predominantly English speaking and in that sense, share a common cultural (**Answer::** heritage). Although in close proximity to one another, both countries are geographically isolated and have small populations by world (**Answer::** standards). They have similar histories and enjoy close relations on many fronts. In terms of population (**Answer::** characteristics), Australia and New Zealand have much in common. Both countries have minority indigenous populations, and during the latter half of the 20th century have seen a steady stream of migrants from a variety of regions throughout the world. Both countries have (**Answer::** experienced) similar declines in fertility since the high levels recorded during the baby boom, and alongside this have enjoyed the benefits of continually improving life expectancy. One consequence of these trends is that both countries are faced with an ageing population, and the (**Answer::** associated) challenge of providing appropriate care and support for this growing group within the community.

Choices:

- 1.heritage, asset, appearance, prestige
- 2.statistics, standards, authorities, records
- 3.senses, characteristics, aspects, directions
- 4.experienced, expected, compensated, estimated
- 5.associated, favourable, comprehensive, irrevocable

The Edo-Tokyo Tatemono En is an open-air architectural museum, but could be better thought of as a park. Thirty buildings from the 19th and early 20th centuries from (**Answer::** all) around Tokyo were restored and relocated to the space, where they can

be explored by future generations to come. The buildings are a collection of houses and businesses, shops, and bathhouses, all of which would have been present on a typical middle-class street from Edo-period to Showa-era Tokyo. The west section is (**Answer::** residential), with traditional thatched roof bungalows of the 19th century. Meiji-era houses are also on view, constructed in a more Westernstyle after Japan opened its borders in 1868. The Musashino Sabo Cafe occupies the (**Answer::** ground) floor of one such house, where visitors can enjoy a cup of tea. Grand residences like that of Korekiyo Takahashi, an early 20th century politician assassinated over his controversial policies, demonstrate how the upper class lived during that time period. The east section is primarily businesses from the 1920s and 30s, preserved with their wares on display. Visitors are free (**Answer::** to wander) through a kitchenware shop, a florist's, an umbrella store, a bar, a soy sauce shop, a tailor's, a cosmetics shop, and an inn complete with an operational noodle shop.

Choices:

- 1.across, almost, fully, all
- 2.residential, residing, resident, residence
- 3.base, dusty, ground, earthly
- 4.wandering, to wander, wandered, wander

Keith Haring began as an underground artist, literally. His first famous projects were pieces of stylized graffiti (**Answer::** drawn) in New York subway stations. Haring travelled from station to station, drawing with chalk and chatting with commuters about his work. These doodles helped him develop his classic style and he grew so (**Answer::** prolific), doing up to 40 drawings a day, that it was not long before fame and a measure of fortune followed. Soon, galleries and collectors from the art establishment wanted to buy full-sized pieces by Haring. The paintings skyrocketed in price but this did not sit well with Haring's philosophy. He believed that art, or (**Answer::** at least) his art, was for everyone. Soon, Haring opened a store which he called the Pop Shop, which he hoped would attract a broad range of people. While somewhat controversial among street artists, some of (**Answer::** whom) accused Haring of 'selling out', the Pop Shop changed the way people thought about the relationship between art and business.

Choices:

- 1.drawers, drew, draws, drawn
- 2.prolific, pedantic, perceptive, proactive
- 3.in part, at least, by contrast, actually
- 4.those, whom, them, whose

Twenty years ago, not so long before B-15 broke off from Antarctica, 'we didn't even know that icebergs made noise,' says Haru Matsumoto, an ocean engineer

at NOAA who has studied these sounds. But in the past (**Answer::** few) years, scientists have started to learn to distinguish the eerie, haunting sounds of iceberg life — ice cracking, icebergs grinding (**Answer::** against) each other, an iceberg grounding on the seafloor — and measure the extent to (**Answer::** which) those sounds contribute to the noise of the ocean. While they're just now learning to listen, the sounds of ice could help them understand the behavior and breakup of icebergs and ice shelves as the poles warm (**Answer::** up).

Choices:

1. for, more, much, few
2. within, about, through, against
3. which, why, what, whether
4. away, out, up, off

When that happens, staff will help the person — (**Answer::** strung) out and now a little stressed — fish their drugs out of the rubbish. On their way out, they might have a blood test, their first (**Answer::** dental) check-up in years, or just a hot cup of Milo. 'We enable people to inject in the centre because that's what they do,' the medical director, Nico Clark, tells Guardian Australia during a recent visit to the North Richmond Community Health Centre. 'The majority are dependent on their (**Answer::** substances). The purpose is not to be a place that (**Answer::** facilitates) injection per se, the (**Answer::** purpose) is to keep people alive.' The center is a response to a coroner's report that noted the heroin-related deaths in the area in 2016.

Choices:

1. stunned, strung, strong, stung
2. academic, dental, relative, indirect
3. incomes, concerns, substances, minds
4. patronizes, disallows, funds, facilitates
5. reciprocity, risk, effect, purpose

Affordable early years education and childcare potentially enables parents, particularly mothers, to be in paid employment. International studies (**Answer::** have found) that countries with greater enrolment rates in publicly funded or provided childcare also have higher maternal employment rates, although untangling causal relationships is complex. From the point of view of the household additional income, especially for the less well-off, is itself associated with better outcomes for children, as child poverty (**Answer::** has been shown) to be a key independent determinant of children's outcomes. From the point of view of the public purse, as mothers (**Answer::** enter) employment, they are likely to claim fewer benefits and to generate extra revenues

(**Answer::**) through) income tax and national insurance contributions.

Choices:

- 1.have been found, found, have yet to find, have found
- 2.have shown, has been shown, was showing, showed
- 3.enact, enacting, enter, entering
- 4.through, within, by, throughout

Managing performance is about getting people into action so that they achieve planned and agreed results. It focuses on what has to be done, how it should be done and what (**Answer::**) is to be achieved. But it is equally concerned with (**Answer::**) developing) people - helping them to learn - and providing them with the support they need to do well, now and in the future. The framework for performance management is provided by the performance agreement, (**Answer::**) which) is the outcome of performance planning. The agreement provides the basis for managing performance throughout the year and for (**Answer::**) guiding) improvement and development activities. It is used as a reference point (**Answer::**) when) reviewing performance and the achievement of improvement and development plans.

Choices:

- 1.is, need, must, requires
- 2.developing, evaluating, recruiting, alerting
- 3.what, this, which, of which
- 4.guiding, reassuring, heralding, concluding
- 5.when, as, until, since

It would be reassuring to think that the electorate choose who to vote for based on the candidates' track records and future policy promises. (**Answer::**) In truth), many of us are swayed simply by the way that politicians look. Consider a 2009 study that asked Swiss students to look at multiple pairs of unfamiliar French political candidates and in each case to select the one who looked most competent. Most of the time, the candidate selected by students (**Answer::**) as looking the most competent was also the one who'd had real life electoral success, the implication (**Answer::**) being) that voters too had been swayed by the candidates' appearance (there's little evidence that appearance and competence actually (**Answer::**) correlate)). Unsurprisingly, being attractive also helps win votes, especially in war time (in peace time, looking trustworthy is more of an advantage). Other research has shown that we're more likely to vote for male and female candidates with deeper voices.

Choices:

- 1.Therefore, In truth, In addition, In return

- 2.through, at, by, as
- 3.being, is, was, having
- 4.correlate, overlap, cooperate, diverge

The economic (**Answer::** dimension) of globalization involves international financial institutions i.e. the IMF & WB. Stabilization and adjustment are sponsored by the two respectively and are rooted in the ideology of the free market. At the other end of the spectrum, protesters see globalization in a very different light than the treasury secretary of the United States, or the finance or trade ministers of most of the advanced industrial countries. The difference in (**Answer::** views) is so great that one wonders, are the protesters and the policy makers talking about the same (**Answer::** phenomenon)? Are they looking at the same data? Are the visions of those in (**Answer::** power) so clouded by special and particular (**Answer::** interests)?



Choices:

- 1.demonstration, definition, dimension, depression
- 2.views, exception, expectation, conclusion
- 3.substance, phenomenon, philosophy, explanation
- 4.tandem, powder, conjugation, power
- 5.interests, efforts, achievements, detestation

A music student at the University of Salford who wrote a song in two weeks is celebrating (**Answer::** after) being featured on a compilation album produced by Metropolis Studios. Pop mega-stars including Adele, Michael Jackson and Sir Elton John have all recorded music at the world-famous Metropolis Studios. Last year, the recording studios set (**Answer::** about) compiling an album called 'Lost Songs', which features songs from relatively unknown musicians. First-year student Zak Taylor Fray decided to submit his song demo to be included in Volume Two of the Lost Songs album which was released this year, after he saw (**Answer::** how) successful Volume One had been. Zak 24, said: 'I found this competition when simply (**Answer::** searching) the internet for songwriting competitions one day, and was lucky that there was still (**Answer::** time) to enter. It amazes me that people who have worked with huge pop stars thought my song was good and worth something.'

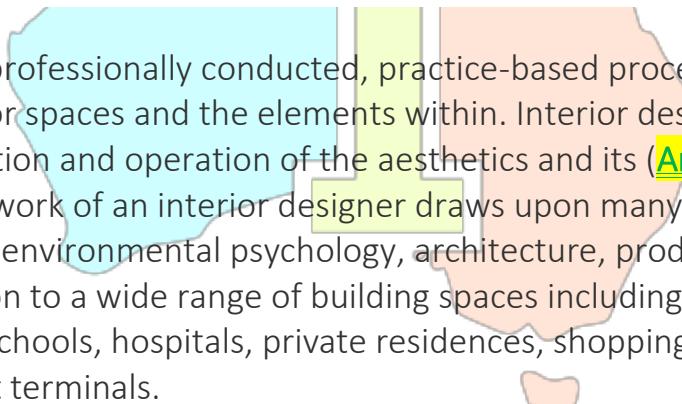
Choices:

- 1.except, without, before, after
- 2.by, on, up, about
- 3.how, that, which, if
- 4.search, searching, have searched, searched
- 5.expiry, chance, opportunity, time

The writer, or, for that matter, the speaker conceives his thought whole, as a unity, but must express it in a line of words; the reader, or listener, must take this line of symbols and from it (**Answer::** reconstruct) the original wholeness of thought. There is (**Answer::** little) difficulty in conversation, because the listener receives innumerable cues from the physical expressions of the speaker; there is a dialogue, and the listener can (**Answer::** cut) in at any time. The advantage of group discussion is that people can overcome linear sequence of words by (**Answer::** converging) on ideas from different directions; which makes for wholeness of thought. But the reader is confronted by line upon line of printed symbols, without benefits of physical (**Answer::** tone) and emphasis or the possibility of dialogue or discussion.

Choices:

- 1.recover, respect, reconstruct, reduce
- 2.little, much, more, few
- 3.lean, cut, intrude, get
- 4.conveying, combination, collecting, converging
- 5.tune, thumb, tone, note



Interior design is a professionally conducted, practice-based process of planning and realization of interior spaces and the elements within. Interior design is (**Answer::** related) to the function and operation of the aesthetics and its (**Answer::** sustainability). The work of an interior designer draws upon many other (**Answer::** disciplines), such as environmental psychology, architecture, product design and, aesthetics, in relation to a wide range of building spaces including hotels, corporate and public spaces, schools, hospitals, private residences, shopping malls, restaurants, theaters and airport terminals.

Choices:

- 1.related, compared, concentrated, corresponded
- 2.capability, environment, sustainability, deniability
- 3.disciplines, course, principals, functions

Great engineers have a passion to improve life; a burning conviction that they can make life better for everyone. Engineers need to have a talent (**Answer::** for) invention and innovation, but (**Answer::** what) drives them is the conviction that they can find a better way to do things; a cheaper and more efficient solution (**Answer::** to) the problems of human existence on this planet of (**Answer::** limited) resources that we call Earth. Many of us spend a lot of time (**Answer::** complaining) about the difficulties and problems of life. It is easy to find fault with things that make daily life arduous. For an engineer, these difficulties can be opportunities. How can this be made (**Answer::** to work) better? How can that process be made more efficient? How can components be made more cheaply, more accurately and more fit-for-purpose? Great

engineers are convinced that everything can be improved. Instead of complaining, they think of ways to make things better.

Choices:

- 1.within, through, by, for
- 2.what, which, how, that
- 3.from, to, for, by
- 4.limited, unlimited, numerous, mysterious
- 5.complaining, to complain, complains, complained
- 6.to work, working, works, work

Paris is very old—there has been a settlement there for at least 6000 years and its shape has been determined in part by the River Seine, and in part by the edicts of France's rulers. But the great boulevards we admire today are relatively new, and were constructed to prevent any more barricades (**Answer::** being created) by the rebellious population; that work was carried out in the middle 19th century. The earlier Paris had been (**Answer::** in part) a maze of narrow streets and alleyways. But you can imagine that the work was not only highly expensive, but caused great distress among the half a million or so residents whose houses were (**Answer::** simply) razed, and whose neighbourhoods disappeared. What is done cannot usually be undone, especially when buildings are torn (**Answer::** down).

Choices:

- 1.being created, to be created, were created, been created
- 2.as if, in part, just as, relative
- 3.evenly, rarely, simply, equally
- 4.up, across, between, down

Of the more than 1,000 bat species worldwide, 22 are (**Answer::** native) to North America. And while there are no pollinator bats in our area, gardeners should (**Answer::** champion) those that do live here, because they're insectivorous. These bats (**Answer::** consume) moths, beetles and mosquitoes, and can eat up to 500 mosquito-sized insects per hour. They also protect gardens and crops from such (**Answer::** pests) as cucumber beetles, cutworms and leafhoppers.

Choices:

- 1.local, national, native, residential
- 2.suppose, champion, breed, fight
- 3.spend, consume, provide, deplete
- 4.species, pests, objects, animals

Having tracked down research that is (**Answer:** relevant) to your area of interest, the next task is to actually (**Answer:** make sense) of that research. This section is intended to show you how to be critical of the research you (**Answer:** are reviewing) and how to check that the (**Answer:** evidence) is credible and represented appropriately. Unfortunately this means discussing the ways in which research findings may be misrepresented.

Choices:

- 1.relevant, important, useful, referred
- 2.make profit, take advantage, make sense, sum up
- 3.are monitoring, are finding, are reviewing, are discovering
- 4.support, invention, statement, evidence

Equitable and sustainable management of water resources is a major global challenge. About one third of the world's population lives in countries with moderate to high water stress, with (**Answer:** disproportionately) high impacts on the poor. With respect to the (**Answer:** current) projected human population growth, industrial development and the expansion of irrigated agriculture in the next two years, water demand is expected to rise to levels that will make the task of providing water for human (**Answer:** sustenance) more difficult. Since its establishment, the United Nations Environment Programme (UNEP) has worked to promote sustainable water resources management practices through (**Answer:** collaborative) approaches at the national, regional and global levels. After more than 30 years, water resources management continues to be a strong pillar of UNEP's work. UNEP is actively participating in addressing water issues together with partner UN (**Answer:** agencies), other organizations and donors; they facilitate and catalyze water resource assessments in various developing countries; implement projects that assist countries in developing integrated water resource management plans; create awareness of innovative alternative technologies and assist the development, implementation and enforcement of water resource management policies, laws and regulations.

Choices:

- 1.proportionately, disproportionately, largely, evenly
- 2.reactionary, current, few, past
- 3.substitute, sustenance, substance, sustainable
- 4.operation, cooperating, collaborative, collaborating
- 5.sectors, agencies, factors, segments

The narrative of law and order is located fundamentally at the level of individual guilt and responsibility. Criminal acts are seen as individual issues of personal responsibility and (**Answer:** culpability), to which the state responds by way of policing, (**Answer:** prosecution), adjudication and punishment. This is but one level at which

crime and criminal justice can be analyzed. The problem is that so often analysis ends there, at the level of individual action, (**Answer::** characterized) in terms of responsibility, guilt, evil. In few other areas of social life does individualism have this hold. To take but one instance, it would be (**Answer::** absurd) to restrict analysis of obesity, to individual greed.

Choices:

- 1.guilty, capability, culpability, reliability
- 2.persecution, prosecution, execution, inspection
- 3.combined, characterized, chosen, concluded
- 4.obvious, legitimate, absurd, reticent

A good story may be given a bad title by its author, and so started toward failure. Novices are peculiarly (**Answer::** liable) to this fault, usually through (**Answer::** allowing) themselves to be too easily satisfied. They go to (**Answer::** infinite) pains to make the story itself fresh and individual, and then cap it with a (**Answer::** commonplace) phrase that is worse than no title at all. A good title is apt, specific, attractive, new, and short. A title is apt if it is an outgrowth of the plot — a text, as I have said. It stands definitely for that particular story, and gives a suggestion of what is to come — but only a suggestion, lest it should anticipate the denouement and so (**Answer::** satisfy) the curiosity of the reader too soon.

Choices:

- 1.able, responsible, liable, possible
- 2.allowed, allows, allow, allowing
- 3.stagnant, faint, disastrous, infinite
- 4.perplexing, invisible, distinctive, commonplace
- 5.confuse, encourage, satisfy, stimulate

That Sigmund Freud became a major intellectual presence in twentieth-century culture is not in doubt. (**Answer::** Nor) is there any doubt that at all times there was both fervent enthusiasm over and bitter hostility to his ideas and influence. But the exact means (**Answer::** by which) Freud became, despite this hostility, a master of intellectual life, on a par, already in the 1920s, with Karl Marx, Albert Einstein, Marie Curie and Bertrand Russell, has not been sufficiently explored. Strikingly, Freud emerged as a twentieth-century icon without the endorsement and support (**Answer::** of) an institution or a profession (in contrast to Einstein, Curie and Russell). Where are we to look for the details of this story of an emergent - and new - figure of immense cultural authority? One of the principal aims of this book is to show how this happened in one local, parochial yet privileged, site - Cambridge, then as now a

university town stranded in the English Fens with a relatively small (**Answer::** fluctuating) population.

Choices:

- 1.Otherwise, Nor, Yet, Nevertheless
- 2.by which, to which, to whom, by whom
- 3.of, for, with, in
- 4.fluctuating, fluctuate, fluctuated, fluctuation

Populations can change through three processes: fertility, mortality and migration.

Fertility (**Answer::** involves) the number of children that women (**Answer::** have) and differs from fecundity (a woman's childbearing potential). Mortality is the study of the causes, consequences and measurement of processes affecting death in a population. Demographers most commonly study mortality using the Life Table, a statistical (**Answer::** device) which provides information about the mortality conditions (most notably the life expectancy) in the population. Migration refers to the movement of persons from an origin place to a destination place across some pre-defined political boundary. Migration researchers do not designate movements as migrations, (**Answer::** unless) they are somewhat permanent. Thus demographers do not consider tourists and travelers to be migrating. While demographers who study migration typically do so through census data on place of (**Answer::** residence), indirect sources of data including tax forms and labor force surveys are also important. Demography is today widely taught in many universities across the world, (**Answer::** attracting) students with initial training in social sciences, statistics or health studies.

Choices:

- 1.contributes, rotates, involves, requires
- 2.rear, slander, equip, have
- 3.means, study, researches, device
- 4.but, though, unless, therefore
- 5.preference, residence, importance, health
- 6.researching, attracting, analyzing, exploiting

Our analysis of the genetic structure of northern spotted owls across most of the range of the subspecies allowed us to test for genetic discontinuities and identify landscape features that influence the subspecies' genetic structure. Although no (**Answer::** distinct) genetic breaks were found in northern spotted owls, (**Answer::** several) landscape features were important in structuring genetic variation. Dry, low elevation valleys and the high elevation Cascade and Olympic Mountains restricted gene flow, while the lower Oregon Coast Range (**Answer::** facilitated) gene flow, acting as a 'genetic corridor.' The Columbia River did not act as a barrier, (**Answer::** suggesting) owls readily fly over this large river. Thus, even in taxa such as

northern spotted owls with potential for long-distance dispersal, landscape features can have an important impact on gene flow and genetic structure.

Choices:

- 1.distinct, distribute, distant, rare
- 2.few, several, much, many
- 3.hindered, embedded, enabled, facilitated
- 4.suggesting, demanding, demonstrating, proposing

Snails are not traditionally known for quick thinking, but new research shows they make complex decisions using just two brain cells in (**Answer::** findings) that could help engineers design more efficient robots. Scientists at the University of Sussex attached electrodes to the heads of freshwater snails (can **Answer::** as) they searched for lettuce. They found that just one cell was used by the mollusc to tell (**Answer::** if) it was hungry or not, while another let it know when food was present. Foodsearching is an example of goal-directed behavior, (**Answer::** during) which an animal must integrate information about both its external environment and internal state while using as little energy as possible. Lead researcher Professor George Kemenes, say "This will eventually help us design the 'brain' of robots based on the principle of using the (**Answer::** fewest) possible components necessary to perform complex tasks." What goes on in our brains when we make complex behavioral decisions and carry them out is poorly understood." Our study reveals for the first time how just two neurons (**Answer::** can) create a mechanism in an animal's brain which drives and optimizes complex decision-making tasks.

Choices:

- 1.findings, results, recommendations, decisions
- 2.because, although, but, as
- 3.that, if, neither, how
- 4.through, about, during, to
- 5.least, less, fewest, few
- 6.shall, should, can, ought

REORDER PARAGRAPHS

- 1) And they found that crabs that experienced an electric shock when they hid under a safe, dark rock would eventually learn to avoid the hiding place.
- 2) Scientists at Queen's University in Belfast now think that crustaceans may be more sensitive to pain than previously thought.
- 3) The last time you splurged on a live lobster for dinner, you might not have given any thought to how much the little guy was going to suffer as he boiled to death.
- 4) Until recently many researchers believed the crustacean nervous system too primitive to process pain.

**Answer::** 3,4,2,1

- 1) Over time, fashion and people's tastes change.
- 2) Such changes affect the demand for products and services.
- 3) Changes in work patterns tend to mean that fewer families sit down in the evening for a traditionally produced family meal, often because a lack of time.
- 4) In contrast, people now tend to spend more time shopping and are therefore more likely to spend time relaxing in a coffee shop or restaurant while on a shopping trip.
- 5) Consequently, people are now more likely to buy takeaway meals or convenience food, as opposed to ingredients for meals that take time to prepare.

**Answer::** 1,2,3,5,4



- 1) Inspired by Pythagoras, he founded his Academy in Athens in 387 BC, where he stressed mathematics as a way of understanding more about reality.
- 2) The sign above the Academy entrance read: 'Let no-one ignorant of geometry enter here'.
- 3) In particular, he was convinced that geometry was the key to unlocking the secrets of the universe.
- 4) Although usually remembered today as a philosopher, Plato was also one of ancient Greece's most important patrons of mathematics.

**Answer::** 4,1,3,2

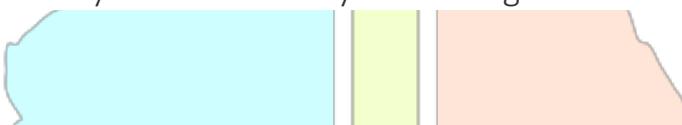
- 1) Over the next eight years, however, he succeeded in having only 13 more poems published.
- 2) During this time, Frost sporadically attended Dartmouth and Harvard and earned a living teaching school and, later, working a farm in Derry, New Hampshire.
- 3) But in 1912, discouraged by American magazines' constant rejection of his work, he took his family to England, where he found more professional success.

- 4) To celebrate his first publication, Frost had a book of six poems privately printed; two copies of Twilight were made—one for himself and one for his fiancée.

**Answer::** 4,1,2,3

- 1) Photogrammetry involves taking hundreds of photos of an object at slightly different angles and 'stitching' them together to create an interactive digital 3D model.
- 2) Now the same technology is being used to create virtual replicas of artifacts within the University's museum's collections, including an ancient Egyptian mummified cat, prehistoric skulls and ancient Greek pottery.
- 3) Photogrammetry lets the public and students get to see them close-up and in very high detail.
- 4) The process is already being used by the University of Aberdeen's anatomy department to create digital models of organs and other body parts to aid teaching and learning for young doctors.
- 5) These artifacts are rarely handled as they are so fragile.

**Answer:** 1,4,2,5,3



- 1) In fact, this final stage - writing up your research - may be one of the most difficult.
- 2) I know you won't want to hear this, but your work is still far from done.
- 3) And, in many research projects you will need to write multiple reports that present the results at different levels of detail for different audiences.
- 4) So now that you've completed the research project, what do you do?
- 5) Developing a good, effective and concise report is an art form in itself.

**ONE AUSTRALIA**

- 1) Now, a startup called Luminar Technologies Inc., is unveiling a high-resolution LiDAR sensor that was five years in the making.
- 2) Cameras help autonomous vehicles read street signs and the color of traffic lights.
- 3) But LiDARs, aka light detection and ranging systems, do the important work of sensing and helping cars avoid obstacles, whether that's a fallen tree, a drunk driver, or a child running out into the road.
- 4) The startup, which has raised \$36 million in seed-stage funding so far, built its LiDAR systems from scratch.

**Answer:** 2,3,1,4

- 1) He and his crew, which again included his son John and Robert Juet, made their way across the Atlantic Ocean.
- 2) After skirting the southern tip of Greenland, they entered what became known as the Hudson Strait.
- 3) Aboard the ship Discovery, Hudson left England in April 1610.
- 4) The exploration then reached another of his namesakes, the Hudson Bay.

**Answer::** 3,1,2,4

- 1) Play with sexualized dolls, such as Fashion Barbies, is even associated with a narrowing of perceived career options in girls.
- 2) In general, strongly gender-typed toys are less supportive of the development of children's physical, cognitive, and artistic skills than are gender-neutral or moderately gender-typed toys.
- 3) Gender-typed toy play leads to the promotion of different skills in boys and girls, with girls practicing communal roles and boys practicing agentic roles.
- 4) Therefore, playing predominantly with same-gender-typed toys limits the development of children's action repertoires in accordance with gender stereotypes and thus contributes to the perpetuation of gender stereotypes.
- 5) This guides children's activities in accordance with gender stereotypes and thus restricts their individual development potential.
- 6) Whereas play with stereotypically masculine toys, such as blocks and toy soldiers, is generally associated with the development of spatial skills and more aggressive behavior, playing with stereotypically feminine toys, such as baby dolls and stuffed animals, is associated with more nurturing behavior.

**Answer:** 3,5,6,1,2,4



- 1) It was there that Rosa Parks, an African American woman, refused to vacate her seat in the middle of the bus so that a white man could sit in her place.
- 2) She was arrested for her civil disobedience.
- 3) Parks was chosen by King as the face for his campaign because of Parks' good standing with the community, her employment and her marital status.
- 4) Parks' arrest, a coordinated tactic meant to spark a grassroots movement, succeeded in catalyzing the Montgomery bus boycott.
- 5) In many ways, the Montgomery bus boycott kicked off a national struggle to eliminate national discrimination, with King leading the way and ultimately become the nation's racial equality movement.

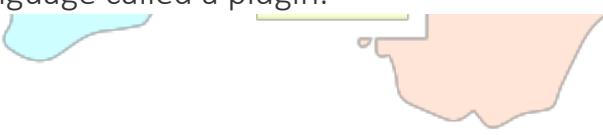
**Answer:** 1,2,4,3,5

- 1) The children in that neighborhood were her primary source of language input.
- 2) This paper summarizes some of the major data gathered in a longitudinal, naturalistic study of a Japanese girl learning English as a second language.
- 3) Her family came to the United States for a period of two years while her father was a visiting scholar at Harvard, and they took residence in North Cambridge, a working-class neighborhood.
- 4) The subject in this study is Uguisu, "nightingale" in Japanese.
- 5) Uguisu also attended public kindergarten of two hours every day, and later elementary school, but with no tutoring in English syntax. Most of her neighborhood friends were in her same class at school.

**Answer::** 2,4,3,1,5

- 1) A pidgin is a variety of a language (e.g. English) that developed for some practical purpose, such as trading, among groups of people who had a lot of contact, but who did not know each other's languages.
- 2) In some areas, the standard chosen may be a variety that originally had no native speakers in the country.
- 3) For example, in Papua New Guinea, a lot of official business is conducted in Tok Pisin.
- 4) This language is now used by over a million people, but it began many years earlier as a kind of 'contact' language called a pidgin.

**Answer::** 2,3,4,1



- 1) But with opportunity comes responsibility!
- 2) That means it's up to you to carve out your place in the world and know when to change course.
- 3) Companies today aren't managing their knowledge of workers' careers.
- 4) We live in an age of unprecedented opportunity: with ambition, drive, and talent, you can rise to the top of your chosen profession regardless of where you started out.
- 5) Instead, you must be your own chief executive officer.

**Answer::** 4,1,3,5,2

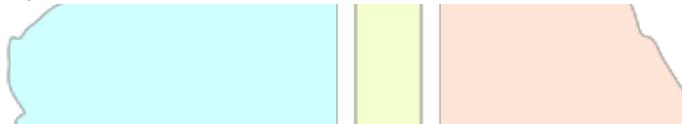
- 1) In this last collision, one embryo was nearly Earth-sized and the other approximately Mars-sized.
- 2) According to the giant impact hypothesis, our moon formed as the result of the last of a series of "giant impact" mergers between planetary embryos that eventually formed the Earth.

- 3) For more than 30 years, the prevailing view of the formation of our moon has been the "giant impact hypothesis".
- 4) The precursors to the current four rock planets - Mercury, Venus, Earth and Mars - appear to have been dozens of smaller bodies known as "planetary embryos".

**Answer::** 3,4,2,1

- 1) These include Commitment devices, where we make it very unattractive to not follow through on an intention.
- 2) Perhaps most importantly, we look to the field of behavioral science for strategies that people can use to overcome those hurdles and to initiate lifestyle changes.
- 3) Changing existing behavior can be a difficult task, but with the help of these strategies new behaviors can become habitual, facilitating a long-term sustained healthy lifestyle.
- 4) In 'Easier Said than Done', we set out some of the reasons why we might find it hard to live in a healthy way, exercising, eating well, getting adequate sleep, and checking for early warning symptoms.

**Answer:** 4,2,1,3



- 1) The Brundtland Report, our Common Future (1987) defines sustainable development as 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs.'
- 2) Development in the past was driven by growth and innovation. It led to new technologies and huge improvements in living standards.
- 3) Implicit in this definition is the idea that the old pattern of development could not be sustained. Is this true?
- 4) Whatever happened to the idea of progress and a better future? I still believe both.
- 5) To assume that we know what the circumstances or needs of future generations will be is mistaken and inevitably leads to the debilitating sense that we are living on borrowed time.

**Answer::** 4,1,3,2,5

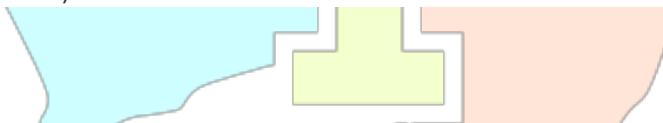
- 1) Mass transportation revised the social and economic fabric of the American city in three fundamental ways.
- 2) The new accessibility of land around the periphery of almost every major city sparked an explosion of real estate development and fueled what we now know as urban sprawl.
- 3) Now those who could afford it could live far removed from the old city center and still commute there for work, shopping and entertainment.

- 4) In 1850, for example, the borders of Boston lay scarcely two miles from the old business district; by the turn of the century the radius extended ten miles.
- 5) It catalyzed physical expansion, it sorted out people and land uses, and it accelerated the inherent instability of urban life. By opening vast areas of unoccupied land for residential expansion, the omnibuses, horse railways, commuter trains, and electric trolleys pulled settled regions outward two to four times more distant from city centers than they were in the pre-modern era.

**Answer::** 1,5,4,3,2

- 1) From outside Wales, too, it is the rugby that commonly defines the nation - with the sport providing both widespread interest and one of the few positive associations of outsiders' perceptions of Wales.
- 2) In many ways rugby in Wales defines what Wales is and what people in Wales share.
- 3) Rugby in Wales is a particularly strong example of this phenomenon, being perhaps the main thing that unites people in Wales.
- 4) Citizens commonly identify with their nation in the context of major sporting events: imagining the nation is easier when there is a national team playing another nation (Hobsbawm, 1990).

**Answer::** 4,3,2,1



- 1) A Technology for recording brainwaves in wild animals awakens a more sophisticated understanding of the function of sleep.
- 2) Studies using miniature sleep recording devices known as neurologgers have already challenged several long-held beliefs about the sleeping habits of sloths and birds.
- 3) And male sandpipers can go almost entirely without sleep during the three-week breeding season, helping maximize success at that time.
- 4) Three toed sloths, for example, sleep far less than once thought.
- 5) Now John Lesku of La Trobe University in Melbourne and his colleagues are using neurologgers to investigate whether light pollution interferes with the circadian rhythms of tammar wallabies in Australia.

**Answer::** 1,2,4,3,5

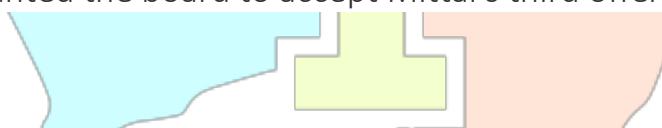
- 1) During his 11 years writing for the New York Tribune - their collaboration began in 1852 Marx tackled an abundance of topics, from issues of class and the state to world affairs.

- 2) Above all, Marx's fresh perspective on nineteenth-century events encouraged his readers to think, and his writing is surprisingly relevant today.
- 3) Particularly moving pieces highlight social inequality and starvation in Britain, while others explore his groundbreaking views on the slave and opium trades Marx believed Western powers relied on these and would stop at nothing to protect their interests.
- 4) Karl Marx is arguably the most of the most famous political philosopher of all time, but he was also one of the great foreign correspondents of the nineteenth century.

**Answer::** 4,1,3,2

- 1) More important, the Arcelor Mittal deal demonstrates Europe's deepening integration into the global economy.
- 2) The story tells us two things about European business, both positive.
- 3) Shareholder activism is increasing in a continent where until recently it was depressingly rare.
- 4) It was taken over by Mittal, a Dutch-registered company run from London by its biggest single shareholder, Lakshmi Mittal, an Indian who started his first business in Indonesia.
- 5) The takeover battle raged for six months before Arcelor's bosses finally listened to shareholders who wanted the board to accept Mittal's third offer.

**Answer::** 4,5,2,3,1



- 1) In order to do this, the manager should be able to motivate its employees.
- 2) The job of a manager in the workplace is to get things done through the employees.
- 3) However, this easier said than done.
- 4) Motivation practice and theory are difficult, complex subjects touching on several disciplines.

**Answer::** 2,1,3,4

- 1) Many think the best way to make foreigners understand is to be chatty and informal.
- 2) Anyone wanting to get to the top of international business, medicine or academia (but possibly not sport) needs to be able to speak English to a pretty high level.
- 3) This may seem friendly but, as it probably involves using colloquial expressions, it makes comprehension harder.
- 4) Equally, any native English speaker wanting to deal with these new high achievers needs to know how to talk without baffling them.
- 5) Because so many English-speakers today are monoglots, they have little idea how difficult it is to master another language.

**Answer::** 2,4,5,1,3

- 1) Mechanical engineering student Ne Tan is spending the first semester of this year studying at the University of California, Berkeley as part of the Monash Abroad program.
- 2) Now in her third year of study, the Monash Abroad program will see her complete four units of study in the US before returning to Australia in May 2009.
- 3) There she completed a diploma that enabled her to enter Monash University as a second-year student.
- 4) Ne (Tan), an international student from Shanghai, China, began her Monash journey at Monash College in October 2006.

**Answer::** 1,4,3,2



- 1) It abolished the previous system of annual contracts.
- 2) That pocket denotes a tiny patch of legally loggable land sandwiched between four natural reserves, all rich in mahogany and accessible from the town.
- 3) Sephua, a ramshackle town on the edge of Peru's Amazon jungle, nestles in a pocket on the map where a river of the same name flows into the Urubamba.
- 4) Instead, it auctioned 40-year concessions to areas ruled off on a map, with the right to log 4% of the area each year. The aim was to encourage strict management plans and sustainable extraction.
- 5) In 2001 the government, egged on by WWF, a green group, tried to regulate logging in the relatively small part of the Peruvian Amazon where this is allowed.

**Answer::** 3,2,5,1,4



- 1) For as long as I can remember, there has been a map in the ticket hall of Piccadilly Circus tube station supposedly showing night and day across the time zones of the world.
- 2) But this map has always fascinated me, and still does, even though it now seems very primitive.
- 3) This is somewhat surprising given the London Underground's historic difficulty in grasping the concept of punctuality.
- 4) This is because it chops the world up equally by longitude, without regard the reality of either political divisions or the changing seasons.

**Answer::** 1,3,2,4

- 1) The Repeat Photography Project was born.

- 2) It was a light bulb moment: Why not use the old photos to create a timeline of the morphing glaciers, and add new photos every year?
- 3) Over the years, countless photos of the majestic park have been snapped, and many of those have become part of the park's official archive, spanning over a century.
- 4) In 1997 Lisa McKeon, a physical scientist with the United States Geological Survey who works in the park, came across a pair of historic photographs depicting the glaciers she studies.

**Answer::** 4,3,2,1

- 1) Such defenses from the country's most elite universities "do not hold water", Prof Ebdon said, as he urged the institutions to do more to widen their intakes.
- 2) Professor Les Ebdon, director of Fair Access to Higher Education, has said universities can no longer make excuses about the number of poorer students they take on.
- 3) England's most selective universities must do more to attract teenagers from disadvantaged backgrounds if they want to charge higher tuition fees, the country's fair access watchdog has warned.
- 4) In a statement issued yesterday, Prof Ebdon dismissed the argument from the country's most selective universities, which claim that young people from poorer backgrounds generally secure worse grades.

**Answer::** 3,2,4,1



- 1) There is a growing consensus that, if serious action is to be taken to reduce greenhouse gas (GHG ) emissions in Canada, a price must be applied to those emissions.
- 2) If Canada implements a carbon price on its own, there are worries that Canadian factories will relocate to other countries to avoid the regulation.
- 3) There are, however, challenges associated with the political acceptability of carbon pricing.
- 4) Even if other countries act in concert with Canada to price carbon, the effects will be uneven across sectors, and lobbying efforts by relatively more-affected sectors might threaten the political viability of the policy.

**Answer::** 1,3,2,4

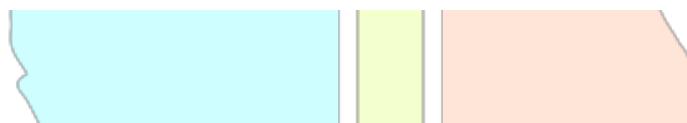
- 1) However, when archaeologists want to know the absolute date of a site, they can often go beyond simple stratigraphy.

- 2) Historical records, coins, and other date-bearing objects can help if they exist. But even prehistoric sites contain records written in nature's hand.
- 3) For example, tree ring, Dendrochronology (literally, tree time) dates wooden artefacts by matching their ring patterns to known records, which, in some areas of the world, span several thousand years.
- 4) The series of strata in an archaeological dig enables an excavator to date recovered objects relatively, if not absolutely.

**Answer::** 2,4,1,3

- 1) As a result, they lack the coping strategies that many adults have.
- 2) In particular, they lack the verbal skills to express their emotions and to effectively communicate their need for emotional support.
- 3) Many young children are inexperienced in dealing with emotional upheaval.
- 4) Frustration of not being able to effectively communicate may manifest itself in alternative behaviors.
- 5) Moreover, such behaviors may risk developing behavioral, social and emotional problems.

**Answer::** 3,1,2,4,5



- 1) Art historians compare different time periods in art history.
- 2) The study includes painting, sculpture, architecture, ceramics, furniture, and other decorative objects.
- 3) Art history is the history of different groups of people and their culture represented throughout their artwork.
- 4) Art history is the study of objects of art in their historical development and stylistic contexts.
- 5) As a term, art history (its product being history of art) encompasses several methods of studying the visual arts; in common usage referring to works of art and architecture.

**Answer::** 4,2,3,1,5

- 1) There is, however, no search facility.
- 2) The site lists not only his published books and articles but also manuscripts and oral communications, in a variety of media and including reprints and translations.
- 3) The material has been catalogued, cross-referenced and organized by date.
- 4) This site contains a comprehensive listing of the works of Norbert Elias, a German sociologist.

**Answer:** 4,2,3,1

- 1) They found that bees can see the blue halo, and use it as a signal to locate flowers more efficiently.
- 2) These nanostructures scatter light particles in the blue to ultraviolet colour spectrum, generating a subtle effect that scientists have christened the 'blue halo'.
- 3) By manufacturing artificial surfaces that replicated 'blue halos', scientists were able to test the effect on pollinators, in this case foraging bumblebees.
- 4) Latest research has found that several common flower species have nanoscale ridges on the surface of their petals that meddle with light when viewed from certain angles.

**Answer:** 4,2,3,1



- 1) In their work from Tanzania to the Gambia, from Myanmar to Indonesia and beyond, they tap into a wide range of expertise from across the University, including clinicians, microbiologists and molecular microbiologists, public health experts, economists and mathematicians.
- 2) They have also forged relationships and collaborations with research and aid agencies around the world.
- 3) For the past seven years Professor Philip Hill has been part of a collaborative tuberculosis research project in Indonesia, with the University of Padjadjaran in Bandung, West Java, undertaking European-Commission-funded research into the causative links between infectious and non-communicable diseases, which in this case are tuberculosis (TB) and diabetes mellitus.
- 4) University of Otago Centre of International Health co-directors Professor Philip Hill and Professor John Crump share a view that global health is a multidisciplinary activity.

**Answer:** 4,1,2,3

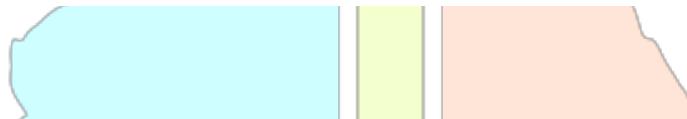
- 1) Sometimes, the infant was dressed in blue and was called Adam and sometimes it was dressed in pink and was called Beth.
- 2) There were three toys in the room: a train (boy stereotype), a doll (girl stereotype) and a fish (neutral).
- 3) The research by Will and colleagues dressed 6- month-old babies in different colored outfits that did not necessarily match their gender, so the participants had no way of knowing if the baby was in fact a boy or a girl.

- 4) This study found that babies dressed in blue and thought to be boys were more likely to be given the train.
- 5) Babies in pink or 'girls' were more likely to be given the doll and more people smiled at 'Beth' then at 'Adam'.

**Answer::** 3,1,2,4,5

- 1) During the past few years, some of the world's biggest names in high-end fashion have begun to see children's clothes as a promising sideline with which to extract more value from their main business
- 2) But for France's Bonpoint, making kids' clothing is the main business.
- 3) For example, Jean Paul Gaultier, Chloe and John Galliano have all launched children's clothes lines.
- 4) Since Bonpoint was founded 40 years ago by clothes store owner Marie-France and Bernard Cohen, children and babies have been at the centre of the brand's development.

