**Unit 1**

**What Are Your Reasons to Become a Scientist or Engineer?**

***Task 2: Write one sentence to summarize each scientist’s main reason(s) to pursue a career in science. Make sure to use a complete sentence. The following is an example.***

Preston Cloud from University of California, Santa Barbara, drifted into geology because he showed more interest in this field than in anything else.

|  |  |  |
| --- | --- | --- |
|  | **Name** | **The main reason(s)** |
|  | Preston Cloud | He showed more interest in geology than in anything else. |
|  | Jerome Bruner | He was curious about the human mind. |
|  | Harry Shipman | He was fascinated about the natural world. |
|  | Walter A. Hill | He had a strong desire to be a role model for blacks. |
|  | Malak Kotb | He was interested in experiments and influenced by his father. |
|  | Marcia McNutt | He was curious about science and he had a sense of responsibility (someone has to do it). |
|  | Masakazu Konishi | His personality and early education influenced his choice. |
|  | Edward Teller | The consistent feature of science itself is appealing to him. |
|  | Peter Denning | He had a strong interest in, and deep commitment to, science. |
|  | Benoit Mandelbrot | Family tradition influenced his choice. |
|  | Ruth Sager | He was fascinated about science and its challenges. |
|  | Anne Kernan | Parents’ influence determined her choice. |
|  | Walter Massey | The desire to change his situation and love for physics are the reasons. |
|  | Rudolf Peierls | Fascination about science and technology is the reason. |
|  | Michael Turner | Good school education influenced his choice. |
|  | George Schaller | Love for animals was the main reason. |

***Task 3: List the different lexical chunks that are often used to express your enthusiasm for an activity or a subject.***

1) Show a strong interest in

2) Have great enthusiasm for

3) Be fascinated by

4) Be curious/passionate about

5) Be intrigued by

6) Be into

7) Be absorbed/engrossed in

8) Be gripped/riveted by

9) Be enthralled by

10) Be keen on

…

***Task 7: Read Text III carefully and explain why English is both easy and difficult.***

|  |  |
| --- | --- |
| **English is easy, because** | **English is difficult, because** |
| The basic English grammar is easy.   * English has only one conjugation. * The subjunctive mood has nearly disappeared in English. * Second person singular *thee* and *thou* vanished. * English irregular verbs are simple. * English nouns have no gender. * English adjectives are invariable. | Spelling is difficult.   * English has a lot of phonemes, a lot of different vowel sounds. * English just doesn’t like diacriticals. * English is orthographically conservative. When a word is borrowed, the spelling is foreign, but the pronunciation is adapted to English. |
| Vocabulary is difficult.  Everyday vocabulary is so immense. English words have too many synonyms with subtle differences in meaning and tone.  Noun-adjective forms have different origins. |
| Written and spoken forms of English are not so different from each other, while German and Greek are practically different languages from the formal written versions of those tongues. | Different prefixes to show negative meaning.  The same word has many different meanings. |

***Task 10: Listen to another clip about dreams and fill in the blanks with the words you hear. Listen again and read aloud by imitation.***

That kind of dreaming was the focus of the last program. This week we’re talking about dreams as in hopes, things you really want to happen:

Examples:

* My dream is to travel to India.
* Her dream is to meet a handsome, sensitive man.
* Every week, I dream of winning the lottery.

Later on in the programme we’ll look at some everyday language and expressions related to dreams.

Here are some famous quotations related to dreams. I want you to tell me who said them.

Examples:

* I have a dream that my four children will one day live in a nation where they will not be judged by the colour of their skin but by the content of their character. (Martin Luther King, Jr. one of the main leaders of the American civil rights movement).
* You may say I’m a dreamer, but I’m not the only one, I hope someday you will join us, and the world will live as one. (John Lennon, musician, Beatles member).
* Dream no small dreams for they have no power to move the hearts of men. (Goethe, German writer).

Now, a closer look at some more language we can use to talk about the things we dream of doing. As we heard, one way is to use the word “dream”, which can be both a noun and a verb.

Examples:

* His dream is to become a writer.
* He dreams of becoming a writer.

We can also use “hope” – again, both as a noun and a verb.

Examples:

* My hope is to become a writer.
* I hope to become a writer.

“To hope” doesn’t suggest such strong emotion as “to dream.” We can use it to talk about something that isn’t quite as important to us as a dream.

Examples:

* I hope he arrives on time.
* I hope it’s sunny tomorrow.

If we want to talk about life plans, the word “ambition” often comes in useful.

Examples:

* My ambition is to become an actor.
* I only have one ambition and that’s to set up my own company.

A slightly more formal word we can also use is “aspire.”

* He aspired to becoming an actor.
* I only have one aspiration and that’s to set up my own company.

So, a reminder of those phrases:

* to dream
* to hope
* an ambition
* to aspire

***Task 11: Note down the key words in the interview with a business coach, speaker and consultant, whose childhood dream was to become a super model.***

Topic of the program**:** Childhood dreams

Notes:

1) You recently decided to take stock of your childhood dreams and see how they played out in your life. What prompted …?

Old pictures, junior high school, high school...

2) How close did you came to living out your dreams?

Not related to childhood dreams, but excited, model, in a sense yes

3) Why do you think an exercise like that is important to look back what you hoped to become and look at the reality today?

A good check, living authentically, fulfilled, joy, adult lose track

4) Why do you think it is a lot of us never fulfill our childhood dreams?

Don’t plan, forget, think how to move from point A to point B, what to do, take steps, dream big.

***Task 12: Note down the key words in the interview with a professional ballet dancer who is living out her childhood dream.***

1) How long have you been a professional ballet dancer?

Since 14.

2) When did you realize that you actually wanted to do that for a living?

About 10, not going to college, not normal job, strong willed.

3) How did you get there in just 4 short years?

Try, hard work, training intense, German teacher, appealing, glamorous, passionate, support from parents.

4) You were born in South Korea and adopted by a family in California, how did that shape your aspiration?

Lucky, opportunity, grateful.

5) What was that first professional opportunity before you when you were 14 years old?

Dancing in Saint Barbara, competition, Director of ABT (American Ballet Theatre), offered contract.

6) Do you see yourself as a role model for other young girls out here who have these similar dreams?

Yes, hard on myself, perfectionist, work hard.

***Task 13: Answer the following questions based on an interview about the importance of correct pronunciation.***

1) What are the things you should study and practice when learning a language?

Vocabulary and grammar, skills such as reading, writing and speaking.

2) Why is pronunciation important?

To be understood when they speak to others. They don’t want their words to be mistaken for other words because they haven’t pronounced them very well.

3) What is good pronunciation?

Clear and comprehensible, not placing a strain on the listener.

4) Does good pronunciation mean a perfect imitation of a particular native-speaker accent?

Not necessarily.

5) Should students aim to sound like a native speaker?

Not essential to sound like native speaker–lots of acceptable native speaker.

6) What does the interviewee say IS important?

To understand native speakers. Their speech will be fast and fluent and may cause difficulties.

***Task 14: Answer the following questions briefly based on an interview about the question “what makes us human.”***

1) What makes us human?

Language.

2) What is the use of language?

It makes us human. It makes us express our humanity.

3) What does language enable us to do?

* I can talk to you about things you cannot see, or hear, touch, taste, or smell.
* I can take you beyond the present moment, language gives us mental time travel.
* Story-telling makes us different from other species. Language enables us to create minds, the virtual world, that doesn’t exist out there, the spiritual world that causes the fundamental core of all these forms of story-telling that are central to human culture as we know it.

**Unit 2**

**Are Children Born Scientists or Engineers?**

***Task 2: Read Text I quickly and write a one-sentence summary of each paragraph.***

|  |  |
| --- | --- |
| **Paragraphs** | **One-sentence summaries** |
| 1 | The author gives his view that children are born engineer. |
| 2 | Grown-up engineering is similar to children’s play. |
| 3 | Children experience the essence of engineering in their earliest activities ⎯ play. |
| 4 | Unfortunately, the number of engineering students is declining, and there is a lack of diversity among college students majoring in engineering. |
| 5 | Design pervades the lives of children and adults alike. |
| 6 | There are rules you must follow in design. |
| 7 | Solving a jigsaw puzzle is an example of design: there are many ways to complete the puzzle, but there is the most efficient way. |
| 8 | Engineering design is like solving a jigsaw puzzle. |
| 9 | Engineering is an interesting and satisfying profession. |

***Task 3: Read Text I carefully and answer the following questions.***

1) What sentence structure is used frequently in paragraph 1? Why do you think the author chooses to use this structure?

The striking sentence structure of paragraph 1 is “They want to….” All the sentences are short and simple. Obviously the author is deliberately mimicking little children who have a limited language resource, both in terms of vocabulary and in terms of structure. This is a good example of choosing the form to suit the content.

Note that complex sentences dominate the rest of the article.

2) In what sense does the author think the essence of engineering is design?

The essence of engineering is the playfulness in the process of invention and design, which means there are many ways to do the same thing or solve the same problem. But there is always a preferred or efficient way.

3) What problem is the author concerned about? What suggestions are given to improve the situation?

The declining numbers of and disappointing lack of diversity among college students majoring in engineering, the lack of exposure of high school students to the very idea of engineering and the fact that many have insufficient mathematics and science backgrounds to gain entrance to engineering school.

Suggestions:

Introduce the idea of design even to pre-school children;

Make use of opportunities in everyday life to expose children to the idea of engineering.

4) Why does the author discuss the jigsaw puzzle activity?

To show that engineering is like the jigsaw puzzle. In spite of the many ways to solve a problem, there is a most efficient way to solve it.

5) What is the author’s attitude towards an engineering profession?

It is a rewarding and satisfying profession; it gives fun and pleasure to engineers; it is essential to the smooth workings of civilization.

***Task 4: Read Text II and find out 1) why the author thinks kids are natural-born scientists, 2) why they desert science later on.***

1. The author thinks kids are natural-born scientists because kids have enquiring minds, which is exactly the spirit of science: deciding what you want to find out, setting out how you’re going to discover it, then carrying out the experiment and coming to a conclusion.
2. They desert science later on when science become formalized in school, when science is divided from other subject. In this situation, they become self-conscious and don’t want to fail and appear stupid. They would think that science is difficult and give up learning it as a result. It is the educational system and the way we treat science and science learning that killed kids’ passion for science.

***Task 8: Complete the following statements according to the information in Text III.***

1. Girls are as good as boys at complex problem solving skills all through 12th grade.
2. Hyde and Mertz’s paper published in *Proceedings of the National Academy of Sciences* shows that more males outperform females on the highest level of math, but the gender gap is narrowing.
3. Among Asian students in the US and Britain who score in the 99th percentile for math achievement, girls outnumber boys very slightly.
4. According to Mertz, in countries where fewer females excel in math, the gender inequality is greater.
5. Analysis shows that the gender gap in math is attributed to socio-cultural, economic and political factors rather than biological factors.
6. The “greater male variability hypothesis” refers to the ideas that there are a greater number of males who are math dunces—but also a greater number who are math geniuses.
7. Larry Summers said in his infamous 2005 speech that there is a low number of women among the Ivy League math departments, because women lack the intrinsic aptitude for math.
8. The international data about mathematical dunces and math geniuses prove that the greater male variability hypothesis is not true across the world.
9. In countries with greater gender equality such as Germany and the Netherlands, more girls’ performance in math is better.
10. It is concluded that social and other environmental forces rather than innate factors explain the math gender gap.

***Task 9: Fill in the missing words in an interview with Hermain Khan, one of the young scientists featured in the new documentary film, Whiz Kids.***

Steve Mirsky (Interviewer): Welcome to Science Talk, the weekly podcast of Scientific American posted on July 19th, 2010. I’m Steve Mirsky. This week on the podcast…

Hermain Khan (student): When you’re drilling into these teeth you get a lot of dust all over your hands, and I guess I was just curious, like, what does it taste like? I just had a, like, took a little lick.

Steve: That’s Hermain Khan, one of the young scientists featured in the new documentary film, Whiz Kids. The movie follows three high school students attempting to get their work accepted into the prestigious Intel Science Talent Search. The three students are Kelydra Welcker, Ana Cisneros and Hermain Khan. Ana and Hermain were able to visit the Scientific Americanoffices on June 4th.

Hermain: Doing research really forces you to, not necessarily grow up, but it forces you to develop a sense of maturity in the sense that you have to learn to set priorities, you become more (1) focused in what you’re doing. There are a lot of attributes that you have to take into yourself and kind of cultivate while you’re doing research in order to have a successful project, because if you don’t have that level of discipline, the level of discipline that is expected from an adult often times, you won’t be able to (2) successfully complete the research or to do what is necessary to come to test whatever you want to test.

Steve: But you had a lot of that kind of discipline and drive going in. I mean, the movie shows you getting up at 5 in the morning.

Hermain: Yeah.

Steve: So you’re obviously a very driven person [and] the film goes into some of your family background that you believe is part of what (3) drives you so hard.

Hermain:  Yeah, I think that, I mean, I had to grow up a little bit early because I didn’t have the level of support that other children my age had. I had to learn to (4) set those priorities for myself, I had to learn to get things done myself and ultimately that’s why I think that I was successful. I mean I don’t look at back it as, like, “Woe is me, I didn’t have a childhood.” I think of it as, I learned very important character traits at a very early age. Whatever my family (5) circumstances were, I reflect positively on what I learned from this.

Steve: I mean basically your family had to (6) support itself by collecting cans, deposit cans, and you were on public assistance for a while, and now you’re an undergrad at Yale University.

Hermain: Yes, yeah. It’s difficult, I mean, it’s hard because, I mean, although I am at Yale that’s still the background that I come from. And I am (7) proud of my background because I think that the story that comes across in Whiz Kids is something that can (8) inspire other children that perhaps come from similar backgrounds, that you can go to schools in the ghetto all of your life and you can still come out of it (9) at the top. It’s just a matter of understanding where it is you want to go and recognizing that it is going to take a lot of hard work and a lot of (10) discipline to get there.

***Task 10: Fill in the missing words in an interview with Ana Cisneros and Hermain Khan, two young scientists featured in the new documentary film, Whiz Kids.***

Steve: Ana, your parents came from Ecuador, and they, you’re really (1) highly motivated as well, and what was your home environment like and how did you get so interested in science?

Ana Cisneros (student): Well, in terms of my home environment, I mean, as most immigrant families when they come to this country it’s very much about work and sacrifice; so growing up I always had babysitters; sometimes I was put into (2) situations in which I had to, sort of, (3) make decisions for myself. You know, mom and dad weren’t around necessarily to ask them for advice or, you know, the culture and society is very different from what they were used to back home which sometimes forced me to also mature at a very young age.

Steve: I am assuming they weren’t around because they were working a couple of jobs each, right?

Ana: Exactly. They weren’t home and that just meant that they encouraged me to do things after school. So in high school, (4) science research just became, really my haven, where I found myself, where I was successful and where I really thought, like I grew up, not just as a person but also into something else, and for me it was a (5) young scientist.

Steve: How did you wind up choosing to get more involved in science then in the arts, let’s say?

Ana: There was something that I felt intriguing about science research, because it wasn’t like any other class I had been in. It wasn’t just about doing word problems or worksheets or packets or (6) memorizing vocabulary words and, sort of, having to regurgitate that information back. It was very much: okay, so here’s a basis; you know, find an (7) interest; what are some questions that you have about this; do your own research. It was very much (8) independent and, like, really creating something of your own with it. And I just love that concept, and even though I was not successful as a freshman in high school I said, “You know what, I am going to stick with it to the end, and I am very happy with the outcome.”

Steve: And you’re finishing up at Columbia University now.

Ana: Yes, I am actually a biochemistry major at Columbia and hoping to get into med school very soon.

Steve: The incredibly important role of some of your teachers who just, they see the (9) promise in their students, and they get incredibly energized themselves and are really like your personal life coaches.

Hermain: Yeah, I think for me I had, I was lucky to have support from one particular teacher in my high school and then to have support from my research mentor. And she became (10) more than just a research mentor, she really became a friend during this process. In school it was Ms. Iraseri who was in charge of the science and engineering research program and the biggest thing that she did teach me was how to be resourceful—how to introduce yourself to scientists, how to ask them for help and how to come across as (11) mature as possible. Because often times when you’re e-mailing scientists at these different universities, and you’re asking them to be part of their lab most people shrug high school students off, saying, you know, “Sorry, we don’t need anyone; if we need someone, we’ll call you.”

Steve: You know, (12) basically that’s what you were told when you first got in touch with the folks at Williams.

Hermain: Yes.

Steve: They didn’t tell you to get lost but they said, “Well this is not really practical…for you to do this.”

Hermain: Yeah, yeah.

Steve: “For you to do this.” But you just (13) refused to take no for an answer.

Hermain: I refused to take no. I mean, the fact that Dr. Blackwell at Williams even offered me an interview, which was just kind of, her being nice to me, that was more than anyone else gave me, and when I had that opportunity I was not going to (14) let go. And so I showed up at the interview, and I made it clear that this is what I want to do, I am committed to this and if you give me the (15) opportunity, I will show up every day.

Steve: And Ana as a high school student, you wound up spending (16) six weeks at a laboratory at Colorado State in Fort Collins, right. Was that a pre-college program or did you just arrange that for yourself?

Ana: Part of my (17) program, the science research program, in my school, was sort, of teaching us that resourcefulness that Hermain just mentioned and it’s really true. The lab recognized its limits but it gave us skills that empowered us to do things on our own, which included e-mailing researchers and being, you know, (18) introducing myself; you know, sharing your ideas and thoughts about their research and how you think that their research could possibly help in your personal research that you’re doing in a high school setting. And so Dr. Omer Falik, he is a root ecologist from Israel and he happened to be doing research at Penn State at that time. So he continued to be my online sort of mentor, so I could (19) e-mail him with questions. And, sort of, that relationship grew and grew; then I could call him and then I thought that was a big deal calling whenever I had questions and concerns about my project. And then he got a position at Colorado State University at the (20) agricultural department and he was like, “You know what, this is my first summer here; I think this is a great lab that focuses on root ecology, which is, you know, applicable to the type of research that you want to do, so why don’t you come over here for six weeks and meet me?” And finally I got a chance to work with him.

***Task 11: Note down the main points of 17-year-old Taylor Wilson’s talk on the TED stage.***

* The first point he makes: He believes nuclear fusion is a solution to our future energy needs.
* The second point he makes: Kids can change the world.
* At the age of 14 he built a working fusion reactor in his garage.
* He said in the previous year at 16, he won the Intel International Science and Engineering Fair.

***Task 12: Answer the following questions briefly based on the video clip about Einstein distinguished fellow and teacher Jenay Sharp Leach. She tells us how her experience at NASA confirmed that she’s finally living her passion.***

1) What is Jenay Sharp Leach’s work?

To connect teachers and informal educators to the NASA curriculum resources.

2) How many students has she taught?

Thousands.

3) What do the students feel about their experiences at NASA?

They are enthusiastic and excited.

4) What does she encourage her students to do?

To pursue their dreams and live their passions.

***Task 13: Listen to an interview and note down the key words in the answers given by Gareth Lloyd.***

**Callum** (Interviewer): What do we mean by recycling?

**William:** It’s to do with our rubbish. Our waste. If we throw it away it goes into a big hole in the ground, called a land-fill. But some rubbish can be used again. Bottles for example can be washed and made into new bottles. This is recycling, using something again, not throwing it away.

**Callum:** I certainly remember as a child taking bottles back to the shop and getting money, but it seems only fairly recently that we’ve really started recycling seriously in this country, bottles, metal, paper, plastics. Anyway, our guest today can tell us more about the subject. Unfortunately he isn’t able to join us in the studio but I was able to speak to him on the phone earlier this morning. His name’s Gareth Lloyd and he’s director of communications at the environmental organisation called WRAP – the Waste Resources Action Programme. I asked him first what the purpose of WRAP is.