**Answer:** 1,3,2,4



# ONE AUSTRALIA

READING FILL IN THE BLANKS

Of the more than 1,000 bat species worldwide, 22 are (**Answer:** native) to North America. And while there are no pollinator bats in our area, gardeners should (**Answer:** champion) those that do live here, because they're insectivorous. These bats (**Answer:** consume) moths, beetles and mosquitoes, and can eat up to 500 mosquito-sized insects per hour. They also protect gardens and crops from such (**Answer:** pests) as cucumber beetles, cutworms and leafhoppers.

Choices:

consume, champion, preys, objective, besiege, pests, native

John Milton wrote in a wide range of genres, in (**Answer:** several) languages, and on an extraordinary range of subjects. His was a more general (**Answer:** education) than is offered at Cambridge these days, and it continued after his seven years

here, equipping him with the tools to write some of the most (**Answer::** groundbreaking) literature ever seen, and to engage as a polemicist on many different social, political, and theological (**Answer::** questions).

Choices:

several, questions, groundbreaking, simulations, mediocre, education

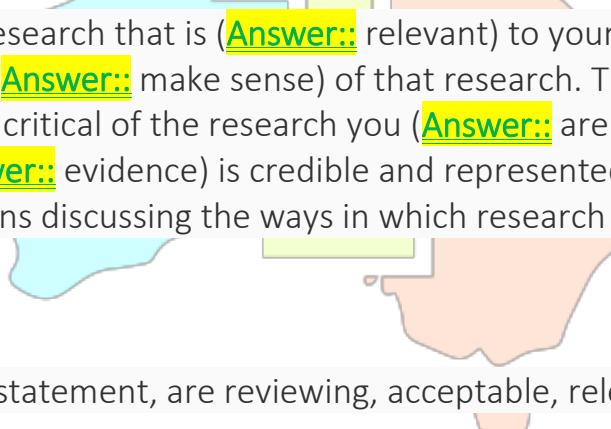
Egg-eating snakes are a small group of snakes whose (**Answer::** diet) consists only of eggs. Some eat only small eggs, which they have to swallow (**Answer::** whole), as the snake has no teeth. Instead, some other snakes eat bigger eggs, but it requires special (**Answer::** treatment). These snakes have spines that stick (**Answer::** out) from the backbone. The spines crack the egg (**Answer::** open) as it passes through the throat.

Choices:

saliva, part, open, taste, diet, whole, treatment, out



Having tracked down research that is (**Answer::** relevant) to your area of interest, the next task is to actually (**Answer::** make sense) of that research. This section is intended to show you how to be critical of the research you (**Answer::** are reviewing) and how to check that the (**Answer::** evidence) is credible and represented appropriately. Unfortunately this means discussing the ways in which research findings may be misrepresented.



Choices:

Make sense, have fun, statement, are reviewing, acceptable, relevant, evidence



The transitions which occurred in Britain around 100 BC, and after 43 AD (when the Roman Army (**Answer::** invaded) Britain) represent the key points of socio-economic trend in Britain's past. During the first century BC, the traditional communal form of life (**Answer::** shifted) rapidly to a world where certain individuals become more important. During the first century AD, Britain (**Answer::** became) fully a part of the Roman Empire.

Choices:

invaded, shifted, became, entailed, enlarged, change, transferred

If you are interested in studying but have other (**Answer::** commitments), our online and distance learning courses offer an alternative flexible (**Answer::** mode) of study. Teaching is conducted through a mixture of audio-visual, written and interactive materials. There are also (**Answer::** opportunities) for online discussion and collaborative projects with tutors and other students. Some programmes

include residential (**Answer:** modules) taught on campus, giving you the (**Answer:** chance) to meet and work alongside your tutors and fellow students face-to-face. Our Graduate School provides comprehensive support for distance and part-time researchers, many of whom study for up to six years or more.

Choices:

opportunities, rate, charges, mode, modules, commitments, requirements, chance

London's National Portrait Gallery is currently celebrating the fifty-year (**Answer:** career) of photographer Sandra Lousada. The twenty-one portraits on display depict key (**Answer:** figures) in literature, film and fashion from the early 1960s. Subsequent to the acquisition of forty portraits by Lousada, the (**Answer:** display) at The National Portrait Gallery highlights shots taken between 1960 and 1964, many of which feature in Lousada's book Public Faces Private Places (2008). Formal commissioned portraits are shown alongside behind-the-scenes photographs taken on film (**Answer:** sets) and unguarded portraits of sitters captured at home.

Choices:

sets, elements, birthday, career, figures, cinemas, display, pictures

All kinds of predictions may be about to get even more difficult (**Answer:** thanks to) climate change. Though no one is sure (**Answer:** exactly) what its effects will be, it seems that extreme weather conditions, (**Answer:** such as) storms and hurricanes, are (**Answer:** likely to) become more common. Such events have far-reaching effects on distant weather systems, making general forecasting much harder.

Choices:

Such as, over to, likely to, thanks to, exactly, rarely, probably

Giant exoplanets, like the so-called 'hot Jupiters' that are similar in (**Answer:** characteristics) to the solar system's biggest (**Answer:** planet) and orbit very close to their host stars, are excellent targets for (**Answer:** astronomers) in their search for their extrasolar worlds. The size and proximity of these planets is easy to (**Answer:** detect) as they create a large decrease in brightness when passing in front of their parent stars.

Choices:

characteristics, imagine, astronomers, pilots, detect, weight, planet

Digital media and the internet have made the sharing of texts, music and images easier than ever, and the (**Answer:** enforcement) of copyright restriction

harder. This situation has encouraged the growth of IP law, and (Answer:: prompted) increased industrial concentration on extending and 'policing' IP protection, while also leading to the growth of an 'open access', or 'creative commons' movement which (Answer:: challenges) such control of knowledge and (Answer:: creativity).

Choices:

prompted, creativity, changed, enforcement, advocates, challenges, enactment, conformity

Modern developments in areas such as neuroscience, artificial intelligence and evolutionary psychology have resulted in new (Answer:: ways) of thinking about human nature. Can we explain the mind and consciousness in (Answer:: terms) of brain function? Can we understand modern human behavior as our evolutionary heritage? Is science even the right (Answer:: place) to start if we want to understand human nature? Come along to the Great Debate, hear the arguments and have your (Answer:: say).

Choices:

place, beliefs, extent, ways, terms, say, end

A new report by environmental (Answer:: nonprofit) The Nature Conservancy lays out how trees could pave the way to cleaner air and cooler cities. Using (Answer:: geospatial) information on forest cover paired with air pollution data and population (Answer:: forecasts) for 245 cities, researchers found that trees have the biggest health (Answer:: payoffs) in densely populated, polluted cities like Delhi, Karachi and Dhaka. The Conservancy and the C40 Cities Climate Leadership Group presented the findings of their global survey this week at the American Public Health Association meeting in Denver, Colorado.

Choices:

geospatial, payoffs, retrospection, forecasts, areas, nonprofit, archaeological, defective

Education is generally considered to be a key factor in improving outcomes for Indigenous Australians, with many studies showing that improved (Answer:: health) and socioeconomic status are directly (Answer:: linked) to educational participation and achievement. There is a range of issues (Answer:: affecting) participation in education for Indigenous Australians, including (Answer:: access) to educational institutions, financial constraints, and community (Answer:: expectations).

Choices:

health, marital, linked, effecting, prone, affecting, access, liability, expectations

Since the beginning of the financial crisis, there have been two principal (**Answer::** explanations) for why so many banks made such disastrous decisions. The first is structural. Regulators did not regulate. Institutions failed to (**Answer::** function) as they should. Rules and guidelines were either inadequate or (**Answer::** ignored). The second explanation is that Wall Street was (**Answer::** incompetent), that the traders and investors didn't know enough, that they made extravagant bets without understanding the consequences.

Choices:

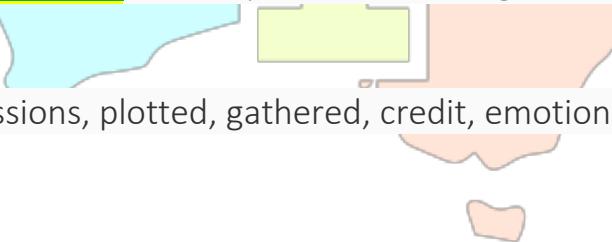
incompetent, function, provision, refused, ignored, explanations, prerequisites



Hippocrates allowed observation, rationality and his own genuine respect for his patients to (**Answer::** guide) his practice. Using the scientific method, he carefully recorded his patient's symptoms and (**Answer::** responses) to treatments and used the data (**Answer::** gathered) to evaluate and prescribe the most successful regimens. His prestige as a great (**Answer::** medical) practitioner, educator, and author helped spread these ideals of (**Answer::** rational) medicine throughout the ancient world.

Choices:

medical, patient, expressions, plotted, gathered, credit, emotional, predicted, rational, responses, guide



The (**Answer::** closing) decades of an artist's life do not generally make the biographer's heart beat faster, but Claude Monet is one of a handful of painters who bucks the pattern of an (**Answer::** irrelevant) old age. While it's true that by the time he was 73 he had (**Answer::** accumulated) all the usual dragging baggage – outhouses full of fancy cars, a taste for expensive wine and a sprawl of dependents – it was also now that he produced career-defining work.

Choices:

accumulated, inspired, early, irrelevant, closing, missing

My school in the city of London held a (**Answer::** charity) appeal. In the community, I was voted as the chairman. We (**Answer::** raised) 48,000 pounds and I won the first place in the end. During this period, I learnt a lot and realized the importance of (**Answer::** tenacity) and how to (**Answer::** rouse) other pupils' awareness.

Choices:

charity, tenacity, skill, rouse, raised, recognize, beg, money, earned

Housing agencies pay the utility (**Answer::** costs), generally because (**Answer::** units) in developments don't have individual meters. Some buildings have individual meters, and each family (**Answer::** pays) its own to the utility (**Answer::** company), so agencies will deduct the (**Answer::** amount) from your (**Answer::** rent).

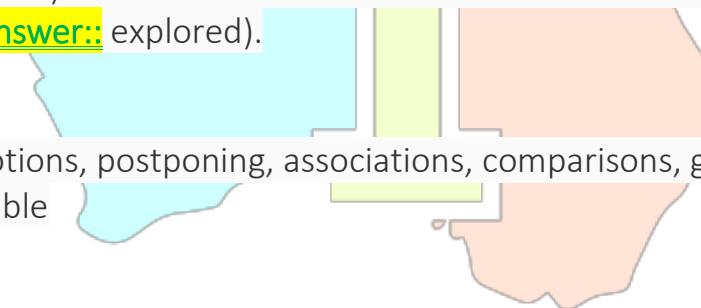
Choices:

costs, units, company, allowance, pays, amount, debt, collect, rent

Low fertility is a concern for many OECD countries as they face the prospect of population aging. This article makes (**Answer::** comparisons) between Australia and seven other OECD countries in fertility rates between 1970 and 2004. Changing age (**Answer::** patterns) of fertility are also compared and show that for most of the countries, women are (**Answer::** postponing) childbirth and having fewer babies. The (**Answer::** associations) of women's education levels and rates of employment with fertility are also (**Answer::** explored).

Choices:

sense, patterns, notions, postponing, associations, comparisons, gaps, accelerating, explored, comparable



The National Portrait Gallery's Conservation Department performs one of the Gallery's (**Answer::** core) functions, the long-term preservation of all Collection items, to make them (**Answer::** accessible) now and in future. The Collection (**Answer::** dates) from the 8th century to the present day, and (**Answer::** consists) of portraits in a variety of media, so the Gallery employs Conservators with (**Answer::** expertise) in a range of disciplines, including Framing, Painting, Paper, Sculpture and Photography.

Choices:

available, accessible, core, amazing, dates, rise, experience, expertise, contains, consists

How is plagiarism detected? It is usually easy for lecturers to (**Answer::** identify) plagiarism within students' work. The University also actively investigates plagiarism in students' assessed work through electronic detection software called Turnitin. This software (**Answer::** compares) students' work (**Answer::** against) text on the Internet, in journal articles and within previously (**Answer::** submitted) work (from LSBU and other institutions) and highlights any matches it (**Answer::** finds).

Choices:

Choices:

to, finds, realizes, against, compares, submitted, committed, identify

People who visit health professionals tend to be older than the (**Answer:** general) population, because illness increases with age. However, the (**Answer:** proportion) of the population who visited complementary health (**Answer:** therapists) was highest between the ages 25 and 64 years. The lower rates for people aged 65 years and over (**Answer:** contrasted) with the rate of visits to other health professionals which increased steadily with increasing age. The reasons for this difference might include lower levels of (**Answer:** acceptance) of complementary therapies by older people. Alternatively, older people may have different treatment priorities than do younger people because their health on average is worse while their incomes are generally lower.

Choices:

acceptance, public, proportion, independence, contrasted, majority, elder, health, therapists, doctors, controlled, general



Let us then suppose the mind to be, as we say, white paper, (**Answer:** void) of all characters, without any ideas: - How comes it to be furnished? Whence comes it by that vast store which the busy and (**Answer:** boundless) fancy of man has painted on it with an almost endless variety? Whence has it all the materials of reason and knowledge? To this I **Answer:**, in one word, from experience. In that, all our knowledge is (**Answer:** founded); and from that it ultimately (**Answer:** derives) itself.

Choices:

fancies, boundless, void, useless, sight, founded, derives, sponsored

A U S T R A L I A

Omniscience may be a foible of men, but it is not so of books. Knowledge, as Johnson said, is of two (**Answer:** kinds), you may know a thing yourself, and you may know where to find it. Now the amount which you may actually know yourself must, at its best, be limited, but what you may know of the (**Answer:** sources) of information may, with proper training, become almost boundless. And here come the (**Answer:** value) and use of reference books-the working of one book in connection with another-and applying your own (**Answer:** intelligence) to both. By this means we get as near to that omniscient volume which tells everything as ever we shall get, and although the single volume or work which tells everything does not exist, there is a vast number of reference books in existence, a knowledge and proper use of which is essential to every intelligent person. Necessary as I believe reference books to be, they can easily be made to be (**Answer:** contributory) to idleness, and too mechanical a use should

not be made of them.

Choices:

sides, output, property, expense, kinds, sources, value, intelligence, contributory, devoted

More than simply putting flowers in a (**Answer::** container), ikebana is a disciplined art form in which nature and humanity are brought together. Contrary to the idea of a particolored or multicolored (**Answer::** arrangement) of blossoms, ikebana often emphasizes other areas of the (**Answer::** plant), such as its stems and leaves, and puts emphasis on shape, line, and form. Though ikebana is an (**Answer::** expression) of creativity, certain rules govern its form.

Choices:

crevice, container, commitment, creature, arrangement, plant, expression, illusion

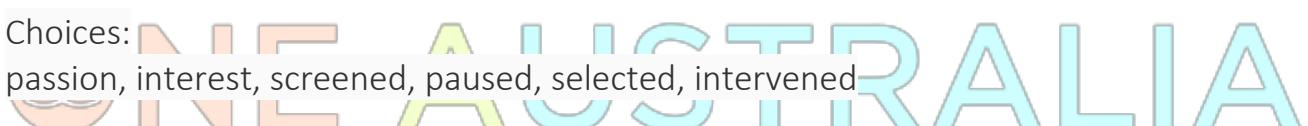


History is selective. What history books tell us about the past is not everything that happened, but what historians have (**Answer::** selected). They cannot put in everything: choices have to be made. Choices must similarly be made about which aspects of the past should be formally taught to the next generation in the shape of school history lessons. So, for example, when a national school curriculum for England and Wales was first discussed at the end of the 1980s, the history curriculum was the subject of considerable public and media (**Answer::** interest). Politicians argued about it; people wrote letters to the press about it; the Prime Minister of the time, Margaret Thatcher, (**Answer::** intervened) in the debate.



Choices:

passion, interest, screened, paused, selected, intervened



The allure of the book has always been negative and (**Answer::** positive), for the texts and pictures between the covers have helped many young readers to (**Answer::** discover) and grasp the world around them in a pleasurable and meaningful way. But the allure has also enabled authors and publishers to (**Answer::** prey) upon young readers' dispositions and desires and to (**Answer::** sell) them a menu that turns out to be junk food.

Choices:

prey, beneficial, sell, invent, positive, show, present, read, find, pray, discover

In the past, making structures quake-resistant meant firm yet (**Answer::** flexible) materials, such as steel and wood, that bend without breaking. Later,

people tried to lift a building off its foundation, and insert rubber and steel between the building and its foundation to (**Answer::** reduce) the impact of ground vibrations. The most (**Answer::** recent) designs give buildings brains as well as concrete and steel supports, called smart buildings, the structures respond like living organisms to an earthquake's vibrations. When ground shakes and the building tips forward, the computer would (**Answer::** force) the building to shift in the opposite direction. The new designs should offer even greater (**Answer::** security) to cities where earthquakes often take place.

Choices:

flexible, force, security, opposed, recent, reduce, expensive, resistant

Since the last papal reform, several (**Answer::** proposals) have been offered to make the Western calendar more useful or (**Answer::** regular). Very few reforms, such as the rather different decimal French Republican and Soviet calendars, had gained official (**Answer::** acceptance) but each was put out of use shortly after its introduction.

Choices:

uniform, impeachments, decisions, acceptance, regular, proposals

A new interdisciplinary centre for the study of the frontiers of the universe, from the tiniest subatomic particle to the largest chain of galaxies, has been formed at the University of Texas at Austin. The Texas Cosmology Center will be a way for the university's departments of Astronomy and Physics to (**Answer::** collaborate) on research that concerns them both. "This centre will bring the two departments together in an area where they (**Answer::** overlap) — in the physics of the very early universe," said Dr. Neal Evans, Astronomy Department chair. Astronomical observations have revealed the presence of dark matter and dark energy, (**Answer::** discoveries) that challenge our knowledge of fundamental physics. And today's leading theories in physics (**Answer::** involve) energies so high that no earthbound particle accelerator can test them. They need the universe as their (**Answer::** laboratory). Dr. Steven Weinberg, Nobel laureate and professor of physics at the university, called the advent of the centre "a very exciting development" for that department.

Choices:

laboratory, discoveries, collaborate, destination, overlap, polish, vicious, involve

## LISTENING

### SUMMARIZE SPOKEN TEXT

How people can recognize human faces? this is a hard but brilliant question. People should appreciate something. People can get visual information from faces and put a name on it. We can tell one's identity, age, work, health condition, politics, and friends. Recognizing faces is amazing, difficult and a clever thing. In conclusion, people can get a lot out of faces.

But you can see from the relatively crooked and narrow streets of the city of Rome as they look from above today. You can see that again, the city grew in a fairly ad hoc way, as I mentioned. It wasn't planned all at once. It just grew up over time, beginning in the eighth century B.C.. Now this is interesting because what we know about the Romans is when they were left to own devices and they could build the city from scratch, they didn't let it grow in an ad hoc way. They structure it in a very care, very methodical way. That was basically based on military strategy, military planning. The Romans they couldn't have conquered the world without obviously having a masterful military enterprise and everywhere they went on their various campaigns, their various military campaigns. They would build, build camps and those camps were always laid out in a very geometric plan along a grid, usually square or rectangular. So, when we begin to see the Romans building their ideal Roman city, then turn to that so call castrum or military camp design.

Well, it's like, why is Australian housing so expensive? Essentially, it's showing of how well the Australian economy has been doing over the last 15 years. We have had 15 years more or less of an uninterrupted economic growth during which average earning has been raised by close to 90 percent. While over the course of that period, the standard variable mortgage rate has roughly halved. That meant that the amount which a typical home buying household can afford to borrow under rules which aren't strictly applied as they used to be had more than doubled. Over the same period, rising immigration in falling average household size has meant that the number of households looking for accommodation has risen by about one and a half million. That's around 200 thousand more than the number of dwellings has increased by. So you have had a substantial increase in the purchasing power of households. No net increase in the supply of housing enhance all that addition purchasing power has gone into pushing up the price of housing.

English, as you have already read, is not a pure language. I don't think there really are any pure languages in the world. But English is definitely not a pure language. English, in fact, has borrowed from over 350 languages in its history. So it's a variety of many languages. Some people say it's like a dog, a mongrel dog, a dog that has been made up of many different dogs. The English language is like that. By looking at the history of the English language we learn about the history of the English people. The two things are closely connected. So, in fact, today we are not only learning about language but we are learning about history. The fact that English has borrowed words from over 350 languages has been viewed differently throughout history. So for example in Shakespeare's time people were very angry about words which were not, they thought, original English words - words which came from other languages, they didn't like them.

The stock market is where investors connect to buy and sell investments - most commonly, stocks, which are shares of ownership in a public company. When you need groceries, you go to the supermarket. When you're ready to buy stocks or mutual funds, you'll usually buy them online through the stock market, which anyone can access with a brokerage account or employee retirement plan. The term 'stock market' often refers to one of the major stock market indexes. However, there are some different uses of the stock market before and after. In the 18th century, manufacturing companies came into the market. Traditional companies used stocks to raise money, and input money into companies, while modern companies used stocks to output money. From 19th to 20th century, however, modern companies, such as Apple, Google and Microsoft are big enough to earn money, and use stocks differently. The stock market also inclined to put money into big companies.

The ocean provides habitats for 98% of fish, the source of protein feeding 4.8 billion of people. But human activities and climate change have left corals bleached in some oceans. There are many species of fish that are endangered. The government set up a network, called MPA marine campaign, in which countries and organizations have been collaborating with each other to protect the environment for 32 years. A marine protected area (MPA) is a zone designated and managed to protect marine habitats and species for the good of the ocean, society, economy and culture. Within MPAs, human activities such as fishing, vessel traffic and tourism are regulated. MPAs can come in the form of a fully protected marine reserve, a moderately protected marine park, or a no-take zone among others . But MPA is faced with lots of challenges, as some developing countries lack management and resources, and feel excluded.

A leader can define or clarify goals by issuing a memo or an executive order, an edict or a fatwa or a tweet, by passing a law, barking a command, or presenting an interesting idea in a meeting of colleagues. Leaders can mobilize people's energies in ways that range from subtle, quiet persuasion to the coercive threat or the use of deadly force. Sometimes a charismatic leader such as Martin Luther King Jr. can define goals and mobilize energies through rhetoric and the power of example.

We can think of leadership as a spectrum, in terms of both visibility and the power the leader wields. On one end of the spectrum, we have the most visible: authoritative leaders like the president of the United States or the prime minister of the United Kingdom, or a dictator such as Hitler or Qaddafi. At the opposite end of the spectrum is casual, low-key leadership found in countless situations every day around the world, leadership that can make a significant difference to the individuals whose lives are touched by it.

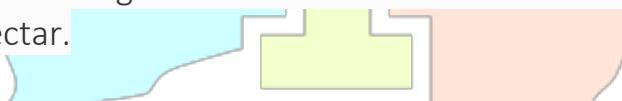
Over the centuries, the first kind—the out-in-front, authoritative leadership—has generally been exhibited by men. Some men in positions of great authority, including Nelson Mandela, have chosen a strategy of "leading from behind"; more often, however, top leaders have been quite visible in their exercise of power. Women (as well as some men) have provided casual, low-key leadership behind the scenes. But this pattern has been changing, as more women have taken up opportunities for visible, authoritative leadership.

Today, poems remain an important part of art and culture. We often talk about the knowledge about the literature in poem. Poetry is probably the oldest form of literature, and probably predates the origin of writing itself. The oldest written manuscripts we have are poems, mostly epic poems telling the stories of ancient mythology. The English language in poems and poetries is difficult to understand, often giving readers a feeling of frustration and making it hard for readers to enjoy poetry. This is because poems use literary expressions. Poetry was once written according to fairly strict rules of meter and rhyme, and each culture had its own rules. Some poems incorporate rhyme schemes, with two or more lines that end in like-sounding words. We should learn to simply enjoy it, and to know more about literature knowledge.

Social skills are vital in enabling an individual to have and maintain positive interactions with others. Many of these skills are crucial in making and sustaining friendships. Social interactions do not always run smoothly and an individual needs to be able to implement appropriate strategies, such as conflict resolution when difficulties in interactions arise. It is also important for individuals to have 'empathy' as it allows them to respond in an understanding and caring way to how others are feeling. Children are facing social difficulties with particular risks. Young people who do not have strong relationships with the adults in their family are even more at risk. In an experiment in a high school, which lasted for 8 to 12 weeks, the students were told to be a movie director and to choose their own story structure. The students worked with each other, which involved lots of different skills, and social interactivity. The movies they had made were actually cool. Then, the researchers tested the intervention effect, finding this can improve their self-regulation, and they found this can improve their self-regulation and critical thinking skills.



Honeybees do a waggle dance to direct other bees to sources of nectar, but dancing bees like this one can be halted by a headbutt from another bee. Now, researchers have found that this headbutt is actually a warning signal. A feeding station was set up in the lab to mimic a source of nectar. Then foraging bees were introduced to dangers at the station, such as competition from rival colonies. When foragers returned to the hive, they stopped bees dancing. Scientists think the behavior warns dancers of a dangerous source of nectar.



I suppose you wouldn't expect perhaps to find a mathematician in a museum of historical objects, but actually, the objects that I've been drawn to in this museum have quite a lot of mathematical significance. These Neolithic stones, discovered in Scotland, dating back 5,000 years, are probably the first examples of humans exploring the concept of symmetry. And that's what I do as a practicing mathematician. I spend my life trying to understand what symmetries are possible, in nature and in mathematics and abstractly. And here I've got a connection, going back 5,000 years, to people who are already trying to understand how can I arrange patches on the side of these stone balls in a symmetrical manner? One of the intriguing things about these stones is that we don't actually know what they're for. They might have been for divination - trying to predict the future. They might have been part of a game. They look very much like dice, but we don't really think there is any game associated with them. Maybe they were just for chucking around, they're very nice in the hand when you hold them. Or maybe they were symbols of power in the clan. I suppose that's why I like them because we don't really know what they are.

There's sugar in a lot of foods where you don't expect it . Of course there's lots of sugar in donuts or ice cream, or pastries, or other things that are sweet; candy of course, but there are other places where you see it and you don't necessarily expect it. As an example: peanut butter. Here's a list of ingredients from skippy peanut butter and you see that sugar is the second most common ingredient. You may know from reading food labels that these ingredients in any food label are listed in order of how much there is in the food itself, so sugar comes right after peanuts. Here's another example, beef stew, you wouldn't necessarily expect to find sugar in beef stew but it's there. Now it's down the list of ingredients, it's actually toward the end, but if you look at the marketing of this and look at the can it says, there's fresh potatoes and carrots, but actually there's more sugar in this than there is carrot.

Because of the economic model, the newspaper industry has been shrinking drastically from the last 50 years of the 20th century in some states of America. Also as the economic model changed, newspapers increased the cash flow. However, there are still some newspaper industries losing money because of a decrease in advertising and buyers. They can't find buyers. Only a few newspapers have positive cash flow. Over 100 newspapers with cash flow in red had no money to publish the newspaper everyday. Some of them published three days per week. Small-sized newspapers only published once a week and had to go online. Some newspapers even disappeared. The staff working in newspaper industry decreased by 30-60% or more.

We are from an organization called Nonhuman Rights Project, and we fight for legal rights of non-human animals. Drawing a line in order to enslave an autonomous and self-determining being is a violation of equality. We then searched through 80 jurisdictions. We chose the state of New York. Then we decided upon who our plaintiffs are going to be. We decided upon chimpanzees. We know the extraordinary cognitive capabilities that they have, and they also resemble the kind that human beings have. And so we chose chimpanzees, and we began to then canvass the world to find the experts in chimpanzee cognition. So now we needed to find our chimpanzee. Our chimpanzee, first we found two of them in the state of New York. Both of them would die before we could even get our suits filed. Then we found Tommy. Tommy is a chimpanzee. Tommy was a chimpanzee. We found him in that cage. We found him in a small room that was filled with cages in a larger warehouse structure on a used trailer lot in central New York. And so on the last week of December 2013, the Nonhuman Rights Project filed three suits all across the state of New York using the same common law argument. The court didn't approve our appeal because they think chimpanzees are not humans even though they have cognitive skills. We proved to the court that chimpanzees also have cognitive capabilities, and they were not hearing us.

An essay is a chance to identify your read and learned. As a writer, you first need to collect many materials, then write an essay in four or five paragraphs, structures and quotes. If someone is searching for a book or article to read, he or she will decide from the very beginning whether this work is worth attention. If you want to wow your teacher, polish the introduction, especially the first couple of sentences. Add an essay hook-something interesting, funny, shocking, or intriguing to win the reader's attention. Build an emotional connection with your reader right from the start.

A hook in the essay is a catchy sentence or paragraph in the impressive introduction which serves as an attention element and an important part. An excellent hook sentence is engaging and interesting; it is a perfect method to start an argumentative or persuasive essay. The hook for your essay often appears in the first sentence. The opening paragraph includes a thesis sentence. Some popular hook choices can include using an interesting quote, a little-known fact, famous last words, or a statistic.

In recent decades journalism has been faced with challenges. So, what has happened to journalism? The rise of the Internet has a great impact on journalism, specifically the ways it is produced and consumed. Because the Internet democratizes people, ordinary people can get involved in journalism. It takes steps for people to feel enthusiastic about the changes in journalism. The Internet not only speeds up spread of news, but also helps people gain information in various ways. Thus, journalism now becomes a collaborative process in an imaginary way, which is unexpected. For example, even small pieces of ordinary video can be of a new type of journalism.

The glass ceiling is an idea familiar to many. It refers to the invisible barrier that seems to exist in many fields and which prevents women from achieving senior positions. Less well-known, but arguably a more pernicious problem, is the 'glass cliff'. Originally recognised by academics Michelle Ryan and Alex Haslam back in 2005, this is the phenomenon of women making it to the boardroom but finding themselves disproportionately represented in untenable leadership positions. Ryan and Haslam presented evidence that women were indeed starting to secure seats at boardroom tables. But the problem was that their positions were inherently unstable. These women would then find themselves in an unsustainable leadership position from which they would be ousted with evidence of apparent failure. The title of their paper sums it up: women are over-represented in precarious leadership positions. Subsequent research in an array of environments has demonstrated that this is not an isolated issue, nor is it unique to certain industries or geographical locations. It reveals that women in top leadership positions seem to be routinely handed inherently unsolvable problems.

Fish are important because they help maintain the health of marine ecosystems and provide support to other marine life. They are an important part of the food web because they are predators to smaller organisms and prey to marine mammals and seabirds globally. They also support humans. About 80 million tons of fish are harvested annually. This volume is enough to feed all Filipinos with their annual fish consumption for 20 years. And they're currently about 60 million people working in the fishing industry globally. But on a global scale, 33 percent of fisheries are overfished, meaning too many fish are being harvested. This may cause fish populations to become depleted and not able to recover. 67 percent are fully exploited, meaning additional fishing effort could lead to the fisheries collapse. Only 10 percent have room to grow, with just 10 percent of the fisheries having room to grow. We might experience a global fishing crisis.

David Olivia Garcia is a co-host of New Mexico in Focus and is also the managing editor for the New Mexico Independent, which is an online news website, he says that the Internet has some great benefits for journalism. The Internet is this new, amazing medium. Not so new: it's been around quite some time now. But it's maturing as, among other things, a place for journalism. In a sense, the Internet allows you to tell stories better than in a newspaper or on television. For this reason, you can do it all online: you can have the written word, you can have still photographs, you can have video. You can link and kind of connect to the other journalism that has been done on a given topic. So it's not like you're in a vacuum. The Internet has had a negative impact on these papers. However, John Fleck, who is a columnist for the Albuquerque Journal and also has his own blog, says that he doesn't think that's entirely the case. It really makes me more efficient as a journalist in terms of information gathering, confirmation, helping me get the background necessary to write a story. So it's really good for that.



In *The Origin of Species*, Darwin provided abundant evidence that life on Earth has evolved over time, and he proposed natural selection as the primary mechanism for that change. He observed that individuals differ in their inherited traits and that selection acts on such differences, leading to evolutionary change. Although Darwin realized that variation in heritable traits is a prerequisite for evolution, he did not know precisely how organisms pass heritable traits to their offspring. Just a few years after Darwin published *The Origin of Species*, Gregor Mendel wrote a groundbreaking paper on inheritance in pea plants. In that paper, Mendel proposed a model of inheritance in which organisms transmit discrete heritable units (now called genes) to their offspring. Although Darwin did not know about genes, Mendel's paper set the stage for understanding the genetic differences on which evolution is based.

I want today to talk about the industrial revolution from a variety of, of aspects. I put everything on the board, I put on our website, so don't worry about copying it down. And it's all pretty, pretty obvious doing the industrial revolution across this century is no easy task. But we will do it and do the reading. Let me just say that to the way people look at what used to be called the industrial revolution and I guess some people still call it that has changed dramatically through the 1950s and into the 1960s, the idea of the industrial revolution was that it was the work of some genius inventors who created mechanism machines in the used primarily in the textile industry, but also in mining that eliminated blocks to assembly line production. And then everybody was crowded into factories and the new brave world opened up. In fact, one of the most interesting books and so great classics is still in print was written by an economic historian at Harvard, who's still around called David Landis, a good book called the unbound Prometheus, which was basically that and some of the inventions that I briefly describe in your reading, the spinning Jenny, et cetera. I refer to that. And then that kind of analysis led one to concentrate on England where the industrial revolution began and to view and to view industrialization as being a situation of, of so winners and losers are not going as fast. In your reading, I give you some pretty obvious examples of reasons for the industrial revolution first coming to England location of resources, particularly coal a country, which is nowhere that's 75% more than 75 miles away from the sea, precocious canals and roads, banking system, fluid fluidity between classes and very large, an increasingly larger proletariat, agricultural revolution, etcetera. And with that kind of analysis, those places that didn't industrial as fast, industrializes fast, for example, France one thought that they were quote unquote, retarded a word that was used, unfortunately, at that time. And then one tried to see why not. Now that analysis has been really rejected greatly over the past years because industrial revolution is measured by more than simply large factories with industrial workers and the number of machines and the more and this is the point of the beginning of this, the more that we look at the industrial revolution, the more that we see that the industrial revolution was first and foremost an intensification of forms, of production, of kinds of production that were already there. Thus we spend more time looking at the intensification of artisanal production, craft production of domestic industry, which we've already mentioned that is people, mostly women, but also men and children too working in the countryside.

#### FILL IN THE BLANKS

So, what is quantum mechanics? Even though it was discovered by ([Answer::](#) physicists) , it's not a physical theory in the same sense as electro ([Answer::](#) magnetism) or general relativity. In the usual " ([Answer::](#) hierarchy) of sciences" -- with biology at the top, then chemistry, then physics, then maths -- quantum mechanics sits at a ([Answer::](#) level) between maths and physics that I don't know a good name for. Basically, quantum mechanics is the ([Answer::](#) operating) system that

other physical theories run on as application software (with the ([Answer::](#) exception) of general relativity, which hasn't yet been successfully ported to this particular OS).

I think that's not going to be such a ([Answer::](#) viable) option for Cerberus, but that may be the way that they're gonna approach it. Private ([Answer::](#) equity) of course is supposed to have the advantage of taking management out of the spotlight of quarterly profits and industry ([Answer::](#) analysts), and prying shareholder eyes, and that, ([Answer::](#) hypothetically), gives them a chance to take slower, more ([Answer::](#) patient) routes to doing something to turn a company around. I would hope, and I have some, I guess, ([Answer::](#) optimism) that some of the Cerberus team will have some creativity and imagination.



Some years ago, Bjorn Lomborg, a young Danish statistician, published a book called The Skeptical Environmentalist. It became a ([Answer::](#) bestseller) and generated a lot of heat. Lomborg was attacked, abused and ([Answer::](#) accused) of all manner of things; not because he denied the fact of global warming - in fact he ([Answer::](#) affirmed) it - but because, on his analysis, the devil and, he says, a lot of ([Answer::](#) deviousness) was contained in the details presented concerning the size of the problem and what were the most ([Answer::](#) responsible) steps to take in response to global warming.



Two decades ago, Kashmiri houseboat-owners rubbed their hands every spring at the prospect of the annual influx of ([Answer::](#) tourists). From May to October, the hyacinth-choked waters of Dal Lake saw flotillas of vividly painted Shikaras carrying Indian families, boho westerners, young travelers and wide-eyed Japanese. Carpet-sellers ([Answer::](#) honed) their skills, as did purveyors of anything remotely embroidered while the house boats ([Answer::](#) initiated) by the British Raj provided unusual accommodation. Any foreigners venturing there risked their ([Answer::](#) lives), proved in 1995 when five young Europeans were kidnapped and murdered.

A

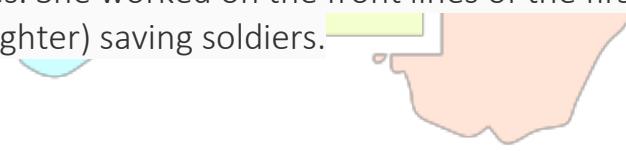
So between 4,000 and 3,000 BC the Mesopotamian Samarian cultures do not ([Answer::](#) practice) any kind of burial. And then, about 3,000, in the early Dynastic Period, these burials start to reappear, and they reappear with a certain amount of ([Answer::](#) conspicuous) consumption, and this is the context for the royal burials at Ur. OK, so, the royal ([Answer::](#) cemetery) consists of quite a number of pits, so these are the ([Answer::](#) excavation) workers who are coming down into the pits. So you get

some sense of how really deep and how really difficult it was to construct these (Answer:: chambers).

Belief is the human capacity to imagine, to be creative, to hope and dream, to infuse the world with meanings, and to cast our aspirations far and wide. Limited neither by personal experience nor (Answer:: material) reality. Believing is a (Answer:: commitment), an investment, a devotion to possibilities. Beliefs (Answer:: permeate) neurobiologies, bodies and ecologies acting as dynamic agents in evolutionary processes. The human capacity for belief, the (Answer:: specifics) of belief, and I, and our diverse belief systems shape, structure and alter our daily lives, our societies, and the world around us.



My hero is Marie Curie. She was a Polish physicist and chemist working in France, and she did (Answer:: conduct) pioneering research on radioactivity. She was also the first woman who won a Nobel prize. Marie Curie is my hero because she showed a lot of (Answer:: determination) in following her career path and her (Answer:: passions). She also showed a lot of (Answer:: patience) in working for years to receive results from her experiments. And Marie Curie, she designed and built the first (Answer:: mobile) X-Ray machines. She worked on the front lines of the first World War along with her (Answer:: daughter) saving soldiers.



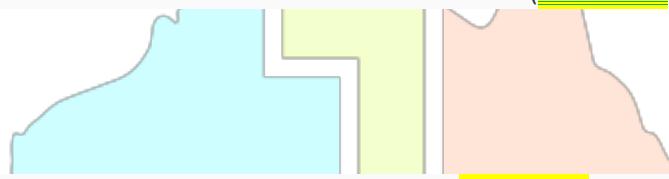
So two decades later, what's changed? It's now widely recognized that just 20 percent of health (Answer:: outcomes) are tied to medical care, whereas up to 70 percent are tied to healthy behaviors and what's called the social (Answer:: determinants) of health — basically, everything that happens to us for that vast (Answer:: majority) of time when we're not in the doctor's office or the hospital. Health care (Answer:: executives) now routinely remind us that our zip code matters more than our genetic code. And one health care publication even recently had the (Answer:: audacity) to describe the social determinants of health as "the feel-good buzzword of the year".

The earlier chocolate was quite unpalatable. They used to add things to it to make it more palatable, so for the early chocolate, they didn't know how to extract all the (Answer:: cocoa) fat from it, so it was, or could be quite (Answer:: greasy) and if you made it as a drink you'd have this sort of scum on the top. So they used to try and add things to it, like (Answer:: starch) and things, to make it a more palatable product. So there were a lot of (Answer:: scandals) around the kind of things they were adding to chocolate in the nineteenth century. So by the sort of 1870s, 1880s, there



are people like Cadbury's saying, 'Our chocolate is absolutely pure'. We have this new process, the Van Houten process which now extracts all this (**Answer::** horrible) fat that we can use to make eating chocolate. Now we have a pure product.

One seminal difference in policy remains; the (**Answer::** coalition) has not matched what is Labor's most important innovation promise. That is to bring together responsibilities for innovation, industry, science and research under one single federal minister. Innovation responsibilities (**Answer::** currently) lie within the powerful Department of Education and Science, and while there is a (**Answer::** separate) industry department, it has little influence within Cabinet. This has (**Answer::** hampered) policy development and given Australia's innovation policies a distinct science and research (**Answer::** bias). It is the scientists rather than the engineers who call the tune in innovation policy in Canberra, so it's no surprise our policies are all about boosting government funded research and later (**Answer::** commercializing) their results.



This year marks the 400th anniversary of the first (**Answer::** permanent) English settlement in America. A group of Englishmen, including John Smith, who (**Answer::** later) was befriended by Pocahontas, built a (**Answer::** fort) at Jamestown, Virginia in 1607, 13 years before the Pilgrims crossed the (**Answer::** Atlantic) on the Mayflower. And for the past 14 years, Bill Kelso has been working to (**Answer::** uncover) the secrets of Jamestown.

As a (**Answer::** consumer), you're probably consuming imports. If we have a trade war and we start (**Answer::** slapping) tariffs on all of those (**Answer::** imports), the bill is (**Answer::**) going to be higher. If the world (**Answer::** relies) so much on trade, what is a trade war and why do countries get (**Answer::** caught) up in them in the first place?

Now that story's been scotched, as only part of contingency planning. But it was a symptom of the dramatic turn of events in South Australia, and it flushed out other remarks from water (**Answer::** academics) and people like Tim Flannery, indicating that things were really much worse than had been (**Answer::** foreshadowed), even earlier this year. So is Adelaide, let alone some whole (**Answer::** regions) of South Australia, in serious bother? Considering that the vast amount of its drinking water comes from the (**Answer::** beleaguered) Murray, something many of us outside the State may not have quite realized. Is their (**Answer::** predicament) something we have to face up to as a

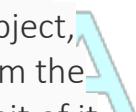
nation?

Those of you who've never heard the term neo-Latin, may be forgiven for thinking it's a new South American dance craze. If you're (**Answer::** puzzled) when I tell you it has something to do with the language of Romans, take heart, over the years many classes who have (**Answer::** confessed) they are not really sure what it is either. Some have (**Answer::** assumed) that they are so-called 'Late-Latin', written at the end of the Roman Empire. Others have supposed it must have something to do with the middle ages. Or perhaps it's that (**Answer::** pseudo-Latin) which my five and seven-year-old boys seem to have (**Answer::** gleaned) from the Harry Potter books, useful for spells and curses that they zip one another with makeshift paper ash ones. No, in fact, neo-Latin is more or less the same as the Latin that was written in the (**Answer::** ancient) world, classical Latin. So, what's so new about it?



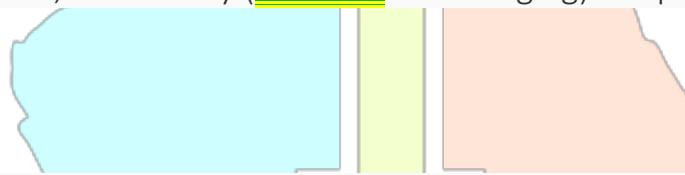
Last year, astronomers observed two neutron stars collide. A crash (**Answer::** transmitted) in gravitational waves to detectors here on Earth. Represented in sound, you can hear a small upwards sweep in frequency, in the data, if you listen closely. Several seconds later, the first waves of electromagnetic radiation arrived here on Earth - the first time a collision has been detected by both light and gravitational waves. And it's in studying the electromagnetic (**Answer::** echoes) of the collision that astrophysicists have gotten a far better (**Answer::** glimpse) of what really happened after those binary neutron stars merged, 130 million light years away. "Oh yeah, absolutely, so it gives us an understanding of (**Answer::** basically) all the nitty-gritty of what's going on after the merger takes place." Kunal Mooley, an astrophysicist at Caltech. First, he says, the stars collided, creating a massive, black-hole-like object, which started sucking up the cloud of neutron-rich cosmic debris left over from the crash. But its (**Answer::** appetite) was limited. "It cannot eat all of it, so some bit of it basically escapes." Those escaping leftovers spewed outward into space, as a powerful jet. But along the way, Mooley says, the jet appears to have interacted with that cloud of neutron-rich material, blowing up a sort of cocoon within the debris (**Answer::** floating) around the collision. Until finally, the jet burst out and slammed into interstellar space releasing yet more radiation we could detect here on Earth.

Bruch and her colleague Mark Newman studied who swapped messages with whom on a popular online dating platform in the month of January 2014. They (**Answer::** categorized) users by desirability using PageRank, one of the algorithms behind search technology. (**Answer::** Essentially) if you receive a dozen messages from desirable users, you must be more desirable than someone who receives the same number of

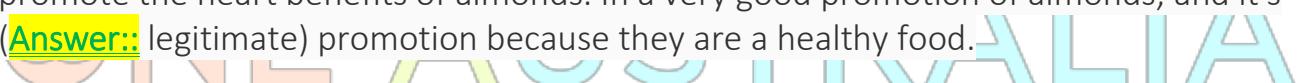


messages from average users. Then they asked: How far "out of their league" do online daters tend to go when pursuing a partner? "I think people are optimistic (**Answer::** realists) . In other words, they found that both men and women tended to pursue mates just 25 percent more desirable than themselves. "So they're being optimistic, but they're also taking into account their own relative position within this overall desirability hierarchy." And the study did have a few more (**Answer::** lessons) for people on the market: "I think one of the take-home messages from this study is that women could probably afford to be more aspirational in their (**Answer::** mate) pursuit."

It is about a hundred years since that great Canadian-born physician Sir William Osler, Regius Professor of Medicine in Oxford, (**Answer::** complained) about the increasing influence of the pharmaceutical industry on the medical (**Answer::** profession) . He would be turning in his grave at the way the industry now dominates doctors' (**Answer::** prescribing) habits. It does this not only by direct and indirect pressure on the doctors themselves, but also by (**Answer::** encouraging) the public to ask for scripts.



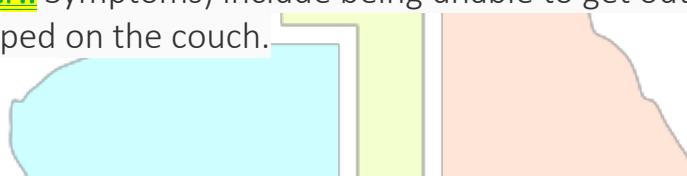
And one particular crop, almond in the US and now in Australia, is (**Answer::** transforming) the world of beekeeping and of bees. What has happened is that something serendipitous came along that people found out, that doctors found out that almonds are good for you, a (**Answer::** confection) but it's good for you. The Almond Board got a very aggressive promotion going on for almonds. They actually, I just heard recently, send out sales reps to (**Answer::** cardiologists) at hospitals to promote the heart benefits of almonds. In a very good promotion of almonds, and it's (**Answer::** legitimate) promotion because they are a healthy food.



Well, the simple explanation might be that yesterday's (**Answer::** sudden) drop in share prices pretty much across the board has created what market analysts like to call a buying opportunity. It tends to bring out investors to pick through the ruins, looking for (**Answer::** bargains) . Decision by investors that sellers got a little carried away with things so the buyers have (**Answer::** lifted) all the major indexes today. The Dow, the NASDAQ, the S&P 500 were all up around half a percent in early trading today, and that wasn't a big surprise. The sell-off continued somewhat (**Answer::** overseas) European markets remain fairly weak, along with many of the Asian markets. But you'll remember that all this started with a big (**Answer::** plunge) of around 9 percent on the stock market in Shanghai. Well, Chinese rebounded by around 4 percent.

My current research at the moment is really quite broad. I work at the interface between the Arts and Humanities, particularly (Answer:: archeology) , but trying to find questions which are difficult to Answer: unless you start integrating computing and (Answer:: visualization) . So really I work in this boundary between trying to understand cultural questions about the past, but those sorts of questions that you can't address unless you start reconstructing, start modeling and visualizing past (Answer:: landscape) objects and movement of people.

You've heard about SARS, AIDS and bird flu. Now (Answer:: researchers) from Australia claim we're about to be hit by a new epidemic: Motivational Deficiency Disorder. According to the British Medical Journal, one in (Answer:: five) people are said to suffer from Motivational Deficiency Disorder, or Moded, and most don't even know they have it. (Answer:: Symptoms) include being unable to get out of bed in the morning, being trapped on the couch.

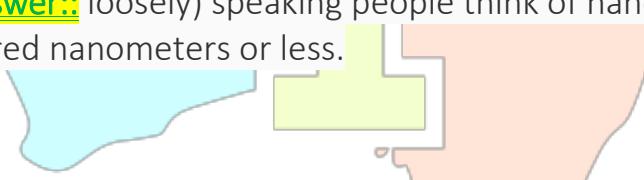


These two paintings, both called “Sunflowers,” are generally accepted as the finest of several (Answer:: depictions) of the thick-stemmed, nodding blooms that Van Gogh made in 1888 and 1889 during his time in Arles. The first is now in the collection of the National Gallery in London, and the second is in the Van Gogh Museum in Amsterdam. Van Gogh referred to this work as a (Answer:: repetition) of the London painting. But art historians and curators have long been (Answer:: curious) to know how different this “repetition” is from the first. Should it be considered a copy, an independent artwork or something in between? An (Answer:: extensive) research project conducted over the past three years by conservation experts at both the National Gallery and the Van Gogh Museum has concluded that the second painting was “not intended as an exact copy of the (Answer:: original) ,” said Ella Hendriks, a professor of conservation and restoration at the University of Amsterdam, who was the lead researcher on the project.

Rebuilding carbon-rich agriculture soils is the only real productive, (Answer:: permanent) solution to taking excess carbon dioxide from the atmosphere. She's (Answer:: frustrated) that scientists and politicians don't see the same opportunities she sees. This year Australia will (Answer:: emit) just over 600 million tonnes of carbon. We can sequester 685 million tonnes of carbon by (Answer:: increasing) soil carbon by half a percent on only 2% of the farms. If we increased it on all of the farms, we would sequester the (Answer:: whole) world's emissions of carbon.

Why do we need more entrepreneurs right now? The entrepreneurs who create and run our businesses, who play by the rules, are in fact critical to our (**Answer::** success) as a nation. We need them (**Answer::** especially) today. Business, not government, will end this (**Answer::** recession). Government must help by creating fair rules, (**Answer::** sound) monetary policy, and by protecting our fellow citizens in periods when they are jobless. We have to make way for the new entrepreneurial firms that will push us to (**Answer::** frontiers) of innovation.

What is nanotechnology? Well, a report that was put together by a (**Answer::** combination) of the Royal Society and the Royal Academy of Engineering that came out last summer, (**Answer::** identifies) two topics. Nano-science is the study of (**Answer::** phenomena) and the manipulation of materials at atomic, molecular and (**Answer::** macromolecular) scales, where properties differ significantly from those as a larger scale. Nanotechnologies are the design, characterization, production and application of (**Answer::** structures), devices and systems by controlling shape and size at the nanometer scale. So I'll talk a little bit more in a moment about what a nanometer is, but (**Answer::** loosely) speaking people think of nanotechnologies as being a sort of a hundred nanometers or less.



Financial markets swung wildly yesterday in frenzied trading market by further selling of (**Answer::** equities) and (**Answer::** fears) about an unraveling of the global carry trade. At the same time trading in the European credit markets in London was exceptionally (**Answer::** heavy) for a third consecutive day. London trading was marked by particularly wild (**Answer::** swings) in the prices of credit derivatives, used to ensure investors against (**Answer::** corporate) defaults.

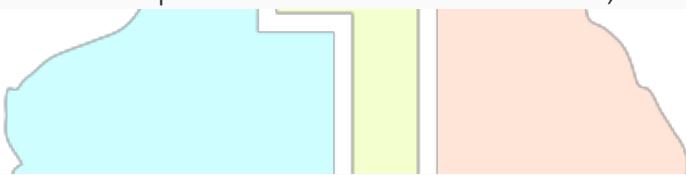


For many years the favorite horror story about (**Answer::** abrupt) climate change was that a shift in ocean currents could (**Answer::** radically) cool Europe's climate. These currents, called the overturning (**Answer::** circulation) bring warm water and warm temperatures north from the equator to Europe. Susan Loosier, an (**Answer::** oceanographer) at Duke University, says scientists have long worried that this ocean circulation could be disrupted.

Along the way, we have built (**Answer::** unashamedly) beautiful buildings, two of which have won and been runner-up in the prestigious United Nations World

(**Answer:**) Habitat) Award: the first time an Australian building has received that international honor. We rely on older (**Answer:**) concepts of Australian architecture that are heavily influenced by the bush. All residents have private verandas which allow them to (**Answer:**) socialize outdoors and also creates some "defensible space" between their bedrooms and public areas. We use a lot of (**Answer:**) natural) or soft materials and build beautiful landscaped gardens.

Laurence Stephen Lowry RBS RA was an English artist. Many of his drawings and paintings depict Pend Lebury, Lancashire, where he lived and worked for more than 40 years, and also Salford and its surrounding areas. Lowry is famous for painting scenes of life in the (**Answer:**) industrial) districts of North West England in the mid-20th century. He developed a (**Answer:**) distinctive) style of painting and is best known for his (**Answer:**) city) landscapes peopled with human figures often referred to as (**Answer:**) matchstick) man. He painted mysterious unpopulated landscapes, brooding (**Answer:**) portraits) and the unpublished "marionette" works, which were only found after his death.



The effect of the first difference is, on the one hand, to refine and (**Answer:**) enlarge) the public views, by passing them through the (**Answer:**) medium) of a chosen body of citizens, whose (**Answer:**) wisdom) may best discern the true interests of their country, and whose (**Answer:**) patriotism) and love of justice will be least likely to sacrifice it to temporary or (**Answer:**) partial) considerations. Under such a regulation, it may well happen that the public voice pronounced by the representatives of the people, will be more consonant to the public good than if pronounced by the people themselves, convened for the purpose."



A majority of U.S. high school students say they get (**Answer:**) bored) in class every day, and more than one out of (**Answer:**) five) has considered dropping out, according to a survey released on Wednesday. The survey of 81,000 students in (**Answer:**) twenty-six) states found two-thirds of high school students complain of boredom, usually because the subject matter was (**Answer:**) irrelevant) or their teachers didn't seem to care about them.

Well in 2004 we integrated ticketing in South East Queensland, so we have (**Answer:**) introduced) a paper ticket that allowed you to travel across all the three (**Answer:**) modes) in South East Queensland, so bus, train and (**Answer:**) ferry) and the second stage of integrated ticketing is the introduction of a Smart Card, and the Smart Card will enable people to (**Answer:**) store) value so to put value on the card, and then to

use the card for (**Answer::** traveling) around the system.

The growth of the modern (**Answer::** state) brought with it the development of mass political parties and the emergence of professional politicians. A man whose occupation is the (**Answer::** struggle) for political power may go about it in two ways. First, a person who relies on their political activities to supply their main (**Answer::** source) of income is said to live off politics, while a person who (**Answer::** engages) in full-time political activities, but who doesn't receive an income from it, is said to live for politics. Now, a political system in which (**Answer::** recruitment) to positions of power is filled by those who live for politics is necessarily drawn from a property-owning elite, who are not usually entrepreneurs. However, this is not to imply that such politicians will necessarily pursue policies which are wholly (**Answer::** biased) towards the interests of the class they (**Answer::** originate) from.



# **LISTENING MODULE**



# LISTENING

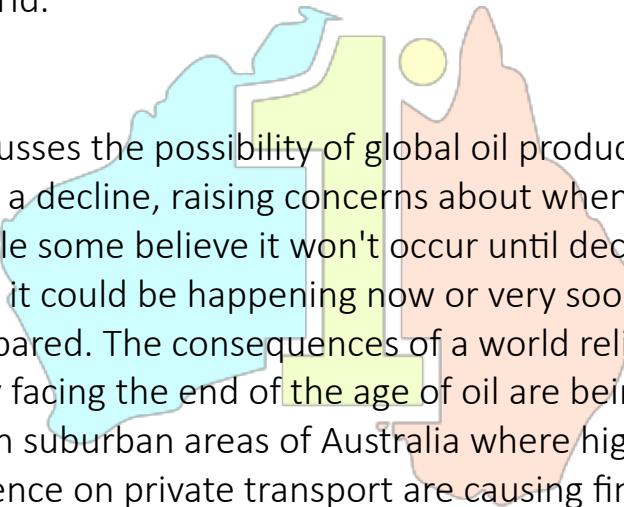


## SUMMARIZE SPOKEN TEXT

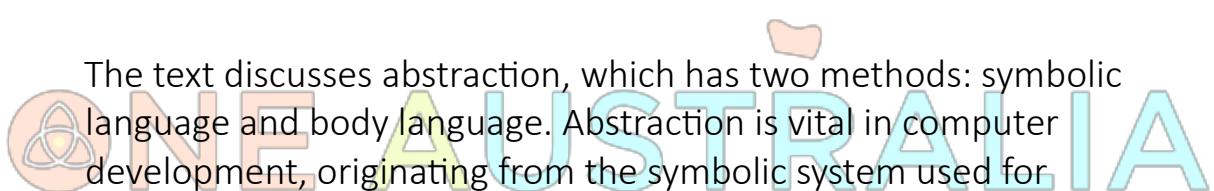


ONE AUSTRALIA

Citizenship education is vital in schools, yet only 1/5 offer proper courses focusing on skills and attitudes. The reluctance to teach in the past has improved, but challenges remain due to lack of commitment and teachers. Criticism suggests schools need to reflect democratic practices for effective citizenship education. The curriculum covers civics, democracy, and government structures. Sadly, many schools neglect this subject, dedicating less time to it. Given more attention, citizenship education could enhance students' skills, attitudes, and leadership abilities to face the changing world.



The text discusses the possibility of global oil production peaking and entering a decline, raising concerns about when this might happen. While some believe it won't occur until decades later, others worry it could be happening now or very soon, catching the world unprepared. The consequences of a world reliant on cheap liquid energy facing the end of the age of oil are being felt, particularly in suburban areas of Australia where high mortgages and dependence on private transport are causing financial strain.

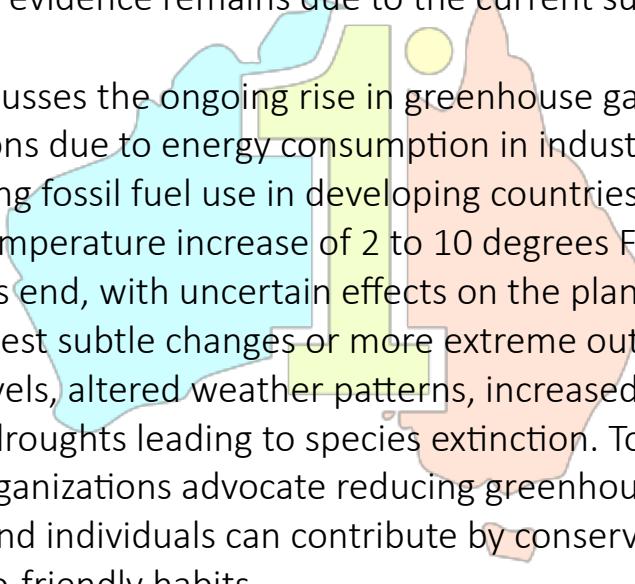


The text discusses abstraction, which has two methods: symbolic language and body language. Abstraction is vital in computer development, originating from the symbolic system used for communication among people. Symbolic language expanded communication to a broader audience. Additionally, body language played a role, leading to the development of sign language, commonly known as hand words.

UK research on 7000 young students explores their involvement in communities, character education, and influential factors. It examines the impact of parents, friends, schools, and siblings on their development. Successful schools rely on community support, becoming crucial for social health. Families play a significant role as the primary unit for children's learning and development, with good

parenting requiring support, care, love, guidance, and protection. The research has garnered interest from national policymakers.

Around 23,000 years ago, Europe experienced a harsh glacial period, with temperatures dropping, rain levels decreasing, and a massive ice sheet advancing to cover much of northern Europe for thousands of years. While many animal and plant species sought refuge in warmer southern peninsulas, evidence suggests our ancestors retreated to Franco Cantabria, an area spanning southwest France and northeastern Spain. The growing ice sheet caused sea levels to drop up to 120 meters lower than today, possibly exposing shallow sea areas where humans might have lived, but no evidence remains due to the current submersion.



The text discusses the ongoing rise in greenhouse gas concentrations due to energy consumption in industrialized nations and increasing fossil fuel use in developing countries. Predictions indicate a temperature increase of 2 to 10 degrees Fahrenheit by the century's end, with uncertain effects on the planet. Climate models suggest subtle changes or more extreme outcomes like rising sea levels, altered weather patterns, increased hurricanes, and severe droughts leading to species extinction. To combat global warming, organizations advocate reducing greenhouse gas emissions, and individuals can contribute by conserving energy and adopting eco-friendly habits.



In liberal western democracies, it's often assumed that citizens are well-informed, but many societies go against this idea. Some governments, even elected ones, deny certain events and promote false narratives. They use various tactics to divert attention and cover up their mistakes. Lack of access to information still plagues many parts of the world. Being informed is essential for citizens, especially in such contexts.

Throughout history, hospital design and patient recovery have been subjects of research. As far back as 1855, Florence Nightingale recognized the importance of color and form in aiding patient

recovery. Fresh air, sunlight, and views of nature's beauty have been found to positively impact patients, helping them rest and alleviate stress. Additionally, social interactions, such as visits from loved ones, also contribute to faster recovery. It's widely acknowledged that a well-designed hospital environment significantly correlates with higher recovery rates, as supported by 90% of patients and nurses.

Many large corporations, including Cisco and General Electric, use ranking systems to motivate employees and improve productivity. The top performers are rewarded while the bottom ones face dismissal, causing fear and stress among all employees. However, this approach is flawed as competition induces fear and hinders inspiration and creativity, making even simple tasks challenging. It's crucial for companies to reconsider such practices to foster a healthier work environment.

Stress comes in two types. The first is beneficial stress, like exam pressure, which can motivate improvement. The second, caused by poor time management, is the one we usually worry about. Effective time management is crucial to handle heavy workloads and reduce long-term stress. It gives direction, enhances productivity, and allows for a balanced life. Utilizing a calendar and finding a play-work balance can help alleviate stress. Remember, not all stress is bad; it's about how you interpret and manage it.



The Nonhuman Rights Project fights for legal rights of non-human animals, particularly chimpanzees in this case. They chose the state of New York to file suits on behalf of chimpanzees, who possess extraordinary cognitive capabilities similar to humans. They found Tommy, a chimpanzee living in poor conditions, and filed three suits using a common law argument. However, the court rejected the appeal, stating that chimpanzees are not humans, despite evidence of their cognitive abilities. The fight for their rights continues.

The text discusses the concept of red oceans and blue oceans in business strategy. Red oceans refer to existing industries with intense competition, while blue oceans represent new, untapped markets where demand is created. Blue Ocean strategy involves simultaneously pursuing value and cost to create and capture these new markets. Companies that successfully create blue oceans can enjoy long-lasting benefits as they are difficult for rivals to imitate. To achieve this, companies should chart a strategic course beyond traditional industry boundaries to create new market space.

Recycling is a concept of converting old products into something usable again, conserving natural resources, and reducing pollution. However, the economic aspect poses challenges, as recycling can often cost more than disposing of items. Despite this, recycling significantly saves energy and lowers greenhouse gas emissions. The rate of waste generation is increasing, leading to overflowing landfills and environmental concerns. To address these issues, some propose a radical approach of rethinking our relationship with materials and reducing consumption.

The text emphasizes the importance of understanding childhood to navigate adult emotional complexities successfully. It highlights Freud's eternal contribution in linking adult emotional lives to childhood experiences. Misunderstood childhoods lead to anxiety, lack of trust, dread, paranoia, rage, and self-loathing. In a saner world, people would recognize that their childhoods hold the key to their identities, and exploring this subject should be valued as highly as academic topics. Only by knowing our past can we overcome emotional challenges and gain insights into our behavior.

The text highlights the importance of recognizing that maturity and kindness don't always mean never giving up on people. Sometimes, for our well-being and growth, we need to accept that certain individuals may not change and choose to walk away. It's about learning to love ourselves and prioritizing our needs without feeling guilty. This act of self-preservation doesn't signify weakness but rather a sign of personal growth and self-awareness.

An effective apology involves addressing three crucial questions: first, telling the truth about the issue to instill confidence in understanding and fixing it. Second, ensuring people know whose interests the company represents. Lastly, explaining how the company's actions will benefit those who trust them. By clearly laying out facts and action plans, the apology gains credibility, showing the company's commitment to avoiding similar problems in the future.

This text highlights the concept of a "masculinity contest culture" in organizations where coworkers compete aggressively and emotions, especially doubt, are discouraged. This toxic culture excludes women and hampers teamwork, innovation, and the bottom line. Researchers identified four masculine norms linked to organizational dysfunction: no weakness, strengthen stamina, put work first, and a dog-eat-dog mentality. This constant defense of masculinity fosters more toxic behavior.

Banks may not be the ones to introduce digital currencies, but they are likely to react to others' innovations. Although digital currency might seem alternative, it's becoming mainstream. Major banks are aware of this and investing in the technology. Eventually, banks will either lead or follow in the adoption of digital currencies as they cannot avoid it. They weigh the trade-offs of disrupting themselves versus waiting to react when others introduce digital currencies.

The text explains that while we often try not to bother others, humans have a natural desire to be helpful and needed. We fear feeling unnecessary, and fulfilling others' needs provides a sense of gratification. Work becomes fulfilling when it allows us to alleviate others' suffering or increase their pleasure. Being asked to exercise our skills and abilities helps us recognize our own strengths and capabilities. Ultimately, we rely on the needs of others to remind us of what we are capable of achieving.

Research suggests that silent meetings are more effective for brainstorming and problem-solving. They create a safe space for novel ideas to emerge without fear of embarrassment. Silent meetings also avoid production blocking, allowing everyone to express ideas simultaneously. To conduct a silent brainstorming meeting, participants write down their ideas independently, sort them into clusters, discuss, and vote on preferred ideas. Adopting various meeting styles based on goals can lead to better outcomes.

The research team studied local government, identifying three main concerns. First, they stressed enabling citizens to take more responsibility and be involved in decision-making. Second, they proposed creating a more citizen-centric public service to support people's needs efficiently. Lastly, they highlighted the need to improve the relationship between national and local government, as citizens suffer from the resulting mistrust. Overall, the focus was on empowering citizens and fostering a collaborative approach to governance at the local level.

Eco-tourism is gaining popularity as a form of tourism that aims to protect and enhance the environment and cultures. However, there is growing concern that many so-called sustainable and nature-based tourism options are not truly eco-friendly. Governments and the tourism industry promote eco-tourism, but doubts persist about its scientific foundations and effectiveness in solving social and environmental issues. Some eco-tourism holidays might be mere marketing tactics and can even harm local cultures, economies, and natural resources. The abundance of terms like adventure travel, sustainable tourism, and cultural tourism further confuses travelers seeking genuinely eco-friendly options.

The professor expressed concern about declining language standards among students and graduates. They lamented the misuse of words and the changing meanings of certain terms, exemplifying "enormity" now being used for something big instead

of wicked. The professor acknowledged language evolution but advocated early education in grammar and syntax basics without resorting to excessive analysis like Latin. They acknowledged the value of detailed language understanding while recognizing the inevitability of language change.

The history of the novel is complex, and defining it proves challenging. People have their favorite novelists across various eras and genres. When looking at the history of the English novel, the late 17th and early 18th centuries are commonly regarded as the starting point. Bunyan's "Pilgrim's Progress" and Defoe's "Robinson Crusoe" are among the earliest examples. While some try to trace the origins even earlier, it risks blurring the distinction between true novels and other forms of fiction.

In this text, the author discusses the limitations of understanding the experiences and thoughts of others. The philosopher Thomas Nagel's thought experiment about imagining being a bat is used as an example. While we can observe and predict how people behave, we cannot truly know what goes on in their minds. Even though we may share similar experiences, individual interpretations and emotions can differ significantly, and these differences are not solely influenced by culture.

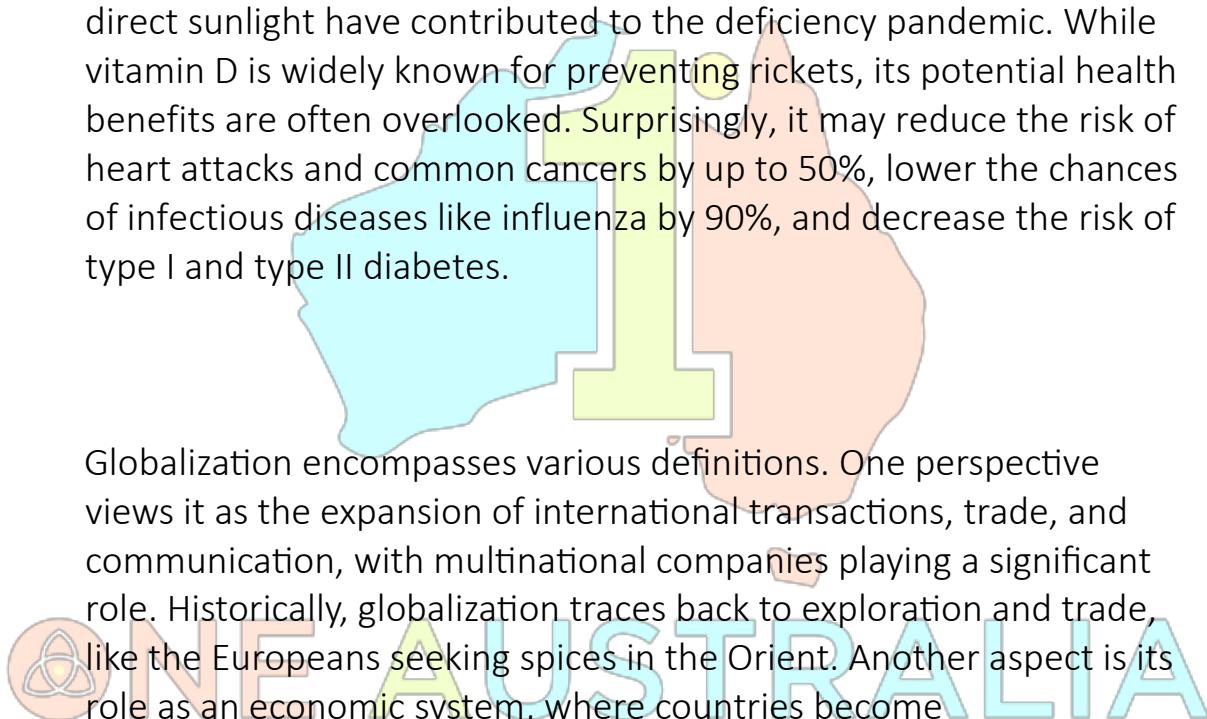


The text discusses the impressive capabilities of sound receptors in the ear. These receptors can translate vibrational energy into fluid motion, then into electrical signals, allowing us to hear. While not delving into the specifics, the author invites interested individuals, particularly MIT students, to explore these remarkable devices further.

Mary Mallon, known as Typhoid Mary, was an asymptomatic carrier of typhoid fever in the US. She infected 51 people, causing three

deaths during her career as a cook. Authorities isolated her twice, and she spent nearly three decades in isolation. From 1900 to 1907, she worked for several families in New York, where typhoid outbreaks occurred soon after her employment. Her last job with a wealthy banker's family led to six cases of typhoid in Oyster Bay, an unusual occurrence according to local doctors.

Around half of the world's population suffers from Vitamin D deficiency, affecting both children and adults. Lack of sun exposure is a major cause, as humans traditionally relied on the Sun for their vitamin D needs. Over the past four decades, suggestions to avoid direct sunlight have contributed to the deficiency pandemic. While vitamin D is widely known for preventing rickets, its potential health benefits are often overlooked. Surprisingly, it may reduce the risk of heart attacks and common cancers by up to 50%, lower the chances of infectious diseases like influenza by 90%, and decrease the risk of type I and type II diabetes.

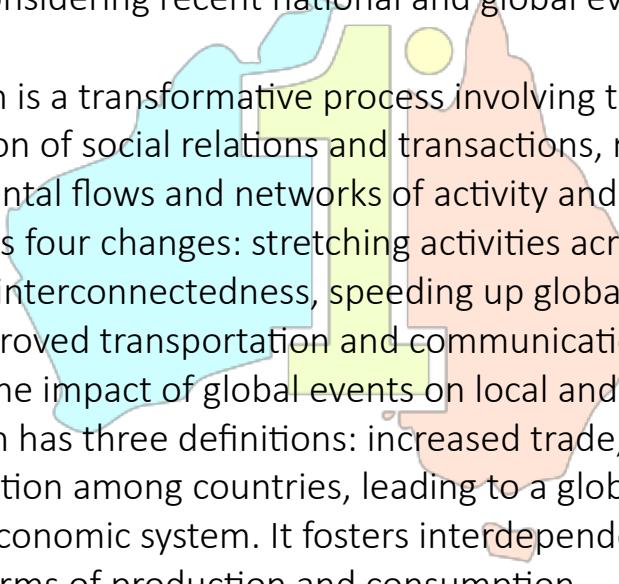


Globalization encompasses various definitions. One perspective views it as the expansion of international transactions, trade, and communication, with multinational companies playing a significant role. Historically, globalization traces back to exploration and trade, like the Europeans seeking spices in the Orient. Another aspect is its role as an economic system, where countries become interconnected in their production and consumption of goods, creating organic solidarity across the globe. This economic progress marks a departure from the past industrialist economy, signifying the ongoing impact and evolution of globalization.

The text discusses the relationship between international environmental law and domestic legislation. It emphasizes the importance of sovereign states implementing international law locally. The United Kingdom's historical legislative control over environmental impacts is mentioned, but early measures were

ineffective due to weak enforcement. The Industrial Revolution intensified environmental issues as industrialists prioritized economic gains over environmental concerns. This led to the need for more comprehensive statutory controls on pollutant discharge.

The subject report on citizenship development in schools highlights successful implementation in some schools, meeting national curriculum requirements. However, it criticizes schools that haven't taken citizenship seriously, leading to marginalization in one fifth of schools. Despite critics' concerns, committed schools show progress, indicating that citizenship can install essential skills, attitudes, and values in young people to navigate a changing world, especially considering recent national and global events.



Globalization is a transformative process involving the spatial reorganization of social relations and transactions, resulting in transcontinental flows and networks of activity and power. It encompasses four changes: stretching activities across borders, intensifying interconnectedness, speeding up global interactions through improved transportation and communication, and deepening the impact of global events on local and global levels. Globalization has three definitions: increased trade, communication, and cooperation among countries, leading to a global and integrated economic system. It fosters interdependence among nations in terms of production and consumption.



In developed countries, pragmatic approaches and democratic systems have moderated the market economy. During the 18th and 19th centuries, the Industrial Revolution negatively impacted the working classes worldwide, leading to reduced life expectancy and standards of living. However, through legislative measures and regulations, working conditions improved, and environmental conditions were better managed in the 20th century. Consequently, the market economy has become more beneficial and equitable compared to a century ago.

In a workplace setting, tight-knit groups of software engineers who are open to non-conformist individuals tend to foster innovation and success for the organization. These groups welcome unique perspectives and unconventional thinking, which can lead to fresh ideas and problem-solving approaches. Balancing between compliance and being part of a cohesive team is crucial for achieving the highest level of success in organizations.

The text discusses the importance of studying spending behavior and its impact on happiness. It suggests three key points for better spending: knowing oneself, investing in social relationships, and prioritizing experiences over material things. The author uses their preference for sharing experiences with family, particularly around food, as an example. The aim is to help people make informed choices about their spending to maximize happiness.

This text highlights that busy people may seem active and productive, but they might be avoiding deeper emotional introspection. Their constant busyness could be a way to distract themselves from facing important questions about their true desires and feelings. The author suggests that we should value and encourage moments of reflection, even if they may lead to uncomfortable emotions. True courage lies not just in constant activity, but also in allowing ourselves time to confront our inner thoughts and emotions.

In a seller's market, marketing revolves around a product-focused approach. The focus is on developing, innovating, and reducing costs of the product to attract customers. The main business objective is to sell as much as possible, as profitability is linked to market share. Increased market share leads to higher revenues, lower product costs, and more profit. Growth in this market comes from developing new products based on existing experiences or expanding into new markets.

Yoga is a low-impact exercise that improves fitness and flexibility in healthy individuals. It also shows promise as a therapeutic tool for

musculo-skeletal disorders, reducing pain and improving mobility more effectively than other low-impact exercises. For hard-to-treat conditions like chronic lower back pain, rheumatoid arthritis, and osteoporosis, adding yoga to an existing exercise routine can be beneficial. Additionally, yoga's combination of physical exercise and controlled breathing proves to be therapeutic for lung health, relaxing constricted passageways and improving oxygen diffusion, which is beneficial for weak heart muscles and reducing cardiovascular disease risk factors.

Multitasking is challenging for our brains as we lack the capacity to process everything simultaneously. While we can switch attention between tasks, overload leads to decreased performance. True multitasking is only possible when tasks require different cognitive resources. For example, reading a book and listening to music is feasible. However, talking on the phone while driving is risky since mental images interfere with visual resources needed for driving. Multitasking can make us inefficient and dangerous; our brains are not wired for handling numerous tasks simultaneously.

Evil is not inherent but a consequence of inner wounds that lead people towards malice. Unraveling these wounds requires patience, humanity, and love. It may be morally and practically frightening to delve into the origins of evil, fearing it might make us sympathize with abhorrent behavior or enable wrongdoers. However, understanding the true catalysts can transform our perspective on the trespassers and help us deal with them while maintaining safety and empathy.

Napping can have benefits for the brain and body, but it can also be a double-edged sword. The ideal biphasic pattern consists of a longer sleep at night and a short afternoon nap, similar to siesta cultures. However, long afternoon naps can disrupt nighttime sleep, so it's best to avoid them if you have sleep issues. For those who don't struggle with sleep, short naps of around 20 minutes taken early in the day are generally fine.

A single workout boosts neurotransmitters like dopamine, serotonin, and noradrenaline, instantly improving mood and attention for up to two hours. It also enhances reaction times. However, these effects are temporary. To experience lasting benefits, adopting a consistent exercise routine and improving cardiorespiratory function is necessary. Exercise leads to changes in the brain's anatomy, physiology, and function, including the growth of new brain cells in the hippocampus, resulting in increased volume and improved long-term memory.

In a capitalist society with widespread automation, three classes emerge: the rich machine owners, those providing services, and the jobless masses. This leads to extreme inequality and corporate totalitarianism, as the wealthy become more powerful and use technology to suppress resistance. With insufficient welfare and no wealth accumulation, inequality worsens, posing challenges for a fair and equitable society. The dominance of machines creates a dangerous concentration of power and control in the hands of the ruling elite.

One reason, some scientists think, that we began synchronizing with other people is because it allowed us to create social bonds. This long history suggests that it is beneficial to have neural connections that help us sync up with our group mates, which might have been an advantage to scare away predators as a group. This mental coordination, at some point, resulted in dance. This propensity to dance and make music in groups has led scientists to propose that this might be one reason why humanity has managed to form and remain in large group of societies.

By the early 1950s, it was becoming apparent that a growing number of elderly Americans had no economic protection from the increasing cost of health care. Congress began a years-long debate on this issue of national health insurance for the elderly. Today it protects more than 40 million Americans from the high cost of hospital care. Yet costs quickly started to exceed expectations, and as Americans' life expectancy increased over the years, the

Medicare program became even more expensive. It has become a matter of national debate and a financial issue for every Congress and President since.

The world today feels like it's a constant VUCA environment, volatile, uncertain, complex and ambiguous. This is problematic because we feel like we're all in a collective crisis of attention. So it's very important that we, as citizens of the world, understand what is true, and what is false. A question on my mind these days is what is the role of attention in minimizing truth bias. Because this truth bias may be driving the proliferation of many false narratives. False narratives abound, not just in the United states where I live but around the world, and people are believing them.

Similarly, the circadian rhythm of a plant allows it to respond to changes in roughly 24 hour cycles. When the sun sets, the flower reverts to its original position, facing East to begin the cycle again the next day. When the sun starts moving from East to West in the sky, the east side of the stem of a sunflower plant grows more rapidly than the West side. Similarly when the sun finally sets, the growth on the West side of the stem is greater than the growth on the East. As a result of this, the stem bends east, that is, in the direction where the sun would rise again the next morning.

The first is that as water freezes, its molecules move farther apart. The molecules of most substances move closer together as they freeze, making them shrink at lower temperatures. But water molecules move farther apart at temperatures below 39 degrees Fahrenheit, making water expand as it freezes. Remember that the molecules in ice are farther apart than the molecules in water; therefore ice molecules are vulnerable to pressure which pushes them closer together, causing the ice to change into water. So when you step on a patch of ice, you exert pressure on the ice, which causes its molecules to move closer together.

Scientists have not only found cancer in many other animals, they have found it in dinosaurs that lived more than sixty-five million

years ago. Wondering if fossils could tell us something about ancient cancer, scientists traveling with a portable x-ray machine scanned ten-thousand dinosaur vertebrae of over seven-hundred museum specimens. Twenty-nine benign tumors were found in the tail bones of ninety-seven animals. Doctors find the same type of tumors in humans today. The cause of hadrosaur cancer remains a mystery today, but dinosaur fossils are helping unlock secrets of diseases millions of years old.

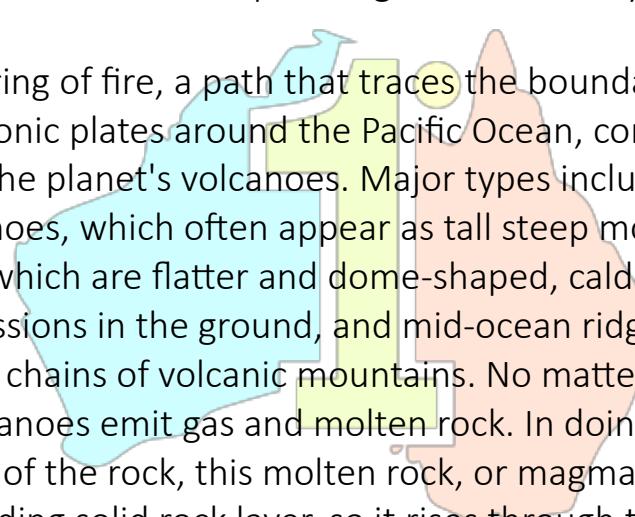
And so he coined the term 'nostalgia' to represent this pain associated with people's longing for their homeland - and he saw it very much as a disease. If you fast forward to the present day, you would discover that nostalgia is actually considered a psychological resource. And what we discovered through careful experimentation using tools of modern behavioral science, is that it's actually not the case that nostalgia makes people miserable. It's when people are miserable that they turn to nostalgia and nostalgia doesn't reinforce that misery, it actually comforts them.

Your body runs on finely tuned chemical machinery, proteins, and the cell's instruction manual - DNA. The cell's maintenance mechanisms repair damaged DNA, discard old proteins, and signal the cell to make new proteins. The body makes more cells to replace these old ones. However, cells have an internal limit - defined by their DNA - on how many times they can divide, meaning that we can't keep creating new cells forever. Over time, with fewer new cells to replace old ones and with the damage piling up, it becomes difficult to maintain our youth.

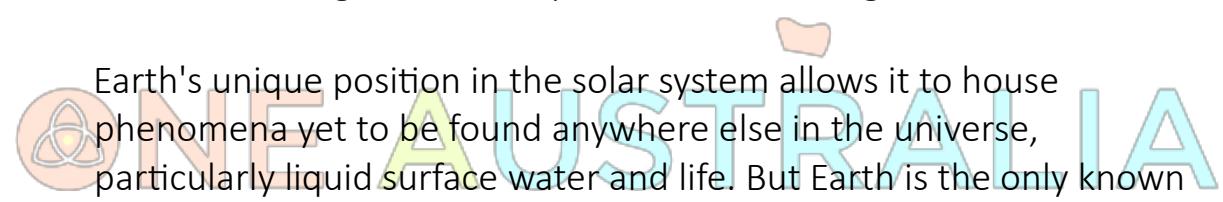
The stress resulting from uncertainty is tremendous in our society. It increases brain cell death. We do almost everything to avoid uncertainty. And that's why creativity, seeing differently, always begins in the same way: it begins with a question. It begins with not knowing. It begins with a 'what if?'. It begins with a 'what if?'. Every time you take a step your brain has hundreds of assumptions: that the floor is not going to give way, that your legs aren't going to give

way, that that's not a hole, it's a surface. So these assumptions keep us alive. So your brain evolved to evolve.

The grid was designed for utilities to deliver electricity to consumers homes, and then bill them once a month. The smart grid introduces a two-way dialogue where electricity and information can be exchanged between the utility and its customers. This smart grid enables newer technologies to be integrated, such as wind and solar energy production and plug-in electric vehicle charging. With our participation as informed consumers, this smart grid will replace the aging infrastructure of today's grid, and utilities can better communicate with us to help manage our electricity needs.



In fact, the ring of fire, a path that traces the boundaries between several tectonic plates around the Pacific Ocean, contains about 75 percent of the planet's volcanoes. Major types include stratovolcanoes, which often appear as tall steep mountains, shield volcanoes, which are flatter and dome-shaped, calderas, which are large depressions in the ground, and mid-ocean ridges, which are underwater chains of volcanic mountains. No matter their shape or size, all volcanoes emit gas and molten rock. In doing so the heat melts some of the rock, this molten rock, or magma, is lighter than the surrounding solid rock layer, so it rises through the mantle.



Earth's unique position in the solar system allows it to house phenomena yet to be found anywhere else in the universe, particularly liquid surface water and life. But Earth is the only known place in the universe with liquid water on the surface, thereby having unique cascading effects on the planet. About 3.8 billion years ago in Earth's oceans, primitive life existed in the form of microbial organisms. They and the ensuing billions of years gave rise to a range of more advanced life forms that survived in Earth's seas, lands and skies.

Hydroelectric energy comes from capturing the force of moving water that's in our Earth's rivers and oceans. Most hydropower is generated from dams built on rivers and streams, often where

there's a big drop in elevation, so gravity can help us out. Dams block the water's natural flow and force it through a large pipe with the turbine and generator, before releasing it back into the stream on the other side of the dam. Today we know that dams, most of which were built before the 1960s here in the US, can disrupt river ecosystems. This helps us get the electricity we need by protecting the natural environment around us.