**Gareth Lloyd:** Well the purpose of the organization is to develop campaigns to

* make us more resource efficient
* to boost the amount of recycling in the country
* look at new ways of minimizing our waste

**Callum:** I remember when I was a child taking bottles back but I wonder, when did recycling really begin to take off and become a priority in this country?

**Gareth Lloyd:** I think it probably goes back

* ten or fifteen years when we started to have a lot more bottle banks in the country.
* probably in the last ten years it’s really started to move along
* there’s been a steep increase in the last three years, the rate of recycling has nearly doubled.
* It’s now up to 27% of household waste.

**Callum**: It may seem like a silly question or a basic question but why is it necessary to recycle?

**Gareth Lloyd**: No, well, that’s a very good question. You do two good things or three good things for the environment.

* It reduces the amount of rubbish we send to landfill sites.
* It also helps conserve energy because if you reuse those materials, for example glass, you can.
* It saves a lot of energy.
* It’s actually a positive way that all of us can make a positive contribution to tackling climate change.

So it is well worth doing.

***Task 14: Listen to an interview and write down the interview questions. Listen again and answer the questions briefly according to what you hear.***

Question (1) how much waste do we produce and how much do we recycle.

Answer: About a metric tonne of waste generated per average household.

Question (2) how much of that are we recycling at the moment?

Answer: It used to be 14% of that would be recycled, it’s now 27% so it’s nearly doubled.

Question (3) what’s the biggest challenge for recycling?

Answer: we need to boost the rate of recycling but also think much more about what we can do in terms of waste minimisation so we need to start looking hard at how to actually reduce excess packaging, how to get those reusable bags used much more, how to use technology to actually help us get the products that we need in the minimum packaging.

Tip: take in a reusable bag and use it and use it and use it again.

**Unit 3**

**What Makes a Successful Scientist or Engineer?**

***Task 2: Read Text I and write a short sentence to summarize the 6 types of habits of successful scientists.***

|  |  |
| --- | --- |
|  | Habits of successful scientists |
| 1 | Make new connections/novel combinations. |
| 2 | Learn from successful and failed expectations. |
| 3 | Be persistent. |
| 4 | Be interested in and excited about research |
| 5 | Be cooperative. |
| 6 | Interact with the world. |

***Task 3: Use your own words to explain each of the following sentences from Text I.***

1. But case studies rarely address the question of what made these investigators more accomplished than the legions of scientific laborers whose names have been forgotten.

Case study cannot explain why some scientists are more successful than others.

1. I was skeptical that they would come up with anything less trite than *work hard* and *be smart*.

I thought they would only say what everybody knows such as “work hard” and “be smart”.

1. Visual representations may facilitate analogical and other kinds of inference.

If you see the things, you are more likely to make connections between them and understand them in other ways.

1. Because scientific explanations and technological breakthroughs often involve the discovery and manipulation of mechanisms, seeking novel mechanisms is often a good strategy.

Trying to understand something from a new perspective is the key to scientific explanations and technological breakthroughs.

1. The injunction to “confirm early, disconfirm late” goes against the methodological advice of Karl Popper that scientists should set out to refute their own ideas.

This advice is opposite to Karl Popper’s advice.

1. It allows a research project to develop without being destroyed prematurely by apparent disconfirmations that may arise from difficulties in getting good experimental research underway.

If you disconfirm an idea in the middle of a research project, you may risk destroying the project. But if you overcome the difficulties and continue the experiment, the research project will be successful.

1. It is rarely possible for scientists to do a cost-benefit analysis of what projects to pursue, but following their noses to work on projects that are fun and exciting can keep them motivated and focused.

It is rarely possible for scientists to decide what projects to pursue based on the analysis of the cost and benefit. Scientists usually decide what projects to pursue according to their interest.

1. Finally, there is little point to doing research if you do not devote time to communicating it effectively to others by well-written articles and interesting presentations.

It is important to for scientists to produce well-written articles and make interesting presentations about their research. Otherwise, what’s the use of doing research at all?

1. Scientists can benefit from finding rich environments to study and building instruments to detect features of those environments.

Scientists should be interested in studying the environment and try to understand its features.

1. Testing ideas is not just a logical matter of working out the consequences of hypotheses, but involves interacting with the world to determine whether it has the properties that the hypotheses ascribe to it.

Testing ideas is not just to test whether a hypothesis will lead to a consequence. It is possible that the world does not have the hypothesized features or properties!

1. It would take an enormous amount of empirical research to establish that the above habits really are ones that lead to scientific success.

We still need to conduct lots of research to collect data in order to prove that these habits can lead to scientific success.

1. One would have to produce a substantial data base of scientists, ordinary as well as illustrious, with records of the extent to which they exemplify the different habits and degrees of professional success.

In order to prove that these habits lead to success, the researcher has to keep a detailed record of habits of a large number of successful and less than successful scientists to determine the role of these habits in scientific success. Such a project is unlikely.

***Task 5: Read paragraph 1 of Text II and find out what the author would like to write about.***

Gottfried Schatz would like to write about the bright side and dark side of a scientific career.

***Task 6: Work in groups and list the gains from science and the price you have to pay for pursuing a scientific career.***

|  |  |
| --- | --- |
| **Gains/Benefits** | **Price/Cost** |
| Science gives you better eyes, broaden your vision and make you see the world more clearly. | Some sciences have become expensive, busy, manipulative, political, and harshly competitive. |
| Science will plug you into the brains of many smart people. It enables you to stand on the shoulders of giants. | You may have to gloss over uncertainties, make wild claims, and tell white lies. |
| Science makes you understand numbers in meaningful ways and avoid numbers which make no sense. | You may be kicked out of a company or university. |
| Science enables you to take a dynamic view of the world. | You may have to work hard, face fierce competition, sacrifice your family and friends. |
|  | You may become cold, seek power, and become snobbish. |
|  | You suffer from a terrible sense of loneliness. |

The author’s advice: You need to see the world from various perspectives so that you can have a deeper and thorough understanding of it. Therefore, you need to learn the subjects outside your own area, and art is one of these other subjects.

***Task 7: Gottfried Schatz is fond of expressing his ideas metaphorically. Explain the meaning of the following sentences from Text II. The first sentence is explained as an example for you.***

1. In giving you the grand tour of the castle, I must now show you the kitchen.

In this sentence, “the grand tour of the castle” and “the kitchen” are metaphorical expressions. Gottfried Schatz wants to show both the bright side and the dark side of science and a scientific career. He means to say that he has shown you the gains, the satisfaction, and the pleasure of learning science. That is a blessing. But now he will show you the problems, hardships, and difficulties you have when pursuing a scientific career.

1. Science gives you better eyes because it removes mental blinkers and gives your brain a much bigger playground.

Science broadens your vision and mind, and it enables you to see and understand the world more clearly.

1. It feels good to stand on the shoulders of giants.

It feels good to see far and wide. You become knowledgeable because you are acquainted with the ideas of smart and great people.

1. Understanding numbers will be your Ariadne’s thread that shows you the way in science and your everyday life.

Understanding numbers can help you understand the meanings and implications of many things both in science and everyday life.

1. Very soon the entrance to Paradise—the laboratory—will be blocked by guardian angels with flaming swords.

It is very difficult to get the position you love in the laboratory, because the authorities are too critical and harsh.

1. Yes, science’s kitchen can be crowded, hot, hectic and noisy. But it does turn out fantastic meals. In the end, it’s those meals that count. They are well worth the price.

Doing scientific research is full of hardships and difficulties, but you try to overcome the difficulties, because the final product or result will give you the pleasure that nothing else can compare.

1. Those delicious meals, however, are nutritionally unbalanced and will not sate you.

Although you take pleasure in scientific research, it can only make you see the world from a single perspective. You won’t be satisfied with it. So you need to have a well-rounded development and look at the world from various perspectives to get a full understanding of it.

1. Make science your home, but also venture beyond its borders.

Science is only part of your life. You can devote the larger part of your energy and time to the pursuit of science, but you also need to read and learn about the things outside your research area.

***Task 11: Fill in the blanks with words you hear from a report about Georgia Tech’s new robots.***

Robots have evolved in leaps and bounds in recent years, but they still cannot safely leap or bound. They have to (1) move carefully. If a robot were to fall from an elevated surface, for the most part it would (2) crash down like a bag of rocks. Not ideal if that robot is on a rescue (3) mission.

So a team of Georgia Tech researchers wants to produce robots that are more agile, by making them literally cat-like. (4) Specifically, the plan is to create a robot that can emulate a cat’s uncanny ability to (5) calculate the best landing angle, (6) adjust its body midflight and land on its feet.

So far the research team has been able to build a robot (7) capable of computing landing angles during test falls. They hope to eventually give the robots joints that can twist or flip their bodies to stick the landing, (8) regardless of the angle.

***Task 12: Answer the following questions according to a report about China’s lunar mission.***

1. What is this news report about?

China’s lunar mission team celebrating the soft landing of its Jade Rabbit rover on the moon.

1. What other nations have ever landed on the moon?

The US and the Soviet Union.

1. What does the lunar landing mean for China?

This is a moment of great pride and glory. Happy scientists throughout China are celebrating the successful implementation of this mission.

1. Why should the Chinese be proud of the mission?

It is a huge achievement through their own research and development.

1. What is China likely to do after this successful mission?

Establish long term presence in on the moon or through space station.

1. What is the importance of space program according to the interviewee?

It reflects comprehensive national power, nation’s capabilities, military, economy, love of science and technology, industrial development, diplomatic respects, etc.

***Task 13: Answer the following questions according to a news report about a 16-year-old Maryland student Jack Andraka who created a simple test that can detect pancreatic cancer at its earliest stage of development.***

1)What award did Jack Andraka win?

He won the grand prize Intel International Science and Engineering Fair, the largest high school science competition in the world.

2) Why is Jack interested in scientific research?

Because he has been encouraged by his parents, inspired by his brother, and nurtured at his high school.

3) Why did Jack become interested in developing a test to detect pancreatic cancer?

Because he lost a close family friend to the disease.

4) What does Dr. Maitra think of Jack?

He is a very gifted young man and very impressive.

5) Where did Jack complete his project?

In one corner of Dr. Maitra’s lab.

6) What is the significance of Jack’s test?

It may save many lives.

***Task 14: Watch the report again and fill in the numbers you hear.***

1. The 16-year-old Maryland resident is the youngest-ever recipient of the $75,000 award, beating out more than 1,500 students from 70 countries.
2. “I went on the Internet and I found that 85 percent of all pancreatic cancers are diagnosed late, when someone has less than a 2 percent chance of survival.”
3. Jack’s test is 90 percent accurate.
4. “The sensor is 400 times more sensitive, 168 times faster and 26,000 times less expensive. It costs three cents per test and also takes only five minutes to run.”
5. Jack’s mentor at John’s Hopkins University, Dr. Anirban Maitra, was the only one out of 200 researchers to respond favorably to e-mails the student sent out describing his project.
6. In 2011, Dr. Maitra gave Jack a corner of his lab, where he worked for seven months completing his award-winning project.

***Task 15: Answer the following questions briefly based on an interview about metaphor.***

1. What is metaphor?

It is a substitution of one term for another. Metaphor is speaking of one thing in terms of another.

1. What is the distinctive feature of metaphor?

It is the resemblance between two things.

1. How does the speaker explain the metaphor “George is a swine”?

It’s not just the resemblance between the things compared. My feelings towards him are like the feelings I have towards the unfairly despised animal, swine. It is the feelings towards the two things that are compared.

***Task 16: Listen to an interview and write down the answer given by David, the interviewee. Listen again and explain the meaning of the examples of metaphor and simile from Shakespeare’s works and everyday life.***

**Question:**

I wonder if you could help to clarify the actual meanings of the word Metaphor. My daughter is seven and the word “metaphor” came up in a book she is reading. She asked me to explain it so she could enter it into her vocabulary book, and I did, but when she went to school the next day, her teacher told her I’d got it wrong. Any help would be much appreciated as I’m truly intrigued now. English is a fabulous but complicated language sometimes, even for native speakers!

**Answer:**

Well it’s a way of comparing one thing to another, to provide an image that helps to explain something or provide a dramatic feeling – Shakespeare’s writings are full of metaphors.

***Task 17: Listen to an interview and write down the question. Listen again and complete the answer.***

**Question:** Do you need to be special classical kind of actor to play Shakespeare, is it very different doing Shakespeare from doing a modern play?

**Answer**:

A good actor is a good actor. Some actors (1) are able to do a lot of different things very well. Some might be very good in Shakespeare, and (2) might also be excellent in a soap opera, and good on the radio, in theatre or television, or film. But there are some people who might (3) be very good actors, but (4) would really struggle with the language of Shakespeare. One tends to think of Shakespeare as being performed on stage, there are very good actors, (5) who are not particularly good on stage, they are great on screen, small screen or big screen, great on the radio. They are not able to sustain themselves over three hours live in front of an audience. The main problem is (6) the language, the use of language and understanding of the language. A famous and successful English Shakespearian actor John Gilbert played all the great parts but famously said (7) he didn’t actually understand a lot of what he was saying, but has (8) the technique and ability to make it sound as if he did.

**Unit 4**

**Is There a Divide Between Sciences and Humanities?**

***Task 2: Answer the following questions based on the information in Text I.***

1) What did C. P. Snow mean by “two cultures”?

The two cultures refer to literature and science.

2) What did Leavis think of Snow?

He thinks that the tone of Snow’s lecture is too confident. In his eyes: “Not only is [Snow] not a genius, he is intellectually as undistinguished as it is possible to be….” Although Snow had been trained as a scientist before becoming a writer, his novels were mediocre.

3) What were the characteristics of education back in the 1960s? What were the consequences of that kind of education?

In the 1960s, the bright boys were expected to read classics at Oxford, and the less bright steered towards the labs. This lead to a perceived crisis in science education. Fewer students were taking science at A-level; the majority of science teachers in schools lacked a relevant degree; university departments were closing or being threatened with closure; and industrialists were complaining that it was becoming impossible to find good scientists.

4) What was the purpose of the new science GCSE?

The new science GCSE was designed to persuade more students to take science at A-level and university by making it more interesting and relevant.

5) What were the problems of the new science GCSE according to David Perks, the physics teacher?

According to David Perks, the new science GCSE treated science as a branch of media studies, rather than as a group of discrete bodies of knowledge to be transmitted to the student; it assumed that children can relate only to what they know, and that they should not be challenged by new concepts; it gave too much weight to what children say they enjoy, rather than stretching them to develop their capacity for abstract thought; and it replaced the controlled laboratory experiment – “the backbone of modern scientific enquiry” – with field studies.

6) What is the author’s attitude toward the new science GCSE? How does he present his attitude?

The author criticized the approach by citing the points of David Perks.

7) What examples does the author give to show the problems with the education system in UK?

Some undergraduates even did not know what the Renaissance and the Reformation were, or which came first. Secondary schools have to do catch-up when children join them from primary schools; universities have to teach the basics of writing an essay.

Most of the grammar schools that provided a ladder out of poverty for bright children from poor families have gone, while the academic rigor that characterised all kinds of teaching is also largely a thing of the past.

8) What would have appalled Leavis and Snow?

The current situation of education would have appalled them. That is the old debate between arts and sciences, to which they gave the most pungent expression, is now completely out of date. It is no longer a question of whether children should be taught to translate Horace or to solve algebraic equations: it is a question of whether they are to be taught anything at all.

9) What’s the point of talking about the famous debate on “two cultures” these days according to the author?

He thinks the Snow/Leavis controversy raised the most profound questions about the nature of education and what we expect it to achieve.

10) What is the aim of liberal education? How can this aim be achieved?

The notion of a liberal education is that human beings are capable of moving from barbarism to civilisation by using their intellectual and moral capacities. To achieve it scientists and literary intellectuals alike ought to be united.

***Task 3: Read Text I carefully and summarize the different opinions or arguments of the scientists and literary intellectuals mentioned in the article.***

|  |  |
| --- | --- |
| **Scientists and** **literary intellectuals** | **Opinions or arguments** |
| C. P. Snow | It is dangerous to separate humanities and sciences. |
| F. R. Leavis | He looked down upon Snow. |
| T. H. Huxley | Science was as valid an intellectual training as the classics. Both are valid. |
| M. Arnold | Classical education was still relevant in an age of great scientific and technical advance. Science education is important in an age of great scientific and technical advance, but classical education was still relevant. |
| Sir A. Huxley | He gave up classics and pursued a science career. |
| The headmaster of Westminster School | Science is not serious learning. |
| David Perks | Science education is not properly treated in the present system. Science education should develop students” capacity for abstract thinking. Scientific enquiry should take place in labs. |

***Task 4: Skim through Text II and identify the author's argument and the examples to support the argument.***

1. The author’s argument:

Science and art should go hand-in-hand.

1. The examples used to support the argument:

* Great thinkers like Leonardo Da Vinci and Su Song.
* One of Carl Jung’s mythological archetypes.
* Nobel Laureates in the sciences.
* Inventions like camouflage for soldiers, pacemaker, medical stents and improvements to airbag technology.
* Steve Jobs’ self-description.
* Mae Jemison’s words at TED.

***Task 5: Guess the meanings of the underlined words and expressions according to word formation rules as well as the context.***

1. In the wake of （在……之后）the recent recession（不景气）, we have been consistently apprised of （告知）the pressing need to revitalize （振兴）funding and education in STEM fields.
2. Renewing （恢复）our focus on STEM is an unobjectionably （无可非议地）worthwhile endeavor（努力）.
3. But there is a growing group of [advocates](http://steam-notstem.com/) （倡导者）who believe that STEM is missing a key component.
4. Their proposition （提议）actually makes a lot of sense （很有意义）, and not just because the new acronym （首字母缩略词）is easy on the ears（悦耳）.
5. Though many see art and science as somewhat at odds（有分歧）, the fact is that they have long existed and developed collaboratively（协作地）. This synergy （协同）was embodied in great thinkers like the legendary Leonardo Da Vinci and the renowned Chinese polymath （博学者）Su Song.
6. Nobel laureates（诺贝尔奖得主） in the sciences [are](http://scienceblogs.com/art_of_science_learning/2011/04/11/the-art-of-scientific-and-tech-1/) seventeen times likelier than the average scientist to be a painter.
7. Camouflage（迷彩）for soldiers in the United States armed forces was invented by American painter Abbot Thayer.
8. The arts and sciences are avatars（化身） of human creativity
9. Despite the profound connection between art and science, art programs across the nation are on the chopping block（削减）.
10. Schools nationwide are eschewing（回避）art programs to instead focus on teach-to-the-test courses （应试课程）catered to（迎合） math and reading.
11. By teaching the arts, we can have our cake and eat it, too（鱼与熊掌兼得）.
12. Both programs excited students about science while concurrently（同时地） fueling their imaginations（助长想象力）.
13. A potent blend of science and imagination（科学与想象力的融合） sounds like the perfect concoction （调和）to get our country back on track（使我国重新回到正确的道路上）.
14. Celebrated physicist（著名的物理学家） Richard Feynman once [said](http://www-history.mcs.st-and.ac.uk/Biographies/Feynman.html) that scientific creativity is imagination in a straitjacket（被束缚的想象力）. Perhaps the arts can loosen that restraint.