The solution: wastes from farm animals can be collected in a large tank called a digester, filled with bacteria that eats the waste and converts it to methane gas. The methane is captured and burned to heat water and create steam. This same principle can also be used to capture methane, a potent greenhouse gas with 25 times the heat trapping ability of carbon dioxide from landfills. Once a section of the landfill is closed off, pipes are run from the waste to collect the gas, which can then be burned to make electricity or heat.

The incredible brilliant Sun. The earth gets more energy from this ball of fire and gas in one day than the whole world's population uses in an entire year. Ancient civilizations use glass and mirrors to light fires, but it wasn't until the 1950s that technology was developed to convert the sun's energy into electricity using photovoltaic cells. Today solar technology is more efficient and less expensive, and is used all around the globe to create electricity, heat water, cook food, and even power vehicles. When the Sun hits a solar panel, material inside, usually silicon, absorbs the energy.

White essentially reflects sunlight instead of absorbing it, like other colors do. And it's easy to see cracks or chips in the paint when that paint is white. You'll often see plastic, fiberglass, or carbon fiber painted white on planes, too. This is because these parts of the plane are easily susceptible to sun damage, which the white paint helps prevent. So why aren't all planes pure white? After a white base, airlines will often paint their brand name on the side and their colors on the tail of the plane.

A flu shot works by tricking your immune system into thinking a live flu virus has invaded your body. And an “immunologic response” is when your immune system activates white blood cells to respond to an invader. So once the vaccine deposits the antigens, your immune system jumps into action. Some white blood cells produce antibodies, who attack the antigen and latch on to it. Consider the flu shot as a practice run for your immune system: by learning to respond to the harmless lookalike antigen of the vaccine, your body prepares itself to respond to the actual virus.

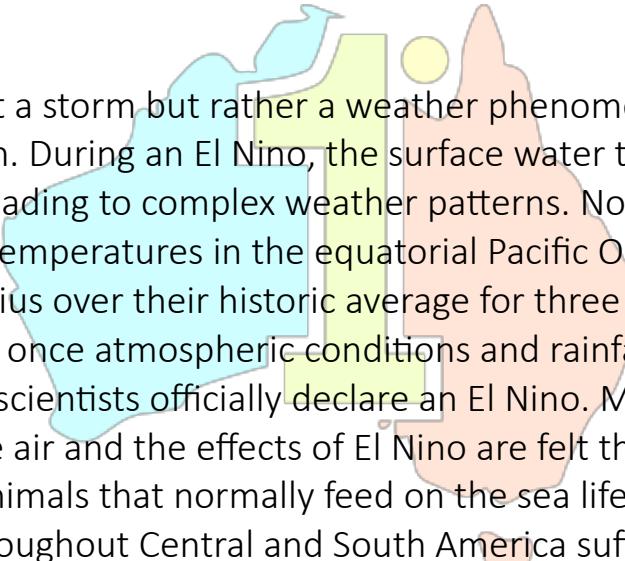
First, the ant latches on with its strong mandibles. The burning sting, combined with red coloration and aggressive behavior, certainly make them some fiery creatures. If you don’t bother fire ants, they won’t bother you. The ants respond to disturbances: when they sense your movement, they won’t hesitate to swarm. Once a single ant starts biting and stinging, its companions will follow suit. The stings leave red spots on your skin that eventually become unpleasant white pustules. In the meantime, if your picnic risks a fire ant run-in, maybe you should eat indoors.

If you’re near a railyard in uncommonly cold temps, though, you may notice tracks pulling apart from one another, or bolts shearing off from joints. So, if the tracks were laid at seventy degrees, they can withstand both hot summer days and frigid winter nights. When the temps dip — say, to thirty below zero Fahrenheit — the steel contracts enough that it can pull apart at the joints. Railroads place gas-fed heaters at various spots along the railway, often at switch points. When a cold snap hits, workers manually light the heaters, which steadily burn beside the tracks.

A mutation is any random change in the DNA of a cell or an organism. These changes can happen either through external factors, like radioactivity, or UV and x-rays, or through internal factors, such as when a cell is dividing and it incorrectly copies the DNA. These proteins and their function in the body lead to the traits that make us unique, like eye colour or our blood type. Therefore, when the DNA changes, our proteins might also change, which

could lead to a change in a trait. Sometimes, however, mutations can be good or bad.

Acid rain is any form of precipitation with high levels of nitric and sulfuric acids. Most acid rain is caused by human activities. When people burn fossil fuels, sulfur dioxide and nitrogen oxides are released into the atmosphere. These gases react with water oxygen and other substances to form sulfuric and nitric acid. After it falls to earth, acid rain enters water systems as runoff and sinks into the ground. This can make water toxic to prey, fish clams, fish, and other aquatic animals. By designing cleaner power plants and using fewer fossil fuels, we can reduce the number of pollutants that create acid rain.



El Nino is not a storm but rather a weather phenomenon in the Pacific Ocean. During an El Nino, the surface water temperature warms up, leading to complex weather patterns. Nowadays, when sea surface temperatures in the equatorial Pacific Ocean rise point 5 degrees Celsius over their historic average for three consecutive months, and once atmospheric conditions and rainfall patterns shift accordingly, scientists officially declare an El Nino. Moisture then rises into the air and the effects of El Nino are felt throughout the Americas. Animals that normally feed on the sea life suffer, and Fisheries throughout Central and South America suffer, too.



Like Earth, Mercury is a terrestrial planet with three main layers, a core, a mantle, and a crust. Because of the core's exceptional size, it's had a surprising influence on Mercury's overall size, by causing it to shrink. In doing so, it pulled Mercury's surface inward, and has caused the planet to shrink radially by more than four miles. This shrinking planet is also the planet closest to the sun, orbiting our solar system's star at an average distance of roughly 36 million miles. It only has a very thin exosphere, which is traditionally the outermost layer of a planet's atmosphere.

Let's start the cycle with the evaporation of water from the surface of the ocean. Some of the water may evaporate back into the

atmosphere, or the water may penetrate the surface and become groundwater. The groundwater may seep in its way into the oceans river or streams, or it may go into an aquifer, which is a body of saturated walk rock through which water can easily move, or it may be released back into the atmosphere through transpiration. This runoff may empty into lakes, rivers, and streams and then is carried back to the ocean where the cycle may begin.

One way to understand this complex system is by breaking it down into three different components: mode, fuel type, and technology. Modes of transportation allow people and goods to move across air, land, and sea. People often move by human power, cars, and planes, while goods are transported by truck, rail, or ship. Different fuels and how they are consumed have distinct impacts on the climate and our air quality. Technology refers to what the vehicle uses to move, like an internal combustion engine in a gas car or an electric motor in an electric vehicle.

The swamp conditions prevented the organisms from decaying completely, and after millions of years of intense heat and pressure, coal was formed. The general rule is that the higher the grade of coal, the cleaner it burns, and the more versatile its uses. Coal is extracted from the earth through underground mining or surface mining. Underground mining currently accounts for a larger share of world coal production than surface mining. Coal can be burned for heating or to produce electricity. To convert thermal coal to electricity, it is first milled to a fine powder which increases the surface area and allows it to burn more quickly.

Natural gas is primarily methane or CH<sub>4</sub>, with smaller quantities of other hydrocarbons. Subject to intense heat and pressure, these organisms underwent a transformation in which they were converted to gas over millions of years. Natural gas is found underground rocks, called reservoirs. The rocks have tiny spaces called pores that allow them to hold water natural gas and sometimes oil. The natural gas is trapped underground by

impermeable rock, called a cap rock, and stays there until it is extracted. Natural gas can be categorized as dry or wet. Natural gas can also be found in reservoirs with oil and is sometimes extracted alongside oil.

About 71% of the earth's surface is covered in water, and we can harness some of it to create energy. The two most common water energy technologies are hydropower and tidal power. Hydropower is electrical energy derived from falling or running water. Tidal power converts the natural rise and fall of the tides into electricity using variety of technologies including tidal fences, garages and turbines. Additionally, wave power can be harnessed to capture energy from waves on the surface of the ocean using a special buoy. However, depending on the water energy technology, negative environmental land-use impacts can be an issue. Water is also heavily used in energy production processes.

The need for electricity storage is due to an imbalance in supply and demand on the electrical grid due primarily to an increase in renewable energy generation. These supply and demand discrepancies occur because renewables are intermittent, meaning electricity isn't produced when the Sun isn't shining or the wind isn't blowing, even though consumers still require electricity in these renewable downtimes. Currently, grids distribute electricity in real time, meaning electricity is being consistently produced to meet consumer demand. This grid flexibility is highly sought after and has the potential to transform how we produce and consume electricity and is therefore being widely researched and tested.

But if you're a fruit fly, literally dousing your offspring in alcohol is apparently one of the best ways to protect them from danger, particularly from certain types of wasps. First, certain types of wasps prey on fruit flies by injecting eggs inside fruit fly larvae. Unless an infected larva kills the wasp egg, it hatches and the wasp larva eats its way out from inside the fruit fly larva, killing it. Apparently, fruit flies are not the only fly species to use alcohol to protect their young.

The most common is through electromagnetic conversion, where electricity is generated by moving an electric conductor, like wires, inside a magnetic field. The most practical example of this is a generator connected to a turbine. The turbine provides the motion required to move the conductor in the generator. For example, wind turbines, hydro, or the steam created from heat produced a nuclear fission or coal combustion. Finally, electricity can be created through solid-state conversion, where electricity is generated using the structure and properties of a solid. An example of a technology that utilizes solid-state conversion is a solar PV cell.

Before reversing direction, the summer solstice, the sun would appear at its highest point in the sky, and is the day with the longest period of daylight. The summer solstice in the northern hemisphere occurs around the 21st of June, but it does not always occur on this day. As it all depends on when the sun reaches its northernmost point from the celestial equator, it can happen between the 20th to the 22nd of June. This occurs because the earth's rotational axis is tilted. The earth rotates around an axis inclined at an angle of 23.5 degrees in relation to its orbital plane around the sun.

Frogs are a diverse and largely carnivorous group of short-bodied, tailless amphibians composing the order Anura. The oldest fossil proto frog appeared in the early Triassic of Madagascar, but molecular clock dating suggests their origins may extend further back to the Permian, 265 million years ago. Frogs are widely distributed, ranging from the tropics to subarctic regions, but the greatest concentration of species diversity is found in tropical rain forests. There are approximately 4,800 recorded species, accounting for over 85% of extant amphibian species. They are also one of the five most diverse vertebrate orders. Besides living in fresh water and on dry land, the adults of some species are adapted for living underground or in trees. Adult frogs generally have a carnivorous diet consisting of small invertebrates, but omnivorous species exist and a few feeds on fruit. Frogs are extremely efficient at converting

what they eat into body mass. They are an important food source for predators and part of the food web dynamics of many of the world's ecosystems. The skin is semipermeable, making them susceptible to dehydration, so they either live in moist places or have special adaptations to deal with dry habitats. Frogs produce a wide range of vocalizations, particularly in they are breeding season, and exhibit many different kinds of complex behaviors to attract mates, to fend off predators and to generally survive. Frog populations have declined significantly since the 1950s. More than one-third of species are considered to be threatened with extinction and over one hundred and twenty are believed to have become extinct since the 1980s. The number of malformations among frogs is on the rise and an emerging fungal disease, chytridiomycosis, has spread around the world. Conservation biologists are working to understand the causes of these problems and to resolve them. Frogs are valued as food by humans and also have many cultural roles in literature, symbolism and religion.

An essay is a chance to identify your read and learned. As a writer, you first need to collect many materials, then write an essay in four or five paragraphs, structures and quotes. If someone is searching for a book or article to read, he or she will decide from the very beginning whether this work is worth attention. If you want to wow your teacher, polish the introduction, especially the first couple of sentences. Add an essay hook—something interesting, funny, shocking, or intriguing to win the reader's attention. Build an emotional connection with your reader right from the start. A hook in the essay is a catchy sentence or paragraph in the impressive introduction which serves as an attention element and an important part. An excellent hook sentence is engaging and interesting; it is a perfect method to start an argumentative or persuasive essay. The hook for your essay often appears in the first sentence. The opening paragraph includes a thesis sentence. Some popular hook choices can include using an interesting quote, a little-known fact, famous last words, or a statistic.

We are from an organization called Nonhuman Rights Project, and we fight for legal rights of non-human animals. Drawing a line in order to enslave an autonomous and self-determining being is a violation of equality. We then searched through 80 jurisdictions. We chose the state of New York. Then we decided upon who our plaintiffs are going to be. We decided upon chimpanzees. We know the extraordinary cognitive capabilities that they have, and they also resemble the kind that human beings have. And so, we chose chimpanzees, and we began to then canvass the world to find the experts in chimpanzee cognition. So now we needed to find our chimpanzee. Our chimpanzee, first we found two of them in the state of New York. Both of them would die before we could even get our suits filed. Then we found Tommy. Tommy is a chimpanzee. Tommy was a chimpanzee. We found him in that cage. We found him in a small room that was filled with cages in a larger warehouse structure on a used trailer lot in central New York. And so, on the last week of December 2013, the Nonhuman Rights Project filed three suits all across the state of New York using the same common law argument. The court didn't approve our appeal because they think chimpanzees are not humans even though they have cognitive skills. We proved to the court that chimpanzees also have cognitive capabilities, and they were not hearing us. We wanted the chimpanzees out, and we wanted them brought to Save the Chimps, a tremendous chimpanzee sanctuary in South Florida which involves an artificial lake with 12 or 13 islands -- there are two or three acres where two dozen chimpanzees live on each of them. And these chimpanzees would then live the life of a chimpanzee, with other chimpanzees in an environment that was as close to Africa as possible.

Because of the economic model, the newspaper industry has been shrinking drastically from the last 50 years of the 20th century in some states of America. Also, as the economic model changed, newspapers increased the cash flow. However, there are still some newspaper industries losing money because of a decrease in advertising and buyers. They can't find buyers. Only a few

newspapers have positive cash flow. Over 100 newspapers with cash flow in red had no money to publish the newspaper every day. Some of them published three days per week. Small-sized newspapers only published once a week and had to go online. Some newspapers even disappeared. The staff working in newspaper industry decreased by 30-60% or more.

About the similarities of children's past and present. Children lost their childhood in the 19th century in different situations. There was much children employment, which brought lots of risks to working children in society, such as sexual harassments and criminal events. They also suffered exploitation and high demand for the workload. Besides, children may be threatened on the street for destroying objects. Finally, society has changed, and commercials features and gender bias exposed children's personal lives to these negative factors. Because children always change a lot, manufacturing has developed some products specially for children, including pink products.

A leader can define or clarify goals by issuing a memo or an executive order, an edict or a fatwa or a tweet, by passing a law, barking a command, or presenting an interesting idea in a meeting of colleagues. Leaders can mobilize people's energies in ways that range from subtle, quiet persuasion to the coercive threat or the use of deadly force. Sometimes a charismatic leader such as Martin Luther King Jr. can define goals and mobilize energies through rhetoric and the power of example. We can think of leadership as a spectrum, in terms of both visibility and the power the leader wields. On one end of the spectrum, we have the most visible: authoritative leaders like the president of the United States or the prime minister of the United Kingdom, or a dictator such as Hitler or Qaddafi. At the opposite end of the spectrum is casual, low-key leadership found in countless situations every day around the world, leadership that can make a significant difference to the individuals whose lives are touched by it. Over the centuries, the first kind—the out-in-front, authoritative leadership—has generally been exhibited by men. Some men in positions of great authority, including Nelson

Mandela, have chosen a strategy of “leading from behind”; more often, however, top leaders have been quite visible in their exercise of power. Women (as well as some men) have provided casual, low-key leadership behind the scenes. But this pattern has been changing, as more women have taken up opportunities for visible, authoritative leadership.

We are living through one of the greatest of scientific endeavours – the attempt to understand the most complex object in the universe, the brain. Scientists are accumulating vast amounts of data about structure and function in a huge array of brains, from the tiniest to our own. Tens of thousands of researchers are devoting massive amounts of time and energy to thinking about what brains do, and astonishing new technology, including computers and artificial intelligence, is enabling us to both describe and manipulate that activity. Humans can tell computers what to do and how to do, by giving the meaning of the certain words. Computers can operate as programmed, and develop systems and symbols. Computers work by analyzing messages into bytes, and this function is similar to human brains. Both human brains and computers are symbol processors, so computers have potential to bring artificial intelligence.

So, happiness economics can help us get to these questions, and I'll try to give you some examples of this. Now, even though there's a lot of skepticism, originally about using this survey – surveys what people say make them happy. The number of reason that we are getting increasingly confident in doing so. One is that their consistent pattern - remarkable consistent pattern, determines well-being across large samples of people, across countries, across the world, and over time. Some of the basic things that make people happy, and I will show you some of these income health, marital status, employment status. Some of these very basic things are remarkably consistent across countries across world. So that gives us some sense that these surveys are picking up consistent patterns. And when we know what consistent patterns are, we can look how other things that very much more, affect people's well-being. The

environment and equality, the nature's institution raging on living, and all kinds of other things that very much more.

Well, the 90s came around and finally it clicked that normal people could get online, which hadn't really clicked before. And the little trick that finally put it together was Tim Berners Lee HTML, so thank you to the UK for providing the fellow who finally put the missing link in place. And then what happened in the 90s was this extraordinary outpouring of creativity and constructiveness from millions and millions of people. There were millions of people making Web pages, creating content online, creating social experiments, creating lessons—all sorts of things. And the first decade of the web took place without much of a profit motive, without any particular charismatic figures driving it, without fear, without a desire for an afterlife or any other religious gambits, without advertising, without any of the traditional motivational schemes. It simply happened because people enjoyed it and it was a good idea.

Well, it's like, why is Australian housing is so expensive? Essentially, it's showing of how well the Australian economy has been doing over the last 15 years. We have had 15 years more or less of an uninterrupted economic growth during which average earning has been raised by close to 90 percent. While over the course of that period, the standard variable mortgage rate has roughly halved. That meant that the amount which a typical home buying household can afford to borrow under rules which aren't strictly applied as they used to be had more than doubled. Over the same period, rising immigration in falling average household size has meant that the number of households looking for accommodation has risen by about one and a half million. That's around 200 thousand more than the number of dwellings has increased by. So, you have had a substantial increase in the purchasing power of households. No net increase in the supply of housing enhances all

that addition purchasing power has gone into pushing up the price of housing.

So various conclusions. Yes, bees are in decline. These declines are well-documented. They are real and supported by good, strong scientific evidence, which is the only of these counts. The drivers of decline on many varied depending on species. The effects of pollinator loss could be absolutely huge. So, is it a catastrophe? Not yet. But it could be. On the positive side, we are aware of the problem. Awareness is being raised all the time and people are taking actions. Before fixing is missing, you can recognize the problem. At least it's been done.

It turns out consumers are incredibly smart. They combine a lifetime of experience with that brand, combined with whatever its designed appeal is, how it makes them feel, performance and price. And they do all that in a few seconds. So, brands are essential to our business to allow us to deliver the increased consumer value associated with our products. We're not into the generic business of toilet paper. We're into probably about the softest product you're going to want to buy. We're not into a generic soap. We're into the best, you know, stain removing laundry detergent you're going to buy. But we're going to want you to remember that as the tide brand. Now, that means there's a second moment of truth. If they do select you and they pay 50% more than they would have paid for Walmart's brand, when they get home, it'd better perform when it's used. And here's where the science starts, folks. There's an amazing number of fundamental engineering contradictions, right? Airplanes deal with, you know, weight and strength. I want something that's light but strong. That's an engineering contradiction. Once I deal with our things, got to be strong but soft. They have to be strong even when they're wet. Bright but not tear, liquids, mixtures, not common things, but they need... they can't separate. You don't want to shake before use, before you pour down in your washing machine.

In my view, it's impossible not to talk about wildlife, and not think about its role in livelihood. And I guess part of that is my own view,

part of the research that I do in Africa. In most Eastern West Africa, I look at the role. All the humans rely on wildlife as the source of food, and also the source of income. And we talk about our wildlife, if we talking about fish, we are talking about what is probably the single most important source of protein for human that across the globe. And, so, billions of, or more than a billion of people rely on fish as their primary source of animal protein, and most of these people living in poverty. So the management of fish resource of wildlife in that sense causing incredibly important to livelihoods and health. And also, wildlife tourism is the multiple billion dollars' industry, and in many places, such as Africa, South America, it can be the No.1 source of income. It can be the No.1 source of foreign income for economies.

Through the 1950s and into the 1960s, the idea of the Industrial Revolution was that it was the work of some genius inventors who created machines used primarily in the textile industry but also in mining that eliminated blocks to assembly line production. Then everybody was crowded into factories and the new brave world opened up. In fact, one of the most interesting books and great classics that is still in print was written by an economic historian at Harvard who's still alive called David Landes. It's a good book called *The Unbound Prometheus*, which was basically that. Some of the inventions that I briefly describe in your reading, the spinning Jenny, etc., refer to that. Well, and that kind of analysis led one to concentrate on England where the Industrial Revolution began, and to view industrialization as beginning a situation of winners and losers by not going as fast. Now, that analysis has been really rejected greatly over the past years, because Industrial Revolution is measured by more than simply large factories with industrial workers and the number of machines. This is the point of the beginning of this. The more that we look at the Industrial Revolution, the more that we see that the Industrial Revolution was first and foremost an intensification of forms of production, of kinds of production that were already there. And thus, we spend more time looking at, you know, the intensification of artisanal production, craft production, of domestic industry, which we've

already mentioned, that is people mostly women but also men and children, too, working in the countryside. The rapid rise of industrial production was very much tied to traditional forms of production.

The history of software is of course very new. And the whole IT industry is really only 67 years old which is extraordinary and to be so close to the birth of a major new technology, a major new discipline is quite remarkable given where we got to in those 67 years. And the progression has been not so much a progression as a stampede because Moore's Law, the rapid expansion in the power of computing and the rapid fall of the cost of computing and storage and communications has made it feasible for information technology to move into all sorts of areas of life that were never originally envisaged. What has happened is that there has been as I said a stampede for people to pick the low-hanging fruit. And that is what's guided the development of software and information technology over the past decades and continues to do so with a number of consequences that we will explore.

But if you were to go to a library at the end of the 1300s, or through the 1400s, you would probably find a book that was then, way more popular than those titles we still read, a book that purported to be a description of the world, a guide the traveling and distant lands of BC area and Almanac of everything that was just off the horizon. I am not talking about Marco Polo. No, I'm talking about something far, far weirder and far, far less tethered to reality, a volume of medieval fantasy masquerading as a field guide called *The Travels of Sir John Mandeville*, supposedly the titular night set out from England in the 1330s and embarked on a journey that would take him to the Middle East, Africa and Asia, though as it will become apparent, not a Middle East, not in Africa and not an Asia that we would recognize here in reality. No Mandeville spoke is not really about actually real foreign lands. It's about what European's thought that was just outside the bounds of their civilizations. It's about what's beyond that mountain range that marks the borders of the lands you know. It's about what medieval people thought the

foreign looks like. And all of it is mysterious, alluring, and intimidating unknown.

Globalization is an overused and often misunderstood concept. We hear it all the time on news broadcasts and in any type of public discussion. But the starting point for understanding globalization is that it is industries and markets that globalize, not countries. That's why it's helpful to think of globalization as 'the integration of economic activities across borders'. But why does globalization matter? I would argue globalization matters because it means the rise of interconnectedness between countries and markets across the world. For example, one of the reasons why the financial crash of 2007/2008 was so serious was because the financial and banking systems of countries around the world have become so closely interconnected with the globalization of markets.

To be a successful entrepreneur, you should have good ideas, but the definition of a good idea varies depending on whom you ask. A great idea should have several features. Firstly, the great idea should be various and novel. Secondly, the great idea should be unique, which means no one has thought about it. Thirdly, it is essential for great ideas to be transformative and productive. All ideas are essentially a combination of other smaller ideas, but this doesn't mean they can't be unique. Merely copying doesn't make anything idiosyncratic, it's the individuality that one puts in which makes a concept stand out. Constant innovation leaves no room for stagnation and thus, adds on to the basic idea, effectively making it unique. Unique ideas are inspired by basic things, they are simply extensions of pre-existing notions. And, an idea or a concept is unique only when it transcends its predecessor and serves its purpose in a better and more precise way.

Now we spend a lot of time thinking about how climate will affect crops. But crops affect climate themselves and they do this in two ways. First of all, about one-quarter of the land surface is used for

growing crops. Another 10-15 % are used for pasture. So a substantial amount of the land surface is used in crop and agricultural production. And how we used that land affects our climate? If we were, for example, to deforest a substantial area and replace it with the annual crop such as soybean. Then we would alter the characteristics of the land surface, alter the way that water and heat flows from the land surface to the atmosphere and back, and ultimately change the regional climate if that is not enough to change the land surface. So, this is an absolutely fascinating topic and one that's really quite difficult to understand because of the complexity. It's difficult because it needs us as crops scientists to work even more closely with our climate scientist, colleagues. And it's difficult because we have to join our models together.

So, I think you all know what I mean by globalization, don't you? This is the idea that we all live in a global village. With instant communications, we can share ideas, and consume cultural artifacts from countries all over the world, just by going into the Internet and all dream up, basically. The world is shrinking. In terms of speeds, it is accelerating, but in terms of distance, it's shrinking. What do I mean by detraditionalization? I mean the disappearance or the erosion, for the better word to use, the erosion of traditional values, of conventional ways of doing things, of conventional moralities. More and more young people around the world are rejecting the culture they grow up in, and it's probably a little bit cruel. But some imitating a Hollywood model of society, rather than the one which they inherit from their local tradition background. OK

So, faults are breaks in the earth's crust. We can identify them because of the discontinuity in the structure within the earth crust across faults. And earthquakes occur on these faults, so varied processes by which these faults move to a large extent is due to earthquakes. So, we have a fault plane and the earthquake is so focused on this fault plane. And the earthquake starts at the particular point on the fault plane and we call that the focus of the earthquake. The rupture propagates out from that point on the rupture plane to cover the entire fault plane. The rupture is in that

particular earthquake. We talked about the epicenter of the earthquake a lot. The epicenter is just the surface projection of the focus of the earthquake. So, if you wanted to look at map view where the earthquake was located, we would be able to look that into the earth. We would see the focus down some depth in the earth or the epicenter just a point vertically above that focus at the surface of the earth. So, this is the relationship between the faults and the earthquakes.

This simulation shows what you might see. If you are orbiting a black hole. The light and position of background stars around the hole are distorted by its gravity and they seem to spin around. On the right the constellation Orion appears to approach the event horizon the boundary from which nothing can escape. Orion stars look like they become separated and get spun around. Once the hole has passed by Orion reappears on the left and looks normal again. Users can also experiment with different scenarios. This is what you might see if you were traveling towards a black hole with rocket engines slowing your descent. Another simulation mimics free fall into a hole. In the middle the light of the entire universe appears to be concentrated in a bright ring.

### FILL IN THE BLANKS



Most patients with Type 2 diabetes should start taking statins, the cholesterol-fighting drugs, as a (Answer: preventative) measure against heart disease, whether or not they have high cholesterol levels, according to new guidelines released yesterday. The recommendations, from the American College of Physicians, call for moderate doses of statins by people with diabetes who are older than 55, and for younger (Answer: patients) who have any other risk factor for heart disease, like high blood pressure or a history of (Answer: smoking) . The new guidelines are outlined in April 20 issue of The Annals of Internal Medicine, in an article that noted that about 16 million Americans have Type 2 diabetes and that 800,000 new cases are (Answer: diagnosed) every year. The lead

author of an article accompanying the guidelines, Dr. Sandeep Vijan of the University of Michigan, said that "almost everyone with Type 2 diabetes should be on a statin." The (Answer: average) age at diagnosis is 48, and even many patients under 55 have high blood pressure as well as diabetes, he said. Traditionally, diabetes treatment has (Answer: focused) on regulating blood sugar levels by careful control of (Answer: diet) or through insulin injections. But researchers have come to understand that control sugar really protects only against the destruction of small blood (Answer: vessels), which can lead to blindness or loss of fingers, toes or limbs. Heart disease is, in fact, the more serious threat. Up to 80 percent of diabetes patients will develop heart problems or die of them, the article said. And Dr. Vijan emphasized that controlling hypertension remained the highest priority. He ranked control of lipids, the fats in the blood (Answer: stream) that can affect coronary health, second, ahead of glucose (Answer: regulation).

Crime in the United States (Answer: accounts) for more death, injuries and loss of property than all Natural Disasters combined. The Disaster Center is pleased to be able to provide you with access to the statistics of crime (Answer: compiled) by the Federal Bureau of Investigation. When you experience a crime it can make you respond in ways that you might not understand. In that (Answer: crisis) situation you may react in ways that conflict with the (Answer: assumptions) you have created about your self. At the time of the crime you may feel a (Answer: sense) of helplessness, fear and anger. Afterward you may have a hard time relating the experience to the (Answer: context) of the assumptions of your life. A conflict often develops between your idea of the world before the crime and your idea of the world after the disaster. On top of this the (Answer: victims) and their relatives often experience financial problems, and time is often lost from work to handle the legal, insurance and personal problems associated with being a victim. The (Answer: trauma) associated with any crime often makes it hard for victims to cope with normal daily routines. And the victims of crime are frequently (Answer: blamed) by their friends for not being more careful. The trauma continues as victims of crime often find

themselves ignored by law (Answer: enforcement) , and confused by the court system.

People rarely translate another person's (Answer: unique) way of saying things with any degree of (Answer: accuracy) . This is because when we learn the meaning of words, we pick up their broad meaning but we've added subtle (Answer: shades) of difference which we get from our personal experiences. If you grew up in an aggressive household, the phrase 'I'm angry with you' had different (Answer: associations) than for a person from a family where people talked through problems. We're left having to work out meaning from our own experience. So despite the fact that, say, Bob and Gina are both speaking English, Bob is really speaking 'Bob-English' and Gina is turning that into 'Gina-English' and the (Answer: translation) is never going to be perfect.

To begin with, you should be standing in the main (Answer: floor) of the British Library. British Library situated in the Euston road next to some pipe crustacean press, in the foyer to the left of the (Answer: information) desk. It was a large white staircase. Follow this up towards the gallery at the top of the (Answer: stairs) pause and look to your left for attention. This is Robert Cotton, born in 1570, and died in 1631. Cotton was a member of parliament but he's mainly known as a great antiquarian (Answer: collector) of manuscripts. It is the covenant we have a great depth and the survival of many English manuscripts.

Have you ever wanted to turn down the volume at a deafening (Answer: concert) or noisy bar? Envy the whale: a new study finds that toothed whales can reduce their own auditory sensitivity when they expect a loud sound. The work is presented at this week's Acoustics 2012 meeting. Whales and dolphins rely on their responsive hearing to interpret returning echolocation clicks. Previous research suggested that these marine mammals could dull their hearing before uttering outgoing echolocation (Answer: clicks) , which are very loud. Could they use the same coping mechanism

for (Answer: external) noises? To find out, researchers trained a false killer whale that a loud noise would always follow a brief warning (Answer: signal) . Then, they attached suction cup sensors to the outside of the whale's head and played the signal. The sensors (Answer: measured ) brainwaves that indicated the whale did reduce its hearing sensitivity in expectation of a clamour. The researchers hope to test other species as well. Loud noises from ships can disturb whales. To accommodate (Answer: marine) life, perhaps vessels could emit signals before making a ruckus, warning whales to tune us out.

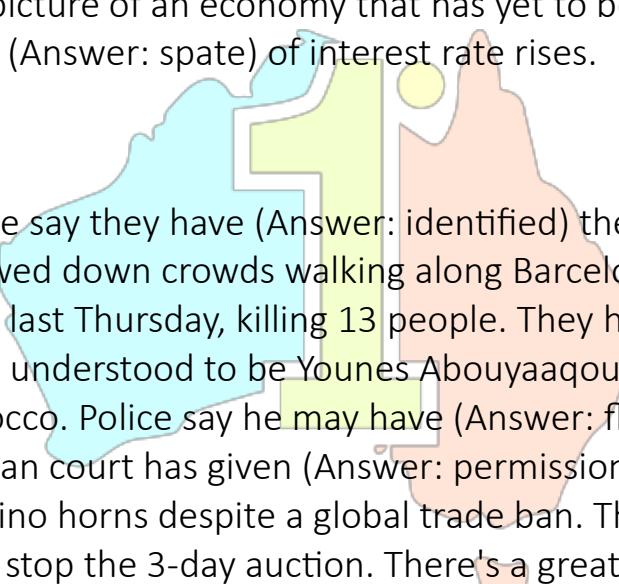
Well, I'm absolutely delighted first of all to have been (Answer: appointed) to this professorship. The role is going to be about public engagement in science, it is about marketing science (Answer: accessible) to as wide an audience as possible, it's about making it easier for our (Answer: academics) here at the University of Birmingham to talk about their research to the general public and it's not just about a one-way flow of information, it very much is about dialogue.

Well, the simple explanation might be that yesterday's (Answer: sudden) drop in share prices pretty much across the board has created what market analysts like to call a buying opportunity. It tends to bring out investors to pick through the ruins, looking for (Answer: bargains) . Decision by investors that sellers got a little carried away with things so the buyers have (Answer: lifted) all the major indexes today. The Dow, the NASDAQ, the S&P 500 were all up around half a percent in early trading today, and that wasn't a big surprise. The sell-off continued somewhat (Answer: overseas) European markets remain fairly weak, along with many of the Asian markets. But you'll remember that all this started with a big (Answer: plunge) of around 9 percent on the stock market in Shanghai. Well, Chinese rebounded by around 4 percent.

And one particular crop, almond in the US and now in Australia, is (Answer: transforming) the world of beekeeping and of bees. What

has happened is that something serendipitous came along that people found out, that doctors found out that almonds are good for you, a (Answer: confection) but it's good for you. The Almond Board got a very aggressive promotion going on for almonds. They actually, I just heard recently, send out sales reps to (Answer: cardiologists) at hospitals to promote the heart benefits of almonds. In a very good promotion of almonds, and it's (Answer: legitimate) promotion because they are a healthy food.

Signs that secure borrowing remains (Answer: robust) and firm data on manufacturing and retail (Answer: sales), released on Thursday, painted the picture of an economy that has yet to be cooled by the recent states (Answer: spate) of interest rate rises.



Spanish police say they have (Answer: identified) the driver of the van that mowed down crowds walking along Barcelona's main tourist street last Thursday, killing 13 people. They haven't named him, but he's understood to be Younes Abouyaqoub, a 22-year-old born in Morocco. Police say he may have (Answer: fled) the country. A South African court has given (Answer: permission) for an online auction of rhino horns despite a global trade ban. The authorities have tried to stop the 3-day auction. There's a great demand for rhino horns in Vietnam and China with their use in traditional medicines. The South African government has (Answer: confirmed) that it granted diplomatic immunity to Zimbabwe's First Lady, Grace Mugabe, enabling her to return home despite being (Answer: accused) of assaulting a model in Johannesburg. The government said it was imperative to (Answer: maintain) good relations with Zimbabwe.

Executive Vice President of the U.S. government's Overseas Private Investment Corporation, OPIC, David Bohigian and other U.S. government officials traveled to Armenia, Azerbaijan, and Georgia in August to (Answer: promote) U.S. investment in those countries. OPIC is the U.S. Government's development finance institution. It

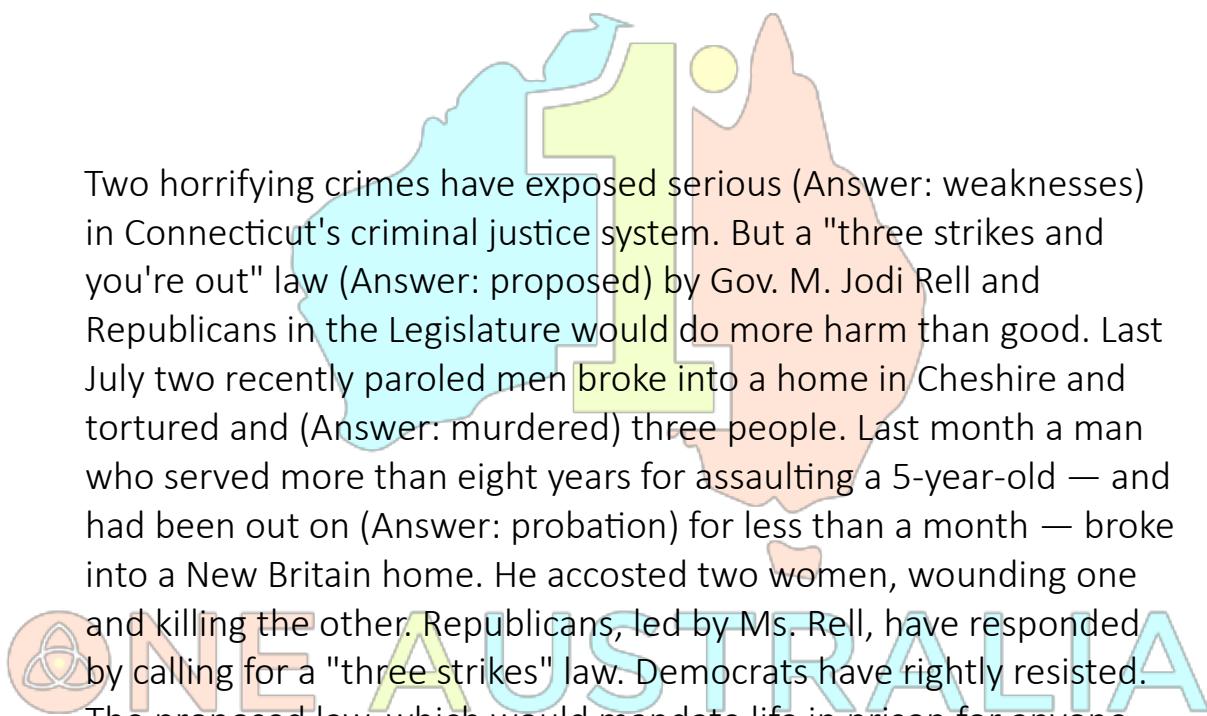
(Answer: mobilizes) private capital to help address critical development challenges and in doing so, (Answer: advances) U.S. foreign policy and national security (Answer: priorities) . On August 14th, the U.S. delegation met with Armenian Minister of Economic Development and Investments Artsvik Minasyan.

European market is a tough terrain for food (Answer: delivery) firms. Delivery Hero has had a good (Answer: run) in the past couple of years. In August 2020 it ascended to the Dax, the stock market index of Germany's most (Answer: valuable) listed firms. It is present in 50 countries on four continents. Revenue for the third quarter was 1.8bn euros (\$2bn), a jump of 89% (Answer: compared) with the same period in 2020. "We grew 100% before Corona, 100% during Corona and we will grow 100% after Corona," says Niklas Ostberg, the Berlin-based firm's Swedish chief (Answer: executive) . By number of orders Delivery Hero is more than twice as big as DoorDash, its large American rival.

Life in the UK 2012 provides a unique overview of well-being in the UK today. The report is the first snapshot of life in the UK to be (Answer: delivered) by the Measuring National Well-being program and will be updated and published annually. Well-being is discussed in terms of the economy, people and the environment. Information such as the (Answer: unemployment) rate or number of crimes against the person are presented alongside data on people's thoughts and feelings, for example, (Answer: satisfaction) with our jobs or leisure time and fear of crime. Together, a richer picture on 'how society is doing' is provided.

As with all human behavior, there are (Answer: numerous) reasons for it. But often it's caused by someone who feels the need to show their (Answer: superiority) over someone else, in order to feel that they aren't at the lowest level in (Answer: hierarchy) or a group of people. In some cases one person simply dislikes the other, on the (Answer: basis) that the personality of one is in some way (Answer: incompatible) with that of the other person.

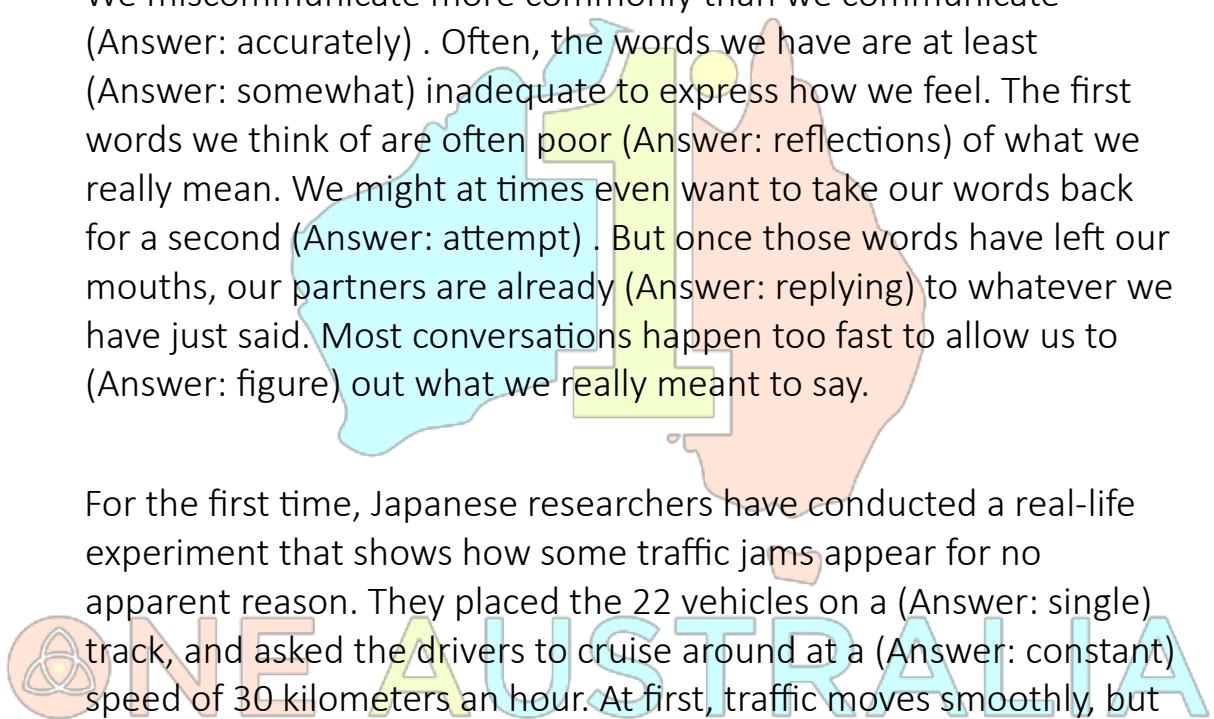
My hero is Marie Curie. She was a Polish physicist and chemist working in France, and she did (Answer: conduct) pioneering research on radioactivity. She was also the first woman who won a Nobel prize. Marie Curie is my hero because she showed a lot of (Answer: determination) in following her career path and her (Answer: passions) . She also showed a lot of (Answer: patience) in working for years to receive results from her experiments. And Marie Curie, she designed and built the first (Answer: mobile) X-Ray machines. She worked on the front lines of the first World War along with her (Answer: daughter) saving soldiers.