***Task 7: Categorize the following courses into two types: arts＆humanities, sciences*＆*technologies. List 10 most important arts＆humanities courses that would benefit science and engineering majors.***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Courses** | **Arts＆Humanities** | **Sciences＆ Technologies** |
|  | [Introduction to Computing Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=190&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | Music Theory and Practice | ✓ |  |
|  | [Wireless Networks](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=439&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Analog Signal Processing](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=210&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Interviewing](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=115&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Power System Analysis](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=476&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Digital Signal Processing](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=310&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Biomedical Instrumentation](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=414&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | English | ✓ |  |
|  | [Electromagnetic Fields](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=452&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Electric Machinery](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=431&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | Cross Cultural Communication | ✓ |  |
|  | [Microwave Devices & Circuits](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=457&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Family Communication Theory](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=530&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Optical Remote Sensing](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=468&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | Ethics | ✓ |  |
|  | [Optical Communications Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=465&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Nanotechnology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=481&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Introduction to Optimization](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=490&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Distributed Algorithms](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=526&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Random Processes](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=534&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Numerical Circuit Analysis](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=552&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Digital Imaging](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=558&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Communication Network Analysis](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=567&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Watershed Hydrology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOG&pltp_term=fall&pltp_classNumber=401&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Argumentation](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=323&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Earth Systems Modeling](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOG&pltp_term=fall&pltp_classNumber=421&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Exploring Geology in the Field](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOL&pltp_term=fall&pltp_classNumber=110&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Natural Disasters](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOL&pltp_term=fall&pltp_classNumber=118&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Introduction to Geophysics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOL&pltp_term=fall&pltp_classNumber=452&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Operations Research](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=IE&pltp_term=fall&pltp_classNumber=310&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Introduction to Programming](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=INFO&pltp_term=fall&pltp_classNumber=103&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Industrial Quality Control](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=IE&pltp_term=fall&pltp_classNumber=330&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Simulation](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=IE&pltp_term=fall&pltp_classNumber=413&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Statistical Methods in Finance](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=IE&pltp_term=fall&pltp_classNumber=522&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Cooperative Problem Solving](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=IE&pltp_term=fall&pltp_classNumber=542&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Thermodynamics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=300&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Engineering Materials](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=330&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Global Environmental Issues](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=109&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Environmental Economics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=210&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Advanced Physical Acoustics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=545&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Advanced Robotic Planning](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=550&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Optimum Control Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=553&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Environment and Society](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=287&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Surgical Pathology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PATH&pltp_term=fall&pltp_classNumber=559&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Small Group Communication](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=113&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
|  | [Environmental Chemistry](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=351&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Statistical Modeling](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=509&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Fundamentals of Geostatistics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NRES&pltp_term=fall&pltp_classNumber=515&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Modeling Nuclear Energy System](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NPRE&pltp_term=fall&pltp_classNumber=247&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Energy and Security](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NPRE&pltp_term=fall&pltp_classNumber=480&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Introduction to Neurobiology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NEUR&pltp_term=fall&pltp_classNumber=314&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Cognitive Psychophysiology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NEUR&pltp_term=fall&pltp_classNumber=450&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Integrative Neuroscience](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NEUR&pltp_term=fall&pltp_classNumber=462&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
|  | [Public](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=268&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) Speaking | ✓ |  |
|  | [Advanced Interpersonal Comm](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=435&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6)unication | ✓ |  |
| 57 | [Strategies](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=NEUR&pltp_term=fall&pltp_classNumber=314&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) of Persuasion | ✓ |  |
| 58 | [Transportation and Sustainability](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOG&pltp_term=fall&pltp_classNumber=465&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 59 | [Introductory Physical Geology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOL&pltp_term=fall&pltp_classNumber=101&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 60 | [Workplace Communication Technology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=410&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 61 | [Contemporary Rhetorics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=417&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 62 | [Gender and Language](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=432&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 63 | Wind Symphony | ✓ |  |
| 64 | [Percussion Ensemble](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=257&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 65 | Jazz Composition | ✓ |  |
| 66 | [Musical Acoustics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=402&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 67 | [Analysis of Musical Form](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=408&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 68 | [The History of Opera](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=420&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 69 | [Technology in Music Education](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=542&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 70 | [Social Organization](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=SOC&pltp_term=fall&pltp_classNumber=179&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 71 | [Political Sociology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=SOC&pltp_term=fall&pltp_classNumber=226&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 72 | [Criminology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=SOC&pltp_term=fall&pltp_classNumber=275&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 73 | [Technology and Society](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=SOC&pltp_term=fall&pltp_classNumber=350&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 74 | [Social Stratification](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=SOC&pltp_term=fall&pltp_classNumber=373&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 75 | [Community Psych](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=239&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6)ology | ✓ |  |
| 76 | [Psychological Statistics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=301&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 77 | [Human Memory](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=321&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 78 | [Evolution of Mind](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=356&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 79 | [Culture & Psychology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=373&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 80 | [Language and the Brain](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=427&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 81 | [Organizational Psych](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=455&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6)ology | ✓ |  |
| 82 | [Psycholinguistics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=525&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 83 | [Engineering Psychology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=527&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 84 | [Personality Assessment](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PSYC&pltp_term=fall&pltp_classNumber=567&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 85 | [Data-Based Systems Modeling](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GE&pltp_term=fall&pltp_classNumber=524&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 86 | [Control of Complex Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GE&pltp_term=fall&pltp_classNumber=525&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 87 | [Introduction to Social Statistics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GEOG&pltp_term=fall&pltp_classNumber=280&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 88 | [Music and Performance](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=413&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 89 | [Diversity in Music Classrooms](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=439&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 90 | [Energy Conversion Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=400&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 91 | [Health Informatics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=506&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 92 | [Internal Combustion Engines](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=403&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 93 | [Introduction to Robotics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=445&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 94 | [Saxophone](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=492&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 95 | [Control of Machine Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=541&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 96 | [Jazz Ensemble](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=266&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 97 | [Wind Orchestra](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=269&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 98 | [Robust Adaptive Control](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ME&pltp_term=fall&pltp_classNumber=562&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 99 | [Concepts in Pathology](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=PATH&pltp_term=fall&pltp_classNumber=550&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 100 | [Classical Performance Practice](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=527&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 101 | [Industrial Organization](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=580&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 102 | [Air Pollution to Global Change](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ENSU&pltp_term=fall&pltp_classNumber=302&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 103 | [Control Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GE&pltp_term=fall&pltp_classNumber=320&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 104 | [Digital Control Systems](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=GE&pltp_term=fall&pltp_classNumber=420&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 105 | [International Trade Theory](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=520&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 106 | [Development Economics](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=450&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 107 | [Collective Bargaining](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=542&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 108 | [Large Sample Theory](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=578&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 109 | [Microeconomic Principles](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=102&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 110 | [Macroeconomic Principles](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECON&pltp_term=fall&pltp_classNumber=103&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 111 | [Speech Processing Fundamentals](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=537&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 112 | [Coding Theory](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ECE&pltp_term=fall&pltp_classNumber=556&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 113 | [Architecture Design and the Landscape](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ARCH&pltp_term=fall&pltp_classNumber=373&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 114 | Advanced Choral Techniques | ✓ |  |
| 115 | [Cellular Bioengineering](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=BIOE&pltp_term=fall&pltp_classNumber=206&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 116 | [Heat and Moisture in Buildings](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=ARCH&pltp_term=fall&pltp_classNumber=441&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 117 | [Behavior of Materials](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CEE&pltp_term=fall&pltp_classNumber=300&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 118 | [Airport Design](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CEE&pltp_term=fall&pltp_classNumber=407&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) |  | ✓ |
| 119 | [String Instrument Literature](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=MUS&pltp_term=fall&pltp_classNumber=560&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |
| 120 | [Popular Media and Culture](https://my.illinois.edu/uPortal/render.userLayoutRootNode.target.u41998l1n6.uP?pltc_target=210253.u41998l1n6&pltc_type=RENDER&pltp_course=CMN&pltp_term=fall&pltp_classNumber=375&pltp_action=catalogCourseView&pltp_year=2013#u41998l1n6) | ✓ |  |

***Task 8: Read Text III and find more details to support the main points listed below. Use the information to give a brief recount of the story and discuss what you think of Albert Einstein’s personality.***

1. The story took place when I was a young man.

* It took place after dinner at the home of a distinguished New York philanthropist.
* A lot of guests were pouring to the enormous drawing room.

1. Music meant nothing to me.

* I am almost tone deaf.
* Serious music was to me no more than an arrangement of noises.
* I fixed my face in what I hoped was an expression of intelligent appreciation, closed my ears from the inside, and submerged myself in my own completely irrelevant thoughts.
* I knew as much about Bach as I know about nuclear fission.

1. I was sitting next to Albert Einstein.

* Einstein’s face was one of the most famous faces in the world.
* I knew it was Einstein because his image was famous. I did know one of the most famous faces in the world, with the renowned shock of untidy white hair and the ever-present pipe between the teeth.
* Einstein had a mobile face.

1. Einstein was surprised and troubled to hear that I never heard Bach.

* A look of perplexed astonishment washed across Einstein’s mobile face.
* He made it sound as though I had said I’d never taken a bath.

1. Einstein was so concerned about my lack of understanding of music that he took me to a room upstairs and tried to change my attitude toward music in a patient and encouraging way. The way he was completely preoccupied by this concern has given me a feeling of awe all my life.

* He first asked me whether I like any kind of music.
* He allowed me to listen to Bing Crosby’s record “When the Blue of the Night Meets the Gold of the Day”.
* The expression on Einstein’s face was like the sunrise.
* “You see!” he cried with delight when I finished. “You do have an ear!”
* You start with simple music and go on to appreciate more complicated music.
* Bing Crosby’s “When the Blue of the Night Meets the Gold of the Day.”- John McCormack’s “The Trumpeter”- Cavalleria Rusticana by Caruso - a dozen others- Bach’s “Sheep May Safely Graze.”

1. He was very pleased that I was able to enjoy music and appreciate its beauty.

***Task 10: Listen to an interview and write down the interview questions.***

**Interviewer**: I’m very pleased to be joined today by James Heard, Adult Learning Manager at the National Gallery. James, imagine that you are a tourist and you have just two days to spend in London… and of those two days about two hours for the National Gallery!

Question 1): How do you get the most out of those two hours?

James: The most important thing is to plan your visit....

William: Nuala, imagine we’ve planned our trip to the gallery and we’re now inside. Around us, some people are talking quietly about the paintings.

Question 2): Is there anything special about the language they’re using?

***Task 11: Fill in the blanks with the words you hear and then imitate the pronunciation, intonation, stress and rhythm of the speakers.***

What adjectives can we use to describe paintings? Well, of course it’s up to you what words you choose, but here are some ideas…

If you’re looking at a portrait and the subject is wearing his/her finest clothes and there are lots of symbols of his or her job or position in society, you might say that it’s (1) formal. But if the subject is shown with his/her family, for example, or if he/she looks (2) relaxed – you might judge it to be (3) informal or (4) natural.

If the picture is of a (5) private moment, such as a woman brushing her hair, for example, we might say that it’s an “intimate portrait”.

Paintings with lots of exciting action can be called dramatic: a dramatic picture.

“It’s such a (6) powerful, (7) exciting composition – the whole thing is so dramatic.”

If you find a picture to be very (8) beautiful you might use the word lyrical.

If you’re not sure what message a picture is trying to tell you, you might say that it’s ambiguous: ambiguous.

And, if the subject of a painting looks very real, we can call it (9) life-like.

“The fruit in that still life are so life-like I feel like I can eat them…”

So, that’s (10) formal, informal, natural, intimate, dramatic, lyrical, ambiguous and life-like.

***Task 12: Note down the key words of James’ answer to the interview question, and then answer the question in complete sentences based on your notes.***

The way the things in a painting are arranged is known as the composition, the composition. “The artist’s knowledge of Dutch painting is evident in the composition…”

The front of the composition is known as the foreground and the back, the background. “We can see a small crucifix in the background…”

Often, paintings contain stories – we usually call this the narrative of the painting – the narrative. We can say that a painting depicts its narrative, it shows it:

“This famous painting depicts a scene from Ovid’s Metamorphosis”

“The subject is depicted in a fine coat, leaning against a wall…”

Details in paintings give us a better idea about the subject. These details, we might say, “tell us” things:

“The scissors in his hand tell us that the subject was a tailor…”

Other details represent ideas of themes. We call these details symbols and we can say that they symbolise their themes:

“The skull in the foreground symbolises death”

**Question:**

James, Here’s a question for you, is it possible to really appreciate art without knowing lots and lots about the history of art?

**James’ Answer:**

Try to avoid looking at the labels.

Start enjoying the painting for its own sake.

Start with the things you really like the look of.

Start with the things you can related to.

Look at the things people don’t always consider. The background can be very important, it can direct our eyes. Trees? Colors?

***Task 13: Fill in the missing words according to the interview you hear.***

**Questions:** What do art and science have in common there? Where do you see the connection between science and art?

**Answers:**

Well, to me it’s kind of obvious. They ask the same questions. Science addresses – really what it does at its best is force us to reassess our place in the cosmos. (1) Where do we come from? (2) Who are we? (3) Where are we going?

And those are the very same questions that you get in (4) art, literature, music. Every time you read a wonderful book or see a wonderful film, you come out of it with a (5) different perspective of yourself, and too often, it seems to me, we forget that (6) cultural aspect of science, and that’s the reason we’re celebrating it here.

And they come together in some sense in the notion of origins. Origins really is one place where, it seems to me, those two worlds connect the closest, because we all (7) wonder about our origins in different ways.

And it’s the (8) forefront of science in almost every field and yet, of course, it’s really what we’re asking ourselves when we think about literature and art.

***Task 14: Watch a video clip “On Teaching Arts and Sciences Together” and fill in the blanks with the words or word chunks you hear.***

The arts and sciences are avatars of human creativity. It’s our attempt as humans to build an understanding of the (1) universe, the world around us. It’s our attempt to (2) influence things, the universe internal to ourselves and (3) external to us. The sciences, to me, are manifestations of our attempt to (4) express or share our understanding, our (5) experience, to influence the universe external to ourselves. It doesn’t rely on us as (6) individuals. It’s the universe, as experienced by everyone, and the arts manifest our desire, our attempt to share or influence others through experiences that are (7) peculiar to us as individuals. Let me say it again another way: science (8) provides an understanding of a universal experience, and arts provides a universal understanding of a (9) personal experience. That’s what we have to think about, that they’re all part of us, they’re all part of a continuum. It’s not just the tools, it’s not just the sciences, you know, the mathematics and the (10) numerical stuff and the statistics, because we heard, very much on this stage, people talked about music being mathematical. Right? Arts don’t just use clay, aren’t the only ones that use clay, light and sound and movement. They use analysis as well.

***Task 15: Answer the following questions according to the video clip you watch.***

1) What is our mission? Why do we have this mission?

Our mission is to reconcile, to reintegrate science and the arts, because people have this idea that science and the arts are really separate.

2) What do any people tend to think of scientists and artists?

They think scientists are ingenious, but are not creative; while artists are ingenious, perhaps, but not analytical.

3) Why is the idea that sciences are separated from the arts becoming critical now?

Because if this idea underlie our education and influence our decision, we will have problems in the future.

4) What is real talent?

Real talent is creative and logical at the same time.

***Task 16: Answer the following questions briefly according to the program you hear. Then discuss and suggest ways to integrate knowledge and skills into education.***

1. What is the focus of the debate according to the program you hear?

Which approach should be taken to curriculum, skills based approach or knowledge based approach?

One the one hand, there are people who say lessons are all about knowledge, children can pick up the skills as they learn. On the other hand, there are people who say education is all about skills, and knowledge can be built around them.

1. What is the speaker’s impression of school education in the UK?

The lessons are rich in knowledge. There is an increasing focus on knowledge as schools are more exam driven.

1. What is the third way in education according to Michael Biber?

It is an absurd debate to separate knowledge and skills. Knowing what, knowing how, knowledge and skills go together. They are an integrated whole.

1. What is the idea behind the curriculum for excellence?

It is built on the concept of capacities, i.e. moving children on from successful learners to confident individuals, and then from confident individuals to being responsible citizens.

***Task 17: Answer the following questions based on an interview about a conference which is designed to bring two communities together.***

1. When and where is the big conference taking place?

It is going to take place the 9th to the 11th of April in Clair College in Cambridge in the UK.

1. What are the two communities that the conference will bring together?

The conservation community and the synthetic biology community

1. Why is there a need to bring the two communities together?

Neither community really knows about the other one.

1. What is the conservation community trying to do? Why?

To prevent extinctions, because they are worried about what is lost.

1. What does the speaker mean by saying that they are “sitting in the back of the bus looking out the back window” and “everybody else on the bus was looking forward”?

They don’t know what’s happening and always feel surprised when new things happen, because nobody told us about them until they hit us in the back of the head.

1. Why does the author give the example of biofuels?

To show that the conservation community is backward in thinking.

Big conference coming up, unfortunately it’s in England, unfortunately for me in New York but fortunate for people in Cambridge.  Tell us a little bit about that conference.

**Unit 5**

**What Are the Strategies to Keep Yourselves Motivated？**

***Task 2: Write one-sentence summaries of the stress reduction techniques in Text I. Discuss which of the techniques will work for you and add any other strategies that you think will reduce stress and activate the spirit.***

|  |  |  |
| --- | --- | --- |
|  | **Techniques** | **Expected effects** |
| 1 | Recognize your stress signals, such as irritation, sleeplessness, rapid weight loss or gain, increased smoking or drinking, etc. | Prevent the symptoms from getting worse. |
| 2 | Engage in exercise and practice good nutrition. For example: you can get up early in the morning and do some physical exercise. | Exercise results in release of endorphins that have to with confidence and self-esteem. Exercising the body keeps the mind sharp. Good nutrition makes you less likely to experience negative effects of stress. |
| 3 | Identify the sources of dangerous stress, such as your personal relationships, your personality, unreasonable demands on yourself, and personal problems | Only after identifying the source of worry can we take specific steps to reduce it. |
| 4 | Turn energy into plans and action. Don’t procrastinate, because procrastination robs you of time, power, and freedom. | Plans and actions will make you in control and proactive. When you are in control, you will feel less stress. |
| 5 | Live in your own right way.  Some prefer speed and intensity, high levels of activity and stress, but others would prefer a quiet job with limited stress. | There is less stress when your job or activity provides stimulation and challenges. |
| 6 | Accept unchangeable situations.  Focus on options, and find places where you have freedom. | It wastes energy to fight the inevitable. It will only end in frustration. If you can’t change reality, you’d better accept it, and find ways to adjust to it. |
| 7 | Set your own goals. Don’t try to live out the goals set for you by others. Make your own goals clear, specific, and achievable. | Your spirit will be rejuvenated if you pursue your own goals. Then you will be in control. |
| 8 | Take direct action when needed to eliminate the source of your stress. | You can reduce stress by removing the source of that stress. |
| 9 | Practice relaxation techniques, such as sitting for ten minutes and concentrate on your breathing or lying on the floor, progressively tensing and relaxing all the muscles in your body. | It will have a relaxing and cleansing effect. |
| 10 | Find a good support group | When you support each other, you will feel life is worthwhile. |

***Task 3: Identify enumeration devices (i.e. words, expressions, or structures used for discussing a list of things one by one) to organize details and help the audience follow your ideas easily. For example:***

**What you need to know first** is that stress is not always negative. Good stress occurs in life situations toward which you feel positively. I know, from my own personal experience, for example, that I chose this kind of work—being a professor—because the high-pressure schedule it demands seemed to be right for me. I chose to live under a fair degree of constant stress. (Para. 4)

* **What you need to know second** is that stress is individually determined. Meaning lies in us; thus, we are the ones who determine what is stressful. The useful part of this understanding is that if we determine it, then we can control it. We determine meaning! We are in control! (Para. 5)
* **There is a third technique, too.** If you are a person who stays unmotivated because of high levels of stress in your life, try to locate the sources of dangerous stress in your life. (Para. 15)
* Take a look**, first,** at your personal relationship with family, friends, roommates, lovers, teachers, and strangers. Often, these forces will accumulate and create a negative stress reaction. (Para. 15)
* **Second, take a look at your own personality**. Are you making unreasonable demands on yourself? Do you, for example, insist on getting all “A’s”? One of my friends who is in seminary became stressed-out because of this demand on himself. When his wife pointed it out as unreasonable, and when he was able to see it as excessive and unnecessary, he was able to relax and better enjoy his classes. (Para. 16)
* **A fifth technique** for activating the spirit is to live in your own right way. (Para. 25)
* **The sixth technique** is to try to make whatever adjustment you need to make to unchangeable situations. (Para. 27)
* **The seventh technique** is to start setting your own goals. (Para. 29)
* **The eighth technique** is to take direct action when called for. (Para. 31)
* **The ninth technique** is to learn and regularly practice relaxation techniques. (Para. 32)
* **The tenth technique** for reducing stress and activating the spirit is to find yourself a good support group. (Para. 34)
* Several things, now, should be clear to you. **First,** activating the spirit is directly related to stress-reduction. **Second,** stress is not always negative. **Third,** we are the makers of our own stress; thus we can control it. **Fourth,** there are some useful, workable techniques for controlling it. (Para. 35)

***Task 4: Complete the following summary according to your understanding of Text I.***

Stress is not always negative; it can be a source of motivation and energy. But there are times in life when we feel stressed out. Excessive stress has harmful effects on our mental and physical health. It depletes both energy and motivation, so it should be reduced before it increases to a level that is out of control. Fortunately, stress appears in various signals. As we ourselves are the ones to determine what is stressful, we should learn to identify and reduce dangerous stress and activate our spirit. Here are ten useful techniques we can use to reduce stress: Recognize your stress signals; Engage in exercise and practice good nutrition; Identify the sources of dangerous stress; Turn energy into plans and action; Live in your own right way; Accept what cannot be changed; Set your own goals; Take direct action when needed; Practice relaxation techniques; Find a good support group. If you are willing to put into practice techniques for activating the spirit, you can keep yourself motivated.