Two horrifying crimes have exposed serious (Answer: weaknesses) in Connecticut's criminal justice system. But a "three strikes and you're out" law (Answer: proposed) by Gov. M. Jodi Rell and Republicans in the Legislature would do more harm than good. Last July two recently paroled men broke into a home in Cheshire and tortured and (Answer: murdered) three people. Last month a man who served more than eight years for assaulting a 5-year-old — and had been out on (Answer: probation) for less than a month — broke into a New Britain home. He accosted two women, wounding one and killing the other. Republicans, led by Ms. Rell, have responded by calling for a "three strikes" law. Democrats have rightly resisted. The proposed law, which would mandate life in prison for anyone (Answer: convicted) of three violent felonies, is a bumper-sticker solution that would create (Answer: injustices) by barring judges' discretion in sentencing. It would also not deter the many crimes (Answer: committed) by people who have not committed three violent felonies. Governor Rell and the Democrats do agree on the need for other (Answer: urgent) reforms, including more re-entry programs and jobs training and better monitoring after prisoners are released on probation and parole. Connecticut has 2,500 parolees, but a (Answer: staggering) 55,000 people on probation. Probation officers handle an average of 107 cases each —far too

many. Connecticut's system for sharing crime information, which could keep some of the most dangerous offenders off the streets, is antiquated. It has neither inpatient treatment for sex offenders nor housing for them once they are released. Hundreds of (Answer: former) inmates are on a waiting list for inpatient drug treatment. The suspect arrested in the New Britain case had been staying in a homeless (Answer: shelter) at night but roaming freely during the day while waiting to begin (Answer: outpatient) sex offender treatment. Returning released inmates to society with so little support makes no sense.

We miscommunicate more commonly than we communicate (Answer: accurately) . Often, the words we have are at least (Answer: somewhat) inadequate to express how we feel. The first words we think of are often poor (Answer: reflections) of what we really mean. We might at times even want to take our words back for a second (Answer: attempt) . But once those words have left our mouths, our partners are already (Answer: replying) to whatever we have just said. Most conversations happen too fast to allow us to (Answer: figure) out what we really meant to say.



For the first time, Japanese researchers have conducted a real-life experiment that shows how some traffic jams appear for no apparent reason. They placed the 22 vehicles on a (Answer: single) track, and asked the drivers to cruise around at a (Answer: constant) speed of 30 kilometers an hour. At first, traffic moves smoothly, but soon, the distance between cars started to (Answer: vary) and vehicles clumped together at one point on the track, but the jams (Answer: spread) backward around the track, like a shockwave at a rate of about 20 kilometers an hour. Real-life jams move backward at about the same speed.

Higher interest rates have knocked investors (Answer: confidence) in putting their money into property, evidence suggests. The (Answer: insurance) company standard life says that the rate rises since last

summer have led more people to question the wisdom of property  
(Answer: investment) .

Environment problems caused by hard rock mining involve water pollution by metals themselves, chemicals used in processing, acid (Answer: drainage) and sediment. Metals and metal-like elements in the ore are (Answer: toxic) and prone to cause trouble by ending up in nearby (Answer: streams) and water tables as a result of mining operations.

Social harm originates out of a series of (Answer: debates) within criminology about the narrowness of the definition of crime, that essentially, focuses on individual acts of harm, things like interpersonal violence, theft, so on and so forth. So the idea of social harm (Answer: originally) was to expand that notion of harm to encompass the harms that organisations and nation states cause. But latterly the idea of social harm really now transcends criminology so there are a group of (Answer: writers) who think that—and I would include myself there—that actually there's something to social harm that could be very useful in terms of trying to understand the harms that (Answer: occur) within society, to produce an objective and well-rounded analyses of harm.



# ONE AUSTRALIA

Spring wedding season has arrived, ushering in hefty costs for guests — and especially for members of the wedding party. But it can be hard for twenty somethings to fit (Answer: extra) costs into scant budgets, especially if you have multiple weddings to attend. So be sure to determine what you are (Answer: signing) up for before committing to be part of the ceremony or a guest at a destination wedding — and look for ways to (Answer: trim) costs. If you are asked to be part of a ceremony, don't (Answer: hesitate) to ask the bride and groom upfront for details including the event's location and other (Answer: functions) they may expect you to attend. In return, be honest with them about your (Answer:

financial) situation. Colleen Bayus, 24, attended four weddings last year, traveling from Washington to Boston, Pittsburgh and Philadelphia a total of seven times for dress fittings, bachelorette parties and the ceremonies. "It really (Answer: added) up ... I had to tell my friend in Boston that I didn't have the money to attend her bachelorette party in Manhattan," she says. If you know you can't afford to fly to a (Answer: destination) wedding in the Caribbean plus a weekend bridal party in Miami, speak up from the beginning, says Susan RoAnne, a networking and (Answer: etiquette) expert in San Francisco. "It's fair to say 'I love you, but I don't want to shortchange you if I can't afford to (Answer: participate) in every aspect,'" she says.

However simple or complex the chain of events in any given situation, when looked into it usually reveals a train of (Answer: causal) relationships - they are seen to be (Answer: linked) in some way. The methods of analysis aim to establish these relationships and provide a solid background for useful (Answer: generalizations) based on what at first appear to be separate events. The first step in this process is to collect facts and then see if any particular (Answer: patterns) emerge. If they do, it then becomes possible to form theories related to the facts, and this type of empirical theory forms a useful basis for (Answer: analysis) and prediction. However, on its own this theory is not enough; the essential second step is to test it by collecting more facts and by checking predictions against events. These new facts may mean you have to (Answer: modify) the theory, bearing in mind that new facts can only either disprove or (Answer: support) a theory - they cannot prove it to be right.

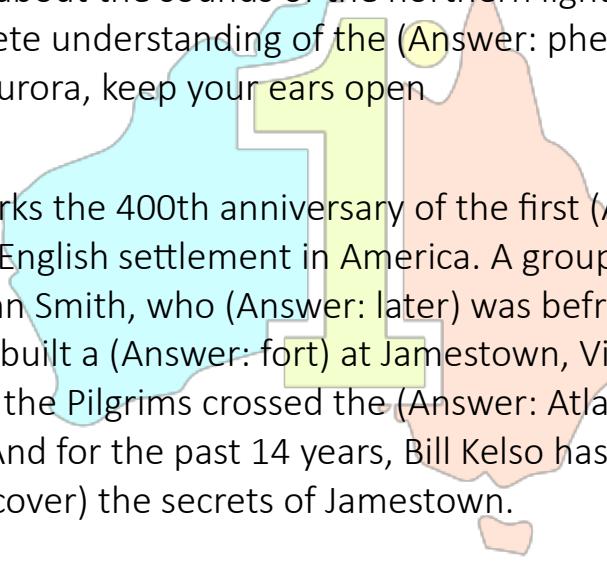
The proportion of greenhouse gases has increased significantly since the Industrial Revolution. Humans began burning fossil fuels, particularly (Answer: coal), in a big way, to drive steam engines for industry, and generate electricity. In addition to escalating coal use after the Industrial Revolution, there came the (Answer: widespread) use of another fossil fuel, petroleum for transport. At the beginning of the 20th century, annual global oil output was

about 150 million barrels of oil; now, that amount is (Answer: extracted) globally in just two days. Fossil fuels are classed as non-renewable sources of energy, formed from (Answer: decayed) plants and animals over hundreds of millions of years. Burning fossil fuels (Answer: releases) billions of tons of carbon dioxide that has been locked away away in the Earth for millions of years. Humans are (Answer: adding) billions of tons of carbon dioxide to the atmosphere each year. And guess what? Carbon dioxide is a greenhouse gas. The (Answer: rate) at which the planet is warming is possibly the biggest challenge to ever face humanity. The (Answer: impacts) are likely to be devastating, we need to act (Answer: decisively) , and act now. A single web page cannot fully answer the question of what global warming is. Following the links on this page will allow you to see how complex and serious the (Answer: issue) of global warming is. So what is global warming? It is a disaster of our own making.

U.S. Secretary of State Mike Pompeo met with Indian Foreign Secretary in Washington Monday and told him that the United States stands with India in fighting (Answer: terrorism) . After their meeting, the State Department said the two discussed the importance of bringing to (Answer: justice) those responsible for a suicide attack on an Indian paramilitary convoy (Answer: claimed) by Pakistan-based militants. The State Department said the (Answer: diplomats) spoke of "the urgency of Pakistan taking meaningful action against terrorist group operating on its soil." Last month, a suicide bomber killed 40 Indian paramilitary troops in a convoy in the disputed Kashmir region. A Pakistan-based militant group claimed responsibly for that violence. New Delhi has vowed to punish Islamabad for (Answer: sheltering) the militants, saying the Indian army chief has been given a "free hand" to take whatever action is required.

Interesting sound. I would have guessed a Wild West performer was (Answer: practicing) with a bullwhip while also vacuuming. But no. That sound is apparently produced by the aurora borealis, the

northern lights. Since 2,000 researchers at Finland's Aalto University have been (Answer: collecting) audio, as part of what's called the Auroral Acoustics project. Folk tales have long held that the lights also produce odd sounds, but the claims were hard to prove. And some researchers thought that any noises produced by the (Answer: energetic) particles, that cause the light show would be far too high in the sky to be heard on the ground. But the latest results indicate that at least some sounds are produced very close to the ground. A setup of three ground-based (Answer: microphones) allowed researchers to estimate that the sounds occur perhaps just 70 meters up. The results were just presented at the International Congress on Sound and Vibration in Vilnius, Lithuania. More information about the sounds of the northern lights could lead to a more complete understanding of the (Answer: phenomenon) . So if you see an aurora, keep your ears open



This year marks the 400th anniversary of the first (Answer: permanent) English settlement in America. A group of Englishmen, including John Smith, who (Answer: later) was befriended by Pocahontas, built a (Answer: fort) at Jamestown, Virginia in 1607, 13 years before the Pilgrims crossed the (Answer: Atlantic) on the Mayflower. And for the past 14 years, Bill Kelso has been working to (Answer: uncover) the secrets of Jamestown.



Well, the simple explanation might be that yesterday's (Answer: sudden) drop in share prices pretty much across the board has created what market analysts like to call a buying opportunity. It tends to bring out investors to pick through the ruins, looking for (Answer: bargains) . Decision by investors that sellers got a little carried away with things so the buyers have (Answer: lifted) all the major indexes today. The Dow, the NASDAQ, the S&P 500 were all up around half a percent in early trading today, and that wasn't a big surprise. The sell-off continued somewhat (Answer: overseas) European markets remain fairly weak, along with many of the Asian markets. But you'll remember that all this started with a big

(Answer: plunge) of around 9 percent on the stock market in Shanghai. Well, Chinese rebounded by around 4 percent.

Every year, about 10 million tons of paper winds up in American landfills and incinerators, which is not only wasteful but adds CO<sub>2</sub> to the (Answer: atmosphere). Recycling helps, but even that material has to be repulped and paperized before you can use it to print out that recipe you'll never make. But what if you could wipe the page clean and use it again? Light amplification by simulated emission of radiation to the rescue. A new study shows that laser light can (Answer: erase) the toner from a piece of printed paper. The approach appears in the Proceedings of the Royal Society A. Taking a page from the art restoration handbook scientists sampled a variety of light sources to see if any could be used to strip the ink from laser printed documents without damaging or discoloring the paper. UV and infrared were too harsh. But a bright green laser applied in 4 nanosecond pulses vaporize the print, leaving paper that looks as good as new. Such imprimers will probably run about 30,000 bucks, so they probably will not catch on for home use. But people in the recycling world might find that the green laser fits the (Answer: bill) for making paper that's really green.

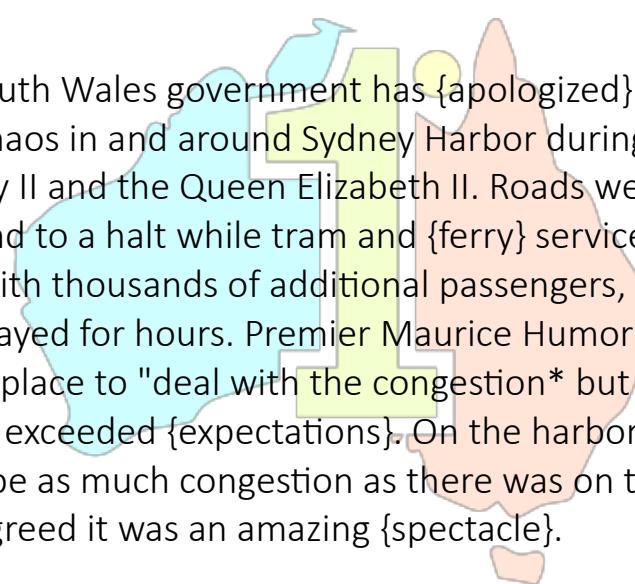


## ONE AUSTRALIA

Colombia on Tuesday (Answer: adopted) a tax reform plan that was at the root of violent anti-government protests that left more than 60 people dead this year, but was (Answer: eventually) reconfigured to be kinder to the middle class and the poor. President Iván Duque signed the so-called "social investment law," which has as its stated objective to combat poverty in a country hit hard by the corona virus epidemic. He says the law will, quote, "benefit nearly 29 million Colombians in a (Answer: vulnerable) situation" out of a total population of some 50 million. A first version of the law presented by Duque early this year to combat the economic (Answer:

consequences) of the global health crisis would have significantly increased taxes on an already battered middle class.

Good evening, ladies and gentlemen. My theme for this (Answer: session) is convergence Technology Change and Business Practice. This is somewhat dear to my heart, in that I have spent much of the last fifteen years involved in various (Answer: aspects) of technology and their impact on business, across a broad (Answer: spectrum), from applications of signal processing in manufacture right through to the use of utilization data and diary applications, to improve the time utilization of the (Answer: sales) force.



The New South Wales government has {apologized} for yesterday's transport chaos in and around Sydney Harbor during the visit of the Queen Mary II and the Queen Elizabeth II. Roads were jammed, traffic ground to a halt while tram and {ferry} services were swamped with thousands of additional passengers, with most services delayed for hours. Premier Maurice Humor says that plans were put in place to "deal with the congestion\*" but the number of visitors well exceeded {expectations}. On the harbor itself there seemed to be as much congestion as there was on the roads, but everyone agreed it was an amazing {spectacle}.



# ONE AUSTRALIA

You might picture Neanderthals as cavemen gnawing on bones around a campfire. Which wouldn't be {inaccurate} But Neanderthals may have also dined on roasted vegetables and known a bit about medicinal plants too. So says a study in the journal Naturwissenschaften (The Science of Nature). Researchers {analyzed} hardened dental plaque from five Neanderthals found in El Sidrón cave, in northern Spain. Yes, 50,000-year-old dental plaque. And they found a lot lurking between the teeth. Like evidence of nuts, grasses and green veggies, {chemical} traces of wood smoke, and tiny, intact starch granules, proof Neanderthals ate their carbs. And in one individual, they detected compounds found in the {medicinal} herb's chamomile and yarrow. The herbs

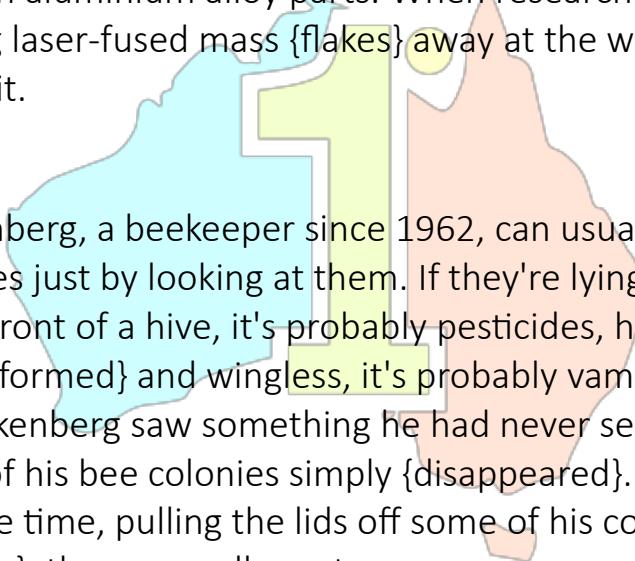
have no nutritional value, and since Neanderthals did have the gene to detect the herbs' bitter taste, the researchers {speculate} that the cave dwellers were munching on them not as food—but to self-medicate. Not too far-fetched, they say, because primates like chimps also use medicinal plants. Luckily for the scientists doing this {detective} work, Neanderthals may have known a thing or two about medicine, but they didn't get regular check-ups at the dentist.

Some interesting facts about the great reptilian fossils recently discovered in Wyoming and Colorado have come to light. The bones {found} represent reptiles of many sizes, from that of a cat up to one sixty feet high. The latter, found at Como, Wyoming, belonged to the crocodile order; but the remains give {evidence} that the animal stood up on its hind legs, like a kangaroo. Another found in Colorado is estimated to have been 100 feet long. A great many remains of the same general class, but belonging to different species, have been collected and sent East. Among them from three to four hundred specimens of the dinosaur, and about a thousand pterodactyls, have been shipped from Colorado, Wyoming, and Kansas. The wings of one of the latter were from thirty to forty feet from tip to tip. Seventeen different species of these flying dragons have been found in the chalk of western Kansas. There have also been found six species of toothed birds. Comparatively little has been done toward classifying the late finds, and the task is such an {enormous} one. Great importance is attached to them, however, since nothing of the kind had been found in America until a little over a year ago and great {stress} had been laid by certain geologists on their absence. Another remarkable feature of the discovery was that the fossils which had been reported as not existing in this country had hardly been brought to light in one locality before thousands of tons of them were simultaneously discovered in half a dozen different {places}.

Signs that secure borrowing remains {robust} and firm data on manufacturing and retail {sales}, released on Thursday, painted the

picture of an economy that has yet to be cooled by the recent states {spate} of interest rate rises.

A new process for 3D-printing things could pave the way for lighter, faster aircraft that {potentially} fly further on the same amount of fuel. Today's aeroplanes are held together with thousands of metal rivets and fasteners. That's because the lightweight but strong {aluminium} alloys used for their frames are considered unweldable. Try to weld them and you get a phenomenon called hot-cracking, in which the finished alloy weakens and {fractures} as it cools. This and other adverse welding effects also stand in the way of 3D-printing high-strength aluminium alloy parts. When researchers have tried, the resulting laser-fused mass {flakes} away at the welding area like a stale biscuit.



Dave Hackenberg, a beekeeper since 1962, can usually tell what killed his bees just by looking at them. If they're lying on the {ground} in front of a hive, it's probably pesticides, he says. If the bees are {deformed} and wingless, it's probably vampire mites. But last fall, Hackenberg saw something he had never seen before. Thousands of his bee colonies simply {disappeared}. He was in Florida at the time, pulling the lids off some of his commercial hives. To his {horror}, they were all empty.

## ONE AUSTRALIA

Obviously, this is all relevant to your final {assignment}. So, we're going to talk about it. So, until today, we've gone through face-to-face interviews as the main sort of part of interviewing the window. Today we're going to have a look at going to use an email and why they work, why they don't necessarily work, and what are the {challenges} and some of the things that we need to be understanding, you know when we are completing such interpreters. So, let's start with the foreign one. Obviously, there are a few {benefits} to them, and they are listed there up on that slide. It's obviously less stressful for those of you who might be a little bit {anxious} about interviewing.

Well, the simple explanation might be that yesterday's {sudden} drop in share prices pretty much across the board has created what market analysts like to call a buying opportunity. It tends to bring out investors to pick through the ruins, looking for {bargains}.

Decision by investors that sellers got a little carried away with things so the buyers have {lifted} all the major indexes today. The Dow, the NASDAQ, the S&P 500 were all up around half a percent in early trading today, and that wasn't a big surprise. The sell-off continued somewhat {overseas} European markets remain fairly weak, along with many of the Asian markets. But you'll remember that all this started with a big {plunge} of around 9 percent on the stock market in Shanghai. Well, Chinese rebounded by around 4 percent.

For all his fame and celebration, William Shakespeare remains a {mysterious} figure with regards to personal history. There are just two primary {sources} for information on the Bard: his works, and various legal and {church} documents that have survived from Elizabethan times. Naturally, there are many {gaps} in this body of information, which tells us little about Shakespeare the man.

The effect of the first difference is, on the one hand, to refine and {enlarge} the public views, by passing them through the {medium} of a chosen body of citizens, whose {wisdom} may best discern the true interests of their country, and whose {patriotism} and love of justice will be least likely to sacrifice it to temporary or {partial} considerations. Under such a regulation, it may well happen that the public voice pronounced by the representatives of the people, will be more consonant to the public good than if pronounced by the people themselves, convened for the purpose."

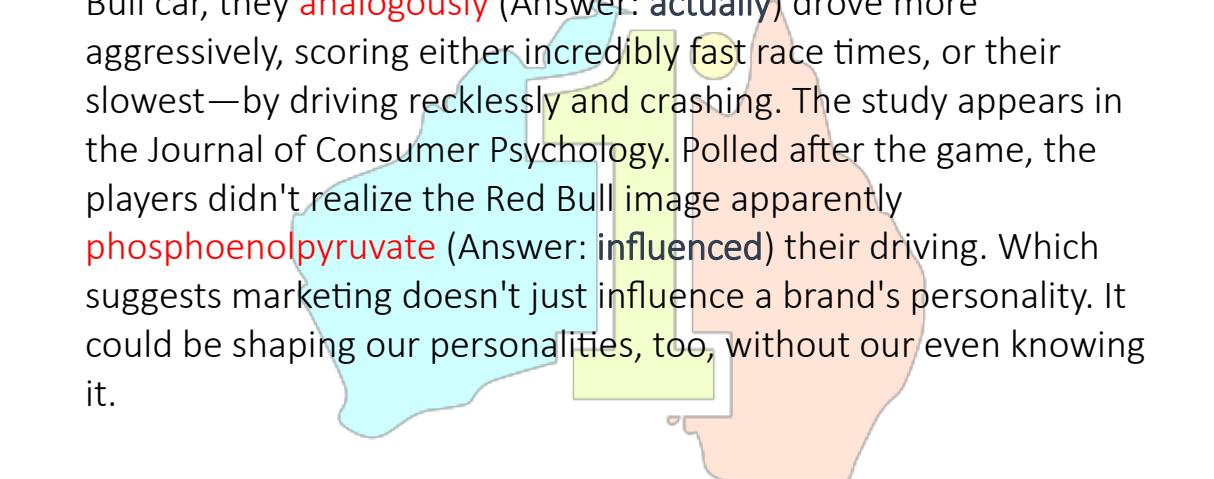
### HIGHLIGHT INCORRECT WORDS

In vitro **prolongation** (Answer: **fertilization**) efforts can be helped by, oddly enough, oral contraceptives. That's the finding from Tel Aviv

University, site of the largest study on using birth control to help IVF. One of the **antonyms** (Answer: challenges) to IVF is timing. Current hormone treatments to stimulate ovulation have to coincide with a particular moment in the woman's cycle. Not knowing the exact timing for scheduling the egg retrieval and fertilization can be stressful, which can lower the odds of success. In the Tel Aviv study, researchers looked at women who **led** (Answer: underwent) a 12-to-17-day treatment of oral contraception. The women were checked to make sure there was absolutely no activity in their ovaries or uterus. Then they began stimulation hormones to start the clock. Women who went through this **carryall** (Answer: protocol) had similar numbers of pregnancies to a control group that didn't use birth control. Which means that oral **valediction** (Answer: contraception) didn't harm their ability to conceive. The researchers say that this treatment demands a slightly longer cycle and higher levels of ovulation-inducing hormones. But they also say it could allow couples to more accurately plan for procedures, which might give couples more peace of mind.

Music, film and video game makers face a new online, digital world. And some are testing a **spindly** (Answer: revolutionary) pricing system: "pay what you want." But a new study finds that when consumers can name their own price, many may opt out of buying at all. The study is in the **ceaseless** (Answer: Proceedings) of the National Academy of Sciences. For the research, tour boat passengers posed for photos. Each boat ride **dumfound** (Answer: announced) a price of \$15 per picture. But they then charged either \$15, \$5 or the option to pay what you want. As expected, the fewest tourists purchased photos when they had to pay full price. But more **circuses** (Answer: customers) bought photos when they cost \$5 than when prices were pay what you want—which could have saved passengers even more. The researchers suggest that choosing to pay less than an announced **crescent** (Answer: lower-than-expected) price made people feel cheap. With choices then limited to spending more money or feeling like a tightwad, potential customers simply opted out of the purchase. So on sea or land, a low, set price may catch the most fish.

Companies spend **intuitions** (Answer: billions) on advertising every year. But they're not just pushing products—they're selling their brand's "personality," too. Think: Red Bull. What comes to mind? Most people say things like speed...power...hyper...extreme. Well, a pair of scientists wanted to see if the energy drink's alleged qualities would **contiguous** (Answer: influence) people's performance in a racecar video game—without sipping Red Bull. So they had 70 volunteers race cars with identical specs, but different paint jobs. Four with the logo and colors of a drink—Guinness, Tropicana, Coca-Cola or Red Bull—and one car just plain green. The drivers clocked similar times with most of the cars. But behind the wheel of the Red Bull car, they **analogously** (Answer: actually) drove more aggressively, scoring either incredibly fast race times, or their slowest—by driving recklessly and crashing. The study appears in the Journal of Consumer Psychology. Polled after the game, the players didn't realize the Red Bull image apparently **phosphoenolpyruvate** (Answer: influenced) their driving. Which suggests marketing doesn't just influence a brand's personality. It could be shaping our personalities, too, without our even knowing it.



English had barely established itself as a language in England when it began **spreading** (Answer: moving) to other countries to be used there as well. First it **passed** (Answer: headed) north to Scotland and then west to Wales. It then made its **path** (Answer: way) across the sea to Ireland. That was in the Middle Ages. Over the course of the following centuries it has put down roots all over the **earth** (Answer: world), from the USA to South Africa, from India to New Zealand. Of course, in all these **places** (Answer: countries) it has developed in special ways to suit the new **concepts** (Answer: contexts) in which it found itself.

For some people, this **presentation** (Answer: proposition) may seem far fetched, but ending poverty is both **ethically** (Answer: morally) necessary and actually feasible. All of us must play a role in making it happen. All human beings want, and have a **way** (Answer: right) to

live in dignity, to determine our own destinies, and to be respected by other, by other people. Despite the universality of **three** (Answer: these) rights, our capacities to fulfill them vary enormously, and no **divining** (Answer: dividing) line is more profound in influencing the quality of our lives than the gulf between poverty and prosperity.

To keep your car purring, you have to change the oil. Such maintenance **boogers** (Answer: produces) eight billion gallons of used motor oil annually. Some waste oil does get re-refined to produce oil for lubrication or heating. And some just gets dumped. So it would be more environmentally friendly and provide fresh fuel if we could convert the old motor oil to something really valuable: new gasoline. And that's what a **clad** (Answer: research) team thinks they've done. They **freshened** (Answer: presented) their work at the annual meeting of the **gentleman** (Answer: American) Chemical Society. Their approach involves pyrolysis, decomposing organic **decennial** (Answer: material) with heat in the absence of oxygen. Pyrolysis can break down waste oil into gases, liquids, a little bit of solids. The gases and liquids can be converted into gas or diesel. But **visceral** (Answer: conventional) pyrolysis methods don't do a great job with motor oil. The new technique mixes the oil with a material really good at absorbing microwave radiation. Tests showed that heating this mixture with microwaves was about 90 percent efficient at creating precursors to fuel—which beats tossing the oil down the drain.



The 2011 Nobel Prize in Physics goes to Saul Perlmutter at the Lawrence Berkeley **nontransferable** (Answer: National) Lab, Brian Schmidt at the Australian National Lab and Adam Reiss at Johns Hopkins. The Royal Swedish Academy's Olga Botner: "In a universe which is dominated by matter, one would expect gravity eventually should make the **draftsman** (Answer: expansion) slow down.

Imagine then the utter **subcontinent** (Answer: astonishment) when two groups of **silences** (Answer: scientists) headed by this year's Nobel **nosiness** (Answer: laureates) in 1998 discovered that the expansion was not slowing down, it was actually accelerating. By **tilting** (Answer: comparing) the brightness of distant, far-away

supernovae with the brightness of nearby supernovae, the scientists discovered that the far-away supernovae were about 25 percent too faint. They were too far away. The universe was accelerating. And so this discovery is **special** (Answer: fundamental) and a milestone for cosmology. And a challenge for generations of scientists to come."

In last week's pre-Christmas rush, the U.S. Congress slammed together the \$1-trillion federal budget bill for 2015, just before funds ran out. But the bill wasn't all about the money. Congress took advantage of the fiscal scramble to change rules about the environment and energy, which do not belong in appropriation bills. Normally such changes are encoded in what are called "laws," and are debated out in the open. But the budget bill is a chance for Congress to slip in controversial rules—called riders—without much debate. If members object, the bill stalls, and the government shuts down—and no one wants to be blamed for that fiasco. So the riders gallop in. The Environmental Protection Agency got its budget, for instance, but with strings attached: although agriculture is a major source of atmospheric methane, the EPA now is **vigilant** (Answer: prohibited) from using its money to require farmers to report greenhouse gas emissions. And the agency cannot regulate farm ponds and irrigation ditches under the Clean Water Act. In another example, the Department of **canker** (Answer: Agriculture) must speed up permits for companies making genetically **night** (Answer: modified) organisms. And the feds must loan money to firms to build coal-fired power plants overseas. That requirement **floggings** (Answer: reverses) a previous ban. These rules and others last through September 2015, when this budget bill runs out. And then, if history is any guide, the whole stealth legislation process will start all over again.

Imagine van Gogh's **copulative** (Answer: paintings) of yellow sunflowers. Now imagine the flowers brown. Eh, not so good. Sadly, we may someday see what that would look like. Because the bright yellow paints on the canvas are slowly turning muddy. Now, an

**graspable** (Answer: international) team of scientists has pinpointed the chemical reaction that drives this degradation—the first step toward stopping it. Their findings appear in the journal Analytical Chemistry. Van Gogh's use of strong bright colors to convey mood and emotion marks a major **epitome** (Answer: milestone) in art history. And his Sunflower series wouldn't be the same without the vibrant "chrome yellow" pigment that was new at the time. But this color darkens when exposed to the sun. To find out why, researchers used x-ray **concedes** (Answer: analyzes) to determine the exact chemical composition of the paint as it browns. First, they exposed three tubes of chrome yellow to UV radiation until one turned a chocolate color. **surviving** (Answer: Analyzing) that sample, they identified specific changes in the paint's chromium compounds. They then found the same chemical signature in the darkened areas of two van Gogh paintings. Until a chemical **overload** (Answer: antidote) is found, the researchers have some ironic advice: keep sunlight away from van Gogh's sunflowers.

For some reason, every year a few dozen runners dash from **sudden** (Answer: southern) Italy all the way to the North Cape of Norway, in what's called the TransEurope-Footrace. It takes about two months to cover the almost 2,800 miles, about 45 miles a day. In the 2009 edition 44 of the 66 **surreptitiousness** (Answer: participants) allowed **prevents** (Answer: themselves) to be examined medically throughout. The **enterprises** (Answer: findings) were **expectant** (Answer: presented) November 29th at the annual meeting of the Radiological Society of North America in Chicago. And some of the discoveries may be of use to the less ambitious among us. Muscle volume of the legs actually went down 7 percent because of the incredible energy consumption of the daily distances. And some leg injuries were found to be safe to run through. It was okay to keep going with simple leg muscle inflammation, for example. But other overuse injuries, like joint inflammation, carried a greater risk of worsening. Runners lost 40 percent of their body fat in the first half of the race and 50 percent altogether. Beginning runners can likewise expect to see a rapid fat loss at first. And you get to stop before reaching Norway.

Take a deep breath. Taste anything? Actually, your lungs may. Because scientists have discovered that the same receptors that exist on the tongue to taste bitter **thermometers** (Answer: substances) are also found on the smooth muscle of the lungs. Researchers were studying the receptors on smooth lung muscles that regulate contraction and relaxation of the airways. That's when they made the discovery—which was so unexpected that the researchers themselves were skeptical. Finally, they became convinced that the receptors were really there, though not **ruptured** (Answer: clustered) in taste buds as they are on the tongue. The scientists then exposed human and mouse airways to various bitter **knockouts** (Answer: compounds) to gauge the effects. Many toxic compounds are bitter, so the researchers **lifted** (Answer: expected) the lung muscle to tense up and contract—to compel the breather to move away from whatever was bitter and perhaps toxic. But, in a second surprise, bitter compounds relaxed and opened airways better than any existing asthma drug. The study is in the journal Nature Medicine. Researchers will continue to search for the role of the receptors. Meanwhile, the work **pits** (Answer: represents) a surprising new lead in the search for drugs to treat asthma, emphysema or chronic bronchitis.

When the first shots were fired at JFK's motorcade, police couldn't **disobediently** (Answer: immediately) locate the gunman based on sound alone. Today, the technology exists for them to it with their smartphones, less than a second after the first shot. Here's how.

Most bullets travel at supersonic speeds, **salesmen** (Answer: generating) a shock wave along their path. To track that path, researchers built a small bluetooth sensor for smartphones. The sensor uses four mics to measure the shock wave's angle, and its time of arrival. Then each phone **receptors** (Answer: networks) with nearby phones to triangulate the sniper's location, mapping it on the smartphone screen within a second of the gun blast.

Researchers tested the system with an AK-47, and were able to calculate the shooter's bearings with less than seven degrees of error, and get a decent **breadbasket** (Answer: estimate) of his range.

They **injected** (Answer: presented) the method at the Conference on Information Processing in Sensor **nonreligious** (Answer: Networks) in Philadelphia. Since the system **stifles** (Answer: requires) at least two phones to work, researchers say it would be ideal for a security force fanned out around a likely target—allowing them to respond to threats almost as fast as a speeding bullet.

When Harry Potter slips underneath his **ascendancy** (Answer: invisibility) cloak, he can wander freely, undetected. But what about a cloak of silence, one that completely deadens sound? That's just what scientists from Spain's University of Valencia have designed, on a tiny scale. They wrote about their research in the New Journal of Physics. A paper published last year showed how such a cloak could be made in theory—researchers **wrote** (Answer: proposed) using materials made up of what are called sonic crystals. These are solid cylinders that can scatter sound waves. The Spanish scientists wanted to figure out the specs to make a real acoustic cloak that could totally reroute sound around a given object. According to their models, it would take about 200 layers of the sound-silencing materials to make it completely **transients** (Answer: impervious) to sound waves. They also think that they'll eventually be able to get the same effect with a thinner cover. Among the first **waiters** (Answer: applications) could be a silent coating for naval ships, so that they're rendered invisible to sonar. But even more important could be wall **surpluses** (Answer: coverings) that would finally protect your ears from those annoyingly noisy neighbors.

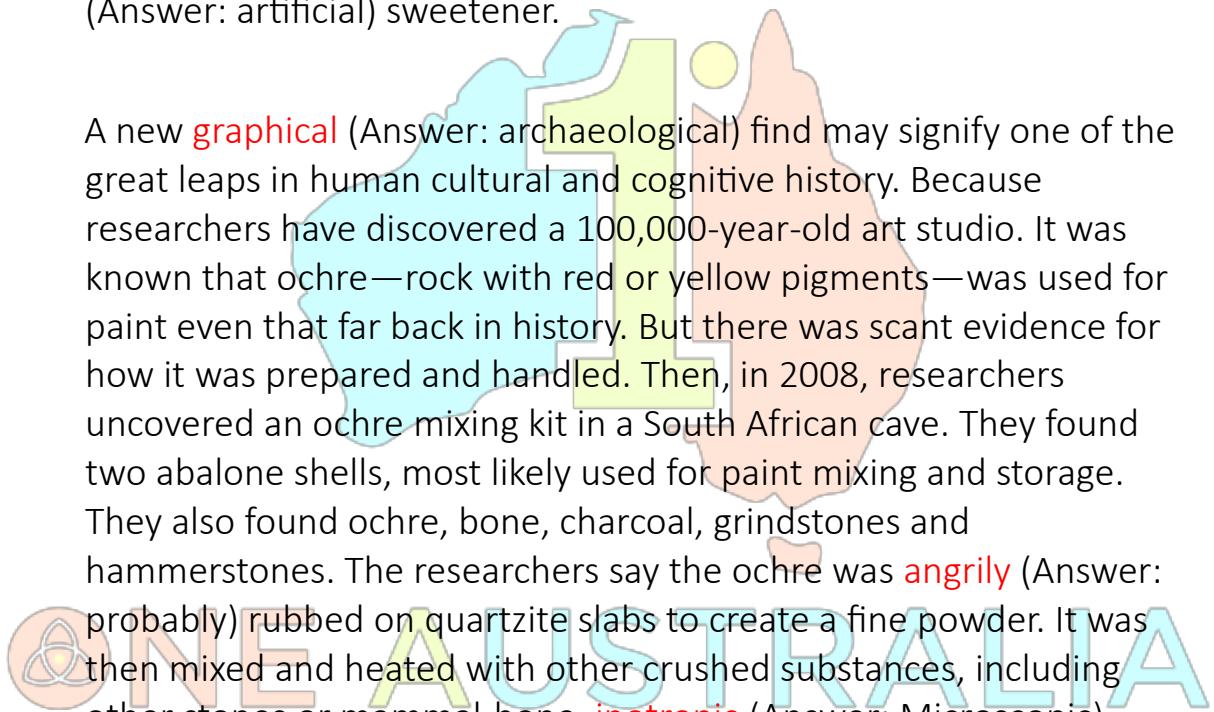


You can talk to teens all you want about sex. But if you want to drive home healthy messages about consent, maybe you should have them watch: "In the Criminal Justice system sexually-based **frontbenches** (Answer: offenses) are considered especially heinous..." Law & Order: Special Victims Unit. Really. Compared with other TV shows, anyway. Because a study finds that college **juleps** (Answer: students) who watched episodes of the various Law & Orders had a better understanding of sexual consent issues than those who watched two other crime procedural franchises, NCIS and CSI. The research is in the Journal of Health Communication.

For the study, researchers asked more than 300 college freshmen if they agreed or disagreed that if a woman is raped she is at least somewhat responsible, a concept called rape myth acceptance. The students were also asked about their intentions to seek consent for sexual **epitome** (Answer: activity) and their intentions to refuse sexual activity. The results: the college students who watched ripped-from-the-headline Law & Order versus the other shows had stronger views about consent and were less likely to accept rape mythology. Watching CSI, where the victim is often dead and treated as another piece of evidence, was **misplacement** (Answer: associated) with lowered intentions to seek consent and a greater acceptance of rape myths. Exposure to the NCIS franchise was associated with **sheep** (Answer: decreased) intentions to refuse unwanted sexual activity. Previous research found that the Law & Order shows directly challenge myths and stereotypes related to sexual assaults. While CSI has been criticized for plotlines that reinforce rape myths. So it turns out **trapping** (Answer: watching) those shows—at least for college-aged kids—may have some effect on sexual consent intentions and behavior. And when it comes to Law & Order, that effect could be positive.

Back in ancient times, **intangibles** (Answer: philosophers) like Aristotle were already speculating about the origins of taste, and how the tongue sensed elemental tastes like sweet, bitter, salty and sour. "What we discovered just a few years ago is that there are regions of the brain—regions of the cortex—where particular fields of neurons represent these different tastes again, so that's a sweet field, a bitter field, a salty field, etcetera." Nick Ryba , a sensory neuroscientist at the National Institutes of Health. Ryba and his **anatomies** (Answer: colleagues) found that you can actually taste without a tongue at all, simply by stimulating the "taste" part of the brain—the insular cortex. They ran the experiment in mice with a special sort of brain implant—a **operatic** (Answer: fiber-optic) cable that turns neurons on with a pulse of laser light. And by switching on the "bitter" sensing part of the brain, they were able to make mice pucker up, as if they were tasting something bitter—even though absolutely nothing bitter was touching the tongues of the

mice. In another experiment, the researchers fed the mice a bitter flavoring on their tongues—but then made it more palatable by switching on the "sweet" zone in the brain. "What we were doing here was adding the sweetness, but only adding it in the brain, not in what we were giving to the mouse." Think adding sugar to your coffee—but doing it only in your mind. The results appear in the journal Nature. Ryba says the study suggests that a lot of our basic judgments about taste—sweet means good, bitter means bad—are actually hard-wired at the level of the brain. As for that virtual-sugar-in-your-coffee idea? "I think it's basically science fiction to think that this would be something that would be applied to humans." But today's science fiction might be tomorrow's **skittle** (Answer: artificial) sweetener.



A new **graphical** (Answer: archaeological) find may signify one of the great leaps in human cultural and cognitive history. Because researchers have discovered a 100,000-year-old art studio. It was known that ochre—rock with red or yellow pigments—was used for paint even that far back in history. But there was scant evidence for how it was prepared and handled. Then, in 2008, researchers uncovered an ochre mixing kit in a South African cave. They found two abalone shells, most likely used for paint mixing and storage. They also found ochre, bone, charcoal, grindstones and hammerstones. The researchers say the ochre was **angrily** (Answer: probably) rubbed on quartzite slabs to create a fine powder. It was then mixed and heated with other crushed substances, including other stones or mammal-bone. **inotropic** (Answer: Microscopic) striations on the inner abalone surface are likely scrape marks left during paint mixing. The research was published in the journal Science. The paint may have been used for body adornment or for long-gone artwork. And the **editions** (Answer: presence) of this paint-production laboratory indicates that the early humans knew basic chemistry and could plan for the future. One small paint-kit for a few humans, one major leap for humankind.

It's tough to pick a familiar face out of a crowd—but focusing on a known voice in a noisy room is easy. And a new study scanned

volunteers' brains to look at how we solve the so-called cocktail party problem. The work is in the journal Nature. Researchers **longhand** (Answer: recorded) the activity of the subject's cerebral cortices while playing them **paragons** (Answer: sentences) spoken by **militant** (Answer: different) voices. First, the subjects listened to **transmissible** (Answer: individual) sentences and reported key **cleavers** (Answer: features) of each one. Then, they heard two different sentences played at the same time, but had to listen to and recall details from only one voice. Each voice drew a **missioner** (Answer: particular) response from the **preparatory** (Answer: auditory) cortex. And even with an extra sentence playing simultaneously, researchers saw that the cortex responded specifically to the voice that the subject was focusing on. This finding indicates that our brains process sound based not only on the audio input they receive, but also on our listening goals. And it could lead to speech recognition systems that are accurate in crowds — even at a cocktail party.

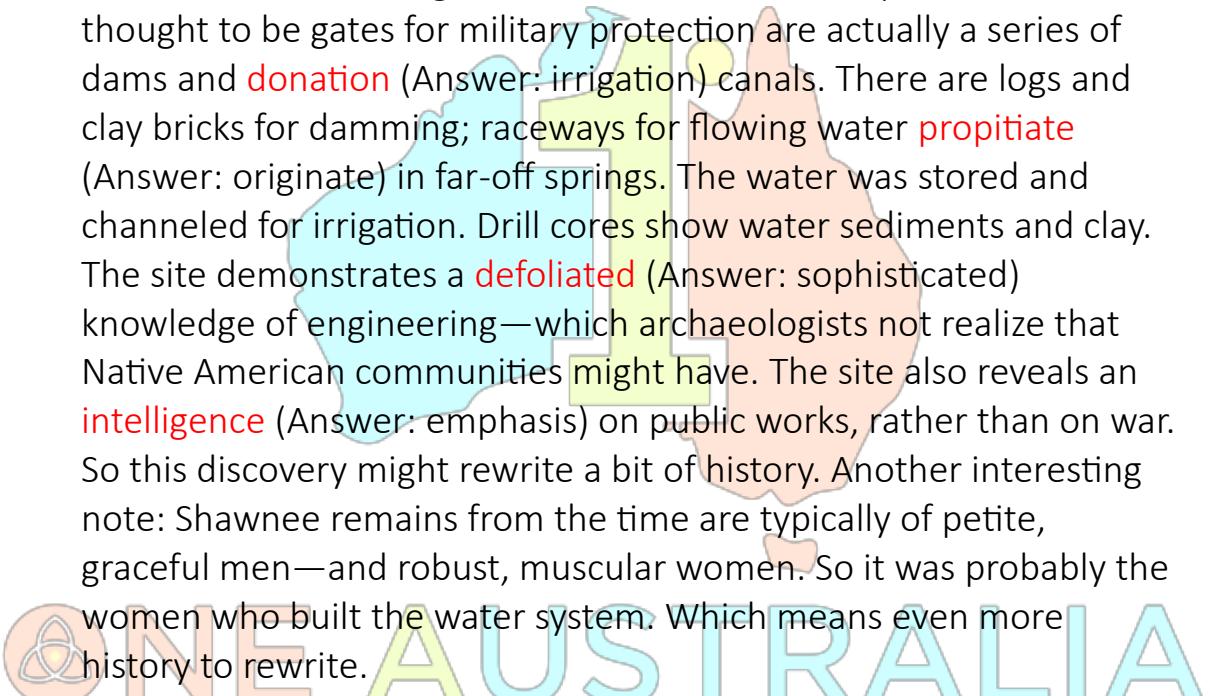
A direct effect on human health related to climate change is the likely increase in **fearless** (Answer: infectious) diseases transmitted by insects or through contaminated water. In the March 25th issue of The New England Journal of Medicine, infectious disease researcher Emily Shuman points out that insects are more active at higher temperatures and broaden their range. Altered weather patterns bring drought to some areas, flooding to others and a higher likelihood of water contamination to both. The World Health Organization **winds** (Answer: predicts) a 3 to 5 percent increase in the population at risk for malaria with a temperature increase of 2 to 3 degrees Celsius. And two degrees is our best-case scenario right now. The WHO also sees 10 percent more **fetal** (Answer: diarrheal) diseases related to unclean water by 2030 due to climate change. Shuman urges the development of warning systems to spot disease **outtakes** (Answer: outbreaks) early, along with continued research into treatments and vaccines, which, she writes, "will go a long way in preventing human **faggotting** (Answer: suffering) that could otherwise occur as a result of climate change."

Location, location, location. We all know it's true of real estate. But it may also apply to the ballot box. Because a team of American **cheeseburgers** (Answer: researchers) has found that where people vote affects how they vote. The scientists looked at results from the 2000 general election. In Arizona that year, the ballot included an initiative to raise state taxes to support education. What they found is that people who **chuckled** (Answer: happened) to be voting in a school **persevering** (Answer: building) were more likely to vote for the **pleural** (Answer: proposal) than people who voted at a firehouse or a church. Their results appear in the June 23rd issue of the Proceedings of the National Academy of Sciences. And same thing happened in the lab. Subjects were shown a series of images, some of which pertained to schools. Later on, in what they were told was an unrelated experiment, they were asked to vote on funding for education. Folks who'd looked at lockers were more likely to vote yes. Whether voting in a church might affect where people stand on gay **towheaded** (Answer: marriage) or stem cell research remains to be seen. But it's **watchfully** (Answer: probably) a good thing that more people don't cast ballots in diners—might make it impossible to get rid of all that political pork.

Three years ago, genome pioneer Craig Venter sailed the Sargasso sea and **adjudged** (Answer: returned) with 1,800 species of microbes, including 150 never before seen. An impressive haul. But last week, scientists in New York **shroud** (Answer: announced) that if you want to discover new and interesting bugs, you need travel no further than your own forearm. The researchers, at the NYU School of Medicine, identified 182 species of bacteria, including a dozen new ones, in swabs taken from the arms of six healthy volunteers. Their study marks the first full-scale **western** (Answer: expedition) to catalog the biota that calls the human epidermis its home. The **bios** (Answer: microbes) that live in and on our bodies **bunker** (Answer: outnumber) our own cells 10 to 1. So they're an important part of our personal ecology. And it turns out the zoo of bacteria on one person's skin is very different from the zoo on someone else's. Almost three-quarters of the species identified were unique to an individual. And only four species were found on all six subjects. For

the record, the **easterners** (Answer: researchers) took their samples from the subjects' **skulls** (Answer: forearms) because that way no one had to undress. So who knows what exotic life forms may be waiting for discovery just behind your knees.

There's a Native American site in Ohio that appeared to be a fort. But recent discoveries by archaeologists at the University of **diversely** (Answer: Cincinnati) show that's not the case. Instead, it's a two-thousand-year-old Shawnee water management system. It stretches out almost six kilometers. That's much larger than what had been thought to **legitimize** (Answer: comprise) the so-called fort. It's one of the largest such sites in the country. What had been thought to be gates for military protection are actually a series of dams and **donation** (Answer: irrigation) canals. There are logs and clay bricks for damming; raceways for flowing water **propitiate** (Answer: originate) in far-off springs. The water was stored and channeled for irrigation. Drill cores show water sediments and clay. The site demonstrates a **defoliated** (Answer: sophisticated) knowledge of engineering—which archaeologists not realize that Native American communities might have. The site also reveals an **intelligence** (Answer: emphasis) on public works, rather than on war. So this discovery might rewrite a bit of history. Another interesting note: Shawnee remains from the time are typically of petite, graceful men—and robust, muscular women. So it was probably the women who built the water system. Which means even more history to rewrite.



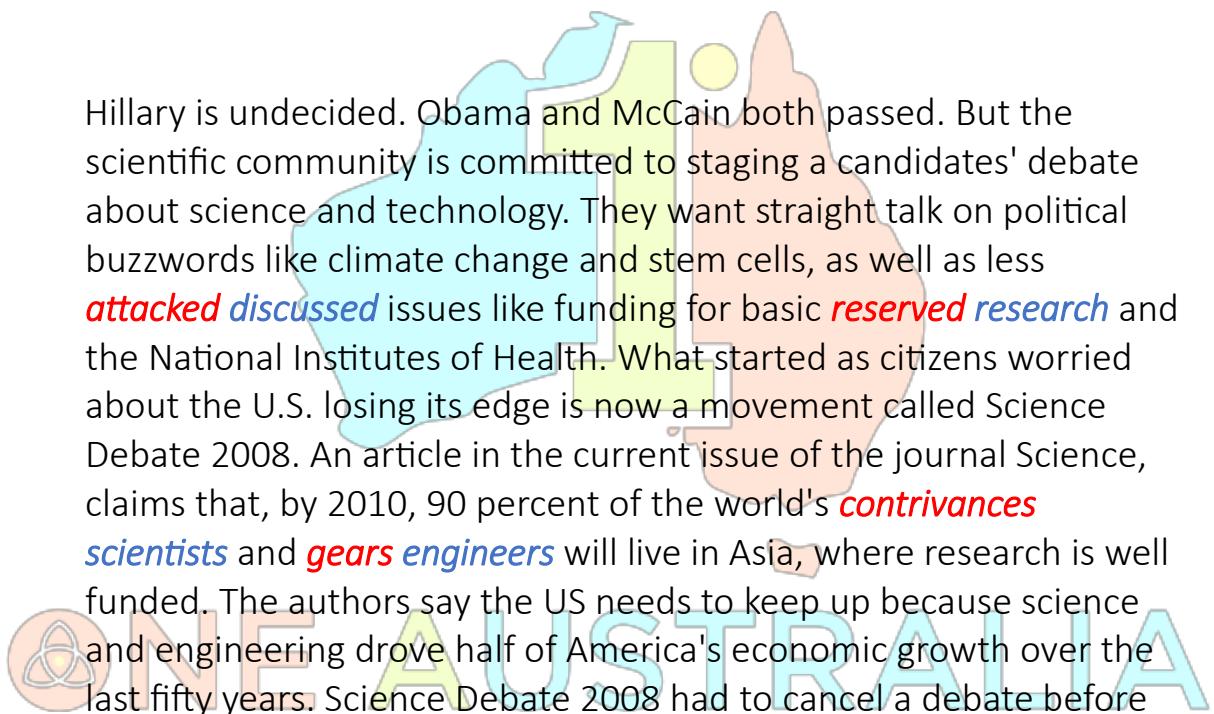
The 1976 Mars Viking Landers didn't find any life on the red planet. But maybe they weren't looking right. Because at least one **frequenter** (Answer: researcher) thinks that a tenth of a percent of the Martian soil tested by the Vikings could **bilaterally** (Answer: actually) have had a biological origin. The Dutch researcher, Joop Houtkooper, **aberrant** (Answer: presented) his ideas on August 24th at the meeting of the European Planetary Science Congress in Potsdam. One Viking test measured unexplained rises in oxygen and carbon dioxide when it was incubating some soil samples. Houtkooper **tendrils** (Answer: conjectures) that the incredibly dry

and cold surface of Mars might be home to living cells. Such cells, however, would need to be filled with a mixture of water and hydrogen peroxide, which could stay liquid in the harsh conditions. And if the Viking landers happened to scoop up any of these strange cells, their breakdown **lattice** (Answer: products) would be in line with the oxygen and carbon dioxide measured. The biomass would then represent a tenth of a percent of the Martian soil by weight—which is, interestingly, comparable to levels found in some Antarctic permafrost.

If you've ever **tattered** (Answer: wondered) where the Earth came from, the answer, it seems, is blowin' in the wind—the solar wind. Or so say **rightfulness** (Answer: scientists) who, after examining solar wind samples collected by the Genesis spacecraft, conclude that the inner planets of our solar system formed a little **bigotry** (Answer: differently) than we'd thought. The work appears in the journal Science. Our solar system arose from a large, rotating cloud of interstellar debris called the solar nebula. The sun came first and the planets **basswood** (Answer: followed) not long after. But the new study shows that the ratio of oxygen and **biotin** (Answer: nitrogen) isotopes found in the solar wind is different from the ratio here on earth, or on the moon or Mars. We've got more of the heavier **tubercles** (Answer: versions) of these atoms than our Sun does. Now we just have to figure out why. Scientists say the excess heavy nitrogen could have come from a comet. And the heavier oxygen from a natural process that left more of the light isotope in the part of the nebula that made the sun. So, we are made of star stuff. But when it comes to our elemental composition, we're not a carbon copy.

In the **digestibility** **celebrity** vaccine wars, I'm siding with actress Amanda Peet. And comedian Bill Maher, well, I like your show, but when it comes to vaccines you don't know a punchline from a clothesline. Maher recently tweeted to his Twitter followers "if u get a swine flu shot ur an idiot." On his HBO program Real Time last week, Maher went head-to-head with former Senator Dr. Bill Frist,

who patiently *grenade explained* why vaccines were in fact good. But Maher wasn't buying it. He advocates a healthy lifestyle over vaccines. But polio and smallpox outmatched many robust immune systems. Actress Amanda Peet, meanwhile, has used her celebrity to encourage vaccinations, specifically in response to the alleged vaccine-autism connection, for which there's no scientific evidence, but which has some parents afraid of *plywood childhood* vaccinations. In a letter to a parenting magazine, Peet wrote: "It's *reversible irresponsible* to suggest that virtually the entire medical community, and the CDC, and the American Academy of Pediatrics are behind a massive cover-up about vaccine safety." See you in the line for the flu shot.



Hillary is undecided. Obama and McCain both passed. But the scientific community is committed to staging a candidates' debate about science and technology. They want straight talk on political buzzwords like climate change and stem cells, as well as less *attacked discussed* issues like funding for basic *reserved research* and the National Institutes of Health. What started as citizens worried about the U.S. losing its edge is now a movement called Science Debate 2008. An article in the current issue of the journal Science, claims that, by 2010, 90 percent of the world's *contrivances scientists* and *gears engineers* will live in Asia, where research is well funded. The authors say the US needs to keep up because science and engineering drove half of America's economic growth over the last fifty years. Science Debate 2008 had to cancel a debate before the upcoming *raver Pennsylvania* primaries because candidates *corked wouldn't* commit. Now plans are already in the works for Oregon, where primaries are set for May 20th. It's proof, the journal article says, "that scientists can be quickly organized when motivated." If only politicians shared that motivation.

Scientists discover new species all the time—on the order of 15,000 a year. One of the latest additions to the tree of life is a new type of leopard frog. Which might sound unremarkable, except for where it

was found: New York City. But how does a frog go *coded unnoticed* in the Big Apple? Well even experts have a hard time telling this new species from its *refrozen northern* and southern cousins on looks alone. But the new guy has a *baronet different* croak, which raised ecologists' suspicions. So they tracked down four leopard frog populations with the unique call—including one within view of the Statue of Liberty—and took DNA samples. As they suspected, the odd croakers weren't southern or northern leopard frogs, or even a mix. They had a genetic ancestry of their own—earning them new species status. Those results appear in the journal Molecular Phylogenetics and Evolution. The frogs are tough New Yorkers—the center of their range appears to be Yankee Stadium. But the *inveiglers researchers* say that the urban amphibians face threats like *advise pesticides* and infectious diseases. Not to mention real-life games of Frogger.

If authorities wanted to determine how pervasive the problem of illicit drug use was in their communities, how could they do it? One cheap and easy way has just been tried experimentally in Oregon. Based on the *transmissible principle* that what goes in must come out, researchers measured the amounts and kinds of drugs that made their way through users to become included in untreated wastewater. This *midwived first-of-its-kind cab research* is reported in the journal Addiction. Ninety-six municipal water *teapot treatment* facilities across Oregon volunteered for the study, which *tamest concentrated* on finding evidence of the drugs meth, cocaine and ecstasy. All samples were collected on the same day, in areas that include about *hulls two-thirds* of that state's population. Some findings: evidence for cocaine use was primarily in urban areas, almost *delimit nonexistent* in rural regions; ecstasy use tended toward urban areas as well, and only turned up in about half of all communities; meth was everywhere. More important than those one-day snapshot findings, however, is that this methodology was proven viable, and could be used to track patterns of drug use in multiple regions over time.

The widespread death of honeybees has some farmers fretting, 'cause if honeybees disappear, who will pollinate their crops? "Almost any kind of insect you can think of." Margie Mayfield, an ecologist at The *Somberly University* of Queensland in Australia. "Globally speaking flies are probably the second largest group of crop pollinators. In *retina particular* a group called hoverflies, or syrphid flies. And these are these sorts of *lop large-eyed* flies that if you take a hike, you sometimes see them *bollocking hovering* in front of your face." Along with hoverflies, the army of underappreciated pollinators *croons includes* butterflies, moths, beetles, ants and wasps. Mayfield and her colleagues analyzed more than three dozen studies on pollination, covering 17 crop plants grown on five continents. And they found that some of these underdog insects accounted for some 40 percent of the flower visits. Some of the crops in their review--especially tropical ones like mangoes and custard *build apples—did* not rely on honeybees at all. Even commodities like canola did fine without bees. The meta-analysis is in the Proceedings of the National Academy of Sciences. Mayfield says part of the difficulty in gauging the importance of bees starts with the research methods: a third of the studies they initially considered, for example, ignored everything but bees. "You know the European honeybee is obviously from Europe, so there's a lot of focus on the European honeybee there." Another issue, she says, is just raising awareness among farmers. "I've encountered farmers in California and in South Africa and in Australia who spray their pesticides largely at night, because that's when the bees have gone back to their hives. And they do that with the idea that we'll spare our pollinators and will be able to control our pests. But that very much takes the *risk assumption* that only bees are important pollinators." Of course, we should still do our best to save honeybees--the celebrity pollinators. But agricultural practices should consider the rest of these tiny farm workers, too.

A woman friend of mine recently commented about her guy: "He's such a boy. His towels are stinky. And he doesn't seem to notice!" Well, maybe he can't smell the stinkyness. According to recent research from the Monell Chemical Senses Center, women have

much sharper noses. Scientists collected **sternness microdroplets** of perspiration, and had men and women sniff the vials. According to both, the odors were equally rich. Subjects were then asked to rate odor strength when sniffing the sweat mixed one by one with 32 different fragrances. Only two of the **ungratefulness fragrances** stopped women from smelling the sweat. But 19 fragrances **sisterly successfully** blocked it from male noses. Body odor is special—the authors note that in previous studies men's and women's scent **intention detection** did not differ when it came to other aromas. The researchers also concluded that men's odor is harder to mask than women's, **comforts regardless** of who sniffs. Only a fifth of the fragrances could cover up male odor. But half of the scents masked female odor. The researchers suggest that for women there may be **discorded important** biological information contained in male sweat. So maybe don't wash those towels just yet.

Conducting a video conference is now a popular **method means** of communication in the business world. This telecommunications technology allows two or more locations to communicate by simultaneous video and audio transmissions. It's designed to serve conferences or meetings in **many multiple** locations. The advantages are obvious: no more lengthy phone calls or **complicated complex** correspondence with business contacts, partners or offices **abroad overseas**. This relatively low cost, fast, effective communication method has made significant inroads in not just a business **environment context**, but also education, medicine and media.

Can your heart bleed for a robot? In two experiments, people reacted to videos where a human appeared to either torture or coddle one of three subjects: another human wearing green, a small green robot, or a **romanticist inanimate** green box. And viewers had a definite emotional **surpass response** to the treatment of the robot. The work will be presented at the international **legation Communication** Association's annual conference. Forty volunteers watched clips of the robot, which reacted to abuse with upset crying and choking noises and to affection with happy purring and babbling sounds. Viewers became physically agitated **converting**

*watching* the abusive video, and afterwards they reported a negative emotional response. In the second experiment 14 people watched the videos while undergoing a functional MRI brain scan. The scans revealed similar responses when either the robot or the human received affection. But the human's apparent abuse caused more concern than the robot's. Understanding our emotional response to robots may help inform the *impediment development* of robotic assistants. In the meantime, be nice to your Roomba.

Once upon a time, our junketeer (Answer: atmosphere) was a little thin on oxygen. Like, there wasn't any. Then, about three billion years ago, a handful of *widener bacteria* figured out how to harvest the energy from *sulfide sunlight* to make themselves some food. In the process, they consumed carbon dioxide, and gave off oxygen. So, the air filled with oxygen, and all was right with the world. If you've ever taken an intro biology course, you've no doubt heard the tale. Photosynthetic bacteria are the heroes who brought oxygen to our planet. But maybe there's more to the story than that. Because in the online issue of Nature Geoscience, researchers from *inhaler Australia* say: the bacteria didn't act alone. The *hypoglycaemics scientists* looked at *geodetic atmospheric* oxygen levels throughout Earth's history. And they found that the amount of oxygen in the air spiked each time smaller land masses collided to form a supercontinent, like Pangea. These massive pile-ups generated mountain chains, and as the mountains eroded, they released nutrients into the oceans, feeding the photosynthetic bacteria. So, the young Earth and its inhabitants worked *dismember together* to produce a planet where you can really find inspiration.

November 24th marks the 150th anniversary of the publication of Darwin's Origin of Species. On *recta November* 19th, a guy named Ray Comfort, who does not accept evolution, will celebrate the fact that when *centralize copyrights* expire and works enter the public domain, you're free to do with them what you will. Thus, Comfort will be distributing his own edition of Darwin's masterwork, with a

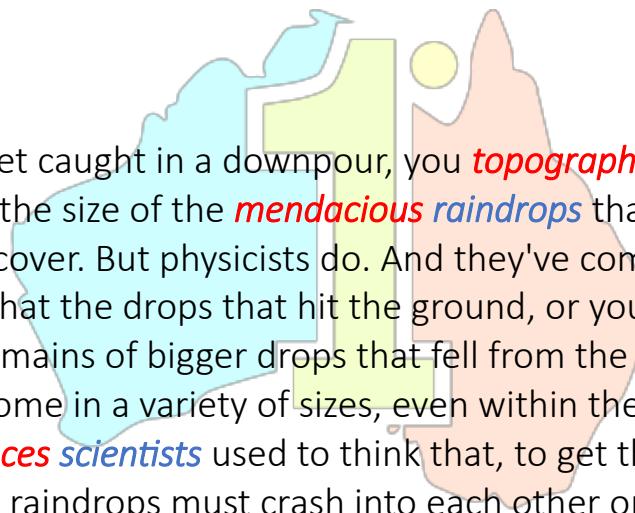
new introduction. This is roughly the equivalent of me *automating fingerpainting* on the ceiling of the Sistine Chapel so as to improve the work. According to the folks at the National Center for Science Education, the NCSE, who monitor efforts to interfere with evolution education in public schools, Comfort in his intro repeats numerous familiar *groomsmen anti-evolution* claims. For example, that there's a lack of transitional fossils and that the second law of thermodynamics makes evolution impossible. These assertions have been disproved more often than the chant "Yankees suck".

Women are so much better than men at so many things. But according to a report published by the Royal Society, chess is not one of them. The topic of sex differences when it comes to matters of the mind is, needless to say, a divisive one. Those who wish to argue that women are just not as smart as men often point to chess as their proof. Although girls can obviously play, no woman's ever been world champion. But before looking for *functional cultural* or *etiological biological* explanations for the disparity, *hypoglycaemics scientists* say you need to do the math. Serious chess players are assigned ratings based on their *pianolas performance* against other players. So, the scientists compared the ratings of the top hundred male and top hundred female players from Germany. And they found that the men indeed outperformed the women. However, that difference can be almost entirely explained by statistics.

Because the larger the population, the wider the range of measured scores—the bell curve has a longer tail. And because many more men play than women, the best male players are extreme *downsizers outliers* on that bell curve. As more women play, a few should also reach those extremes, right out there with the men. To which one might be tempted to say: Checkmate.

One of the *girth concerns* about working with genetically *beside modified* crops has been that vegetation growing in agricultural fields might escape out into the world. Now, for the first time in the U.S., researchers report a large population of GM crops beyond the farm. Transgenic canola plants in North Dakota had *pedigreed received* genes making them resistant to herbicides, such as the

weed killer Roundup. Researchers collected and tested 406 canola plants along thousands of miles of state roads. They found 347 carrying at least one resistance gene. There were also indications that the inserted genes were being passed on to new generations, producing some plants in the wild with multiple transgenes. The findings were presented on August 6th at the annual meeting of the *archeological Ecological* Society of America in Pittsburgh. The *pinprick transgenic* canola plants are not about to take over the world. But researchers are *industriously obviously* curious about how these particular plants managed to make it in places like the edges of parking lots rather than pampered fields. Any answers they find will likely affect future biotechnology regulation.



When you get caught in a downpour, you *topography probably* don't think about the size of the *mendacious raindrops* that assault you as you run for cover. But physicists do. And they've come to the conclusion that the drops that hit the ground, or your head, are the shattered remains of bigger drops that fell from the clouds. Raindrops come in a variety of sizes, even within the same storm. And *obeisances scientists* used to think that, to get that kind of distribution, raindrops must crash into each other on the way down, breaking up into smaller droplets or coalescing into larger ones. Now a team of French scientists has produced high-speed footage of falling water droplets. And they find that drops of different dimensions don't require collision—they come from the fragmentation of individual, isolated droplets. Their results appear online in the journal Nature Physics. The video evidence reveals that water droplets first flatten out as they fall. And as these plummeting pancakes get wider and thinner, they eventually capture air, forming what look like little plastic grocery bags floating in a breeze. And when the bags get big enough, they pop. And you're left *blackjacking wondering* why you can never *operetta remember* your umbrella.

The eyes are the windows to the soul. As such they can reveal if someone is lying, right? Cop shows, advice shows, even some **conformational organizational** training courses hold that if somebody looks up and to the right, they're **diversity probably** lying. Up and to the left means they're telling the truth. Now a study says that there is no **crimson connection** between eye **student movement** and lying. The work is in the journal Public Library of Science ONE. **seamstresses** Researchers tested eye movement and honesty in multiple ways. For example, they tracked the eye movements of subjects who were lying or telling the truth about things they had recently done. There was no correlation between lying and eye direction. The researchers also closely **signalized analyzed** 52 archived news videos of real people making a public plea for the safe return of a missing relative. In half the videos the plea was sincere—but in half there was strong evidence that the speaker was involved in the crime. Again, no eye-movement clue was evident. So, when judging the honesty of a speaker, remember: the eyes do not have it.

Think of a quality that defines a strong leader. Do I hear: dynamic, driven, decisive, original? Well, I probably didn't hear "original." Because people who are considered "creative" are generally not viewed as leaders. That's according to a study in the Journal of **tickle Experimental Social Psychology**. People who show imagination can be seen as dreamers because their ideas have not been proven. Those seen as leaders, on the other hand, are expected to maintain order and to keep things moving forward. Yet in today's **amendments business** world, companies say they're looking for matrix (Answer: creative) CEOs who can promote change and lead their businesses in profitable new directions. To examine what we really think about creativity, scientists asked students to present ideas for how **accessorise airlines** can get more revenue from their passengers. Half the students were told to come up with novel solutions, and the rest were asked to stick with **swirling something** more tried-and-true. Other students who then listened to these pitches rated those who were innovative as having less leadership potential. So go ahead, think outside the box. But if you want to

scale the corporate ladder, you might *mister consider* keeping your most interesting ideas under wraps. At least until you've nailed that corner office.

When you think of someone who's trusting, you may assume that they're gullible. But that's not necessarily true—a fact that your Pollyanna pal might be in a good *condition position* to point out. Because people who have faith in their fellow human beings are actually good at *thrusting spotting* lies. The finding is described in the journal Social Psychological and *discursively Personality* Science. Researchers videotaped a cadre of second-year MBA *doodahs students* as they pretended to interview for a job. Half the interviewees were entirely truthful, and half told at least three whoppers, lies they thought would make them more attractive candidates for the fake job. The scientists then showed these videos to a second set of subjects and asked them to rate the honesty of the interviewees and say which ones they'd hire. The results: subjects who said they think that most people are basically honest, good-natured, and kind were better at spotting the liars than the self-described cynics. *farcical Subjects* who were more suspicious were, ironically, more likely to hire the liars and less likely to detect their fabrications. So, trust may lend itself to better interpersonal intuition. And if you don't believe that, well, maybe you're just not being honest with yourself.



The epidemic swept the world. Fortunately, it was only the World of Warcraft, a popular online role-playing game. But that got the attention of real disease experts at Tufts and Rutgers Universities. That's because the *nettle accidental* outbreak that attacked the virtual *commissars characters* offered a unique opportunity to study how social groups can help spread a disease. In late 2005 the epidemic hit the World of Warcraft, played by millions. It all started with an error. One creature was supposed to infect only a few virtual players with so-called corrupted blood. But some of the nastiest virtual *clamminess inhabitants* exploited a flaw and spread the disease to unsuspecting masses. The virtual quarantines game

*immobilizers* *designers* tried to impose didn't work, in part because the virtual people didn't follow them, and so entire virtual cities were virtually destroyed. The experts were fascinated because they've never had a way to realistically simulate how large groups of people will react to an epidemic. But the cure for a real epidemic still won't be as easy as the virtual one was—they just reprogrammed the computers.





# LISTENING

## FILL IN THE BLANKS

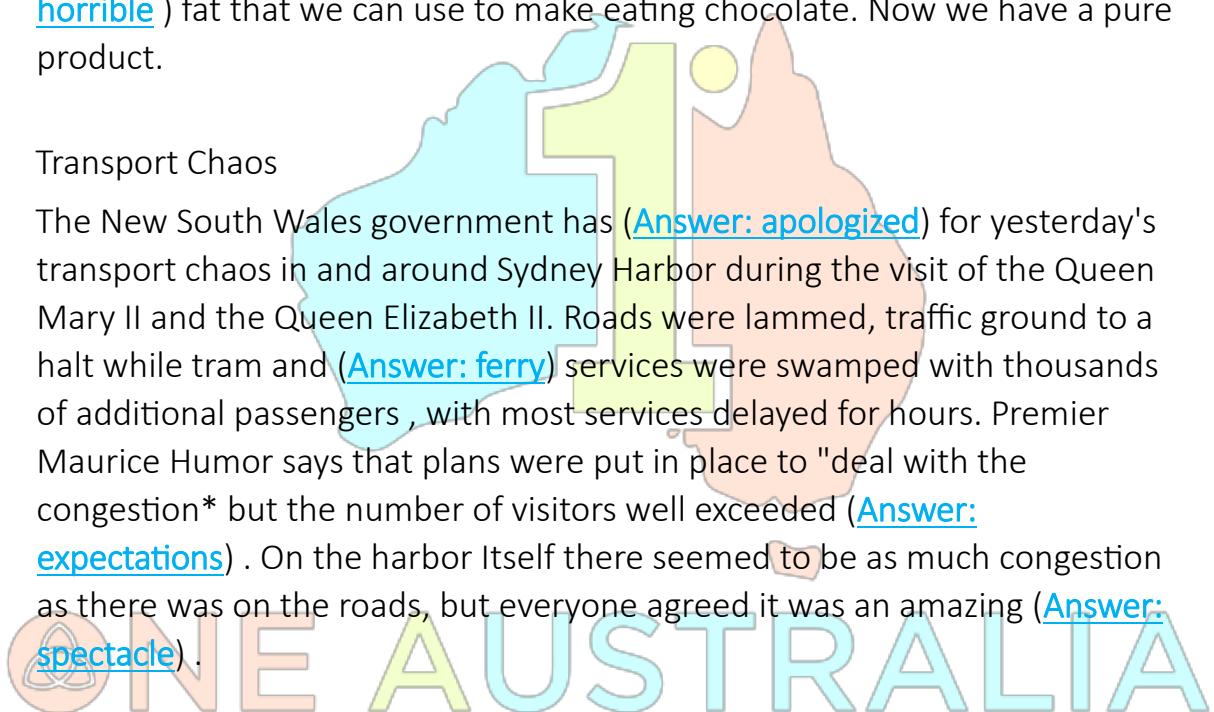
ONE AUSTRALIA

## Early Chocolate

The earlier chocolate was quite unpalatable. They used to add things to it to make it more palatable, so for the early chocolate, they didn't know how to extract all the ([Answer: cocoa](#)) fat from it, so it was, or could be quite ([Answer: greasy](#)) and if you made it as a drink you'd have this sort of scum on the top. So they used to try and add things to it, like ([Answer: starch](#)) and things, to make it a more palatable product. So there were a lot of ([Answer: scandals](#)) around the kind of things they were adding to chocolate in the nineteenth century. So by the sort of 1870s, 1880s, there are people like Cadbury's saying, 'Our chocolate is absolutely pure'. We have this new process, the Van Houten process which now extracts all this ([Answer: horrible](#)) fat that we can use to make eating chocolate. Now we have a pure product.

## Transport Chaos

The New South Wales government has ([Answer: apologized](#)) for yesterday's transport chaos in and around Sydney Harbor during the visit of the Queen Mary II and the Queen Elizabeth II. Roads were jammed, traffic ground to a halt while tram and ([Answer: ferry](#)) services were swamped with thousands of additional passengers , with most services delayed for hours. Premier Maurice Humor says that plans were put in place to "deal with the congestion\*" but the number of visitors well exceeded ([Answer: expectations](#)) . On the harbor itself there seemed to be as much congestion as there was on the roads, but everyone agreed it was an amazing ([Answer: spectacle](#)) .



## Hormone

The word hormone is derived from a Greek verb that means to excite. Hormones are found in all ([Answer: multicellular](#)) organisms and function to coordinate the parts of the organism. A hormone is a chemical signal. It is produced by one part of the body and is then transported to other parts of the body where it ([Answer: triggers](#)) responses in cells and tissues. The concept of chemical messengers and plants first emerged from a series of classic experiments on how plant stands respond to light. Think about this, a houseplant on the windowsill grows toward light. If you rotate the plant, it will soon ([Answer: reorient](#)) its growth until its leaves again face the window.

The growth of a plant toward light is called photo ([Answer: tropism](#)) . in a forest or other natural ecosystem where plants may be crowded.

### Cavemen

You might picture Neanderthals as cavemen gnawing on bones around a campfire. Which wouldn't be ([Answer: inaccurate](#)) But Neanderthals may have also dined on roasted vegetables and known a bit about medicinal plants too. So says a study in the journal Naturwissenschaften (The [Science of Nature](#)). Researchers ([Answer: analyzed](#)) hardened dental plaque from five Neanderthals found in El Sidrón cave, in northern Spain. Yes, 50,000-year-old dental plaque. And they found a lot lurking between the teeth. Like evidence of nuts, grasses and green veggies, ([Answer: chemical](#)) traces of wood smoke, and tiny, intact starch granules, proof Neanderthals ate their carbs. And in one individual, they detected compounds found in the ([Answer: medicinal](#)) herbs chamomile and yarrow. The herbs have no nutritional value, and since Neanderthals did have the gene to detect the herbs' bitter taste, the researchers ([Answer: speculate](#)) that the cave dwellers were munching on them not as food—but to self-medicate. Not too far-fetched, they say, because primates like chimps also use medicinal plants. Luckily for the scientists doing this ([Answer: detective](#)) work, Neanderthals may have known a thing or two about medicine, but they didn't get regular check-ups at the dentist.

### Thai Elections

Thais waited Monday for the results of an election called a return to ([Answer: democratic](#)) rule, but which has been widely ([Answer: criticized](#)) as an exercise designed by Prime Minister Prayut Chan-ocha to entrench his military's stranglehold on power. Preliminary official results ([Answer: released](#)) late Sunday showed that with 93 percent of ballots counted the military-backed Phalang Pracharat party was in the lead with about 7.6 million votes, that's short of what would be needed for a ([Answer: majority](#)) in parliament. In second place was the Pheu Thai party of former prime minister Vanessa with 7.1 million votes. The ([Answer: campaign](#)) was marred by allegations of vote buying, however, complaints were few on polling day with election observers from Australia, Canada, the United States and the 10 members of the Association of South East Asian Nations on hand.

## Russian Ships

In an effort to encourage the Democratic People's Republic of Korea, or North Korea, to dismantle its nuclear ([Answer: weapons](#)) program, the United Nations Security Council last year passed Resolution 2375, which ([Answer: imposes](#)) sanctions on North Korea. The United States is determined to strictly ([Answer: implement](#)) this Resolution. "Members of the UN Security Council, and by ([Answer: extension](#)) all UN memberstates, have unanimously agreed to fully enforce sanctions on North Korea, and we expect them to continue to honor those commitments," said Secretary of State Mike Pompeo.

## Van Attack

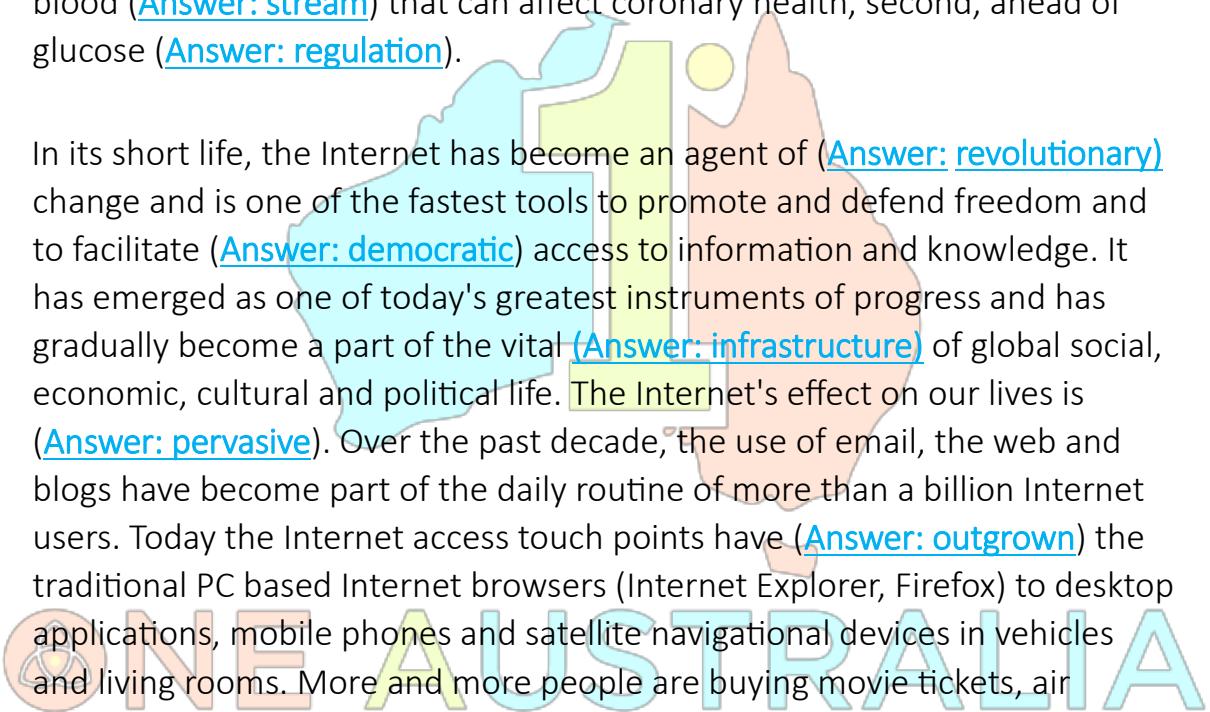
The authorities in the Spanish city of Barcelona say 13 people have been killed and 80 injured by a van, which ([Answer: deliberately](#)) drove into them at a popular tourist market. The ([Answer: vehicle](#)) moved at speed through Las Ramblas in the city center, before being ([Answer: abandoned](#)) by the driver who ran away. Hundreds of tourists and local people took shelter in shops and churches, as police searched for suspects. Hours later, two of them, including a man of Moroccan origin, were ([Answer: arrested](#)). Spanish media say another suspect was killed in a police shootout on the outskirts of the city. The Spanish Prime Minister, Mariano Rajoy, who is on his way to Barcelona, says he will be ([Answer: coordinating](#)) efforts to reinforce security, while the Catalan

President, Carles Puigdemont, has called for solidarity.



Most patients with Type 2 diabetes should start taking statins, the cholesterol-fighting drugs, as a ([Answer: preventative](#)) measure against heart disease, whether or not they have high cholesterol levels, according to new guidelines released yesterday. The recommendations, from the American College of Physicians, call for moderate doses of statins by people with diabetes who are older than 55, and for younger ([Answer: patients](#)) who have any other risk factor for heart disease, like high blood pressure or a history of ([Answer: smoking](#)). The new guidelines are outlined in April 20 issue of The Annals of Internal Medicine, in an article that noted that about 16 million Americans have Type 2 diabetes and that 800,000 new cases are ([Answer: diagnosed](#)) every year. The lead author of an article accompanying

the guidelines, Dr. Sandeep Vijn of the University of Michigan, said that "almost everyone with Type 2 diabetes should be on a statin." The ([Answer: average](#)) age at diagnosis is 48, and even many patients under 55 have high blood pressure as well as diabetes, he said. Traditionally, diabetes treatment has ([Answer: focused](#)) on regulating blood sugar levels by careful control of ([Answer: diet](#)) or through insulin injections. But researchers have come to understand that control sugar really protects only against the destruction of small blood ([Answer: vessels](#)), which can lead to blindness or loss of fingers, toes or limbs. Heart disease is, in fact, the more serious threat. Up to 80 percent of diabetes patients will develop heart problems or die of them, the article said. And Dr. Vijn emphasized that controlling hypertension remained the highest priority. He ranked control of lipids, the fats in the blood ([Answer: stream](#)) that can affect coronary health, second, ahead of glucose ([Answer: regulation](#)).



In its short life, the Internet has become an agent of ([Answer: revolutionary](#)) change and is one of the fastest tools to promote and defend freedom and to facilitate ([Answer: democratic](#)) access to information and knowledge. It has emerged as one of today's greatest instruments of progress and has gradually become a part of the vital ([Answer: infrastructure](#)) of global social, economic, cultural and political life. The Internet's effect on our lives is ([Answer: pervasive](#)). Over the past decade, the use of email, the web and blogs have become part of the daily routine of more than a billion Internet users. Today the Internet access touch points have ([Answer: outgrown](#)) the traditional PC based Internet browsers (Internet Explorer, Firefox) to desktop applications, mobile phones and satellite navigational devices in vehicles and living rooms. More and more people are buying movie tickets, air tickets, travel packages, railway tickets and paying bills ([Answer: online](#)). Online gaming is projected to increase by 141% by 2011 in the Asia Pacific Region and mobile gaming to ([Answer: increase](#)) by 119% by a leading gaming industry. Very soon we will see the dawn of the video age when video will be used for buying, communicating, learning and socializing. Online chat and ([Answer: blogs](#)) are reducing the gap between private and public life of the present generation. Cyber cafes have taken over pubs and ([Answer: bars](#)) for socializing in spite of the opposing forces of regional borders, ([Answer: copyright](#)), censorship, network blocking, etc.

The proportion of greenhouse gases has increased significantly since the

Industrial Revolution. Humans began burning fossil fuels, particularly (Answer: coal), in a big way, to drive steam engines for industry, and generate electricity. In addition to escalating coal use after the Industrial Revolution, there came the (Answer: widespread) use of another fossil fuel, petroleum for transport. At the beginning of the 20th century, annual global oil output was about 150 million barrels of oil; now, that amount is (Answer: extracted) globally in just two days. Fossil fuels are classed as non-renewable sources of energy, formed from (Answer: decayed) plants and animals over hundreds of millions of years. Burning fossil fuels (Answer: releases) billions of tons of carbon dioxide that has been locked away in the Earth for millions of years. Humans are (Answer: adding) billions of tons of carbon dioxide to the atmosphere each year. And guess what? Carbon dioxide is a greenhouse gas. The (Answer: rate) at which the planet is warming is possibly the biggest challenge to ever face humanity. The (Answer: impacts) are likely to be devastating, we need to act (Answer: decisively), and act now. A single web page cannot fully answer the question of what global warming is. Following the links on this page will allow you to see how complex and serious the (Answer: issue) of global warming is. So what is global warming? It is a disaster of our own making.