***Task 5: Explain the following concepts according to your understanding of Text I.***

1. **Stress**: A demand on physical and mental energy; continuous feelings of worry about work or personal life that prevent someone from relaxing.
2. **Positive stress** (Para.4): A fair amount of stress that you think you can endure, which encourages you to achieve or accomplish more in study or work.
3. **Motivation**: Eagerness and willingness to do something without needing to be told or forced to do it.
4. **Negative stress**: A level of stress that you think you cannot deal with and therefore causes harmful, unpleasant, or unwanted effects on your physical and mental health.
5. **Physiological impact**: The influence of something (such as stress) on the function of living organisms.
6. **Renewed invigoration**: Vigor, energy, and strength that is recovered.
7. **Rejuvenated spirit**: The state of mind in which someone feels young and strong again.
8. **Stress signals** (Para.9-Para.10): A behavior or symptom that expresses someone’s feeling of continuous worry. Example of stress signals are irritability, sleeplessness, rapid weight loss or gain, increased smoking or drinking, foolish mistakes, nervous tension, and tightness of breath, etc.
9. **Support group** (Para. 34): A group of people who meet regularly for the purpose of helping each other often with a particular problem.
10. **Inevitable situations** (Para.27): Situations or facts such as rules, regulations, restrictions, etc. that one has no control over and cannot change. If you cannot change them, you should accept them.
11. **Your own right way** (Para. 25): The way of life that suits you best. For example, some people prefer fast paced, high-pressure jobs, while others prefer relaxing or quiet ones. Different people can deal with different amount of stress.

***Task 6: Skim through Text II and identify “internal previews,” i.e. expressions, clauses, or sentences that announce what is to come and help the readers follow your thoughts easily. For example,***

* I will first tell you what science can give you. Then I will mention the price you may have to pay. And finally I will tell you what science cannot give you.
* Some may have stress under control in ways not mentioned here at all. I will mention ten techniques.
* There is a third technique, too.
* Students who effectively motivate themselves exhibit a variety of behaviors that lead to success. (Para. 2)

1. Two things contribute to your motivation for any task: what you expect from yourself and what value you place on achieving a goal. (Para. 4)
2. Use the following strategies for help in getting motivated. (Para. 5)
3. There are a number of strategies for achieving this. (Para. 6)
4. Before looking at strategies for increasing your motivation, it will be helpful to understand the different ways that people place a value on completing a task. (Para. 8)
5. In these situations there are a number of strategies you can use to increase your motivation so that you can complete the task. (Para. 9)

***Task 7: Answer the following questions according to Text II.***

1. What behaviors and characteristics do motivated students exhibit?

Motivated students make choices that help them achieve their desired outcome. They will work hard to put forth the necessary effort and maintain that effort long enough to complete the task. They think more deeply about course material and engage in more elaborate processing in order to truly learn.

1. What is extrinsic motivation? What examples of extrinsic motivation are given in the text?

It refers to motivation to perform activities for the purpose of a reward or benefit. Examples of extrinsic motivation:

* Getting good grades provides the most obvious extrinsic motivation for students to complete academic tasks.
* The approval of peers or mentors, awards and honors, opportunities to get a good job provide extrinsic motivation.
* Competition and the threat of punishment for poor performance also provide extrinsic motivation.

1. What is intrinsic motivation? What examples of intrinsic motivation are given in the text?

Intrinsic motivation refers to motivation that is driven by a personal interest or enjoyment in the task itself rather than by external pressures or a desire for reward. Intrinsic motivation can make students engage in the task willingly and work hard to improve their skills, which will increase their capabilities.

Examples of intrinsic motivation:

* Your belief that an activity, class or assignment will be useful gives you intrinsic motivation.
* If you have a desire to master a skill, you will be highly motivated to practice the skill.
* If you have a personal interest in an activity, or if an activity gives you pleasure, you will be motivated to participant in it.

4) What are the things you can change or control and what are the things you cannot change?

Things you can change: Lack of knowledge, lack of effort, or flawed study strategies; time management plan; your diet, sleep habits, and exercise habits.

Things you cannot change: Your intelligence; your teacher; required classes. You should learn to adjust and solve problems.

5) What is the importance of learning math?

Math can apply the problem solving methods to any problems you face.

6) What is the importance of learning English?

English classes and other classes that require extensive writing can help you develop the writing skills that will be essential for you in any career that you choose. Because you are introduced to different skill sets in different classes, you can connect the development of new skills to your desire to do well and prepare for future classes and life after graduation.

***Task 8: Complete the following summary according to your understanding of Text II.***

Motivated students persist at tasks and are more cognitively engaged in the material, which makes it easier to learn. So it is important to learn to get yourself motivated and overcome the obstacles to motivation. The two most important sources of motivation are what you expect from yourself and what value you place on achieving a goal. If you want to motivate yourself to achieve a goal, you must be realistic and accurate in assessing your capabilities.Once you have set a realistic goal, you must make efforts and take responsibility for your academic behavior.  Avoid blaming the instructor for being a bad teacher. The second source of motivation is the value or you place on the task. The more highly you value completing a task, the more motivated you will be. There are several ways to do this. First, you must identify the usefulness of the activity by making connection between it and your larger goals. Second, use your GPA as general motivation for doing well. Thirdly, you can discover your own personal interest which can easily motivate yourself to work hard.

***Task 9: Determine what verbs or verb groups can be used with the nouns or noun groups.***

|  |  |
| --- | --- |
| Verbs or verb groups | Nouns or noun groups |
| 1. achieve: goal, desired outcome 2. acquire: skills, techniques 3. address: problems 4. adjust to: new situations 5. assess: new situation, capabilities 6. be engaged in: tasks 7. complete: tasks 8. control: new situations 9. create: plan 10. develop: skills, techniques, intrinsic interests 11. earn: awards, honors, high grades 12. encounter: failure 13. identify: weaknesses 14. improve: skills 15. maintain: motivation, efforts 16. minimize: impact 17. place value on: tasks 18. recognize: weaknesses 19. reduce: stress, impacts, effects 20. suffer: consequences 21. value: tasks | awards  capabilities  consequences  desired outcome  effect  efforts  failure  goal  high grade  honors  impacts  intrinsic interests  motivation  negative stress  plan  problems  new situations  skills  tasks  techniques  weaknesses |

***Task 11: Explain the meaning of the following set expressions or lexical chunks according to the context in Text III. Identify the ones that express ideas figuratively.***

|  |  |
| --- | --- |
| 1. dropped out of |  |
| 1. drop-in |  |
| 1. biological mother |  |
| 1. put me up for adoption |  |
| 1. popped out | √（When I was born） |
| 1. sign the final adoption papers |  |
| 1. see the value in... |  |
| 1. college tuition |  |
| 1. figure it out |  |
| 1. dropping in on |  |
| 1. stumbled into | √ |
| 1. following my curiosity and intuition 2. practical application |  |
| 1. proportionally spaced fonts |  |
| 1. dropped in on the calligraphy class |  |
| 1. connect the dots | √ |
| 1. follow your heart | √ |
| 1. make all the difference |  |
| 1. had a falling out | √ |
| 1. sided with him |  |
| 1. something slowly began to dawn on me |  |
| 1. getting fired from Apple |  |
| 1. animation studio |  |
| 1. in a remarkable turn of events |  |
| 1. at the heart of Apple’s current renaissance | √ |
| 1. awful-tasting medicine |  |
| 1. life’s going to hit you in the head with a brick | √ |
| 1. as the years roll on | √ |
| 1. made an impression on me |  |
| 1. many days in a row | √ |
| 1. was diagnosed with cancer |  |
| 1. get my affairs in order | √ |
| 1. clears out the old to make way for the new | √ |
| 1. living someone else’s life |  |
| 1. follow your heart and intuition | √ |
| 1. farewell message |  |

***Task 13: Fill in the blanks with the words from a news reports about the effect of exercise on brain power.***

Hey kids, here’s a good reason to work up a sweat: when young people exercise for an hour each day it also helps boost their brain power. That’s according to a study of more than 200 kids in the journal Pediatrics.

Seven, eight and nine year-olds were randomly selected to (1) enroll in an after-school exercise program or be placed on a wait list. The exercisers (2) performed much better on intellectual tests. And there was a dosage effect: kids who spent more time in the program performed even better than kids who were enrolled in the program but had spotty (3) attendance.

Government guidelines already (4) recommend that everyone aged 6 to 17 (5) engage in an hour or more of moderate- and vigorous-intensity (6) physical activity daily, but many kids still do not meet this threshold. Better cognitive capabilities could be a selling point for more exercise.

The study could not tease apart how much increased physical fitness versus social interactions in the exercise program may have (7) contributed to better accuracy on cognitive tasks. But other work has suggested that exercise is better for (8) cognition than social interactions alone. Regardless, a workout that offers both is a win-win.

***Task 14: Watch the video presentation given by a former science teacher and complete the following statements with the information you get from his presentation.***

[Let me tell you a story.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#779) [It’s my first year as a new high school science teacher,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#2635) [and I’m so (1) eager.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#6739) [I’m so (2) excited, I’m pouring myself into (3) my lesson plans.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#8059) [But I’m slowly coming to this horrifying (4) realization](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#12259) [that my students just might (5) not be learning anything.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#17411)

[This happens one day:](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#22443) [I’d just assigned my class to read this (6) textbook chapter](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#25147) [about my (7) favorite subject in all of biology:](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#28361) [viruses and how they attack.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#31819) [And so I’m so excited to discuss this with them,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#35291) [and I come in and I say, “Can somebody please explain](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#37677) (8) [the main ideas and why (9) this is so cool?”](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#41141)

[There’s (10) silence.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#45150) [Finally, my favorite student, she looks me (11) straight in the eye,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#47781) [and she says, “The reading sucked.”](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#52054) [And then she clarified. She said, “You know what,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#55597) [I don’t mean that it sucks. It means that I didn’t (12) understand a word of it.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#59125) [It’s boring. Um, who cares, and it sucks.”](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#63054)

[These sympathetic smiles](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#67429) [spread all throughout the room now,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#71473) [and I realize that all of my other students are in the same boat,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#73878) [that maybe they (13) took notes or they (14) memorized definitions from the textbook,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#78517) [but not one of them really understood the main ideas.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#82429) [Not one of them can tell me why this stuff is so cool,](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#87832) [why it’s so important.](http://www.ted.com/talks/tyler_dewitt_hey_science_teachers_make_it_fun.html#90565)

***Task 15: Listen to a radio program and write down what people are complaining about.***

Well, as you have heard, the word “overwork” carries a rather negative meaning – people aren’t very happy about overworking. Now, these days we hear a lot in the media about people trying to improve what we call their “work/life balance”. This means they are trying to spend less time working and more time doing things that they really want to do, like their hobbies or spending time with their family and friends. Another expression which has become common is “long hours culture”. People say that it is our working culture to spend longer at work than we really need to so we can impress our bosses. So, we went out onto the streets of London to ask people about their work/life balance and if they think there is a long hours working culture in their office. Dan, what do you imagine people are going to say?

Dan: Everyone thinks they work too much. They work too hard, they don’t spend enough time with their families.

Well, let’s just listen and find out.

1. “No, I don’t find that I have enough time to do the things that I want to do out of work.”
2. “There’s always very little time and too many things to be done.”
3. “That’s precisely why I’m working part-time. I’ve made that change in my work pattern so I can have more time for myself.”
4. “I work shifts so I can’t have any regular commitments that fall on any particular day or evening of the week.”
5. “Personally, yeah, I’d like to have more days off or, I don’t know, shorter working days, but then by comparison it’s probably not that… well it’s not exactly slavery, obviously, although sometimes it comes very close to it.”
6. “The weather is to blame. The weather is horrible most of the time. There is nothing better to do but work.”
7. “We should be more like mainland Europe: less set working hours, more time to enjoy your family and your social life.”
8. “It’s seen as… you’re a good worker if you stay behind and work overtime, whereas you could be more efficient if you went home on time, didn’t have to have your meals at your desk rather than a proper lunch break and recovery.”

Well, some interesting points of view there. Generally they thought that they spent too much time working and not enough time doing the things that they really want to do. In other words, they think they’ve got their work/life balance wrong. Dan, are you surprised by what you heard there?

***Task 16: Answer the following questions briefly based on an interview about emotional health.***

1. In what sense is emotional health important?

Being emotionally healthy allows you to take you on board new areas of learning.

Otherwise, they would see things in a blinked way. They can’t see a bigger picture. It’s difficult to learn new concepts.

1. Why does the teacher take the class to beach?

To Give children a bigger picture and make them open up and how to respond to different situations.

1. What is the philosophy behind the teacher’s practice of teaching children how to breathe and being calm?

Give children something to visualize on, just slow down and take time to think is vitally important.

***Task 17: Listen to a program about the Secrets of Top Students and write down the main points of the secrets.***

The kids at the top of the class get there by mastering a few basic techniques that others can readily learn. These, according to the education experts and students themselves, are the secrets of top student.

1) Set priorities. Top students have no intrusions on study time. Once the books are open or the computer is booted up, phone calls go unanswered, TV shows unwatched, and snacks ignored. Study is business: business comes before recreation.

2) Study anywhere or everywhere. Study times were strictly a matter of personal preference. Some worked late at night when the house was quiet. Others woke early. Still others studied as soon as they came home from school when the work was fresh in their minds. All agreed, however, on the need for consistency.

3) Get organized. Don’t waste time looking for a pencil or missing paper. Keep everything right where one could put one’s hands on it. Even students who don’t have a private study area remain organized. A backpack or drawer keeps essential supplies together and cuts down on time wasting searches.

4) Learn how to read. The secret of good reading is to be an active reader—one who continually asks questions that lead to a full understanding of the author’s message.

5) Schedule your time. Even the best students procrastinate sometimes. But when that happens, they face up to it. “If you want A’s, you make sure to hit the deadline.” says Christi Anderson, a top student at Lyman High School.

6) Take notes and use them. Reading the text book is important, but the teacher is going to test you on what he or she emphasized. That’s what you find in your notes.

**Unit 6**

**Why Is Honesty the Best Policy in Science?**

***Task 2: Write a one-sentence summary for each paragraph of Text I.***

|  |  |
| --- | --- |
| Paragraphs | One-sentence summaries |
| 1 | Honesty is science’s most important rule. |
| 2 | The difference between dishonesty and error is the motive of the act. |
| 3 | Three kinds of dishonesty in science: fabrication, falsification, and misrepresentation. |
| 4 | Most scientists view fabrication and falsification as serious violations of scientific ethics, they disagree whether misrepresentation is serious. |
| 5 | Scientists do not agree whether fudging and cooking data is good or acceptable scientific practice. |
| 6 | It is possible to judge whether a scientist is misrepresenting data ethically or unethically by finding out his/her intention of the misinterpretation. |
| 7 | Besides dealing with data, honesty applies to many other aspects of the research process such as writing research proposal or apply for funding. |
| 8 | Parody is also dishonesty. It may damage the integrity of science. Honesty is the best policy. |

***Task 3: Answer the following questions according to Text I.***

1. What are the consequences of researchers’ dishonesty?

The harmful effects of scientists’ dishonesty: it will be impossible to achieve science’s goals. Neither the search for knowledge nor the solution of practical problems can go forward. Scientists would not trust each other.

1. What is the main difference between dishonesty and error according to the author?

Dishonesty and error produce similar consequences but they spring from different motives: a dishonest act always involves the intent to deceive an audience that expects to be told the truth.

1. What’s the author’s definition of a dishonest act?

A dishonest act is an act that is intended to deceive an audience that expects to be told the truth.

1. What is the controversy surrounding Millikan's trimming of his data?

Some scientists say Millikan was dishonest because he only reported good results. Others say Millikan was right in distinguishing good results and bad results. He presented data on the basis of his judgment.

1. What does the author try to argue by using the example of Millikan?

Scientist should exercise his scientific judgment in evaluating his data.

1. What is the criterion for distinguishing between accurate representation and misrepresentation of data according to the text?

We need to appeal to the motives or intentions of scientists in order to determine whether they are behaving improperly.

***Task 4: Answer the following questions according to Text II.***

1. What is the definition of “honesty”?

Definition from Random House description: 1. The quality or fact of being honest; uprightness and fairness. 2. Truthfulness, sincerity or frankness. 3. Freedom from deceit or fraud.

Definition from *Funk & Wagnalls Standard Handbook of Synonyms, Antonyms and Prepositions:* “One who is honest in the highest and fullest sense is scrupulously careful to adhere to all known truth and right even in thought.”

1. What is dishonesty for students?

Cheating on exams, papers and theses.

1. What are the researchers’ three sets of obligations that motivate their adherence to professional standards?

* First, researchers have an obligation to honor the trust that their colleagues place in them.
* Second, researchers have an obligation to themselves. Irresponsible conduct in research can make it impossible to achieve a goal.
* Third, researchers have an obligation to act in ways that serve the public, because scientific results greatly influence society.

1. What is the universal ambition among scientists and engineers at all stages of their careers? Why?

Publication. You are what you write. It is essential for scientists who seek career advancement in academia, industry and government.

1. What did the American Physical Society find in their survey?

39 percent of respondents said they had personal knowledge of ethical transgressions, the two most common of which were inclusion of inappropriate authors on a publication and exclusion of appropriate authors.

1. What are the egregious ethical transgressions involving authorship?

Fabrication, falsification and plagiarism.

1. Why is peer review both an honor and a burden?

It is an honor, because they are given the power to decide whether a research is worth publishing or not.

It is a burden, because there are a host of issues that need to be thought through—how one deals with friends or rivals whose applications may be in the pile, how one deals with approaches and methodologies that may be legitimate but with which one is not sympathetic, how much one can legitimately "borrow" from research proposals one reviews, etc.

***Task 5: Explain the following sentences in your own words. Identify the sentences that express ideas figuratively.***

1. Honesty is praised and then left to freeze.

Everyone praises the virtue of honesty, but in real life, this virtue is not practiced.

1. A dictionary definition of honesty belies the rigor and complexity of its practice.

The practice of honesty is too rigorous and complex for a dictionary definition to cover.

1. “Almost everybody wakes up every day and wants to do the right thing.” Later in the day, the goal may be thwarted; the potential pitfalls are many.

Everybody wants to be honest and do the right thing, but they fail to do so because of the pitfalls.

1. If such students don’t understand who is harmed, it is hard to convince them that the detriments of deceit outweigh the benefits.

Students should know that they themselves are harmed if they are dishonest.