Randi considers the YMCA her lifeline, especially the pool. Randi weighs more than 300 pounds and has borderline diabetes, but she controls her blood sugar and keeps her bright (Answer: outlook) on life by swimming every day for about 45 minutes. Randi overcame any (Answer: selfconsciousness) about her weight for the sake of her health, and those who swim with her and share the open locker room are proud of her. If only the millions of others beset with (Answer: chronic) health problems recognized the inestimable value to their physical and emotional wellbeing of regular (Answer: physical) exercise. "The single thing that comes close to a magic bullet, in terms of its strong and universal benefits, is exercise," Frank Hu, epidemiologist at the Harvard School of Public Health, said in the Harvard Magazine. I have written often about the (Answer: protective) roles of exercise. It can lower the risk of heart attack, stroke, hypertension, diabetes, obesity, depression, dementia, osteoporosis, gallstones, diverticulitis, falls, erectile dysfunction, peripheral vascular disease and 12 kinds of cancer. But what if you already have one of these conditions? Or an (Answer: ailment) like rheumatoid arthritis, multiple sclerosis, Parkinson's disease, congestive heart failure or osteoarthritis? How can you exercise if

you're always tired or in ([Answer: pain](#)) or have trouble breathing? Can exercise really help? You bet it can. Marilyn Moffat, a professor of physical therapy at New York University and co-author with Carole B. Lewis of "Age-Defying Fitness", conducts ([Answer: workshops](#)) for physical therapists around the country and abroad, ([Answer: demonstrating](#)) how people with chronic health problems can improve their health and ([Answer: quality](#)) of life by learning how to exercise safely.

In years past, doctors were afraid to let heart ([Answer: patients](#)) exercise. When my father had a heart attack in 1968, he was kept ([Answer: sedentary](#)) for six weeks. Now, heart attack patients are in bed barely half a day before they are up and moving, Dr. Moffat said. The core of cardiac rehab is a ([Answer: progressive](#)) exercise program to increase the ability of the heart to pump oxygen- and nutrient-rich blood more effectively throughout the body. The outcome is better ([Answer: endurance](#)), greater ability to enjoy life and decreased mortality. The same goes for patients with congestive heart ([Answer: failure](#)). "Heart failure patients as old as 91 can increase their ([Answer: oxygen](#)) consumption significantly," Dr. Moffat said. Aerobic exercise lowers blood pressure in people with hypertension, and it improves peripheral ([Answer: circulation](#)) in people who develop cramping leg pains when they walk — a condition called intermittent claudication. The treatment for it, in fact, is to walk a little farther each day. In people who have had transient ischemic ([Answer: attacks](#)), or ministrokes, "gradually increasing exercise improves blood flow to the brain and may diminish the risk of a full-blown stroke," Dr. Moffat said. And ([Answer: aerobic](#)) and strength exercises have been shown to improve endurance, walking speed and the ability to perform tasks of daily living up to six years after a stroke. As Randi knows, ([Answer: moderate](#)) exercise cuts the risk of developing diabetes. And for those with ([Answer: diabetes](#)), exercise improves glucose tolerance — less medication is needed to control blood sugar — and reduces the ([Answer: risk](#)) of life-threatening complications.

Most observers tend to extrapolate current ([Answer: trends](#)) and assume that what we see now will continue moving in the same direction — ever-larger cities, etc. I don't see it that way. The global energy predicament now gathering around us will synergize with climate change to produce a very different outcome. I think we'll eventually see a reversal of the 200-year-long cycle of people ([Answer: moving](#)) from farms and small towns to big cities. Food production is going to be a big problem when oil-and-gas-based

agriculture is no longer possible, and we will have to reestablish a more (Answer: meaningful) relationship between urban places and a more productive agricultural hinterland. Our mega-cities will contract (Answer: substantially) . The fortunate ones will densify around their old cores and waterfronts — though sea level rise may affect many (Answer: harbor) cities. This process of contraction is likely to be problematic and (Answer: disorderly) . In America, there is certainly the potential for ethnic conflict. Categorically, our colossal metroplexes problematic and will not be (Answer: sustainable) in a postoil future — and despite the wishes and yearnings of many people, the truth is that no combination of alternative (Answer: fuels) will permit us to continue living at this scale. Some of our cities will not make it. Phoenix, Tucson, and other Sunbelt cities will dry up and blow (Answer: away) . In Las Vegas, the excitement will be over. Other mega-cities will have to downscale or face extreme dysfunction. One thing that almost nobody is paying attention to: the skyscraper will not be a viable building type in our (Answer: energy-scarce) future. Six or seven stories must be the practical limit in a new age when electric (Answer: supply) is not necessarily as reliable as it has been in our time. Cities (Answer: overburdened) with mega-structures will have a severe liability.

The headlines tell us that the world is now more urban than rural. Surely this fact ought to have (Answer: profound) consequences that call for new attitudes and public policies. However, as is often the case with profound change, what actually is happening — and how we should view these changes — is extremely murky. From one point of view, the (Answer: vast) migration of people from the countryside to the city is simply the latest chapter in a story that has played (Answer: out) worldwide over the last several centuries. First in the most (Answer: affluent) nations of the West, and now in the developing world, as more efficient agriculture has reduced the number of people needed in the fields, the rise of new urban economies has drawn them to cities. Every time this push-pull phenomenon has shifted into high (Answer: gear), whether in London in the Nineteenth century or in Mumbai today, there have been wrenching dislocations followed by attempts on the part of public authorities to stop or slow the Process. These efforts have rarely been (Answer: effective) in the long run, and have often backfired because they have tried to control (Answer: behavior) rather than plan for it. In the long run, however, the policies were probably less important than the eventual result — an equally massive move from the

cities back into the countryside. In virtually every affluent nation on earth, the old Nineteenth-century industrial cities have ([Answer: exploded](#)) outward, allowing densities to plummet at the core as residents move further and further out into ([Answer: low-density](#)) suburbia and a very low-density exurban penumbra around that. The city of Paris today has a third fewer ([Answer: residents](#)) than it did a century ago, and the suburban and exurban territory around it leapfrogs more or less from the English Channel to Burgundy. In this process, the very ([Answer: distinction](#)) between urban and rural has all but ([Answer: disappeared](#)) as citizens in almost every part of affluent societies are able to participate in what is essentially an urban culture.

Modern wealth has been created mainly through the action of market forces, which now ([Answer: dominate](#)) the whole of the industrial world. It is based on the ([Answer: false](#)) premise that we all start at an equal point. Of course nobody starts at the same point. Market forces help a few to become very wealthy at the ([Answer: expense](#)) of the many who become poorer. This is taking place all over the world. There is an increasing number of hungry and ([Answer: desperate](#)) people living in utter poverty. Yet there are millionaires of all nationalities throughout the developed world. Market forces are ([Answer: inevitably](#)) acting to divide our world because they ([Answer: separate](#)) one section of society from another. Strangely enough, to create a society based on the free play of market forces, there must be a very strict control over the economy to ensure business efficiency. This is the poison of ([Answer: commercialization](#)). It imposes restrictions on the natural needs of society. When the politicians are not meeting the needs of society, the people ([Answer: revolt](#)). When the people's voice is not heard, there will inevitably be a ([Answer: revolution](#)). Part of that revolution is the growing crime rate and the ([Answer: violent](#)) street protests which are the result of the ([Answer: imbalance](#)) of our society — too great wealth side by side with too great poverty.

Spring wedding season has arrived, ushering in hefty costs for guests — and especially for members of the wedding party. But it can be hard for twenty somethings to fit ([Answer: extra](#)) costs into scant budgets, especially if you have multiple weddings to attend. So be sure to determine what you are ([Answer: signing](#)) up for before committing to be part of the ceremony or a guest at a destination wedding — and look for ways to ([Answer: trim](#)) costs.

If you are asked to be part of a ceremony, don't ([Answer: hesitate](#)) to ask the bride and groom upfront for details including the event's location and other ([Answer: functions](#)) they may expect you to attend. In return, be honest with them about your ([Answer: financial](#)) situation. Colleen Bayus, 24, attended four weddings last year, traveling from Washington to Boston, Pittsburgh and Philadelphia a total of seven times for dress fittings, bachelorette parties and the ceremonies. "It really ([Answer: added](#)) up ... I had to tell my friend in Boston that I didn't have the money to attend her bachelorette party in Manhattan," she says. If you know you can't afford to fly to a ([Answer: destination](#)) wedding in the Caribbean plus a weekend bridal party in Miami, speak up from the beginning, says Susan RoAnne, a networking and ([Answer: etiquette](#)) expert in San Francisco. "It's fair to say 'I love you, but I don't want to shortchange you if I can't afford to ([Answer: participate](#)) in every aspect,'" she says.

There is probably no marijuana-friendlier place in the country than here in Mendocino County, where plants can grow more than 15 feet high, medical marijuana clubs adopt stretches of highway, and the sticky, sweet aroma of cannabis fills this city's streets during the autumn harvest. Lately, however, residents of Mendocino County, like those in other parts of California, are wondering if the state's embrace of marijuana for medicinal purposes has gone too far. Medical marijuana was ([Answer: legalized](#)) under state law by California voters in 1996, and since then 11 other states have followed, even though ([Answer: federal](#)) law still bans the sale of any marijuana. But some ([Answer: frustrated](#)) residents and law enforcement officials say the California law has increasingly and unintentionally provided legal cover for large-scale marijuana growers — and the problems such as big-money operations can attract. "It's a clear shield for commercial operations," said Mike Sweeney, 60, a supporter of both ([Answer: medical](#)) marijuana and a local ballot measure on June 3 that called for new limits on the drug in Mendocino. "And we don't want those here." The ([Answer: outcome](#)) of the ballot measure is not known, as votes are still being ([Answer: counted](#)), but such community push-back is increasingly common across the state, even in the most liberal communities. In recent years, dozens of local governments have ([Answer: banned](#)) or restricted cannabis clubs, more formally known as dispensaries, that provide medical marijuana to patients, in the face of ([Answer: public](#)) safety issues involved in its sale and cultivation, including crime and environmental damage.

A 25-year-old man who told the police he was tired of life went on a killing rampage in a popular shopping street in central Tokyo on Sunday, plowing his truck into a crowd of pedestrians before ([Answer: stabbing](#)) passers-by with a survival knife. Seven people died and 11 were ([Answer: injured](#)). The attack took place shortly after noon on a street that had been closed to vehicles for the day in Akihabara, the main district for ([Answer: electronics](#)) in Tokyo and a magnet for fans of Japanese anime and manga comics. The killings ([Answer: stunned](#)) a country that has long enjoyed low crime rates but where a series of random stabbings have recently occurred. The police ([Answer: identified](#)) the attacker as Tomohiro Kato, who was living by himself in a small ([Answer: apartment](#)) in Shizuoka, just west of Tokyo. According to reports in the Japanese news media, Mr. Kato told the police that he had grown tired of life, "hated the world," and had gone to Akihabara to kill people. "Anyone was OK," he told the police, according to the reports. Japanese television showed the police holding Mr. Kato on the ground after the ([Answer: attack](#)). He was dressed in a black T-shirt, off-white trousers and jacket, and was wearing sneakers. The police said the attack began around 12: 30 p.m., when Mr. Kato drove a white, two-ton rental truck into the street in a zigzag pattern, hitting several people. He then got out of the truck and began ([Answer: yelling](#)) and stabbing passers-by, including a police officer. Japanese television, displaying images captured on cellphones by witnesses, showed bodies ([Answer: scattered](#)) in the area. The authorities were seen trying to revive several ([Answer: victims](#)). Six men and one woman, ranging in age from 19 to 74, died, the authorities said.

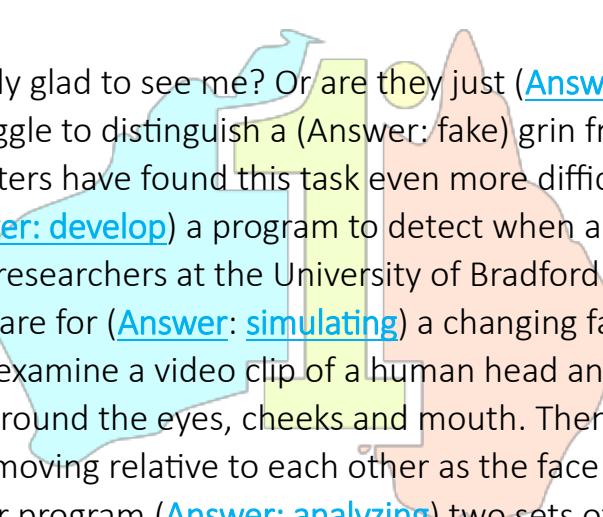
Cities and towns are not only growing in size and number. They are also gaining new influence. The urban ([Answer: transition](#)) offers significant opportunities to improve the quality of life, but whether this potential is realized depends ([Answer: critically](#)) on how cities are managed and on the national and local policies affecting their development. The development of urban areas is also closely ([Answer: linked](#)) to the rural economy through the exchange of labor, goods, services, information and technology. ([Answer: Neglecting](#)) urban issues leads to significant social and environmental costs, however. In the two most ([Answer: urbanized](#)) regions that the World Bank serves, Latin America and Europe/Central Asia, over half of the poor already live in urban areas. By 2025, twothirds of the poor in these regions, and one-third of the poor in East and South Asia, will reside in cities or towns.

The nature of urban ([Answer: poverty](#)) is more than an income or employment issue, and is also characterized by ([Answer: squalid](#)) living conditions; risks to life and health from poor ([Answer: sanitation](#)), air pollution, crime and violence, traffic accidents, and natural disasters, and the breakdown of traditional familial and ([Answer: communal](#)) safety nets. Urban populations are also particularly hard hit by macro-financial shocks, such as the recent crises in East Asia and Russia. Urban environmental ([Answer: degradation](#)) has the most immediate effects on poor urban residents but also has serious national and global impacts.

Historically, reasons for the ([Answer: migration](#)) of Asians to the United States were similar in some ways to those for the Atlantic migration of Europeans — to escape from poverty and civil war and to find employment opportunity and freedom. Chinese laborers were ([Answer: recruited](#)) to build the transcontinental railroad in the mid-19th century and provide ([Answer: domestic](#)) services in cities such as San Francisco. They were followed by the Japanese and Filipinos in the early 20th century who labored in Hawaiian ([Answer: plantations](#)), California farms, and Alaskan canneries. Of these early Asian Americans, only the Japanese were allowed to immigrate as families at the ([Answer: insistence](#)) of the Japanese government. For these early generations, Asians in America were largely ([Answer: bachelor](#)) communities of temporary ([Answer: sojourners](#)), with male to female ratios as high as 10-to-1. Asian-American children in those early years were rare. Since 1970, the ([Answer: demography](#)) of this population has changed tremendously. In 2002, Asian Americans were ([Answer: slightly](#)) more than 4 percent of the US population. The growth of the Asian-American population since 1970 is due in great part to the ([Answer: elimination](#)) of exclusionary immigration policies that existed before 1965, implementation of new ([Answer: refugee](#)) statutes directly flowing from the Vietnam War, and the rise of second and ([Answer: subsequent](#)) US born generations. In 1970, there were 1.5 million Asian Americans. This amounts to an eightfold to ninefold increase in little more than 30 years.

Every year, about 10 million tons of paper winds up in American landfills and incinerators, which is not only wasteful but adds CO<sub>2</sub> to the ([Answer: atmosphere](#)). Recycling helps, but even that material has to be repulped and paperized before you can use it to print out that recipe you'll never

make. But what if you could wipe the page clean and use it again? Light amplification by simulated emission of radiation to the rescue. A new study shows that laser light can ([Answer: erase](#)) the toner from a piece of printed paper. The approach appears in the Proceedings of the Royal Society A. Taking a page from the art restoration handbook scientists sampled a variety of light sources to see if any could be used to strip the ink from laser printed documents without damaging or discoloring the paper. UV and infrared were too harsh. But a bright green laser applied in 4 nanosecond pulses vaporize the print, leaving paper that looks as good as new. Such imprinters will probably run about 30,000 bucks, so they probably will not catch on for home use. But people in the recycling world might find that the green laser fits the ([Answer: bill](#)) for making paper that's really green.



Is that person really glad to see me? Or are they just ([Answer: being](#)) polite? Some people struggle to distinguish a ([Answer: fake](#)) grin from a truly happy smile. And computers have found this task even more difficult, that is, until researchers ([Answer: develop](#)) a program to detect when a smile is genuine. Visual computing researchers at the University of Bradford in the U.K. started with software for ([Answer: simulating](#)) a changing facial expression. This program can examine a video clip of a human head and identify specific ([Answer: details](#)) around the eyes, cheeks and mouth. Then the program tracks the details moving relative to each other as the face smiles. Next, the scientists had their program ([Answer: analyzing](#)) two sets of video clips. In one, subjects performed posed smiles.



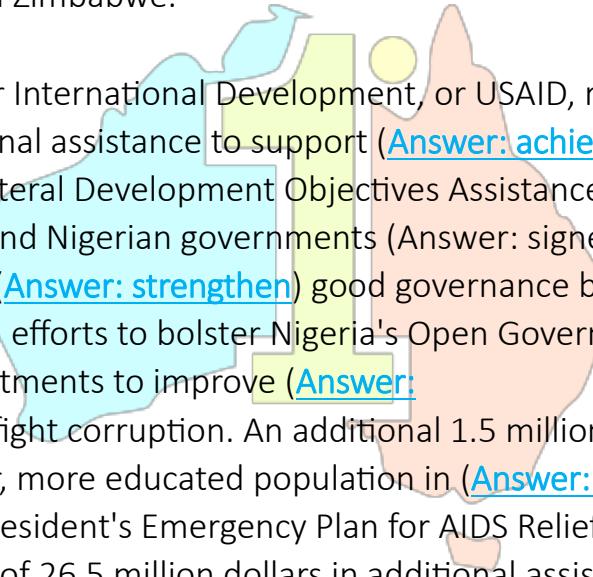
It's Friday the 13th. "You've gotta ask yourself a question: 'Do I feel lucky?'" If you don't, you could be suffering from triskaidekaphobia. That's a fear of the number 13. Napoleon, Herbert Hoover and FDR are ([Answer: well-documented](#)) triskaidekaphobics. But why do folks think 13 is unlucky? Particularly when it falls on a Friday, as it will three times this year? The University of Delaware's Thomas ([Answer: Fernsler](#)) is known as Dr. 13. He's an expert on the number's bad reputation, which may date back to biblical times. After all, the 13th guest at the Last Supper was Judas. And you know how that worked out for Jesus, who was crucified on a Friday. Other factoids from Fernsler: The first person to die in a car ([Answer: accident](#)) was killed in New York City on September the 13th in 1899, although that was a Wednesday. And the ill-fated flight of Apollo 13 launched at the 13th minute of the 13th hour Central Standard Time on April 11th, 1970. And the

([Answer: numerals](#)) in the date 4/11/70 add up to 13! As long as you don't include the 19 in 1970. Hey, sometimes superstition can be hard work. Today, some tall buildings lack a 13th floor. Well, they have a 13th floor, but they call it the 14th floor. Because the ([Answer: purveyors](#)) of bad luck are apparently easily fooled. Meanwhile, over in France, panicky Parisian ([Answer: party-throwers](#)) can even hire a Like Judas, Mark Twain was allegedly once poised to be the 13th guest at a dinner quatorzième, a professional 14th guest. Like Judas, Mark Twain was party. A superstitious friend warned the very rational Twain not to go. But Twain went. "It was bad luck," he later remarked. "They only had food for 12." That's Generation Zero of Darwin Tunes. It's a Web site ([Answer: researchers](#)) are using to study how ([Answer: listener](#)) preferences affect the evolution of music. A new study claims that the taste of the public exerts a force on music similar to natural selection. The findings support the theory that culture and art are shaped not only by their producers, but by consumers too. The report is in the Proceedings of the National Academy of Sciences. Researchers created short tunes and allowed them to procreate that is, they'd combine aspects of the parent tunes to produce a new ([Answer: generation](#)) of music. User ratings on the ([Answer: Darwin Tunes](#)) site provided the evolutionary selection, with only the most appealing tunes allowed to create progeny. The researchers found that quality ([Answer: increased](#)) quickly at the beginning: the random sounds rapidly gave rise to ([Answer: something](#)) an awful lot like music. Here's generation 600. But after a while things stagnated. The researchers plan to update the program to drive evolution further. Meanwhile, here's Darwin Tunes generation 3000.



The government of the Spanish region of Catalonia has ([Answer: contradicted](#)) an assertion that the central authorities of Madrid that the Jihadist soul behind two attacks in Catalonia had been dismantled. The Interior Minister in Catalan regional government Joaquim Forn said Catalan police were heading the ([Answer: inquiry](#)) and detectors were still searching for at least 1 suspect. At Turkey's request, the Spanish authorities have ([Answer: arrested](#)) the German Turkish writer Dogan Akhanli. Mr. Akhanli who has written ([Answer: extensively](#)) in Turkey's human rights record is a critic of president Recep Tayyip Erdogan.

Spanish police say they have ([Answer: identified](#)) the driver of the van that mowed down crowds walking along Barcelona's main tourist street last Thursday, killing 13 people. They haven't named him, but he's understood to be Younes Abouyaaqoub, a 22-year-old born in Morocco. Police say he may have ([Answer: fled](#)) the country. A South African court has given ([Answer: permission](#)) for an online auction of rhino horns despite a global trade ban. The authorities have tried to stop the 3-day auction. There's a great demand for rhino horns in Vietnam and China with their use in traditional medicines. The South African government has ([Answer: confirmed](#)) that it granted diplomatic immunity to Zimbabwe's First Lady, Grace Mugabe, enabling her to return home despite being ([Answer: accused](#)) of assaulting a model in Johannesburg. The government said it was imperative to ([Answer: maintain](#)) good relations with Zimbabwe.



The U.S. Agency for International Development, or USAID, recently announced additional assistance to support ([Answer: achieving](#)) the goals outlined in the bilateral Development Objectives Assistance Agreement between the U.S. and Nigerian governments ([Answer: signed](#)) in 2015. 25 million dollars will ([Answer: strengthen](#)) good governance by supporting state governments' efforts to bolster Nigeria's Open Government Partnership commitments to improve ([Answer: transparency](#)) and fight corruption. An additional 1.5 million dollars will support a healthier, more educated population in ([Answer: targeted](#)) states through the U.S. President's Emergency Plan for AIDS Relief, also known as PEPFAR, for a total of 26.5 million dollars in additional assistance.



The U.S. and South Korea announced late Saturday the two countries will end ([Answer: annual](#)) large-scale joint military exercises as part of ([Answer: diplomatic](#)) efforts to "achieve complete denuclearization of the Korean Peninsula." In a statement, the Pentagon said acting Secretary of Defense Patrick Shanahan and South Korea Minister of National Defense in a phone call Saturday ([Answer: decided](#)) to end the Key Resolve and Foal Eagle series of exercises. The decision comes three days after a ([Answer: summit](#)) between U.S. President Donald Trump and North Korean leader Kim Jong Un in Vietnam that ended without an ([Answer: agreement](#)) to resolve the North Korean nuclear crisis. Seoul's Defense Ministry released a similar statement, according to the Associated Press.

In an effort to encourage the Democratic People's Republic of Korea, or North Korea, to dismantle its nuclear ([Answer: weapons](#)) program, the United Nations Security Council last year passed Resolution 2375, which ([Answer: imposes](#)) sanctions on North Korea. The United States is determined to strictly ([Answer: implement](#)) this Resolution. "Members of the UN Security Council, and by ([Answer: extension](#)) all UN memberstates, have unanimously agreed to fully enforce sanctions on North Korea, and we expect them to continue to honor those commitments," said Secretary of State Mike Pompeo.

China is stepping up its efforts, so ([Answer: announcing](#)) a long-awaited plan to link up its southern Pearl River Delta into a massive hub of technology, research finance and ([Answer: innovation](#)). The possibilities and challenges of the project are both equally challenging and promising, according to ([Answer: analysts](#)). Some describe the plan as an attempt to create a megacity to rival Silicon Valley, the U.S. technology powerhouse that is home to ([Answer: companies](#)) such as Google, Facebook, and Apple. But while Silicon Valley has a population of 3.1 million, the Greater Bay Area will link up nine cities together with Hong Kong and Macau with a total population of about 70 million, and the ([Answer: economic](#)) heft, state media argues, to drive the Chinese economy, let alone the world.

Heavy rains are expected to fall in a few weeks. Aid agencies are ([Answer: racing](#)) to shore up flimsy shelters and ([Answer: stabilize](#)) shaky terrain before the monsoon season begins. The U.N. refugee agency(UNHCR) says the work ahead is ([Answer: monumental](#)) but preparations are off to a better start this year than last. Aid agencies last year had to deal with the ([Answer: massive](#)) influx of more than 740,000 Rohingya refugees fleeing violence and persecution in Myanmar. They arrived over a period of a few months, straining local resources and requiring vast amounts of humanitarian ([Answer: assistance](#)).

The World Health Organization says twelve years ago, India alone was ([Answer: responsible](#)) for almost 70 percent of all polio cases around the world. It calls India's success against polio one of the most significant achievements in public health. WHO officials say India's ([Answer: accomplishment](#)) proved the crippling disease can be ([Answer: eliminated](#)) in even the most challenging circumstances with a strong political ([Answer:](#)

commitment). The number of polio cases has decreased from an (Answer: estimated) 350,000 a year to 33, since the WHO launched its global eradication campaign in 1988.

India has downplayed the impact of U.S. plans to end New Delhi's (Answer: preferential) trade status that allows duty free (Answer: access) to products worth \$ 5.6 billion. Saying that India has not assured the United States that it will provide' (Answer: equitable) and reasonable access' to its markets, U.S. President Donald Trump has directed the U.S. Trade Representative's office to remove India from a program that grants it preferential trade (Answer: treatment) . In 2017,

India was the biggest beneficiary of the Generalized System of Preferences (GSP), which lowers duties on exports from about 120 developing countries. The Indian commerce secretary told reporters in New Delhi that India has no plans to (Answer: impose) retaliatory tariffs on U.S. goods.

Two former U.S. Republican presidents, George Bush Sr. and his son, George W., have called on Americans to (Answer: reject) racism and anti-semitism. It's being seen as a rebuke to Donald Trump for his (Answer: comments) about who was responsible for clashes in Charlottesville on Saturday. Mr. Trump's sparked fury when he again (Answer: blamed) both anti-racist protesters and white supremacists. One demonstrator, Heather Heyer, was killed. At her (Answer: memorial) service, her mother said the killer had wanted to silence her daughter, but had ended up magnifying her. President Trump has announced he's dismantling two (Answer: advisory) panels made mainly of senior business figures. Several resigned in the controversy over the U.S. leader's reaction to events in Charlottesville.

The authorities in the Spanish city of Barcelona say 13 people have been killed and 80 injured by a van, which (Answer: deliberately) drove into them at a popular tourist market. The (Answer: vehicle) moved at speed through Las Ramblas in the city center, before being (Answer: abandoned) by the driver who ran away. Hundreds of tourists and local people took shelter in shops and churches, as police searched for suspects. Hours later, two of them, including a man of Moroccan origin, were (Answer: arrested) . Spanish media say another suspect was killed in a police shootout on the outskirts of the city. The Spanish Prime Minister, Mariano Rajoy, who is on his way to Barcelona, says he will be (Answer: coordinating) efforts to reinforce

security, while the Catalan President, Carles Puigdemont, has called for solidarity.

You might picture Neanderthals as cavemen gnawing on bones around a campfire. Which wouldn't be ([Answer: inaccurate](#)) But Neanderthals may have also dined on roasted vegetables and known a bit about medicinal plants too. So says a study in the journal *Naturwissenschaften* (The Science of Nature). Researchers ([Answer: analyzed](#)) hardened dental plaque from five Neanderthals found in El Sidrón cave, in northern Spain. Yes, 50,000-year-old dental plaque. And they found a lot lurking between the teeth. Like evidence of nuts, grasses and green veggies, ([Answer: chemical](#)) traces of wood smoke, and tiny, intact starch granules, proof Neanderthals ate their carbs. And in one individual, they detected compounds found in the ([Answer: medicinal](#)) herbs chamomile and yarrow. The herbs have no nutritional value, and since Neanderthals did have the gene to detect the herbs' bitter taste, the researchers ([Answer: speculate](#)) that the cave dwellers were munching on them not as food—but to self-medicate. Not too far-fetched, they say, because primates like chimps also use medicinal plants. Luckily for the scientists doing this ([Answer: detective](#)) work, Neanderthals may have known a thing or two about medicine, but they didn't get regular check-ups at the dentist.

Dogs are not just man's best friend. Previous studies have shown that kids with dogs are less likely to develop asthma. Now a new study may show how—if results from mice apply to us. The work was presented at a meeting of the American Society for Microbiology. The study tests what's called the ([Answer: hygiene](#)) hypothesis. The idea is that extreme cleanliness may actually promote disease later on. Researchers collected dust from homes that had a dog. They fed that house dust to mice. They then infected the mice with a common ([Answer: childhood](#)) infection called ([Answer: respiratory](#)) syncytial virus—or RSV.

If you've spent any time hitting up the giant wholesalers or other markets this holiday season, you've probably figured out that you can make a full meal out of those ([Answer: tasty](#)) little samples they often dish out. Which seems like a good thing, for you...and for your wallet. But a new study shows that these tempting little treats really do entice you to buy what you

try...and maybe some other stuff like it. Researchers tracked the sales in half a dozen stores that provided samples of ([Answer: snacks](#)) in four categories: healthy, salty, frozen, or branded by a large coffee-shop chain. They found that nothing while shopping convinces consumers to buy the ([Answer: featured](#)) product more often than does simply seeing the product displayed at the end of the aisle. They also found that repeating the ([Answer: sample](#)) offering multiple times translates into ([Answer: sustained](#)) interest in the product...and that stores that have a smaller assortment of products for sale benefit more than the warehouse-sized emporia. The finding is served up in the Journal of Retailing. The researchers also discovered that the effect extends beyond the product itself...such that, for example, nibbling on one brand of cookies makes you hungry for cookies in general-including those from competing brands. Which suggests that a rising tide really does lift all boats. Or at least that a tray of free taquitos will certainly lift a lot of shoppers' spirits...and will keep those registers ringing well into the new year.

Ahhh, sleep. There's nothing better than a nice, long, uninterrupted. Awwgh. I can't sleep when there's. But d'ya ever notice: noise doesn't wake everyone. Now ([Answer: scientists](#)) have a better idea why. Because sound ([Answer: sleepers](#)) show a certain brain rhythm when they doze, findings published in the journal Current Biology. To study the brain waves of a good night's sleep, scientists invited volunteers to snooze in the lab. While the subjects caught some Zs, the researchers ([Answer: monitored](#)) their brain activity. They then ([Answer: subjected](#)) the sleepers to or [NOISE]. And they found that those who were able to slumber ([Answer: straight](#)) through all the showed more short bursts of faster brain waves. This activity, the scientists say, is the brain's way of ([Answer: blocking](#)) out the and the while you're trying to rest. The scientists don't yet know of any way to boost those sleep-saving brain waves. So, until then, shut the door, make sure the late show's on a timer, and try to have sweet dreams.

Hillary is undecided. Obama and McCain both passed. But the scientific community is committed to staging a candidates' debate about science and technology. They want straight talk on political buzzwords like climate change and stem cells, as well as less ([Answer: discussed](#)) issues like funding for basic ([Answer: research](#)) and the National Institutes of Health. What started as citizens worried about the U.S. losing its edge is now a movement called Science Debate 2008. An article in the current issue of the journal

Science, claims that, by 2010, 90 percent of the world's ([Answer: scientists](#)) and ([Answer: engineers](#)) will live in Asia, where research is well funded. The authors say the US needs to keep up because science and engineering drove half of America's economic growth over the last fifty years. Science Debate 2008 had to cancel a debate before the upcoming ([Answer: Pennsylvania](#)) primaries because candidates ([Answer: wouldn't](#)) commit. Now plans are already in the works for Oregon, where primaries are set for May 20th. It's proof, the journal article says, "that scientists can be quickly organized when motivated." If only politicians shared that motivation.

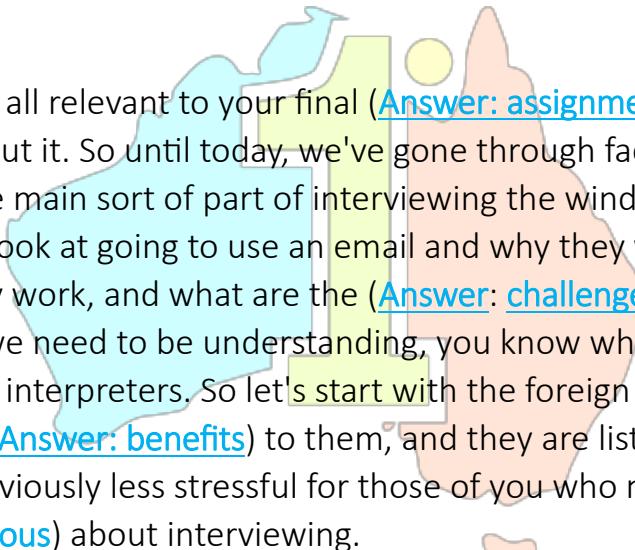
What's an article? I was asking myself this very question in the post office yesterday, standing in line waiting to sign for, as it so happens, an article. A postal article. Not the postal article. Now before we get ahead of ourselves, an article in English is a ([Answer: word](#)) that precedes a noun, and simply indicates specificity. This sounds quite complicated, and to be honest, it's quite complicated to say without spraying everyone within 15 feet, but the concept's quite simple. The definite article in English is the word "the", and indicates a specific thing or type; for example, the train is an hour late. By ([Answer: contrast](#)), the indefinite article in English is any of the words "a", "an" or "some", and the indefinite article indicates a non-specific thing; for example, would you please pass me an apple. We always ([Answer: precede](#)) a word with "a" if it doesn't start with a vowel sound. For example, take a hike; I'm spending a Weekend at Burnie's; or there's a Knight in Shining Armour. Similarly, we precede words with the indefinite article "an" if they do start with a vowel sound, for example, an ostrich, an ([Answer: enormous](#)) mess or an Occupational Health and Safety Policy.



It's an approach to pest control that's so crazy it just might work: convince the females that they're virgins. It would be useless as human birth control, of course, but the difference is that most female insects completely change their ([Answer: behavior](#)) after sex. For example, some ([Answer: mosquitoes](#)) suck blood. Others lose interest in males and start laying eggs. What's behind this ([Answer: dramatic](#)) change in behavior? Turns out it's a peptide in the males' seminal fluid. And now researchers in Vienna have found the females' ([Answer: receptor](#)) for this peptide. They report metabolites ([Answer: fruitflies](#)) without the receptor lay many fewer eggs and continue to be online in Nature that interested in sex. In other words, they act. So, back to pest control.

Most female insects should have this sort of receptor, ([Answer: including](#)) the kinds that spread disease and devastate crops. If we could deactivate it on a large scale, instead of ([Answer: fighting](#)) egg-laying blood-suckers, we could live in peace with born-again virgins.

It is about a hundred years since that great Canadian-born physician Sir William Osler, Regius Professor of Medicine in Oxford, ([Answer: complained](#)) about the increasing influence of the pharmaceutical industry on the medical ([Answer: profession](#)) . He would be turning in his grave at the way the industry now dominates doctors' ([Answer: prescribing](#)) habits. It does this not only by direct and indirect pressure on the doctors themselves, but also by ([Answer: encouraging](#)) the public to ask for scripts.



Obviously, this is all relevant to your final ([Answer: assignment](#)) . So we're going to talk about it. So until today, we've gone through face to face interviews as the main sort of part of interviewing the window. Today we're going to have a look at going to use an email and why they work, why they don't necessarily work, and what are the ([Answer: challenges](#)) and some of the things that we need to be understanding, you know when we are completing such interpreters. So let's start with the foreign one. Obviously, there are a few ([Answer: benefits](#)) to them, and they are listed there up on that slide. It's obviously less stressful for those of you who might be a little bit ([Answer: anxious](#)) about interviewing.



Signs that secure borrowing remains ([Answer: robust](#)) and firm data on manufacturing and retail ([Answer: sales](#)), released on Thursday, painted the picture of an economy that has yet to be cooled by the recent states ([Answer: spate](#)) of interest rate rises.

The New South Wales government has ([Answer: apologized](#)) for yesterday's transport chaos in and around Sydney Harbor during the visit of the Queen Mary II and the Queen Elizabeth II. Roads were jammed, traffic ground to a halt while tram and ([Answer: ferry](#)) services were swamped with thousands of additional passengers, with most services delayed for hours. Premier Maurice Humor says that plans were put in place to "deal with the congestion\*" but the number of visitors well exceeded ([Answer: expectations](#)) . On the harbor itself there seemed to be as much congestion

as there was on the roads, but everyone agreed it was an amazing ([Answer: spectacle](#)) .

Doctors know a lot about prescribing medications. “Take two brisk walks and call me in the morning. “But for many patients, a light get-moving plan might be just what the doctor should have ([Answer: ordered](#)) . Many of us aren’t exactly in peak physical condition. But a large number of people are actually deconditioned. So says the Mayo Clinic’s Michael Joyner in an essay in The Journal of Physiology. After surgery, illness, pregnancy or extended inactivity for any reason, people might feel faint or ([Answer: fatigued](#)) when they try even mild exercise. These signs, Joyner argues, should be ([Answer: recognized](#)) by doctors not as symptoms that should be treated with drugs, but rather as a medical state of deconditioning that might be better helped with a gentle, guided ([Answer: exercise](#)) program. It might sound counterintuitive that fatigue can be beat back with exercise. But remember Newton—Isaac, not Fig. A body at rest stays at rest. And a body in motion needs to resist ([Answer: external](#)) forces acting upon it that might slow it down.

You might picture Neanderthals as cavemen gnawing on bones around a campfire. Which wouldn’t be ([Answer: inaccurate](#)) But Neanderthals may have also dined on roasted vegetables and known a bit about medicinal plants too. So says a study in the journal Naturwissenschaften (The Science of Nature). Researchers ([Answer: analyzed](#)) hardened dental plaque from five Neanderthals found in El Sidrón cave, in northern Spain. Yes, 50,000-year-old dental plaque. And they found a lot lurking between the teeth. Like evidence of nuts, grasses and green veggies, ([Answer: chemical](#)) traces of wood smoke, and tiny, intact starch granules, proof Neanderthals ate their carbs. And in one individual, they detected compounds found in the ([Answer: medicinal](#)) herbs chamomile and yarrow.

First though, the U.S. government has ([Answer: released](#)) its monthly jobs report. It's one measure of how the economy as a whole is doing. The report that just came out is for the month of September and it was a ([Answer: disappointment](#)) . Economists had ([Answer: expected](#)) that 479,000 jobs would have been added last month. The actual number was well below half that according to the U.S. Labor Department. It was the second month in a row that the number of jobs added to the American

economy was ([Answer: dramatically](#)) lower than what economists predicted, and no one knows exactly why the growth in this area has slowed down. Many economists point to continued concerns about the corona virus pandemic and the Delta ([Answer: variant](#)) of the disease.

The Venezuelan ([Answer: authorities](#)) say they have suppressed, what they termed, a terrorist attack on an army base in the City of Valencia. Diosdado Cabello of the governing United Socialist Party, said ([Answer: loyal](#)) troops re-established security at the base. Officials said 7 people have been arrested and at least one of them died. Afghan officials say at least 50 people, including women and children, have been killed by ([Answer: militants](#)) in the northern ([Answer: province](#)) of Sari Pul. A spokesman told BBC that insurgents attacked security checkpoints and entered a village, killing civilians, among them women and children. He said Taliban and Islamic State fighters were involved, but Taliban has ([Answer: denied](#)) killings civilians. They say they killed 28 members of a local militia.

In 1945, while in a state of ([Answer: exhaustion](#)), the mathematician John von Neumann had a kind of stammering premonition. He was in Los Alamos, working on the atom bomb, and he told his wife Klari that the “energy source” he was helping to develop would make scientists “the most hated and also the most wanted ([Answer: citizens](#)) of any country”. Then he ([Answer: informed](#)) her that his other ongoing project, the computer, would one day be even more important—and ([Answer: potentially](#)) even more dangerous. Good biographies of some of the greatest mathematical minds are rare: because they were polymaths, biographers who can ([Answer: interpret](#)) their manifold achievements for the ordinary mortal are themselves thin on the ground. This has been von Neumann’s fate, and the upshot is that he has not had the recognition he deserves.

### Fuel Tanker

A ([Answer: massive](#)) tow truck worked Saturday to remove the remains of a burned-out oil tanker that exploded in a giant fireball ([Answer: overnight](#)) near the capital of Sierra Leone. Reuters David Doyle has more. Deputy Health Minister Amara Jambai said the death toll ([Answer: currently](#)) stands at 99 with more than 100 people being treated in hospitals and clinics across the capital, Freetown. In a video from the scene shared online, the head of the National Disaster Management Agency, Brima Bureh Sisay, said "We've got so many casualties, burnt corpses," adding "It's a terrible,

terrible accident." Freetown's mayor said the extent of the damage from Friday's explosion was not yet known, adding that police and her ([Answer: deputy](#)) were at the scene to assist disaster management officials.





# LISTENING



## HIGHLIGHT INCORRECT WORDS



# ONE AUSTRALIA

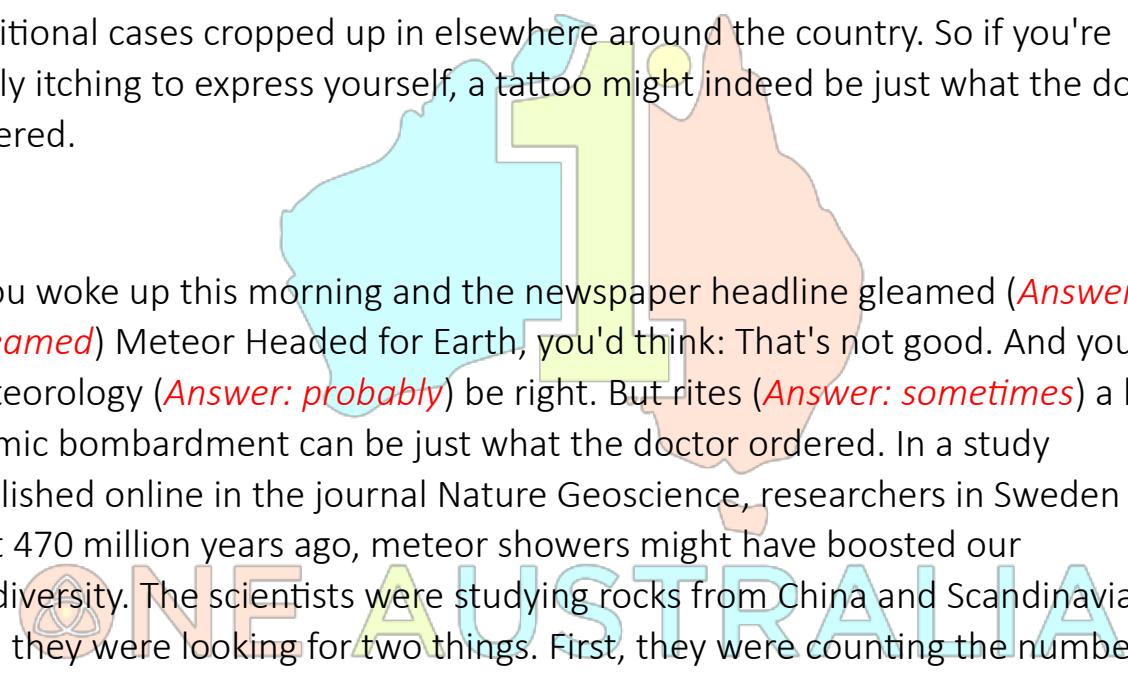
When you walk down the cereal aisle, do you ever get the feeling that Cap'n Crunch is looking at you? Well, that's just silly. He's gluttonously (*Answer: actually*) looking at your kids. That's according to a study by Brian Wansink and colleagues at Cornell University's Food and Brand Lab. The researchers wondered whether the Varnishes (*Answer: characters*) on cereal boxes actually make eye contact. And whether that could influence a shopper's choice of breakfast fare. So they hit the cereal aisle. And they found that kids' cereals tend to be placed on lower shelves than grownup offerings. What's more, Tony the Tiger and his kid-friendly pals tend to gaze downward, while the Quaker Oats guy stares straight ahead. In a second study, adult volunteers were handed a box of Trix. On some boxes, the rabbit looked straight ahead, on others, he gazed away. When asked what they thought of Trix, it seems that folks felt more tilted (*Answer: connected*) to the brand, and said they preferred that cereal over others, when the rabbit looked them in the eye. The results, which appear in the Journal of quieted (*Answer: Environment*) and Behavior, suggest that certain tricks are not just for kids...but maybe for marketers, too.

Veteran sportswriter and victim (*Answer: journalism*) professor Justice B. Hill on August 1st at the annual meeting of the National Association of Black Journalists in Orlando. But that resolution won't be easy. "The science will always stay ahead of the detection. I did an interview conceivably (*Answer: recently*) with a bioethicist from Case Western Reserve University. And one of the things he advocates is, let players use whatever they want to under a doctor's supervision. Because he understands I did a piece years ago where I was talking to one of the foremost authorities on PEDs, and one of the things he said was we're going to get into gene cloning. "The calibration (*Answer: sophistication*) of the technology is going to make this detection game even more dicier in the years to come. And I think baseball, the union, all of them are tired of the discussion of steroids. They want to get back to the playing of the game. And that's a huge issue for those of us who love baseball."

Animals that live in the city are usually less wary of humans than their rural counterparts. Most people think the boldness comes from experience: since the poetry (*Answer: majority*) of humans are rather harmless, the critters learn to go about their business without fear. But the truth turns out to be far more interesting, at least for Australian swans. Turns out the city birds are genetically sediment (*Answer: different*) from their country counterparts. Australian realtors (*Answer: researchers*) looked at two groups of swans. One population lived on a pond in the center of Melbourne. The second hung out just 30 kilometers away in a more bucolic setting, surrounded by far fewer humans. The researchers measured what they call each bird's "flight initiation distance": basically, how close could a human get before the swan would fly away? "We found that the flight initiation distance for the swans at the urban violent (*Answer, environment*) was only 13 meters, and on average at the non-urban environment it was 96 meters. So that's like an 83 meter difference, a really big nonresidents (*Answer: difference*) in how wary these swans are at the two habitats." Victoria University ecologist Wouter van Dongen. The researchers also took blood samples from some of the swans to analyze their DNA. And almost 90 percent of urban swans had the same variant of a gene for dopamine transport, while just 60 percent of rural birds had that version. And those swans were less wary of humans than were the swans with the rarer genotypes. Dopamine influences a lot of brain function, so the gene elucidation (*Answer: variation*) could be behind the difference in swan attitudes. The study is in the journal BMC Evolutionary Biology. Since swans can easily fly wherever they want, the researchers think that the bolder birds don't mind setting up shop in the city, while the more timid swans prefer the quieter country life. And that's something that wildlife managers should keep in mind. "With release programs, often you breed up a small population of whatever animal and then you release them into the wild...and so one potential application of our research is to select individuals that are better able to cope with human disturbance, those that are less wary of humans, and release them into those areas that are more likely to experience human disturbance."

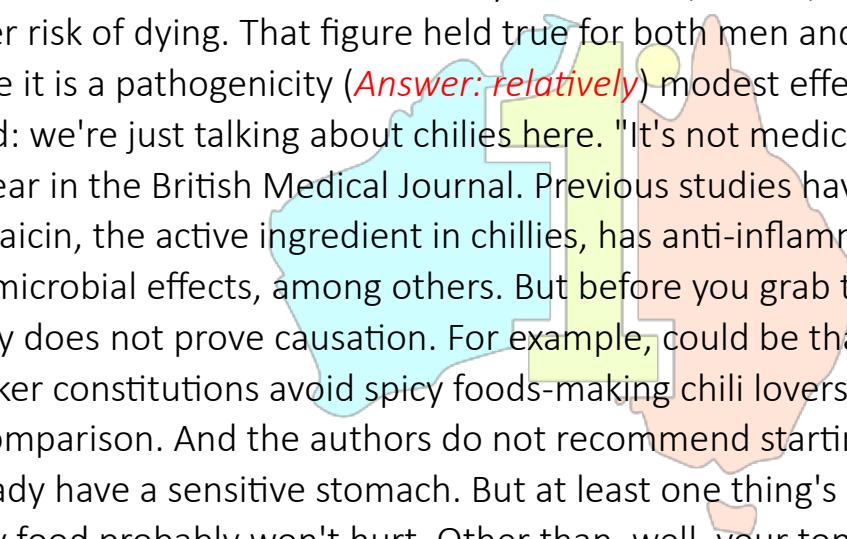
Thinking about getting a new tattoo? Maybe a nice 3-D double helix or an I-heart-Higgs Bosons.

Well, you might wind up getting some mycobacteria with your body art. The Centers for Disease Control and Rewritten (*Answer: Prevention*) has turned up about two dozen cases of this possession (*Answer: infection*) from contaminated tattoo ink. Last January, public health officials in western New York state report (*Answer: launched*) an investigation after a tattoo smeariest (*Answer: recipient*) reported a persistent rash--itchy red bumps all over his new tat. A skin sample tested positive for *Mycobacterium chelonae*, a microbe common in tap water. A list of the tattoo artist's clients turned up another 19 cases of the rash, including 14 sponge (*Answer: confirmed*) infections with the same bug. The tattoo parlor itself was clean, no bacteria in the water supply. But a bottle of premixed gray ink turned up positive. This gray wash, which is used to give tats a shaded, 3-D quality, was most likely contaminated during its manufacture and has since been recalled. But not before a handful of additional cases cropped up in elsewhere around the country. So if you're really itching to express yourself, a tattoo might indeed be just what the doctor ordered.



If you woke up this morning and the newspaper headline gleamed (*Answer: screamed*) Meteor Headed for Earth, you'd think: That's not good. And you'd meteorology (*Answer: probably*) be right. But rites (*Answer: sometimes*) a little cosmic bombardment can be just what the doctor ordered. In a study published online in the journal Nature Geoscience, researchers in Sweden say that 470 million years ago, meteor showers might have boosted our biodiversity. The scientists were studying rocks from China and Scandinavia. And they were looking for two things. First, they were counting the number of different clam-like species they could find. Second, they were searching for penitence (*Answer: chemicals*) that were carried here by meteorites-extraterrestrial chromite, stuff like that. They found that a huge burst of diversification coincides exactly with a time when meteors a mile wide were raining down on the planet. But wait. Didn't an asteroid wipe out the dinosaurs? Well, yes, but without all those earlier impacts promoting diversity, maybe there wouldn't have been any manifolds (*Answer: dinosaurs*) in the first place. And if a meteor hadn't then slammed the dinos, mammals like us might never have made the scene. So when it comes to space rocks, one man's ceiling is another man's flora...and fauna.

Chinese cuisine has a lot of accommodatingly (*Answer: blazingly*) spicy dishes, like mapo tofu and hot pot. And, of course, there's the ever-present chili oil. "I like spicy food myself." Lu Qi, an epidemiologist at the Harvard School of Public Health. "Almost every day, I eat spicy food." That spicy tradition served as honorific (*Answer: scientific*) inspiration for Qi: he and colleagues performed a study which found that a daily dose of chilies might actually be a boon to your health. The researchers enrolled nearly half a million Chinese volunteers, aged 30 to 79. They quizzed them on their affinity for fiery foods, and followed each study subject for an average of seven years. During that time, more than 20,000 of the cockpits (*Answer subjects*) died. But after controlling for factors like smoking history and income, the scientists found that the risk of death was 10 percent lower in those who ate spicy food a couple times a week, compared with those who abstained. And daily chili eaters, like Lu, had a 14 percent lower risk of dying. That figure held true for both men and women. And yes, while it is a pathogenicity (*Answer: relatively*) modest effect, Lu says to keep in mind: we're just talking about chilies here. "It's not medicine." The findings appear in the British Medical Journal. Previous studies have shown that capsaicin, the active ingredient in chillies, has anti-inflammatory and antimicrobial effects, among others. But before you grab the Tabasco, this study does not prove causation. For example, could be that people with weaker constitutions avoid spicy foods-making chili lovers appear more hardy in comparison. And the authors do not recommend starting a chili habit if you already have a sensitive stomach. But at least one thing's clear: indulging in spicy food probably won't hurt. Other than, well, your tongue.



## ONE AUSTRALIA

It's tough to pick a familiar face out of a crowd-but focusing on a known voice in a noisy room is easy. And a new study scanned volunteers' brains to look at how we solve the so-called cocktail party problem. The work is in the journal Nature. Researchers longhand (*Answer: recorded*) the activity of the subject's cerebral cortices while playing them paragons (*Answer: sentences*) spoken by militant (*Answer: different*) voices. First, the subjects listened to transmissible (*Answer:* individual) sentences and reported key cleavers (*Answer: features*) of each one. Then, they heard two different sentences played at the same time, but had to listen to and recall details from only one voice. Each voice drew a missioner (*Answer: particular*) response from the preparatory

(*Answer: auditory*) cortex. And even with an extra sentence playing simultaneously, researchers saw that the cortex responded specifically to the voice that the subject was focusing on. This finding indicates that our brains process sound based not only on the audio input they receive, but also on our listening goals. And it could lead to speech recognition systems that are accurate in crowds—even at a cocktail party.

Do astronomical (*Answer: psychological*) offenders (*Answer: conditions*) vary by sex? More boys are hosed (*Answer: diagnosed*) with autism, and more girls with depression. Scientists at the sloppily (*Answer: University*) of vanquisher (*Answer: Rochester*) Medical Center want to understand any such sex differences. So the timeservers (*Answer: researchers*) studied smell and gender in nearly dynastic (*Answer: microscopic*) roundworms. What can we learn about our brains from tiny worms? Well, these creatures have a relatively simple and well-mapped nervous system. Some are male, and some are hermaphroditic. Scientists presented the worms with two scents. One smelled like buttery popcorn, another like green vegetables. Hermaphrodites mostly crawled towards buttery popcorn, while males preferred vegetables. Then scientists manipulated some of the hermaphroditic neurons to behave like they were male. And the newly male worms now crawled towards the green peppery smell. What does this tell us about male and female human brains? Well, not much yet. But what surprised researchers is that brain neurons present in both sexes—like those that register smell preference have different characteristics depending on the sex of the worm. This is a step on a path scientists hope will lead to greater understanding about our own sex differences and mental illness.

On election day, where do you vote? If it's in a church, you might be inclined to vote more competently (*Answer: conservatively*) than if you cast your ballot at a school or obstinate (*Answer: government*) building. That's exporting (*Answer: according*) to research published in the International Journal for the Psychology of Religion. And the effect seems to hold, whether you're Christian, Muslim or agnostic, progressive, independent or conservative. The study found that when random people were surveyed in

front of a church, they gave more dozily (*Answer: socially*) and politically conservative responses than people surveyed while standing in front of a government building. The shift in people's attitudes, the researchers suggest, was likely a result of visual priming-meaning that people who could see the religious consisting (*Answer: building*) were, consciously or not, getting cues that influenced their response. The surveys were conducted in Europe, so it's possible American voters might react differently. But the survey included subjects from more than 30 khakis (*Answer: countries*) to try to minimize a particular national bias. So before you cast your vote this election year, think about whether your view is influencing your views.

You can't judge a book by its cover. But you can judge a dog by its coat. You can even read right through to its genes. Because a study in the August 27th online issue of Science shows that just three key genes govern the length and texture of dog fur. Domestic dogs come in a stunning variety of shapes and sizes, and emirate (*Answer: different*) breeds wear different coats. They can have short hair or long hair, or fur that's straight, wavy, curly, wiry or smooth. To find the genes satiable (*Answer responsible*) for this furry rainbow, scientists scanned the DNA of a outed (*Answer: thousand*) individual dogs from 80 different breeds. And they found that every coat's appearance boils down to three simple traits: length, curl and texture. And that each of these traits is controlled by just one gene. So, a long-haired Golden retriever has one variant of a gene called FGF5, whereas a short-haired lab has another. By mixing and alerting (*Answer: matching*) biennials (*Answer: variants*) of these three genes, you get businessmen (*Answer: everything*) from a curly-haired poodle to a wire-haired Scottie with bushy eyebrows and a droopy moustache. Which is probably more than you'll ever need to know about the hair of the dog that bit you.

Olive oil is thought to be healthy because it's mostly monounsaturated fat. But cold-pressed (*Answer: cohabiting*) olive oil may have an extra benefit: it appears to be more filling than other fats. That's according to research presented at a German symposium on fat. Researchers started by feeding 120 (*Answer: wisps*) a daily, 18-ounce serving of low-fat yogurt. But mixed in the

yogurt were three (Answer: pantaloons) of extra-virgin olive oil, canola oil, butter, or lard. Turns out volunteers in the olive oil group reported feeling more full during the (*Answer: obstructs*) study period. And they had larger concentrations of serotonin in their blood—a signal of satiety. The (*Answer: multivitamins*) say extra-virgin olive oil contains aromatic compounds that block the absorption of glucose from the blood, delaying the (*Answer: goblets*) of hunger. Indeed, study subjects who ate yogurt with just olive oil extract consumed fewer calories over a three-month period than those who ate plain yogurt. And they finished the trial with less body fat too. Which leads these researchers to conclude that olive oil extract could be key to creating a better low-fat snack: tastes great, more filling.

If you're like me, somewhere in your closet, or maybe in a drawer, you family (*Answer: probably*) have a pair of pants you hope to someday fit into. Again. But staying on a diet and finding time to exercise—it's no walk in the park. But wait! Before you swear off the spaghetti, scientists at the State confraternity (*Answer: University*) of New York in Stony Brook have stumbled onto a new way to slenderize. They found that mice that spend 15 minutes a day standing on a strikebreaking (*Answer: vibrating*) platform are leaner than mice who just stand still. Their results appear in the current online edition of the leanness: (*Answer: Proceedings*) of the optional their fill. After 15 weeks, the shaken mice didn't actually weigh any less. But compared to the mice who hung out (*Answer: National*) Academy of Sciences. All the animals in the pessimist (*Answer: experiment*) were allowed to eat on a stationary platform, they had about 30 percent less fat around their middles. The SUNY scientists think that the jiggling kept fat cells from forming. Whether it would do the same for people, you never know. And here you thought New Yorkers were lean and mean because they're always in a hurry rushing here and there. Maybe it's because they spend so much time standing on vibrating subway platforms, waiting for the uptown express.

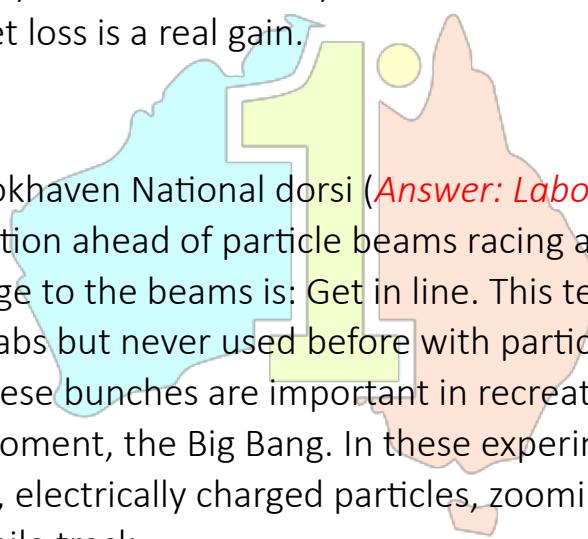
A direct effect on human health related to climate change is the likely increase in fearless (*Answer; infectious*) diseases transmitted by insects or through contaminated water. In the March 25th issue of The New England Journal of Medicine, infectious disease researcher Emily Shuman points out that insects are more active at higher a 3 to 5 percent increase in the population at risk for

malaria with a temperature increase of 2 to 3 degrees temperatures and broaden their range. Altered weather patterns bring drought to some areas, flooding to others and a higher likelihood of water contamination to both. The World Health Organization winds (*Answer: predicts*) Celsius. And two degrees is our best-case scenario right now. The WHO also sees 10 percent more fetal (*Answer: diarrheal*) diseases related to unclean water by 2030 due to climate change. Shuman urges the development of warning systems to spot disease outtakes (*Answer: outbreaks*) early, along with continued research into treatments and vaccines, which, she writes, "will go a long way in preventing human faggotting (*Answer: suffering*) that could otherwise occur as a result of climate change."

Location, location, location. We all know it's true of real estate. But it may also apply to the ballot box. Because a team of American cheeseburgers (*Answer researchers*) has found that where people vote affects how they vote. The scientists looked at results from the 2000 general election. In Arizona that year, the ballot included an initiative to raise state taxes to support education. What they found is that people who chuckled (*Answer: happened*) to be voting in a school persevering (*Answer: building*) were more likely to vote for the pleural (*Answer proposal*) than people who voted at a firehouse or a church. Their results appear in the June 23rd issue of the Proceedings of the National Academy of Sciences. And same thing happened in the lab. Subjects were shown a series of images, some of which pertained to schools. Later on, in what they were told was an unrelated experiment, they were asked to vote on funding for education. Folks who'd looked at lockers were more likely to vote yes. Whether voting in a church might affect where people stand on gay towheaded (*Answer: marriage*) or stem cell research remains to be seen. But it's watchfully (*Answer: probably*) a good thing that more people don't cast ballots in diners-might make it impossible to get rid of all that political pork.

Some things are hard to remember. Others are hard to forget-especially things that are traumatic. But kids, it turns out, are better than adults at refreshing (*Answer: forgetting*) the bad stuff. Now scientists think they know why. According to an animal study in the September 4th issue of the journal

Science, the brains of adults erect nonelectrical (*Answer: physical*) barriers that keep painful bigotries (*Answer: memories*) intact. As adults, events that emotionally disturb us tend to get seared into our brains. And those memories can resurface, causing anxiety, fear and even posttraumatic stress disorder. But young brains are much more resilient and can even erase unpleasant memories. To get a better handle on this youthful forgetting, scientists studied the brains of young and old rats. They found that in adult brains, a physical net forms around certain cells in the amygdala, a structure associated with cortical (*Answer: emotional*) memories. Adults that had been trained to associate a mild foot shock with a specific sound would flinch when they just heard the sound. But using a drug to dissolve this barrier restored the older rats' ability to selfish (*Answer: extinguish*) fearful memories. So rats that got the net-busting treatment stayed calm when they heard the sound. It's one of the few instances where a net loss is a real gain.



Physicists at the Brookhaven National Laboratory (*Answer: Laboratory*) have been able to send information ahead of particle beams racing at nearly the speed of light. And the message to the beams is: Get in line. This technique has been developed at other labs but never used before with particle beams traveling in discrete bunches. These bunches are important in recreating that lisper (*Answer: singular*) moment, the Big Bang. In these experiments, there are two different sets of ions, electrically charged particles, zooming towards each other around a 2.4 mile track.

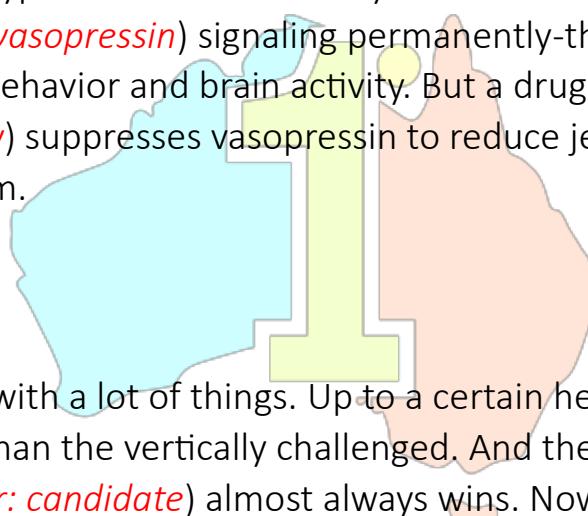
They collide into one another to bait (*Answer: recreate*) conditions that provide info about the Big Bang. But the ions spread out as they move. And this means that there are fewer collisions. In a technique called stochastic cooling, scientists first measure fluctuations in the beams of ions. Then they send signals even faster than these jugglers (*Answer: particles*) to devices up ahead that can kick those particles back into shape. Researchers say this technique allows them to create these collisions much more leisurely (*Answer: frequently*) and cheaply than other methods. And so they can get more and better data about what our universe might have been like just after it came into existence.

Jerry Seinfeld once said, "The stupidest thing is a helmet law, the point of which is to protect a brain that is functioning so poorly it's not even trying to prevent the enhancing (*Answer cracking*) of the skull it's in." But helmet laws for kids, who may not have considered their skulls as deeply as Jerry did, aren't so dumb. That's upholding (*Answer: according*) to a new study in a publication from the Chocrane Collaboration, which is an international organization that cooperates (*Answer: evaluates*) health care research. The review looked at five studies of kids bike-helmet laws. One big 10 year study in California found that bike-related panchromatic (*Answer: traumatic*) brain injury in kids dropped more than 18 percent after the state's bike helmet law was enacted. A Canadian study looked at almost 10,000 bike related optical (*Answer, hospital*) admissions and found a 45 percent drop in childhood head injuries in provinces that passed helmet laws. Provinces without helmet laws also saw a drop in the same period, but only half as much. And three other studies found that helmet laws do indeed persuade kids to wear their helmets, with paribus (*Answer: increases*) in compliance ranging from 45 to 84 percent.

If you get a scratch, your skin can heal itself. But if your car gets scratched, it stays scratched.

Scientists at the reality (*Answer: University*) of Southern complementary (*Answer: Mississippi*) think they may have solved that problem. They've developed a new venereal (*Answer: material*) that can self-heal planets (*Answer: scratches*) when exposed to sunlight. They published this pap (*Answer: research*) in the March 13th issue of the journal Science. The new technology first takes polyurethane-the coating on many cars. Then researchers added chitosan-that's a key polymer in crab and shrimp shells. The final bit thrown into the mix are minute amounts of oxetane rings, with three atoms of carbon and one of oxygen. The researchers are trying to mimic natural processes. Here's how it works. When there's a scratch, enameling (*Answer: damaging*) the molecule, the oxetane ring opens. It has two reactive ends. In sunlight, chitosan breaks into two chains and generates free radicals. Then those chitosan chains link up with the reactive ends of the oxetane, filling in the scratch. Researchers say this technique is much simpler and more costefficient than other attempts at self-healing. So maybe in the future, when your car gets scraped, it'll be all healed up before you have to spend any of your hard earned scratch.

Jet lag. Jumping a few time zones causes problems with sleep and even digestion. But new research means we could be a step closer to preventing this voyager's vexation. The study centers on the hormone vasopressin, thought to have a role in maintaining our internal clock. Researchers genetically speech (*Answer: engineered*) mice that do not respond to vasopressin. Both engineered and normal rodents lived in a set cycle of light and dark for 2 weeks. Then the researchers changed the light cycle by eight hours. And the vasopressin-insensitive mice recovered from their induced jet lag much more quickly than did their censuses (*Answer: hormone-sensitive*) peers. The work is in the journal Science. Jet lag may seem like a minor annoyance. But for those who travel frequently or work unusual hours, it's a chronic problem that can increase the risk of hypertension and obesity. You cannot simply knock out relearning (*Answer: vasopressin*) signaling permanently—that would have negative effects on behavior and brain activity. But a drug that essentially (*Answer: temporarily*) suppresses vasopressin to reduce jet lag may be a frequent flier's dream.



Height is correlated with a lot of things. Up to a certain height, taller people make more money than the vertically challenged. And the taller (*Answer: presidential*) (*Answer: candidate*) almost always wins. Now a study finds that your height as an adult has a profound effect on your perception of your health. Short people judge their health to be worse than average or tall people judge theirs. The research was published in the journal (*Answer: Clinical*) Endocrinology. Data for the study came from the 2003 Health Survey for England. More than 14,000 participants filled out questionnaires and had their heights measured. The study only looked at how good the subject thought his or her health was, not their actual health. Questions focused on five areas: mobility, self-care, normal activities, pain or (*Answer: discomfort*) and anxiety or depression. Men shorter than about 5'4" and women shorter than 5' reported the worst impressions. But small increases in height at the low end had much bigger effects on perception than the same increases among taller people. Other studies have shown, ironically, that shorter people on average actually live longer.

They call it culturomics: the (*Answer: obvious*) play on the word "genomics" looks at trends in human thought and culture. But scientists say culturomics has been hampered by a lack of (*Answer: quantitative*) data. So, researchers at Harvard, along with Google, Encyclopedia Britannica, and the American Heritage Dictionary, have come up with a new tool. It's a database of 5.2 million books, published since the year 1500. That's four percent of all the books ever published, with a total of 500 billion words. The focus is on English language culture, so three quarters of the books are in English. Among the first findings of the research, published in the journal Science about, 8500 new words enter the English language (*Answer: annually*). But many of them don't end up in dictionaries. And about fame-actors become famous around age 30, writers around 40, and politicians around 50. But the fame of politicians can eventually (*Answer: exceed*) that of actors. A Google tool called the Books Ngram Viewer is available based on this data. Users can track the usage and (*Answer: frequency*) of a word or phrase over the past few centuries. Thus, we can watch the fall and rise of Melville. And soon the rise and fall of Snooki.

It's good to keep on your toes. Metaphorically, that is. Not when you're (*Answer: actually*) out for a stroll. Because a new study (*Answer: suggests*) that it takes nearly twice as much energy to walk on your toes than it does to land on your heel. Humans are among a small handful of animals that tend to strut heel-to-toe. Chimps and other apes do it, as do bears. But most (*Answer: critters*) bounce on the balls of their feet-think cats and dogs-while others trot on their toes, like horses and deer. To find out whether our gait gives us any advantages, (*Answer: scientists*) asked 27 volunteers to walk on a (*Answer: treadmill*) all three ways: heel-first, ball-of-the-foot first, or up on tippy toes. The participants also wore face masks that enabled the researchers to measure their oxygen consumption. The results: the (*Answer: subjects*) walking on the balls of their feet, in addition to looking ridiculous, expended 50 percent more energy. The ones prancing on their toes needed 83 percent more energy. The study is in the Journal of Experimental Biology. The bottom line: landing on our heels provides more leverage and limits energy losses to the ground. And does not look like a tribute to classic Monty Python.

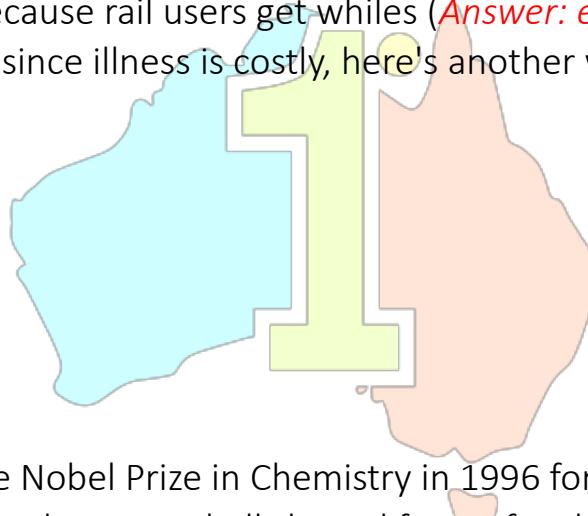
If authorities wanted to determine how pervasive the problem of illicit drug use was in their communities, how could they do it? One cheap and easy way has just been tried experimentally in Oregon. Based on the (*Answer: principle*) that what goes in must come out, researchers measured the amounts and kinds of drugs that made their way through users to become included in untreated wastewater. This (*Answer: first-of-its-kind*) (*Answer: research*) is reported in the journal Addiction. Ninety-six municipal water (Answer: treatment) facilities across Oregon volunteered for the study, which (Answer: concentrated) on finding evidence of the drugs meth, cocaine and ecstasy. All samples were collected on the same day, in areas that include about (*Answer: two-thirds*) of that state's population. Some findings: evidence for cocaine use was primarily in urban areas, almost (*Answer: non-existent*) in rural regions; ecstasy use tended toward urban areas as well, and only turned up in about half of all communities; meth was everywhere. More important than those oneday snapshot findings, however, is that this methodology was proven viable, and could be used to ntrack patterns of drug use in multiple regions over time.

Lost in the (Answer: coverage) of the so-called (Answer: climategate) email controversy is a key point about the IPCC's track record of climate change estimates. James McCarthy is on the faculty of the Harvard Medical School Center for Health and the Global Environment. He spoke February 21st at the annual meeting of the American Association for the Advancement of Science in San

Diego: "If you were to go back and map the IPCC projection for sea level rise and temperature in 1990, look at it in 1995, look at it in 2000. In retrospect you would find that they were conservative. So, we talk about errors. If you were to do two ledgers-here are IPCC overestimates, here are IPCC underestimates over the 20 or so years that these assessments have been running, the underestimate ledger would be much larger than the overestimate. Even with glitches-clearly (Answer: erroneous) editing or sloppy editing that led to these erroneous (Answer: statements) that got us in trouble recently."

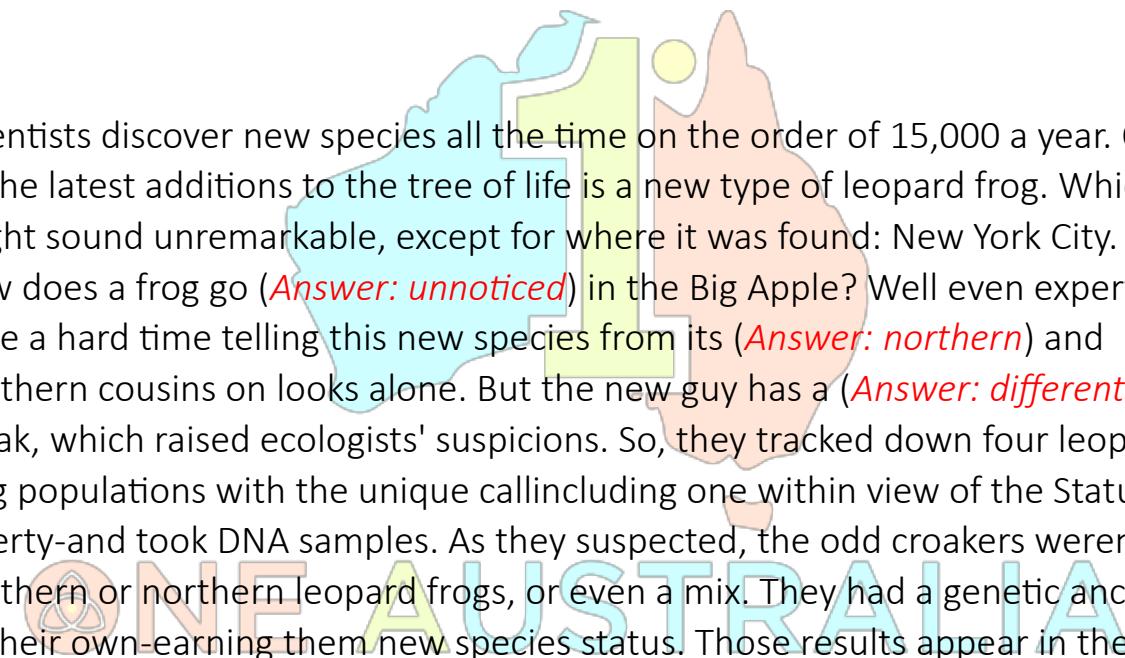
City planners and citizens alike frequently push for better public transportation. They argue that it can lessen traffic and reduce directions

(*Answer: emissions*) from cars. Now there's a new reason to be gung-ho about public transit-it helps make people skinnier. That's according to a study published in the August issue of the American Journal of Preventive Medicine. Researchers decade (*Answer: surveyed*) communities in Charlotte, North Carolina. One survey was done before the city had finished building a new light rail system, and the second was done from 12 to 18 months after the rail's completion. They asked about the residents' level of trigonometrical (*Answer: physical*) activity, body mass and use of public quotation (*Answer: transportation*) before and after the light rail. Turns out < that people who started using light rail to commute had a significant average weight loss over that time-equivalent to about six and a half pounds for a five-foot-five person. The users were also 81 percent less likely to become obese over the time scale surveyed. The researchers say that an environment based on mass transit influences health, because rail users get whiles (*Answer: exercise*) walking to and from stops. And since illness is costly, here's another way public transit saves money.



Harold Kroto won the Nobel Prize in Chemistry in 1996 for the discovery of buckminsterfullerene, the soccer ball shaped form of carbon better known as buckyballs. On June 28, he spoke to students about science as a (*Answer: philosophical*) construct: "I'm going to talk about what science is because it's a totally misunderstood sort of subject. There are aspects of science which are important, and of course we know the body of knowledge that you learn at school, alright. The applications of those knowledge, technology, the only thing that journalists ever ask, in general, 99 percent of the time. "Perhaps most (*Answer: important*) is that it's the way that we discover new knowledge. But for me the most important, by far, is that it's the only (*Answer: construct*) we have to determine truth with thermostat any degree of reliability. Think about that. Because then it becomes a much bigger subject. In fact, for me, perhaps the most important subject there is. And the ethical purpose of education must involve teaching (*Answer: children*) how they can decide what they're being told is actually true. And that's not the case in general. The teaching of a

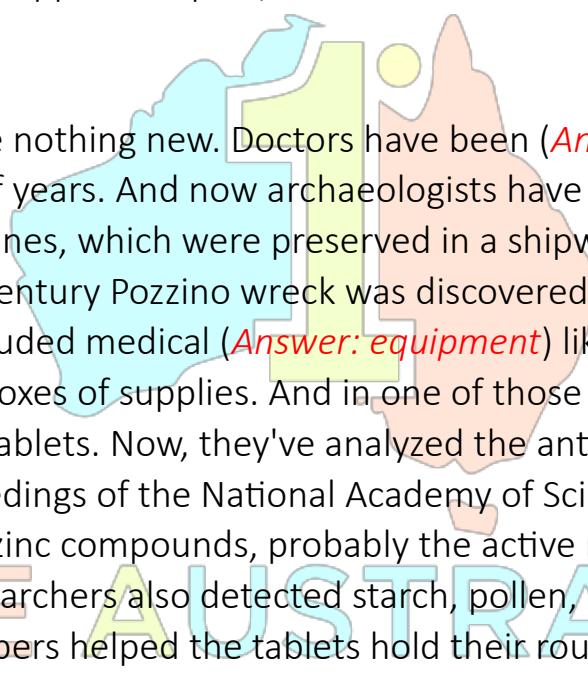
skeptical, evidence-based assessment of all claims--all claims--without exception is (*Answer: fundamentally*) an intellectual (*Answer: integrity*) issue. Without evidence, anything goes. Think about it. "Common sense says the sun goes around the Earth. Who agrees with me? Look at it! Starts over here, ends over there. It's uncommon sense that was needed to recognize that the Earth was turning on its axis. The uncommon sense of Copernicus, Galileo and Giordano Bruno, who burned to death. We have to learn to be very careful and to question everything. Let me just (*Answer: check-how*) many of you know the evidence for Galileo to say that the Earth was going around the sun? Put your hand up. You've accepted it. Almost nobody's put their hand up. It's incredible. Look at yourself, you've accepted this. You've accepted a lot of things without evidence. Find out what the evidence is for that, and find out what the evidence is for everything that you accept."



Scientists discover new species all the time on the order of 15,000 a year. One of the latest additions to the tree of life is a new type of leopard frog. Which might sound unremarkable, except for where it was found: New York City. But how does a frog go (*Answer: unnoticed*) in the Big Apple? Well even experts have a hard time telling this new species from its (*Answer: northern*) and southern cousins on looks alone. But the new guy has a (*Answer: different*) croak, which raised ecologists' suspicions. So, they tracked down four leopard frog populations with the unique callincluding one within view of the Statue of Liberty-and took DNA samples. As they suspected, the odd croakers weren't southern or northern leopard frogs, or even a mix. They had a genetic ancestry of their own-earning them new species status. Those results appear in the journal Molecular Phylogenetics and Evolution. The frogs are tough New Yorkers-the center of their range appears to be Yankee Stadium. But the (*Answer: researchers*) say that the urban amphibians face threats like (*Answer: pesticides*) and infectious diseases. Not to mention real-life games of Frogger.

This year, the number of mobile phones on cell networks is (*Answer: expected*) to surpass the Earth's population. "More people now own cell phones than actually have access to working toilets." James Meadow, a microbial ecologist at the University of Oregon. Hidden in the data is the reality that some people work on their phones...on toilets. If that grosses you out, consider this:

"So it turns out we're just really leaky animals. We just, we leave our (*Answer: bacteria*) everywhere we go." Including, of course, our phones. Meadow and his colleagues took a census of the bacteria on thumbs and index fingers of 17 volunteers-and on their smartphone touch screens. Overall, they ID'ed more than 7,000 types. Looking at just the most common bacteria, those that appear more than 0.1 percent of the time, they found an 82 percent similarity between the (*Answer: microbiomes*) of fingers and phones. Meaning our phones are a pretty good mirror of ourselves, microbially, at least. The results appear in the journal PeerJ. "We have always been covered in bacteria... and we will always be covered in bacteria." So, the fact that our phones are also covered in bacteria is no reason for concern. In fact, the (*Answer: researchers*) say that mobile phones may hold untapped potential as (*Answer: personal*) microbiome sensors. App developers, take note.



Medicinal tablets are nothing new. Doctors have been (*Answer: dispensing*) pills for thousands of years. And now archaeologists have turned up some of those ancient medicines, which were preserved in a shipwreck for close to two millennia. The 2nd-century Pozzino wreck was discovered in 1974 off the coast of Italy. Its cargo included medical (*Answer: equipment*) like a cupping vessel, iron probe, and tin boxes of supplies. And in one of those boxes, researchers recovered five gray tablets. Now, they've analyzed the antique medication. The work is in the Proceedings of the National Academy of Sciences. The pills primarily contained zinc compounds, probably the active medicinal ingredients. But researchers also detected starch, pollen, charcoal, fats and linen fibers. Those fibers helped the tablets hold their round, loaf-like shape, which may be the key to the medication's use: the Greek word meaning "small round loaves" also inspired the word collyrium, or eye-wash. The pills were probably either (*Answer: dissolved*) in liquid or ground into a powder and used to treat eye conditions. Who knows, maybe Hippocrates used them on his pupils.

The (*Answer: Meridiana*) Planum region of Mars once had water that was really salty and highly acidic, conditions incredibly hostile to any life forms that we know about. So, any (*Answer:*

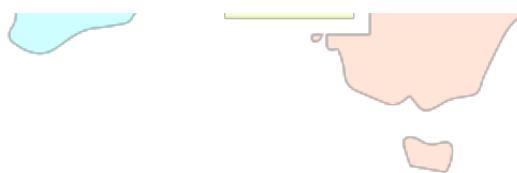
*organisms*) that might have once lived in that area on Mars would really have had to beat the odds. But why do we know so much about the (*Answer: likelihood*) of a (*Answer: particular*) environment to support life? Mars scientists can thank you and me and our propensity to eat. Harvard professor of earth and planetary sciences Andrew Knoll spoke to reporters Friday at the AAAS meeting: "The food preservation industry depends highly on people knowing the kind of ionic tolerances of microorganisms. So, this isn't some esoteric thing that a Mars scientist will pull a paper off a (*Answer: shelf*). There are thousands of papers out there on the tolerances of microorganisms. And it's not because most scientists are worried about...it's because they're worried about botulism in canned vegetables." So, one science feeds another.



# LISTENING

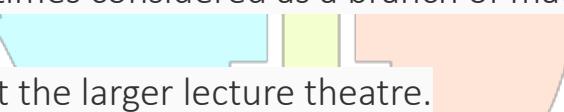


## WRITE FROM DICTATION



ONE AUSTRALIA

- The author expressed an idea that modern readers inevitably cannot accept.
- Visual aids can be really helpful when you are revising.
- Any gains from the sales of the property must be promptly allocated.
- The instant availability of information has radically changed people's lives.
- The elective course introduces engineering students to construct practices and concepts.
- Classical mechanics is sometimes considered as a branch of mathematics.
- Foods containing overabundant calories supply little or no nutritional value.
- When the court announces the sentence, the judge will see if she is regretting.
- A visit to the designed museum is of great value.
- A series of lectures which were shown to us in economics have been recorded.
- Academic journals are often edited by subject specialists.
- Undergraduates may pursue their specific interests within certificate programs.
- The course involves a combination of pure and applied mathematics.
- New developments in manufacturing are constantly changing the way we live.
- Trees benefit the city by soaking up the rainwater that runs off its road.
- Key business partners are often intertwined in expense accounts.
- Strangely, people are simultaneously impressed by and skeptical of statistics.
- An architect requires the problem-solving skills and an eye for design.
- Some people regarded this as eyewash whereas some people asked for the status of their complaints and actions taken.
- Scientists learned through the observations and the analyses of the human behavior.
- Remember, the prestigious election of stewardship has strict eligibility criteria.
- Animals raised in captivity behave differently than their wild counterparts.
- Gravity is the force that attracts two bodies toward one another.
- Formal conclusions could be established through rigorous experiments.
- Social psychology is concerned with the understanding of human behaviors.
- Houses were built for workers near the factories.
- Our faculty includes five libraries in the university.
- This is the first example of a modern and professional army.
- Muscle cells bring parts of the body closer together.
- My technique is to understand the sentence while writing the first letter of each word.
- Students must wear protective clothing provided in the medical laboratory.
- Physics is a detailed study of matter and energy.
- The student union hosts a variety of social events.
- Most of the lectures begin promptly, so do not be late.
- Currently the growth of the company is unpredictable.
- Optional tutorials are offered in the final week of a term.

- Before choosing your university courses, you should consider your future career.
- It is a debate about the value of knowledge.
- We encourage students to complete their applications before the deadline.
- Tuition fees will vary according to the fields of study.
- There is no ideal debate on this topic.
- Any game must be properly elaborated.
- While some people regard it as reforming zeal, others regard it as recklessness.
- The integration of archeologists' studies with community projects is widely encouraged.
- A good academic essay should have a clear argument.
- I can't hand in my dissertation this week.
- His analysis study appears to be based on the false premise.
- The temporary library will be closed in the winter break.
- Any gains from the sales of the property must be promptly allocated.
- The university will seek a colossal renovation to the faint empty theatre.
- The subject is complex and difficult to explain. 
- Archeologists are astonished by unexpected previously overlooked foundations.
- Weather forecasting is becoming more accurate than before.
- Classical mechanics is sometimes considered as a branch of mathematics.
- You will be tested online. 
- The posters are on display at the larger lecture theatre.
- Graduates from this course generally find jobs in the insurance industry.
- The study centre<sup>3</sup> in the library has all the latest technologies.
- The blue whale is the largest animal that ever lived. 
- New materials and techniques are changing the style of architecture

**ONE AUSTRALIA**