1. “Trust and integrity are precious resources, easily squandered, hard to regain. They can thrive only on a foundation of respect for veracity.”

You can easily lose trust placed on you and your integrity. Once these qualities are lost, it is hard to regain them. You can win trust from others and maintain your integrity by respect for truth and facts.

1. And, even if undiscovered, missteps set up the classic “slippery slope” on which small transgressions lead to larger ones. Habits form, and harm is done first to one’s self and then to others.

Small act of dishonesty can slowly build up into larger ones. Once you form the habit, you yourself is to be harmed first.

1. “Each of us builds our discoveries on the work of others; if that work is false, our constructions fall like a house of cards and we must start all over again.”

New scientific research and discoveries are based on the previous ones. If the previous work is false, then all the following ones will be false. Everyone must start all over again. Lots of time and resources are lost.

1. Thus a failure to be honest can directly damage the scientific enterprise and can also erode the public’s faith in science.

If scientists are not honest, the whole scientific research is damaged. The public will lose faith in science.

1. “In the world of scholarship, we are what we write. Publication is the fundamental currency … research quality is judged by the printed word.”

A scholar or scientist’s value lies in their publication. If you don’t publish, you are worth nothing.

1. Abuse of power may lead to the exclusion of deserving authors, and “guest” authorship may be offered to individuals who did not participate substantially in the research.

One form of dishonesty is that some people played an important role in a research project, but they are not included as authors of the publication. Some people did little work but they are included as authors of the publication.

1. Plagiarism is “the appropriation of another person’s ideas, processes, results or words without giving appropriate credit,”

Plagiarism means stealing another person’s ideas, processes, results or words in different ways.

1. “A lie can travel halfway around the world while the truth is putting on its shoes.”

A lie is spread very fast and to be known by many people. But the truth is spread slowly.

*Task 9: Determine whether the following statements are true or false according to the “NSPE Code of Ethics for Engineers.”*

1. False - see NSPE Code of Ethics I.1.
2. False - see NSPE Code of Ethics I.2.
3. False - see NSPE Code of Ethics I.3.
4. True - see NSPE Code of Ethics 1.4.
5. False - see NSPE Code of Ethics I.5.
6. False - see NSPE Code of Ethics I.6.
7. True - see NSPE Code of Ethics II.1.a.
8. False - see NSPE Code of Ethics II.1.b
9. True - see NSPE Code of Ethics II.1.c.
10. False - see NSPE Code of Ethics II.1.d.
11. False - see NSPE Code of Ethics II.1.e.
12. True - see NSPE Code of Ethics II.2.a.
13. False - see NSPE Code of Ethics II.2.b.
14. False - see NSPE Code of Ethics II.2.c.
15. False - see NSPE Code of Ethics II.3.a.
16. True - see NSPE Code of Ethics II.3.b.
17. True - see NSPE Code of Ethics II.3.c.
18. False - see NSPE Code of Ethics II.4.a.
19. True - see NSPE Code of Ethics II.4.b.
20. False - see NSPE Code of Ethics II.4.c.
21. False - see NSPE Code of Ethics II.4.d.
22. True - see NSPE Code of Ethics II.4.e.
23. False - see NSPE Code of Ethics II.5.a.
24. False - see NSPE Code of Ethics II.5.b.
25. False -see NSPE Code of Ethics III.1.a.

***Task 10: Match the verb or verb groups with the nouns or noun groups listed below. You can use one verb or verb group more than once.***

1. enhance the honor and reputation of the engineering profession
2. exhibit the highest standards of honesty and integrity
3. adhere to the highest principles of ethical conduct
4. fulfill professional duties
5. issue public statements
6. avoid deceptive acts
7. accept outside employment
8. acknowledge errors and mistakes
9. reveal facts, data, or information
10. undertake assignments
11. express publicly technical opinions
12. disclose confidential information
13. injure the professional reputation of others
14. accept personal responsibility for their professional activities
15. attend professional meetings and seminars
16. disclose potential conflicts of interest
17. engage in fraudulent or dishonest enterprise
18. falsify their qualifications
19. pay commissions or brokerage fees
20. protect the integrity of the profession
21. conform to applicable engineering standards
22. promote public interests
23. avoid unlawful practice of engineering
24. accept part-time engineering work
25. engage in private or public engineering practice
26. sign engineering documents

***Task 11: Fill in the blank with the numbers you hear from the science report.***

More than half of the world's 7 billion people live in cities, (1) 54 percent to be specific, or (2) 3.9 billion people. That's according to new figure released by the United Nations on July 10th.

Cities in China, India and Nigeria, the world’s first, second and seventh most populous countries, are expected to grow the most by (3) 2050.

India alone will add more than (4) 400 million people to its cities, or the equivalent of (5) 20 Mumbais, just in the next three decades. By (6) 2030, New Delhi is likely to have (7) 36 million residents.

How these cities in Asia and elsewhere grow and get built will determine how humanity fares in the 21st century. Housing, energy and transportation are all major challenges, whether in sprawling megacities or relatively small towns of a million or so inhabitants.

The health and environmental consequences of wasteful infrastructures could be devastating. Cities are now responsible for more than (8) 70 percent of the greenhouse gases causing global warming, which has impacts on everything from growing food to water supplies. And most at risk from sea level rise are all those folks in coastal cities. The future is urban—for better or worse.

***Task 12: Note down Joel Cohen's questions that should be taken into account when talking about human-carrying capacities for the Earth.***

“It took until about 1800 or 1825 to put the first billion people on the planet. We added the most recent billion in 12 or 13 years. We anticipate two billion more by 2050.”

That’s Joel Cohen, head of the Laboratory of Populations at Rockefeller University in New York. He spoke February 20th at the annual meeting of the American Association for the Advancement of Science in Washington, D.C. So how many people can the Earth hold?

“In the last half century, people have estimated human-carrying capacities for the Earth that have ranged from less than one billion to more than a trillion. They can’t all be right. In fact, those numbers are political numbers, not scientific numbers. Because the question how many people can the earth support is an incomplete question, and doesn’t take account of

(1) with what technologies

(2) at what average level of well-being

(3) with what distribution of income

(4) with what political and economic institutions.”

***Task 13: First fill in the blanks with the words you hear and then read the report aloud by imitation.***

It has been fifteen years since pioneering British computer programmer, Sir Tim Berners-Lee, created the protocols which power the World Wide Web. But could he have ever imagined how much the web would (1) transform our lives? And would he approve of how some British students are taking advantage of his invention?

Universities and exam boards around the UK are becoming increasingly concerned with the rising number of cases of plagiarism, many of which are facilitated by (2) internet access.

In the UK most school and university students complete coursework throughout the academic year which contributes towards their final mark. In many cases coursework makes up the bulk of the (3) qualification. Since coursework is completed in the student’s own time it cannot be monitored by teachers in the same way as an exam.

Derec Stockley, director of examinations in the UK, explains, plagiarism (4) affects coursework more than external exam conditions, and in the cases that come to our attention, more and more are linked to the Internet.

At a university level recent reports (5) suggest that plagiarism has evolved from isolated cases of individual cheating to a (6) systematic and even commercial operation. Students can now pay for bespoke essays to be written for them by experts.

It is estimated that the market in online plagiarism is now worth £200 million a year. Every month more and more websites offering to write students’ essays for them appear on the Internet.

Barclay Littlewood, owner of Degree Essays UK employs 3,500 specialist writers and (7) charges between £120 and £4,000 per essay. However, Mr. Littlewood refutes the accusation that he is helping students to cheat.

He says that although students receive an essay that answers their exact question, “They then have to go and do their research outside our piece, (8) formulate their own opinions, look at their own reference and write the creative and original piece which is distant from ours."

***Task 14: Answer the following questions briefly based on an interview about plagiarism.***

1. What is the dictionary definition of plagiarism?

Taking and using someone else's ideas, writings or inventions as one's own.

2) How many students admitted to some cheating according to the program?

70%

3) How many students in the survey think that copying from the Internet is not a serious issue?

3/4.

4) Is the professor of Ohio University noticing the increasing plagiarism?

No, he doesn’t agree. But he agreed that the Internet has made it simpler for the students.

5)　What is the professor’s way to make sure the students do their own work instead of copying the stuff from the Internet?

He structures the essay questions in a creative way which is quite different from the stuff that has been assigned before;

6) What does the professor think his job is?

He would give the students upfront instructions of how to avoid plagiarism.

7) What are the penalties at Ohio University when somebody is caught?

Primarily at Ohio, it's in the hands of the professor. It can start with failing the assignment, up to failing the course. Pretty much, at that point, you would be wanting to move it on to the university committee that looks at the problem. Ultimately, the student has the right or the privilege to contest a grade, or to have it reviewed by someone else. And so, though there are committees that would look at that, it's ultimately the professor's call, and then the grade would be appealed if necessary.

***Task 15: The main findings of two experiments in the following science news are missing. Listen to the report and write down the main findings of each experiment.***

**Expansive Postures May Lead Us to Dishonesty**

Expansive body postures, like stretching one’s legs, confer a sense of power. And studies show that the feeling of power can lead to dishonest behavior. Now researchers find that (1) just sitting at a big desk or in a large chair can also influence one’s honesty.

Subjects sat at desks with either a large or small working space. They were asked to unscramble anagrams without using an answer key—which was available. And (2) those who had the big desk space cheated more than those who had the confined area.

In another experiment, volunteers played a video driving game, sitting either in a large or little seat. They had to drive through a course as fast as possible and attempt not to hit anyone. If they did make contact, they were supposed to stop playing for 10 seconds. (3) And the big-seat drivers were more likely to hit and run.

In a real-world setting the researchers also found that (4) those who drove cars with expansive seats parked illegally more often that those with smaller driver’s seats. The studies are in the journal Psychological Science.

So next time you get behind the wheel, are you in the driver’s seat or is the driver’s seat controlling you?

***Task 16: Fill in the missing parts in a program where Professor Dan Ariely explains why creativity makes us better liars.***

# **Creativity and Dishonesty**

“Lots of us are able to cheat a little bit and still think of ourselves as honest people.” Dan Ariely is a professor of behavior economics at Duke University. His latest book, [*The (Honest) Truth About Dishonesty*](http://www.amazon.com/s/ref=nb_sb_noss?url=search-alias%3Dstripbooks&field-keywords=ariely), explains how creativity makes us better liars — even to ourselves.

“Dishonesty is all about the small acts we can take and then think, no, this not real cheating. So if you think that the main mechanism is rationalization, then what you come up with, and that’s what we find, is that we’re basically trying (1) to balance feeling good about ourselves. On the one hand we (2) get some satisfaction, some utility from thinking of ourselves (3) as honest, moral, wonderful people. On the other hand we try to (4) benefit from cheating.“So rationalization is what we allow you to (5) live with some cheating and not (6) pay a cost in terms of your own view of yourself. “What kind of people would be able to (7) rationalize better than other people? (8) Better storytellers, right? (9) Creative people, right? Because if you’re creative, you (10) find more ways to cheat and still yourself a story about why this is okay.”

***Task 17: Answer the following questions briefly according to the talk about our moral values.***

1. What is the origin of our values according to anthropology?

Our values are an accident of our birth. It is the product of culture. If we were born in another culture, we would believe other things to be important.

1. What is the origin of our moral emotions such as shame, pride, guilty according to psychology?

They are the product of our natural selections for shaping our bodies and our minds.

1. What would pessimists say about morality? Why?

Science dictates that we are all amoral. Because there is no factual basis for our moral position at all.

1. What does the speaker think people can do to make the world a better place to live in?

We are slaves of our culture, but we can choose our values and make our world a better place.

**Unit 7**

**Is Necessity Invention’s Mother or Vice Versa?**

***Task 2: Read the article quickly and summarize the main point of each paragraph.***

|  |  |
| --- | --- |
| Paragraphs | The main points |
| 1 | A common view: Necessity is the mother of invention. |
| 2 | Quite a few inventions do conform to this commonsense view of necessity as invention’s mother. |
| 3 | The opposite view: Many or most inventions were developed by people driven by curiosity or by a love of tinkering, instead of by demand. |
| 4 | A good example: the history of Thomas Edison’s phonograph. |
| 5 | Another example: the motor vehicle. |
| 6 | The reason why Otto’s engine did not replace horses immediately. |
| 7 | Explanation of when and how trucks began to supplant horse-drawn wagons. |
| 8 | Inventors often have to persist at their invention for a long time. |
| 9 | The commonsense view of invention is contradictory to the reality. |
| 10 | Decisive modern inventions such as James’ Watt’s steam engine are based on previous work. |
| 11 | Edison’s famous “invention” of the incandescent light bulb and the Wright brothers’ invention of manned powered airplane are also based on the work of many precursors. |
| 12 | All famous inventors had capable predecessors and successors and made their improvements. |
| 13 | Technology develops cumulatively and it finds most of its uses after it has been invented. |
| 14 | Human beings gradually learned to use raw substances. |

***Task 3: Distinguish the main points or viewpoints in Text I from the supporting details or examples.***

|  |  |
| --- | --- |
| **The main points or viewpoints** | **Supporting details or examples** |
| The common view: Necessity is the mother of invention. | * The U.S. invention of an atomic bomb * Eli Whitney's invention of the cotton gin * James Watt's invention of his steam engine |
| The author's view: Invention is often the mother of necessity, rather than vice versa. | * Thomas Edison’s phonograph * The invention of motor vehicles |
| The author's view: All recognized famous inventors had capable predecessors and successors. | * James Watt’s invention of his steam engine * Edison’s “invention” of the incandescent light bulb * Wright brother’s manned powered airplane * Samuel Morse’s telegraph |

***Task 4: Summarize the author’s reasons for his nominees for the*** [***ten greatest inventions***](http://www.toptenz.net/top-10-human-inventions-of-all-time.php)***/discoveries of the twentieth century.***

|  |  |  |
| --- | --- | --- |
| **Nominees** | **The main reasons** | **The negative sides** |
| Nuclear Power | It is a clean and cost-efficient energy source. | Radioactive effect on environment |
| The Personal Computer | We use them to in our work and entertainment. | Not mentioned. |
| The Airplane | They make travel quick and safe, help people in crop dusting and fighting forest fires, delivery of packages and chasing hurricanes. | They revolutionized warfare. |
| The Automobile | It gives everyone a degree of mobility and personal freedom. | Not mentioned. |
| Rocketry | It enables humans to access outer space. It places satellites into orbit around our planet. | Not mentioned. |
| The Submarine | It becomes the capital warship in every first-class Navy in the world. |  |
| Antibiotics | The reduced mortality rate and much longer life-span. | Not mentioned. |
| Television | It is society’s baby-sitter, news source, teacher, entertainer, and story-teller. | It destroys brain cells and renders people emotionally and psychologically damaged |
| The Internet | You can do anything you can imagine on it and makes the impossible possible. | It is a monster, for example, spreading lies, tormenting old school mates, etc. |
| Radio | It is vital to existence. | Not mentioned. |

***Task 7: Read Text III to find out what Ken Auletta said about Steve Jobs in his article published in The New Yorker and what is the author’s view point.***

1. Steve Jobs in Ken Auletta’s view: Steve Jobs is Thomas Edison in the 20th century.
2. Steve Jobs in the author’s view: The author thinks Steve Jobs is not as important as Thomas Edison.

***Task 8: Identify the author’s criterion for comparing Jobs and Edison. Distinguish the author’s main points from supporting details.***

**The criterion for comparing Jobs and Edison**

The criterion is whether their invention is epochal and fundamental.

**The main points**

Edison’s inventions are the epochal, first-order innovations that made the subsequent second-order and third-order inventions possible while the world without iPhone or iPad would be perfectly fine.

**Supporting details**

**Edison:** We would not have anything in the modern world without electricity. He was a holistic conceptualizer and determined solver of the problems associated with the growth of systems of electricity generation, transmission, and conversion. He was granted nearly 1,100 US patents and more than a thousand foreign ones. And his grandest achievement of making the supply of electricity affordable and reliably available has open doors to everything electrical.

**Jobs:** Apple’s products are actually third-order innovations that use a variety of fundamental second-order innovations. and Apple’s devices have benefited from group infatuation.

***Task 11: Listen to a news report about this year’s Nobel Prize in physics and fill in the blanks with the words or lexical chunks you hear.***

The Nobel Prize in physics goes to Charles Kao, of Standard Communications Labs in England and the Chinese University of Hong Kong, and George Smith and Willard Boyle of Bell Labs in New Jersey. Kao figured out how to (1) transmit light over long distances in optical glass fibers. From the (2) official announcement: “Today, more than a billion kilometers of optical fiber around the world (3) forms the backbones of modern global communication.”

In 1969, Smith and Boyle (4) made your digital camera possible by inventing the charge-coupled device, the CCD (电荷耦合器件): “This device allows (5) electronic recording of images and it replaces the photographic film in cameras. The CCD records the image (6) as a distribution of charge in small cells or pixels, and it (7) outputs the image as a series of digital numbers. The CCD is (8) a crucial component of advanced cameras, and it finds (9) numerous applications in scientific and medical equipment. For example, it gives us the (10) spectacular images of the universe that we can see today.”

***Task 12: Watch the video clip and fill in the blanks with the words or word chunks you hear.***

Michael Mosely: Hello, I’m Michael Mosely. As ever, I’m joined by Professor of Engineering, the lovely Mark Miodownik. And self-confessed geek, industrial archaeologist, Dr Cassie Newland. And tonight we’re going to focus on three pivotal inventions that (1) transformed our relationship with place and time.

We will be following the trail of invention that (2) sprang from our relentless desire to go faster. From the first locomotive, to the internal combustion engine and finally the jet engine. All are linked by a vast family of invention 3) borne from a common principle ––– (4) the conversion of heat energy to motion. But the engines tonight are (5) a radical departure from the normal incremental improvement. These are the transformative machines that re-defined (6) how fast and far we could travel.

Since Ancient Greece, inventors had been trying to use high-pressure steam to (7) create movement. Where others failed, Cornishman Richard Trevithick succeeded. His steam locomotive (8) led to the emergence of rapid, mass transport. On Christmas Eve 1801, the Puffing Devil had its first ever outing—the age of (9) steam locomotion had begun.

(10) Nearly a century later, the Internal Combustion Engine (11) turned its back on steam. Smaller, faster and (12) far more efficient, it made transport personal, and 130 years on, it still reigns supreme.

Cassie Newland: It's called the Benz patent Motorwagen and the engine behind me gives you an average speed of 9 mph which from up here feels more like 90!

Michael Mosely: And finally in 1941, Frank Whittle invented the jet engine 13) turning aviation upside down. The modern commercial jet engines (14) weigh in at just a few kilos more than Trevithick's original Puffing Devil, but they're 15,000% faster.

Mark Miodownik: It's inventions like these that (15) make the impossible possible!

***Task 13: Watch the video clip and answer the following questions briefly.***

1. What limitations did the steam locomotive have?

The engines were enormous and highly inefficient.

1. What did inventors across Europe scramble to build by the mid-19th century?

They scrambled to build a working internal combustion engine.

1. What’s the working principle of the internal combustion engine?

It works by mixing fuel and air to create an explosion that physically moves the piston.

1. Why did it take so long for the final arrival of Nicholas Otto’s four-stroke engine?

New efficient liquid fuels such as kerosene, diesel and petrol had not been distilled from oil.

1. What is the world’s first motor car?

Benz Patent Motorwagen.

1. What event proved the car could replace the horse?

Benz’s wife, Bertha, borrowed her husband’s car prototype and successfully travelled 66 miles to her mother’s house

***Task14: Answer the following questions briefly based on the video clip about Thomas Edison’s invention of the light bulb.***

1. How many patents would Edison’s lab generate?

More than 1000.

1. How much money did Edison’s supporters invest in his research?

$130,000.

1. How many materials did Edison try in his search for the perfect filament?

6,000 materials.

1. How long did Edison find that a piece of carbonized cardboard could burn?

300 hours.

1. What time did Edison show off his new invention?

New Year's Eve 1879.

1. How many people flocked to his lab to see the marvel?

Thousands of people.

1. How many power plants did Edison build in two years?

More than 5000.

1. What is the significance of Edison’s invention？

It changed the way people live.

***Task 15: Answer the following questions briefly based on the video clip about the development of personal computer and the Internet.***

1. Why didn’t computers seem like a revolution at first in the 1940s?

A single computer occupied the size of a bus and consumed the power as a small town.

1. What power did computers reveal in the 1960s and 1970s?

Universities used computers to undertake enormous calculations in 1960s; and in 1970s corporations used them to replace thousands of staff.

1. What event has created the next computer revolution?

In 1976, Steve Jobs and Steve Wosneak created the world’s first practical personal computer.

1. What kind of person are Steve Jobs and Steve Wosneak?

They are ordinary people, not wealthy, not from big companies.

1. What upped the computer competition in the 1970s?

IBM launched its first PC.

1. What is said about the power of Apple II of 1980?

It’s more powerful than that in Apollo moon landing program.

1. What event signaled the birth of the Internet?

In 1969, four computers were connected to each other and transmitted information.

1. What made the American continent’s distances shrink by the mid 19th century?

The railroad and telegraph replaced the horse and wagon.

***Task 16: Fill in the blanks according to a report about new technological advances of controlling your cars.***

Pretty soon you’ll be using your handset to control your car. In addition to being able to unlock your doors and start your engine from your iPhone or Android device, new apps will even let you (1) command your car to park itself. These advances and dozens more were on display at the recent International Consumer Electronic Show in Las Vegas and the North American International Auto Show in Detroit.

What we really need, though, are more ways to (2) control our cars without creating more distractions. BMW and Mercedes have the right idea: they’re working on ways to let drivers (3) interact with their cars using hand gestures and eye movement in addition to voice controls and touch screens.

Gesture control should be useful, especially because most drivers already get lots of practice. Then again, the arm and leg it costs you to afford one of these vehicles might render some gesture controls moot.

***Task 17: Fill in the blanks according to a report about new research on ways to let pilots control aircraft using only brainwaves.***

Ever thought about piloting your own aircraft? Well, you’re in luck—soon thinking might be all that’s needed to take to the skies. A team of German scientists is researching ways to let pilots control aircraft using only brainwaves.

It might be easy to (1) dismiss this as pure science fiction, except that seven people were able to (2) use the scientists’ hands-free control setup to fly successfully in a flight simulator. Some of them were even able to (3) land their virtual aircraft in a dense, albeit simulated, fog and would have passed part of the test needed to get a pilot’s license.

Each test pilot wore a white skullcap loaded with dozens of electroencephalography [EEG] sensors. These electrodes measured electrical signals created by the pilot’s brain cells. That information was sent to a computer, which converted signal patterns into commands to (4) control the virtual aircraft.

The researchers are now trying to (5) figure out how to get their EEG system into a real airplane. Comforting to think that if your pilot becomes incapacitated, the kid sitting next to you playing video games could take over.

**Unit 8**

**What Are Your Dream Teams Like?**

***Task 2: Read Text 1 quickly and note down the benefits of teams and their drawbacks to teams.***

|  |  |
| --- | --- |
| **Benefits of teams** | **Drawbacks to teams** |
| 1. Teams can be a good way of managing many people 2. Teams provide a solid foundation for synergy. 3. Teams have easier access to funding and budgets and the advantages of economies of scale. 4. Teams fulfill a fundamental human need for belonging. 5. Teams give fun to work. Teams members can be close friends. | 1. Teams can be difficult to manage well. 2. A team may not be composed of most proper members. 3. A team may lack compelling direction or empowerment. 4. There are personal conflicts among team members 5. Teams may not be of appropriate structure and size. 6. Teams may lack a supportive context from its organization. |

***Task 3: Read the last section of Text I and summarize the author’s idea of a dream team of the future*. *Give an oral summary to the class.***

The teamwork ideology is deeply rooted in organizations and individuals. But changes in today’s world compel us to rethink about the teamwork ideology. The author makes two suggestions.

Hints: One suggestion is to make the best use of both individual work and teamwork. The former involves information collection, transformation, and processing, while the latter involves discussion, sense-making, prioritization, and decision making.

The other suggestion is to make the best use of established teams and fluid teams. Organizations should show respect and support informal teams and their work. Flexible policies need to be implemented for this purpose.

***Task 4: Skim through the article and find out what questions the author is concerned about and what are the main points of the article.***

The author is concerned about:

* Should the most productive team have 4.6 team members, as suggested in a recent article on "How to Build a Great Team" in Fortune magazine?
* Is it true that larger teams simply break down, reflecting a tendency towards "social loafing" and loss of coordination?
* Or is there simply no magic team number, a recognition of the fact that the best number of people is driven by the team's task and by the roles each person plays?

The main point: There is no hard-and-fast rule to determine the optimal number to have on each team.

***Task 5: Read Text II carefully and summarize different experts’ ideas or arguments about team size.***

|  |  |
| --- | --- |
| **Experts** | **Ideas or arguments** |
| Mueller | Size is not necessarily the first consideration when putting together an effective team.  First consideration: team task  Second consideration: team composition or structure, the skills of the people needed to complete the task  Third consideration: team size.  Her studies prove that individuals in larger teams do perform worse. |
| Klein | Eight or nine is too large.  As a team gets larger, there is a tendency for social loafing, where someone gets to slide, to hide." |
| Wittenberg | Optimal team numbers is between 5 to 12.  Team size is important but not top priority.  Team size depends on the task. |

***Task 6: Explain the following concepts or theories according to your understanding of Text II.***

1. **Social loafing:** A condition where a group or team tends to "hide" the lack of individual effort. The result is decreased effort in a group context relative to individual context.
2. **The Ringelmann effect:** As more people are added to the rope, the total force generated by the group rose, but the average force exerted by each group member declined.
3. **Free riding:** Free riding is rational and self-interested lack of effort.
4. **Diversity:** It refers to a situation where a team consists of members representing different gender, race, and age.
5. **The controversy about diversity**: Some theories suggest that diversity leads to conflict and poor social integration, while various other studies suggest just the opposite.
6. **The benefit of diversity:** Diversity creates more ideas, more perspectives and more creativity for better solutions.
7. **The benefit of similarity:** Similarity enhances coordination and effectiveness in performing tasks that are complex, unpredictable, urgent, and/or novel. Team members who share similar mental models can anticipate each other's responses and coordinate effectively when time is of the essence and opportunities for overt communication and debate are limited.
8. **Team mental models:** Team members share understanding and mental representation of knowledge about key elements of the team's relevant environment.
9. **Numerical minorities:** The team members who represent differentgender, race, age and ethnic groups are less threatening because it is taken for granted that they have different viewpoints. But if the team members who are similar to you disagree with each other, the situation becomes more upsetting.
10. **Emotional stability**: The quality of being calm, rational, and reasonable.
11. **Neuroticism:** The quality of being easily agitated, worrying a lot and having a strong temper.
12. **In-group, out-group problem:** The problem involving how people identify ourselves. When they identify themselves as part of a group or separate from a group, they become in-group and out-group members respectively.

***Task 8: Find the right verbs that can typically collocate with the following noun groups.***

1. promote, seek, benefit from international collaborations
2. advance, promote, develop interdisciplinary thinking
3. seek, find, determine optimal solutions
4. have, take, adopt different cultural approaches to problem solving
5. have, ignore, overcome constraints and boundary conditions
6. solve, resolve, settle, handle, cope with a physics problem
7. tackle, come across, encounter the problem with loads of mathematical equations
8. reach across, transcend, set national boundaries
9. develop, enhance, improve, sharpen their skills
10. deepen, demonstrate, show a breakthrough insight
11. unleash, show, develop limitless individual creativity
12. mark, turn out to be, prove to be a turning point in the history of the PC
13. maintain, crush, improve the status quo
14. participate in, take part in international conferences and cross-cultural communication

***Task 9: Summarize the teambuilding secrets of five teams mentioned above.***

|  |  |
| --- | --- |
| **Teams** | **Teambuilding secrets** |
| Thomas Edison's invention factory | tapped into the team members’ skills  worked on inventions in person  motivated and treated the team members well |
| Lockheed's Skunk Works | integrated design and metalwork  minimized the external disturbance to teamwork |
| the Levitt family | programmed the teamwork  simplified and clarified the work flow  standardized the production  concentrated on efficiency |
| Steve Jobs’ team | incorporated team members from different fields  set a clear team target  pushed the team members forward relentlessly |
| The Ford team Taurus | streamlined production by integrating sub-teams  created a loose environment  activated the team members’ initiatives |

***Task 11: Complete the information in the following report according to what you hear.***

Consider the times you’ve hopped on a subway, boarded a plane or entered a waiting room. Chances are, you probably avoided engaging with any fellow commuters or patients. But contrary to what we might think, we’d be happier if we did strike up a conversation with a total stranger.

In a study, commuters in Chicago were asked to either talk with a stranger on a train, or sit quietly alone, or just do whatever they’d normally do on their commute. Then, they responded to a survey about how they felt.

Turns out those who (1) engaged with strangers had the most pleasurable experience and those who (2) remained solitary had the least enjoyable experience. These answers were compared with another group that did not participate but instead had to predict how they might feel in each situation. This group thought (3) talking with strangers would be the least enjoyable, by far. The study is the journal of Experimental Psychology.

So despite being social animals and enjoying social engagement, we avoid chatting with strangers. Why? Well, according to a follow up study it’s because we think, wrongly, that (4) strangers don’t want to talk with us. The one way to get over this is to practice reaching out – who knows, commuting could become a lot more enjoyable.

***Task 12: Watch the video clip about “Buffett & Gates Go Back to School” and answer the following questions.***

1. What does Warren Buffett value most?

Reputation.

1. By what two tests does Warren Buffett ask his managers to judge their every action?

The first test is legal standards; the second is the newspaper test.

1. What didn’t Warren Buffett realize when he was getting out of school?

How much the unusual people would jump out at you: the way they behave, the energy they bring, the commitment they bring, the quality of how they do things and how they treat people all around.

1. What skill does Warren Buffett emphasize and view as necessary in one’s life?

Public speaking skill.

1. What does Warren Buffett regard as a rare talent?

To get the best out of people around you.

1. What kind of employees in Microsoft could be promoted?

Those who are good at strategy, who are leaders of people, and who are great individual contributor.

1. According to Bill Gates, what defines an ideal person in Microsoft?

The combination of great individual thinking skills, being great with people and being great with strategy

1. What does Warren Buffett joke about Bill Gates in the middle of the talk?

Bill Gates dropped out of school.

***Task 13: Listen to President Obama’s address and answer the following questions.***

1. What does President Obama [announce](http://kkdict.com/en/announce) today?

Members of his science and technology team.

1. What is the key to our [survival](http://kkdict.com/en/survival) as a [planet](http://kkdict.com/en/planet) and our [security](http://kkdict.com/en/security) and [prosperity](http://kkdict.com/en/prosperity) as a nation?

Science.

1. Why does America put science at the top of its [agenda](http://kkdict.com/en/agenda)?

To [restore](http://kkdict.com/en/restore) its place as the world leader in science and technology.

1. What role do American leaders play in science?

They not only invested in our scientists, but also [respected](http://kkdict.com/en/respected) the [integrity](http://kkdict.com/en/integrity) of the scientific process.

1. How could science be promoted?

By protecting free and open [inquiry](http://kkdict.com/en/inquiry) and ensuring that facts and [evidence](http://kkdict.com/en/evidence) are never [twisted](http://kkdict.com/en/twisted) or [obscured](http://kkdict.com/en/obscured) by politics or [ideology](http://kkdict.com/en/ideology).

1. What is the highest purpose of science?

To search for knowledge, truth and a greater understanding of the world around us.

***Task 14: Listen to President Obama*** [***announcing***](http://kkdict.com/en/announce) ***members of his science and technology team and fill in the blanks with words and phrase you hear. Give your comment on the composition of this team.***

Dr. John Holdren has agreed to serve as Assistant to the President for Science and Technology and [Director](http://kkdict.com/en/Director) of the White House Office of Science and Technology Policy. John is a professor and Director of the Program on Science, Technology, and Public Policy at Harvard’s Kennedy [School](http://kkdict.com/en/School) of Government, as well as President and Director of the Woods Hole Research Center. A physicist [renowned](http://kkdict.com/en/renowned) for his work on (1) climate and energy, he’s received [numerous](http://kkdict.com/en/numerous) honors and awards for his contributions and has been one of the most [passionate](http://kkdict.com/en/passionate) and [persistent](http://kkdict.com/en/persistent) voices of our time about the growing [threat](http://kkdict.com/en/threat) of climate change. I (2) look forward to his wise [counsel](http://kkdict.com/en/counsel) in the years ahead.

John will also serve as a Co-Chair of the President’s Council of Advisors on Science and Technology—or PCAST—as will Dr. Harold Varmus and Dr. Eric Lander. Together, they will work to remake PCAST into a [vigorous](http://kkdict.com/en/vigorous) [external](http://kkdict.com/en/external) advisory council that will shape my thinking on the scientific aspects of my (3) policy priorities.

Dr. Varmus is no stranger to this work. He is not just a path-breaking scientist, having won a Nobel Prize for his research on the (4) causes of cancer—he also served as [Director](http://kkdict.com/en/Director) of the National Institutes of Health during the Clinton [Administration](http://kkdict.com/en/Administration). I am [grateful](http://kkdict.com/en/grateful) he has answered the call (5) to serve once again.

Dr. Eric Lander is the Founding [Director](http://kkdict.com/en/Director) of the Broad [Institute](http://kkdict.com/en/Institute) at MIT and Harvard and was one of the driving forces behind mapping the human [genome](http://kkdict.com/en/genome)—one of the greatest scientific achievements in history. I know he will be a powerful voice in my [Administration](http://kkdict.com/en/Administration) as we seek to find the (6) causes and cures of our most [devastating](http://kkdict.com/en/devastating) diseases.

Finally, Dr. Jane Lubchenco has accepted my nomination as the [Administrator](http://kkdict.com/en/Administrator) of NOAA, the National Oceanic and [Atmospheric](http://kkdict.com/en/Atmospheric) [Administration](http://kkdict.com/en/Administration), which is [devoted](http://kkdict.com/en/devoted) to [conserving](http://kkdict.com/en/conserving) our marine and coastal resources and monitoring our weather. An internationally known (7) environmental scientist and [ecologist](http://kkdict.com/en/ecologist) and former President of the American [Association](http://kkdict.com/en/Association) for the Advancement of Science, Jane has advised the President and Congress on scientific matters, and I am [confident](http://kkdict.com/en/confident) she will provide [passionate](http://kkdict.com/en/passionate) and [dedicated](http://kkdict.com/en/dedicated) leadership at NOAA.

Working with these leaders, we will seek to draw on the power of science to both meet our challenges across the globe and [revitalize](http://kkdict.com/en/revitalize) our economy here at home. And I’ll be speaking more after the New Year about how my [Administration](http://kkdict.com/en/Administration) will [engage](http://kkdict.com/en/engage) leaders in the (8) technology [community](http://kkdict.com/en/community) and [harness](http://kkdict.com/en/harness) technology and [innovation](http://kkdict.com/en/innovation) to create jobs, [enhance](http://kkdict.com/en/enhance) America’s [competitiveness](http://kkdict.com/en/competitiveness) and advance our national priorities.

I am [confident](http://kkdict.com/en/confident) that if we recommit ourselves to discovery; if we (9) support science education to create the next generation of scientists and engineers right here in America; if we have the vision to believe and invest in things unseen, then we can lead the world into a new future of (10) peace and [prosperity](http://kkdict.com/en/prosperity).

***Task 15: Answer the following questions according to what you hear.***

1. What is key to the development of cutting-edge science?

International collaboration.

1. What do many governments consider to be a way to get out of economic trouble?

Investing in science.

1. What does it take to create the best and most lucrative Premier League for science?

Building international science team.

1. Where did the best scientist use to go in the world?

UK, US.

1. Why did Lord John Crabs’ father come to the UK?

He became a refugee during Hitler's rule.

1. How many of the refugee scientists won Nobel prizes?

20.

1. What does Lord John Crabs think Britain should do now?

Bring the brightest brains to the country as it did.

**Unit 9**

**Should Scientists Change Their Minds?**

***Task 2: Read Text I quickly and summarize the main point of each paragraph.***

The author tries to argue that scientists are supposed to change their views when newempirical evidence is produced to prove that their views may be wrong. They should willingly and eagerly abandon their former views which lack scientific evidence, but few scientists are able to do so, as shown in a new book.

|  |  |
| --- | --- |
| **Paragraphs** | **One-sentence summaries** |
| 1 | Scientists are supposed to change their minds when evidence undercuts their views, but few of them do so. |
| 2 | In the new book, scientists who change their mind just involve changes of opinion or an evolution of values. |
| 3 | Scientists who stand on either side of a contentious issue rarely change their minds |
| 4 | Some scientists interpret and even ignore “facts” to fit their views. |
| 5 | Only a few scientists in the new book admit they were wrong. Physicist Marcelo Gleiser is one example. |
| 6 | Another example is from evolutionary psychology. |
| 7 | Daniel Gilbert changed his mind because of new evidence. |

***Task 3: Read Text I carefully and find information to complete the following chart.***

**Scientists who changed their minds as shown in the new book.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Scientists** | **Former views** | **Changed views** | **The author’s comments** |
| Not named | Supported manned spaceflight | Not support manned spaceflight | Just a change of opinion |
| Not named | Opposed cognitive enhancement through drugs | Not opposed to cognitive enhancement through drugs | Just a change of opinion |
| Anthropologist  not named | Supported cultural relativism | Uncomfortable with cultural relativism | Just an evolution of values |
| Not named | Computer intelligence would soon rival humans’ | Computer intelligence would not rival humans’ | Resulted only from busted prediction |
| Physicist Marcelo Gleiser | The laws of nature can be unified in a single elegant formulation. | The laws of nature cannot be unified in a single elegant formulation. | He is great to admit his former was wrong |
| Biologist  Marc Hauser | Adaptation and reproduction explain every human behavior. | Little evidence supports the view that human behaviors exist because they help us mate and reproduce. | It is fascinating for him to concede evidence is little for the former view. |
| Psychologist  Steven Pinker | We all carry genes that led to reproductive success in the Stone Age. | Many human genes are changing more quickly than anyone imagined. We do not have the Stone Age brains. | It is fascinating that he changed his mind. |
| Psychologist  Daniel Gilbert | He believed that people are happier when they can change their minds. | He discovered that people are happier when they are locked in to a decision and cannot change their minds. | It makes people happier to be able to change their minds. |

**Scientists who refuse to change their minds even when faced with new evidence**

|  |  |  |
| --- | --- | --- |
| **Scientists’ views** | **New evidence** | **The author’s comments** |
| Alzheimer’s disease is caused by sticky brain plaques. | The plaques are mostly innocent bystanders, not culprits | They cling to their views like a shipwrecked man to flotsam. They would say studies undermine that position are fatally flawed, and they interpret evidence or ignore evidence for their own selfish purposes. |
| Hormone replacement therapy prevents heart attacks in older women. | The drugs for hormone replacement therapy increase the risk of heart attacks (as well as stroke and breast cancer). |
| A killer asteroid sent the dinosaurs into extinction | The impact-crater evidence implicates asteroids caused worldwide volcanism, which led to the extinction of dinosaurs. |

***Task 4: Skim through Text II and identify scientist(s) who admitted being wrong and those who didn’t.***

1. The scientists who admitted being wrong:

* Astronomer Andrew Lyne

1. The scientists who refused to admit being wrong:

* Peter van de Kamp
* David McKay and his colleagues
* John Tainer
* Steve Vogt and Paul Butler

***Task 5: Answer the following questions according to Text II.***

1) What did Andrew Lyne announce six months before his talk at a conference in Atlanta?

He announced the discovery of a planet orbiting a pulsar, which seemed impossible.

2) What did Lyne discover a few weeks before he was supposed to give a talk?

He found that he had made a mistake in calculation. He had ignored the fact that Earth’s orbit is elliptical rather than circular. Actually, the planet he thought he discovered did not survive the explosion.

3) How did Lyne feel when he realized the mistake? What did he do at the conference?

He was horrified, and he smarting from the mistake for years to come. He announced at the conference that his discovery was wrong.

4) How did other astronomers at the conference react to Lyne’s mea culpa?

They erupted into a standing ovation, to show their respect and appreciation.

5) What did the author think of Lyne?

He **caught his mistake** and **was clean**. As John Bahcall said, this is the most honorable thing to do for a scientist. He is ruthlessly honest with himself.

6) What mistake did Peter van de Kamp make? What happened afterwards?

In the early 1960s, he announced that he’d found evidence of a planet orbiting Barnard’s Star, but what van de Kamp thought was a planet was actually a glitch caused when his telescope’s lens was remounted. He refused to admit his mistake. Instead, it was George Gatewood who debunked van de Kamp’s claim. As a result, van de Kamp’s reputation suffered badly. How did van de Kamp react to his mistake?

7) What mistake did David McKay and his colleagues make? What happened afterwards?

They claimed to have found evidence of fossilized bacteria inside a Martian meteorite. Other scientists chipped away at this evidence and concluded that such evidence simply didn’t exist. But David McKay and his colleagues are still sticking to their guns, refusing to admit they are wrong. As a result, they are marginalized in the scientific community.

1. What did John Tainer claim? What did other scientists say about his claim? He claimed to have discovered evidence that life can arise under a wider variety of conditions than biologists thought, boosting the chances that aliens might exist somewhere out there in the Milky Way. But independent scientists took a look but couldn’t replicate the original findings. They concluded that the claim of arsenic-based life was wrong. John Tainer still insists his claim is right.

9) What is the author’s attitude towards the discovery of Gliese 581g?

The author thinks this claim is questionable.

1. Do you think Gliese 581g may exist?

Open.

***Task 8: Read paragraph one of Text III and compare the author's attitude and her father's attitudes toward scientific research and scientific knowledge.***

**The author's attitude toward scientific knowledge:** It can certainly seem that scientists are constantly backtracking but I would argue that this has more to do with the imperfect humans (whose values and beliefs influence how they do research and how they interpret scientific findings) than with flaw in the scientific method per se. We should not throw the baby out with the bath water!

**The attitude of the author's father towards scientific knowledge:** My dad likes to tell me that scientists are always getting it wrong and, therefore, scientific knowledge should not be put on a pedestal （过度崇拜） above other forms of knowledge.

***Task 11: Note down the numbers as you listen to a news report about funding for NASA.***

It’s more of a small step than a giant leap, it being funding for NASA in the White House’s federal budget proposal. The plan calls for the space agency to receive about (1) $18.5 billion in fiscal year 2016, up (2) a half-billion over 2015.

About (3) $5.3 billion of that total is devoted to science. But because of how the budget distributes that money among NASA’s many science missions, some planetary science advocates see the proposal as retrograde—one step forward but several steps back.

The plan includes (4) $228 million for another Mars rover planned to launch in 2020, as well as (5) $30 million to start up a robotic mission to Jupiter’s moon Europa. But the agency wants to kill financial support for two ongoing missions—the Lunar Reconnaissance Orbiter and the Mars Opportunity rover. The budget also calls for defunding another current mission (6) in 2017, the Mars Odyssey orbiter.

Of course, these plans aren’t set in moon rocks. Congress will modify the budget before passing it. And in years past, it’s been fond of funding planetary science.

But sooner or later NASA will be faced with hard choices, as its portfolio swells with well-built spacecraft operating far past their planned lifetimes. Ironically, the agency’s sterling record of success with robotic missions may have become too much of a good thing, forcing it to grapple with the extra expenses of some unexpectedly long goodbyes.

***Task 12: Note down the numbers as you listen to a news report about heart disease among American women.***

Fewer Americans have been dying from heart disease in recent decades. But the rate among women from (1) 35 to (2) 44 has not dropped. There’s no secret sauce for good health, of course, but now researchers have identified six commonsense lifestyle choices that they believe could slash heart attacks within this female age group.

They base their conclusions on the analysis of medical records of nearly (3) 70,000 mostly Caucasian female nurses tracked for two decades. They were all in a large, long-term epidemiological effort called the [Nurses Health Study II](http://www.channing.harvard.edu/nhs/?page_id=70). The findings are in the Journal of the American College of Cardiology. [Andrea K. Chomistek et al, [Healthy Lifestyle in the Primordial Prevention of Cardiovascular Disease Among Young Women](http://content.onlinejacc.org/article.aspx?articleID=2087922)]  
  
 The six anti-heart attack behaviors are: not smoking; exercising for at least (4) 2.5 hours each week: watching TV for fewer than (5) 7 hours a week; consuming a diet rich in veggies, legumes and whole grains but low in red meat, refined grains and sugar; consuming no more than one alcoholic drink daily; and having a [Body Mass Index in the normal range.](http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/)  
  
 The data showed that non-smoking women who exercised regularly and maintained a healthful diet lowered their heart disease risk by (6) 92 percent compared with women who did not have those habits. They also had a (7) 66 percent lower risk for heart disease factors such as high blood pressure, high cholesterol or type 2 diabetes. Take those numbers to heart.

***Task 13: Fill in the blanks with words you hear from a report about Georgia Tech's development of smart keyboards.***

  Keyboards don’t exactly spring to mind when you think of high-tech innovations, especially now that we have voice and even gesture controls for our gadgets. Still, a new device out of the Georgia Institute of Technology is taking typing in a (1) smart direction.

The Georgia Tech researchers have developed an intelligent keyboard that (2) captures information about the force and length of keystrokes. They say these patterns are unique to different typists and could lead to a new type of biometric security, locking out anyone who doesn’t type like you do.

The keyboard can also power itself using something called contact electrification. It (3) generates current when your fingertips touch the keys, which are coated with an electrode material. So we’re talking about a wireless keypad that never needs batteries.

The researchers published a paper about their intelligent keyboard in the journal ACS Nano.

Maybe the best feature of the keyboard is that it’s basically made from layers of plastic and has no (4) mechanical keys. That means you could drop crumbs or even spill coffee on it without any damage—forget voice recognition, now you’re talking!

***Task 14: Answer the following questions briefly based on the interview about dark matter.***

1. What is dark matter?

It is the most common stuff in the universe. There is more of it than anything on the periodic table. We know almost nothing about what it is.

1. What do scientists know about dark matter?

It is different from anything that is on the periodic table. It doesn't shine. It is completely invisible.

1. How do we know that dark matter exists?

Because of its gravitational influence on everything else. The gravity acts as a glue that holds the Milky Way together.

1. What holds the stars together in the Milky Way?

The force of gravity.

1. How can we learn more about dark matter since we can't detect it?

By using gravitational lensing, it is like looking through a bathroom window.

***Task 15: Watch the video clip and answer the following questions.***

1. Who is Alice Stuart?

A fantastic doctor in Oxford in the 1950s.

1. In what ways is Alice unusual?
2. She is a woman, which was rare in the 1950s.
3. She is brilliant and the youngest fellow to be elected.
4. She continued to work after she got married, had children, and got divorced.
5. She was interested in a new field, the emerging science epidemiology, the study of patterns in disease.
6. What is epidemiology?

The study of patterns in disease.

1. What hard problem did Alice choose?

The rising incidence of childhood cancer.

1. What family background did the children with cancers come from?

Affluent families.

1. What did Alice find from her studies?

Children who died had mothers who had been X-rayed when pregnant.

***Task 16: Watch the video clip and complete the following statements with the information you hear.***

1. It took British and American medical establishments 25 years to decide to abandon the practice of X-raying pregnant women.
2. Openness alone can’t drive change .
3. Alice worked with a statistician named George Neil, who was everything Alice wasn’t.
4. Alice was outgoing, and sociable, while George was a recluse. Alice was very warm, very empathetic with her patients. George frankly preferred numbers to people.
5. George said that his job is to prove Dr. Stuart wrong. He actively sought disconfirmation. He used different ways of looking at her models, at her statistics, different ways of crunching the data in order to disprove her. He saw his job as creating conflict around her theories.
6. It was only by not being able to prove she was wrong that George could give Alice the confidence she needed to know that she was right.
7. George and Alice saw conflict as thinking, which is a fantastic model of collaboration.
8. Constructive conflict requires we find people who are very different from ourselves. We seek out people with different backgrounds, different disciplines, different ways of thinking, different experience, and find ways to engage with them.
9. They saw conflict as thinking. Every time Alice went head to head with a fellow scientist, they made her think, and think, and think again.
10. Alice’s daughter said:Ｍy mother didn’t enjoy a fight, but she was really good at them.

***Task 17: Watch the video clip and complete the following notes.***

1. How do organizations think? Why?

They don’t. People inside organizations are afraid of conflicts.

The survey of executives shows 85% acknowledged that they have issue or concerns they are afraid to raise.

1. Why are they afraid?

They are afraid of creating conflicts, or getting embroiled in argument, and they feel they are bound to lose.

They can’t think together.

1. What did Joe worry about?

He worked in medical device company.

The device was so complicated, they may create errors that would hurt people.

Nobody seemed to be worried about the device.

He didn’t want to say anything but kept worrying, the only thing he could do was to leave a job he loved.

1. What did Joe do in the end?

Joe found a way to raise his concerns.

He found almost everybody had exactly the same questions and doubts.

There are conflicts, debates, argument, but they allow the people to think together, to be creative, solve the problem, and change device.

5）What did Joe’s colleagues think of him?

He wasn’t a crank at all, they don’t think of him as a crank, but as a leader.

***Task 18: Watch the video clip and note down the students' questions to Dr.Tara Ruttley and the main points of her answer. Dr. Tara Ruttley is a scientist from NASA's International Space Station Mission Control Center.***

**Question:** What types of scientific experiment are the astronauts working on in space?

**Answer:** They are doing all kinds of scientific experiments.

For example,

* They do human research. They test their own body to see what happens when taking gravity away. What changes happen in their body? They find their bones get weaker, muscle starts to shrink. Heart changes size. Human research.
* They also do physics research. They test how fluid behaves differently in space with no gravity. What happens when they drink out of a cup, and how water behaves differently? It climbs the walls of its container.
* They take images of the earth.
* They test how bacteria behave, viruses behave
* Every kind of discipline, and every kind of scientific experiment.

**Unit 10**

**How Has the Digital Age Changed Your Life?**

***Task 2: Read Text I carefully and distinguish supporters' arguments about digital literacy from those of opponents.***

**The debate about digital literacy or screen reading**

|  |  |  |
| --- | --- | --- |
| **Ideas or arguments** | **Supporters?** | **Opponents?** |
| 1. If we choose to replace the book, what will become of reading and the print culture it fostered? And what does it tell us about ourselves that we may soon retire this most remarkable, five-hundred-year-old technology? (Para.1) |  | Author and  opponents |
| 1. The screen mediates everything from our most private communications to our enjoyment of writing, drama, and games. It is the busiest port of entry for popular culture and requires navigation skills different from those that helped us master print literacy. (Para. 2) |  | Author/opponents |
| 1. This new digital literacy represents an advance for mankind; the book is evolving, progressing, improving, they argue, and every improvement demands an uneasy period of adjustment. (Para. 3) | Enthusiasts and experts/ supporter |  |
| 1. Sophisticated forms of collaborative “information foraging” will replace solitary deep reading; the connected screen will replace the disconnected book. (Para. 3) | Enthusiasts and experts/ supporter |  |
| 1. Eons from now, our love affair with the printed word will be remembered as but a brief episode in our cultural maturation, and the book as a once-beloved technology we’ve outgrown. (Para. 3) | Enthusiasts and experts/ supporter |  |
| 1. Digital literacy’s boosters are not unlike the people who were swept up in the multiculturalism fad of the 1980s and 1990s. (Para. 4) |  | Author/Opponents |
| 1. We are increasingly distractible, impatient, and convenience-obsessed — and the paper book just can’t keep up. Shouldn’t we simply acknowledge that we are becoming people of the screen, not people of the book? (Para.4) | Enthusiasts and experts/ supporter |  |
| 1. In bestowing the power of uniformity, preservation, and replication, the printing press inaugurated an era of scholarly revision of existing knowledge. (Para.5) |  | Author/opponents |
| 1. Literacy is now nearly universal in the United States and the rest of the developed world — a remarkable historical achievement, and yet one that has sparked more complacency than comment. (Para.6) |  | Author/ opponents |
| 1. Regular reading is strongly correlated with civic engagement, patronage of the arts, and charity work. (Para.7) |  | NEA/opponent |
| 1. The people who read regularly for pleasure are more likely to be employed, and more likely to vote, exercise, visit museums, and volunteer in their communities; in short, they are more engaged citizens. (Para.7) |  | NEA/opponent |
| 1. “Only reading novels on a regular basis outside of school is shown to have a positive relationship to academic achievement.” (para.10) |  | University of Michigan study/ opponent |
| 1. Screen reading encourages a different kind of self-conception, one based on interaction and dependent on the feedback of others. It rewards participation and performance, not contemplation. (Para.12) |  | Author/opponent |

***Task 3：The following are the common reporting verbs used when you quote someone else's ideas or arguments. Choose the most appropriate ones to form reporting clauses which can be added to the statements in Task 2. (Hint: More than one of the reporting verbs can be used in each clause.)***

assure, argue，emphasize， insist，warn, admit，agree，claim，comment，explain，observe，repeat，add，note，remark，say, acknowledge, ask, assert, conclude, declare, estimate, find, hint, illustrate, imply, indicate, point out, predict, question, recommend, remind, report, respond, request, reveal, show, specify, stress, suggest, think, warn

*Example:*

1. The author asks if we choose to replace the book, what will become of reading and the print culture it fostered, and what it tells us about ourselves that we may soon retire this most remarkable, five-hundred-year-old technology.
2. The author comments that the screen mediates everything from our most private communications to our enjoyment of writing, drama, and games. It is the busiest port of entry for popular culture and requires navigation skills different from those that helped us master print literacy. (para. 2)
3. Enthusiasts and self-appointed experts argue that this new digital literacy represents an advance for mankind; the book is evolving, progressing, improving, they argue, and every improvement demands an uneasy period of adjustment. (para. 3)
4. Enthusiasts and self-appointed experts predict that sophisticated forms of collaborative “information foraging” will replace solitary deep reading; the connected screen will replace the disconnected book. (para. 3)
5. Enthusiasts and self-appointed experts think eons from now, our love affair with the printed word will be remembered as but a brief episode in our cultural maturation, and the book as a once-beloved technology we’ve outgrown. (para. 3)
6. Advocates of digital literacy reason that we are increasingly distractible, impatient, and convenience-obsessed — and the paper book just can’t keep up. Shouldn’t we simply acknowledge that we are becoming people of the screen, not people of the book? (para.4)
7. The author says that digital literacy’s boosters are not unlike the people who were swept up in the multiculturalism **fad** of the 1980s and 1990s.
8. The author argues that in bestowing the power of uniformity, preservation, and replication, the printing press inaugurated an era of scholarly revision of existing knowledge. (para.5)
9. The author asserts that Literacy is now nearly universal in the United States and the rest of the developed world — a remarkable historical achievement, and yet one that has sparked more complacency than comment. (para.6)
10. The NEA report found that regular reading is strongly correlated with civic engagement, patronage of the arts, and charity work. (para.7)
11. The NEA report found that people who read regularly for pleasure are more likely to be employed, and more likely to vote, exercise, visit museums, and volunteer in their communities; in short, they are more engaged citizens. (para.7)
12. University of Michigan study notes that “Only reading novels on a regular basis outside of school is shown to have a positive relationship to academic achievement.” (para.10)
13. The author insists that screen reading encourages a different kind of self-conception, one based on interaction and dependent on the feedback of others. It rewards participation and performance, not contemplation. (para.12)

***Task 4: Explain or paraphrase the following sentences from Text 1. You can paraphrase the sentences if necessary.***

1. The book is modernity’s quintessentialtechnology — “a means of transportation through the space of experience, at the speed of a turning page."

(Hint: metaphorical expression)

1. But now that the rustle of the book’s turning page competes with the flicker of the screen’s twitching pixel. (Hint: metaphorical expression)
2. And what does it tell us about ourselves that we may soon retire this most remarkable, five-hundred-year-old technology? (The meaning and use of retire)
3. The screen mediates everything from our most private communications to our enjoyment of writing, drama, and games. (Hint: Mediate is related to "medium", thus the screen is the medium of everything...)
4. It is the busiest port of entry for popular culture and requires navigation skills different from those that helped us master print literacy. (Hint: metaphorical expression)
5. Our love affair with the printed word will be remembered as but a brief episode in our cultural maturation, and the book as a once-beloved technology we’ve outgrown. (as only)
6. Intent on encouraging a diversity of viewpoints, they initially argued for supplementing the canon so that it acknowledged the intellectual contributions of women and minorities. (the cannon refers to mainstream culture, i.e. the culture of white males)
7. But like multiculturalism, which soon changed its focus from broadening the canon to eviscerating it by purging the contributions of “dead white males,” digital literacy’s advocates increasingly speak of replacing, rather than supplementing, print literacy.
8. Not everyone endorses this claim for reading’s value.
9. it remains an open question whether the new “reading class” will “have both power and prestige associated with an increasingly rare form of cultural capital,” or whether the pursuit of reading will become merely “an increasingly arcane hobby.” (the people who read on screen)

***Task 5: Skim through Text II and find out 1) how the author views the prospect of e-books, paperbacks, and hardbacks; 2) what strategies are used to explain his viewpoints.***

1. The author’s viewpoint of the prospect of e-books, paperbacks, and hardbacks:

E-books will not replace physical books.

But mass market paperbacks, hardbacks for mysteries, thrillers, "romance fiction" will probably disappear. They will probably only be available as e-books within a few years. Hardback and trade paperbacks for "serious" nonfiction and fiction will surely last longer.

1. The strategies used to explain his viewpoints:

By giving some examples of technological change to show that a new technology is unlikely to drive the old one extinct immediately.

***Task 6: Complete the following guided summary of Text II.***

In spite of the increase of e-book sales, the physical book is unlikely to disappear immediately, and perhaps not at all. This point can be explained by the nature of technological change.

Firstly, a new technology can replace the old one only because the new technology is better, cheaper, or both. For example, printing greatly reduced the cost of producing a book, so it replaced handwritten books on vellum.

Secondly, new technology does not drive the old one extinct, but force some parts of the old one to evolve. For example, live theater is not driven extinct by movies, because the theater has qualities movies could not reproduce. When TV came into being, it didn’t drive movies or radio extinct.

Thirdly, old technology lingers for because of its symbolic power. For example, the chariots, the sword, the fireplace still exist because of their symbolic power.

Fourthly, the old technology remains as a back-up, because new technology is a little cranky at first. For example, the rigging and sails of steamships were not driven extinct by marine engines.

Finally, people are emotionally attached to old technology. For example, the fireplace was not driven extinct by central heating, because the fireplace gives a feeling of homes and warms.

For all these reasons, the physical book will not disappear.

***Task 7: Skim through the following article and find out 1) the questions the author is trying to address, and 2) the conclusion drawn by the author.***

1. Questions: As digital texts and technologies become more prevalent, we gain new and more mobile ways of reading—but are we still reading as attentively and thoroughly? How do our brains respond differently to onscreen text than to words on paper?
2. Conclusion: E-readers and tablets are becoming more popular as such technologies improve, but research suggests that reading on paper still boasts unique advantages.

***Task 8: Summarize the main points of the studies described in Text III. The following is an example.***

**Study 1**

|  |
| --- |
| [Purpose] Anne Mangen and her colleagues tested whether screens impair comprehension. [Method] They asked 72 10th-grade students of similar reading abilities to read two texts. Half of them read the texts on paper and half read the texts in PDF on computers. Then they were asked to complete reading comprehension questions. [Result] They found that the students who read the texts on computers performed a little worse than students who read on paper. |

**Study 2**

[Purpose] Kate Garland studied readers’ immediate reading comprehension and long-term memory. [Method] She asked 50 British college students to read study material from an introductory economics course either on a computer monitor or in a spiral-bound booklet. After 20 minutes of reading Garland and her colleagues quizzed the students with multiple-choice questions. [Result] Students scored equally well regardless of the medium, but differed in how they remembered the information.

**Study 3**

[Purpose] Ziming Liu of San studied whether e-readers always bring as much mental effort to screens. [Method] Based on a detailed survey of 113 people in northern California, [Result] it was found that people reading on screens take a lot of shortcuts—they spend more time browsing, scanning and hunting for keywords compared with people reading on paper, and are more likely to read a document once, and only once.

**Study 4**

[Purpose] Researchers at Technion–Israel Institute of Technology tried to find out whether people are inclined to engage in metacognitive learning regulation—strategies such as setting specific goals, rereading when reading on screens. [Method] College students took multiple-choice exams about expository texts either on computers or on paper. Half of them took seven minutes of their study time; the other half could review the text for as long as they liked. [Result] When under pressure to read quickly, students using computers and paper performed equally well. When managing their own study time, however, students using paper scored about 10 percentage points higher.

***Task 9: Complete the following notes based on a program about how education is changed in the information economy.***

**Topic:** How education has changed in the information economy, especially for those programs with online teaching and learning.

**Main points:** Why education is changing, how is it changing, and with what results.

1) Why is education moving online so rapidly?

* Grad students demanded it.
* Technology could support it.

2) How is it changing?

Challenges:

* Creating a personalized, interactive collaborative learning, environment,
* Sharing knowledge
* Moving from teacher centered model to collaborative interactive authentic learning

Three concepts

* Course designs: structured content in a variety of methods.
* Collaborative real world projects are better than individual research papers alone. Applying theories to practice.
* Best learning occurs in a real learning community where students share their knowledge.

3) The results of online learning.

* Students: They know each other, not strangers, engage fully in learning and sharing knowledge without leaving work.
* Employers: Benefits companies, positive impact on the workplace
* Teachers: Better teacher.

***Task 10: Listen to the news report and fill in the blanks with the collocations, expressions, or lexical chunks you hear.***

**Digital Entrepreneur Wants to Save Books**

Digital books are flying off the proverbial shelves. So it might be (1) **hard to believe** that someone wants to create a new library with at least 10 million books—the kind made from trees. Even stranger, the person creating the library is Internet entrepreneur Brewster Kahle, (2) **best known for** founding the Internet Archive and Open Content Alliance.  
  
 The Internet Archive is a (3) **digital library** Kahle started in 1996 to store a copy of every Web page ever created. The Archive lets the public upload or download digital material (4) **for free**. Open Content Alliance, created in 2005, is a group oforganizations that works to get permission from (5) **copyright holders** to digitize their written material. Which then gets added to the Internet Archive. Google Book Search does something similar, but without (6) **asking for permission**. Kahle has done a lot to reduce our (7) **dependence on** paper. So it may seemironic that's he's also investing so much time and money to save books. But Kahle, who ultimately wants a copy of every book ever published, sees them as an (8) **endangered species** that needs to be protected. He's not ready to write off the written page.

***Task 11: Answer the following questions briefly according to the news report about “MOOCs”, Massive Open Online Courses.***

1. How many professors participated in the survey?

2,200 professors.

1. How many professors surveyed thought that online courses could be as effective as classroom curricula?

Only one in five.

1. What is the professors’ biggest concern about the MOOCs?

Limited interaction between teachers and students.

1. What accounts for the professors’ criticism of MOOCs?

Resistance to change.

1. Who tend to think that online courses are effective?

Those who have taught an online coursework.

***Task 12: Answer the following questions briefly based on a talk about the wide use of digital products and its impact on interpersonal relations.***

1. What is the speaker’s profession?

Psychologist.

1. What was the speaker’s 1996 book about?

Our life on the internet.

1. What did the speaker study over the past 15 years?

Technologies of mobile communication.

1. What examples does the speaker give to show that electronic devices have changed what we do and who we are?

People text or do email during corporate board meetings. They text and shop and go on Face-book during classes, during presentations. Parents text and do email at breakfast and at dinner while their children complain about not having their parents’ full attention. But then these same children deny each other their full attention. This is a recent shot of my daughter and her friends being together while not being together. People even text at funerals.

1. What is the trouble with technology according to the speaker?

The trouble is how we relate to each other, how we relate to ourselves and our capacity for self-reflection.

1. What does the 50-year-old business man complain about?

He doesn’t have colleagues any more at work. People don’t want to be interrupted.

1. What did the 18-year-old boy say?

He would like to learn how to have a conversation someday.

***Task 13: Complete the following statements according to what you hear.***

1. We use conversations with each other to learn how to have conversations with ourselves.
2. For kids growing, the skill of having conversations is the bedrock of development.
3. Feeling that no one is listening to me makes us want to spend time with machines that seem to care about us.
4. We’re developing social robots that are specifically designed to be companions to us.
5. Technology appeals to us most where we are most vulnerable.
6. We are lonely, but we are afraid of intimacy.
7. We’re designing technologies that will give us the illusion of companionship without demands of friendship.
8. When people are alone they become anxious, panic and fidgety.
9. Being alone feels like a problem that needs to be solved.
10. Connection is more like a symptom than a cure.
11. How do you get from connection to isolation? You end up isolated if you don’t cultivate the capacity for solitude, the ability to be separate, to gather yourself.
12. If we’re not to be able to be alone, we’re going to be more lonely.

***Task 15：Listen to an interview and complete the following notes with the information you hear.***

**Special guest today:** Alex Ritson, a very experienced journalist, now Assistant Editor of BBC World Service Business programmes, Hello.

**Question:** Well, news really is a big topic, with lots of different areas to look at. But let’s start simply by looking at what news is. What do we mean by the word ‘news’?

Obviously it’s something that’s happened that’s reported in newspapers or on television reports. But let’s get the perspective of a journalist –Alex for you, what is ‘news’?

**Answer:** Two key elements of news

* Significant
* Interesting

**Question:** Classification of news?

Let's look at some of the language surrounding how news is delivered through the media. I think broadly speaking, nowadays, we can divide it into three main sections. Broadcast news, print news and more recently online?

* Broadcast journalism means any news that goes out through television or radio – it's broadcast.
* Online journalism, refers to news published on the internet.
* Print journalism refers to newspapers and magazines.

**Question:** And here in the UK we have two main different types of newspaper don't we?

**Answer:**

Type 1： They are what we called broadsheet newspapers, which refers to the bigger kinds of newspaper. They're generally seen as taking a more serious look at important stories.

Type 2: Tabloids. They have red tops, sensational, celebrity gossip, tittle-tattle of stars.

***Task 14: Listen to an interview and write down the key words to answer the following questions. For example:***

1) What does Joe do as manager and journalism and production trainer? What does it involve?

Notes: New journalists, all over the world, basic writing skills, advanced skills, special courses, election coverage, sports journalism

2) Where do the journalists come from?

All around the world. Middle East, Africa, Latin America

3) Do they have experience in journalism:

Some have, some don't have.

4) What is taught to the trainees?

Basic writing skills. and advanced journalistic skills. such as presentation skills, interview skills. Special courses such as courses on elections coverage, world cup, sports journalism, very varied.

5) Do the journalists have their English as a first or second language?

The majority of them have English as their second language. They are required to have very good command of English. 95% of the courses are given in English.

**Unit 11**

**Are You a Multitasker or Singletasker?**

***Task 2: Take notes of Rene Marois’ experiment and then give a brief account of his research with the help of your notes.***

The purpose of his experiment: To find whether people are able to perform dual tasks simultaneously.

Participants: Volunteers.

Procedure: Volunteers watch a screen and when a red circle appears, say, they are required to press a key with their index finger. Different coloured circles require presses from different fingers. It takes half a second to respond to a circle. The volunteers quickly reach their peak performance. Then they listen to different recordings and respond by making a specific sound. For instance, when they hear a bird chirp, they have to say “ba”; when they hear an electronic sound they should say “ko”; and so on. Again, no problem. A normal person can do that in about half a second, with almost no effort.

The trouble comes when Marois shows the volunteers an image, then almost immediately plays them a sound. Now they’re confused. One of the tasks is postponed. In fact, if the second task is introduced in half a second or so, the volunteers will process and react to the first task, in other words, the second task will simply be delayed until the first one is done. The largest dual-task delays occur when the two tasks are presented simultaneously; delays progressively shorten as the interval between presenting the tasks lengthens.

Result: Dual-tasks cause delay.

Explanations:

* Attentional blink
* Change blindness
* Response selection bottleneck

***Task 3: Take notes of David Meyer's argument against the bottleneck idea* *and then give a brief summary of his idea with the help of your notes.***

David Meyer’s viewpoint: A central cognitive processor in the brain prioritize multiple activities.

The findings of his experiments: With enough practice—at least 2,000 tries—some people can execute two tasks simultaneously as competently as if they were doing them one after the other.

His explanation: Variations in the character of the processor explains individual differences in achieving the time share. Some brains are just more “cautious”, some more “daring”. No bottleneck causes dual-task interference, but rather “adaptive executive control” “schedules task processes appropriately to obey instructions about their relative priorities and serial order”.

*Task 5：The following are common "reporting clauses" used to report research finding or cite research. Supply the information according to Text I.*

1. David Meyer's experiments show that with enough practice – at least 2000 tries – some people can execute two tasks simultaneously as competently as if they were doing them one after the other.
2. Meyer suggests that there is a central cognitive processor that coordinates all this.
3. Meyer thinks a central cognitive processor uses discretion: sometimes it chooses to delay one task while completing another.
4. Meyer argues that individual differences come down to variations in the character of the processor – some brains are just more “cautious”, some more “daring”.
5. Marois agrees that practice can sometimes erase interference effects.
6. Marois has found that with just one hour of practice each day for two weeks, volunteers show a huge improvement at managing both his tasks at once.
7. Maroise speculates that practice might give us the chance to find less congested circuits to execute a task– rather like finding trusty back streets to avoid heavy traffic on main roads – effectively making our response to the task subconscious.
8. Jolicoeur has found that with enough training such tasks can be performed as well together as apart.
9. Jolicoeur speculates that the brain connections that they use may be somehow special, because we learn to speak by hearing and learn to move by looking.
10. Jolicoeur says that “Certain kinds of task are really hard to do two at once,”“It looks like no amount of practice will allow you to combine these.”
11. David Strayer reported that people using cellphones drive no better than drunks.
12. Strayer found using a hands-free kit did not improve a driver’s response time.
13. Strayer concluded that what distracts a driver so badly is the very act of talking to someone who isn’t present in the car and therefore is unaware of the hazards facing the driver.
14. Art Kramer found that while young drivers tended to miss background changes, older drivers failed to notice things that were highly relevant.
15. Kramer also found that older people can benefit from practice.

***Task 6: Read Text II quickly and answer the following questions.***

1. What is the greatest concern of the author?

People may be suffering from digital device distraction syndrome andslowly lose the ability to be fully present in life’s important situations.

1. What is the author’s suggestion?

We need to adjust and find balance so as to not get so lost in the digital world that we lose ourselves. There is a time and place for technology, but there is also a time and place to be present in the real world. We should recapture the ability to be present and not let life pass us by.

*Task 9: Complete the following chart with information from Text III and then draw a simple conclusion about multitasking.*

|  |  |
| --- | --- |
| **Scholars/Researchers/Studies** | **Findings/Conclusions** |
| Lord Chesterfield | 1. We should do one thing at a time. Focusing our attention on one object is a sure mark of a superior genius, and hurry, bustle, and agitation, are the never-failing symptoms of a weak and frivolous mind. |
| HP funded study | Workers distracted by e-mail and phone calls suffer a fall in IQ seriously and this new "informania" is a serious threat to workplace productivity. |
| Linda Stone | Using mobile computing power and the Internet, we are "constantly scanning for opportunities and staying on top of contacts, events, and activities in an effort to miss nothing." |
| Edward Hallowell | "Attention Deficit Trait" is rampant in the business world. |
| A study by University of California at Irvine | Workers took an average of twenty-five minutes to recover from interruptions and return to their original task. |
| Jonathan B. Spira | Extreme multitasking costs the U.S. economy $650 billion a year in lost productivity. |
| Jordan Grafman | When people engage in "task-switching", the flow of blood increases to a region of the frontal cortex called Brodmann area 10. |
| René Marios | "Response selection bottleneck" occurs when the brain is forced to respond to several stimuli at once. As a result, task-switching leads to time lost as the brain determines which task to perform. |
| David Meyer | Multitasking contributes to the release of stress hormones and adrenaline, which can cause long-term health problems if not controlled, and contributes to the loss of short-term memory. |
| Russell Poldrack | People use different areas of the brain for learning and storing new information when they are distracted; Humans are really built to focus. When we force ourselves to multitask, we're driving ourselves to perhaps be less efficient in the long run. |
| The Kaiser Family Foundation | There are several factors that increase the likelihood of media multitasking.  "Sensation-seeking" personality types are more likely to multitask, as are those living in "a highly TV-oriented household." |
| Jordan Grafman | Kids that are instant messaging while doing homework, playing games online and watching TV aren't going to do well in the long run. |
| Jane Healy | This generation of kids is guinea pigs. They might become adults who engage in "very quick but very shallow thinking. |
| Walter Kirn | We might be headed for an "Attention-Deficit Recession." |

*Conclusion:* This state of constant intentional self-distraction could well be of profound detriment to individual and cultural well-being. When people do their work only in the “interstices of their mind-wandering,” with crumbs of attention rationed out among many competing tasks, their culture may gain in information, but it will surely weaken in wisdom.

***Task 10: Listen to a news report and fill in the blanks with verbs in their correct forms.***

When people talk about the past, they tend to lean slightly back. And if folks talk about things to come they tend to lean forward. Various studies have (1) revealed those physical attitudes. Now a study (2) finds that people usually experience time as if we are literally moving toward the future and away from the past.

Through surveys researchers first (3) determined that subjects perceive future events as being closer than past events, even if the events are equidistant. Then the scientists had subjects experience a virtual reality where they were either walking towards a fountain or backwards away from it. And as they walked, the subjects had to (4) estimate the distance of a specific date. The date they were given was either three weeks ago or three weeks in the future. The participants backing away from the fountain (5) perceived the dates as being equidistant from the present. But those walking towards the fountain (6) estimated the future date to be closer than the past date.

The researchers (7) interpret the finding to mean that the future feels closer because it seems like we’re literally moving towards it. Gives new meaning to the phrase, “*I’m l*ooking forward to seeing you.”

***Task 11: Supply the missing words in the following news report.***

Modern humans are masters of multitasking. We eat while driving, watch TV while studying, and of course talk on our cell phones while doing, well, everything. How do we do it? A study in the July 16th issue of *Neuron* suggests that though we can train our brains to work faster as we (1) juggle, we never actually manage to do more than one thing at a time.

Our brains aren't really built to handle the sort of (2) parallel processing we think we're capable of. The good news is: studies have shown that (3) extensive training can make us better at doing two things at once. But how?

One theory is that with lots of (4) practice some routines become (5) "automatic." And if we don't need to run every little thing past the part of the brain that spends time thinking about stuff, we can multitask just fine.

But this new study finds that that's not the way it (6) works. Turns out that multitaskers still consult the prefrontal cortex, but training gets the "Thinking Brain" to think a little faster. So we're (7) switching tasks quickly enough to appear to be doing them (8) simultaneously.

***Task 12: Listen to* *Prof. Earl Miller talking about a multitasking mind and answer the following questions briefly.***

1. What do we think we are able to do?

10 things at once.

1. What do brain researchers say about our ability to multitask?

We can’t multitask so well. We can’t do so much at a time.

1. Why do people say they can multitask?

Because their brains delude themselves.

1. What does Prof. Earl Miller say we can do?

We can shift our focus from one thing to the next with astonishing speed.

1. Why does the brain have to switch among tasks?

Because similar tasks have a lot of conflicts and have to compete to use the same resources in the brain.

1. What are the researchers trying to do now?

They're trying to figure out the details of how the brain struggles (to switch from task to task).

***Task 13: Fill in the missing words in Prof.* *Weissman’s talk about a multitasking mind.***

But, Weissman said, even simple tasks can overwhelm the brain when we try to do several at once.

"If I'm out on a street corner and I'm looking for one friend who's wearing a red scarf, I might be able to pick out that friend," Weissman said.

"But if I'm looking for a friend who's wearing a red scarf (1) on one street corner, and in the middle of the street I'm looking for (2) another friend who's wearing a blue scarf — and on the other side of the street I'm looking for a friend (3) wearing a green scarf — at some point, I can only divide my attention so much."

So the brain (4) starts switching. Scan for red. Switch. Scan for blue. Switch. Scan for green. Switch.

The part of the brain that does this is called the "executive system." It's a bit like one of those cartoon conductors telling the orchestra: (5) louder, softer, faster, slower.

The (6) conductor in our heads lives in the brain's frontal lobes, basically above our eyes.

(7) "Executive processes allow us to make plans for our future behaviors," Weissman said. "They allow us to exert some sort of voluntary (8) control over our behavior."

The executive system also helps us achieve a goal (9) by ignoring distractions.

"For example, if we're (10) performing a task where we want to watch TV and (11) ignore voices that are coming from, say, our children nearby," Weissman said, "our frontal region brain may configure the brain to (12) prioritize visual information and dampen down auditory information."

And the brain's executive will keep us in that mode until we hear, say, one of our children screaming.

"These are the things that make us the most human. Humans are able to exert free will. We are not like jellyfish."

***Task 14: Write down the main findings of the following science news report.***

**Shut Off E-Mail to Ease Work Stress**

“You’ve got mail.” By alerting you as soon as mail arrives, a constantly open e-mail window keeps you on your toes, right? Actually, a new study finds that closing your in-box can boost concentration and ease [stress](http://www.scientificamerican.com/topic.cfm?id=stress).

The research will be presented at the Association for Computing Machinery's Computer-Human Interaction Conference.

With the permission of their supervisors, workers in a suburban office took “e-mail vacations.” They did not check their mail for five days. As they and their e-mail-enabled co-workers used their computers, monitors recorded their heart rates and software sensors observed when they switched from one browser window to another.

Workers with access to e-mail had constant heart rates, which indicate a state of high alert. But the heart rates of those forgoing e-mail fluctuated naturally, a marker for being under less stress. Plus, those receiving mail multitasked more: they switched from window to window twice as often as those not checking e-mail.

So, designating times when workers check their e-mail may reduce stress and increase productivity. But the verdict’s still out on Twitter.

***Task 15: Write down the main findings of the following science news report.***

**If We Feel Too Busy, It's Probably Due to Having**

**Too Much Free Time**

Objectively time is constant. A minute is a minute. But when we have a lot to do, it usually feels like we have less time. Now a study finds an interesting wrinkle in time: when we busy ourselves with selfless tasks, time seems to expand. The work will be published the journal *Psychological Science.*

Researchers interrupted more than 200 students in class and asked them to complete different five-minute tasks. Some had to cross out the letter “e” in pages of text. Others wrote a letter to a sick child. When surveyed afterward, the group that wrote letters perceived themselves to have more time in general than those who did the crossing out.

In another experiment one group of subjects were given a period of free time to do whatever they wanted, while another group had to do something for someone else. Those who did something selflessly perceived themselves as having more time than those with no obligations.

Those subjects also reported a stronger sense of personal power and effectiveness.

Many Americans have more leisure time today than ever before. Wouldn’t it be ironic if that all that free time contributes to the feeling that we have none?