

SEEKING SCIENCE

by STEM Action Teen Institution



IN THIS ISSUE

GMO SUPERFOODS

**CORONAVIRUS
MUTATION**

MATHEMATICS

AND MORE...

A MONTHLY NEWSLETTER
ON ALL THINGS STEM

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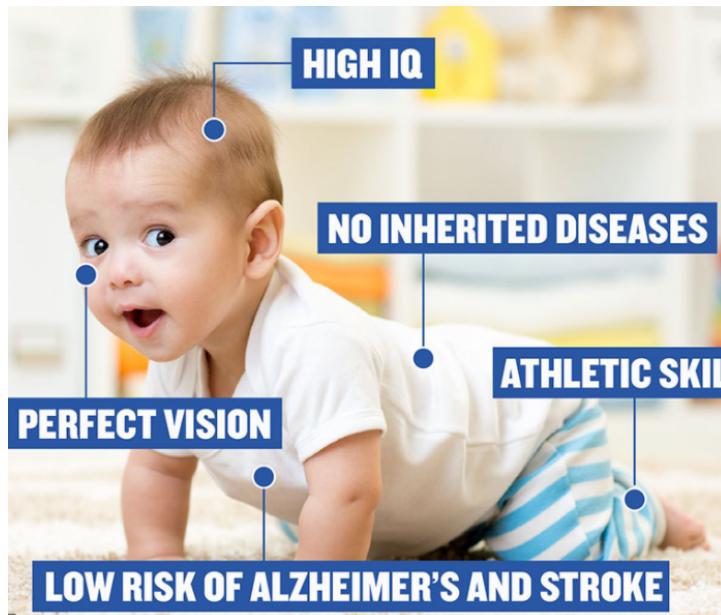
Seeking Science



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Designer Babies

by Anna Y.



He Jiankui a Chinese researcher claims that he has created gene-edited twins with the development called the CRISPR. CRISPR technology is a simple yet powerful tool for editing genomes. It allows researchers to easily alter DNA sequences and modify gene function. This includes potentially preventing embryos from allowing HIV, AIDS, and viruses into the body. This idea could be an advantage for people with great wealth to manipulate the human genome, causing an effect for the future generation. Numerous studies have demonstrated that CRISPR caused thousands of genetic variants straddled over the entire genome to contribute to autism and psychiatric risk, as well as personality traits, and even intelligence. There can be unknown side effects when doing this and can lead children to death.

He Jian Kui focused on the babies' genomes that were altered as embryos to protect them from HIV and to disable a gene called CCR5 that forms a protein doorway that allows HIV, the virus that causes AIDS, to enter a cell. There are no facts whether this procedure is safe or not. He didn't address the meaning of doing this experiment, it's not clear what those mutations will do to future generations, and there were problems with informed consent. There are many opinions on whether this tool should be used or not in the world.

Calculating a Dog's Age

by Angelina C.

Dogs can be our guide, support, and our friends. They seem to not change in appearance as they age, but scientists use them to help us understand how humans age. As dogs age, their personalities change over time. Studies show that dogs and humans share some characteristics when they are in adolescence. Even though dogs and humans go through personality changes, dog age and human age are different. We know dog ages are complicated, and trying to calculate dog year into human year is hard. For what we know when a dog is 2 years old, it equals to about nine years for a human. And after that, each human year would be approximately five years for a dog. Surprisingly, we have been calculating it wrong. According to the article "Quantitative Translation of Dog-to-Human Aging by Conserved Remodeling of the DNA Methylome" it stated that to calculate dog years, you must now multiply the natural logarithm of a dog's age in human years by 16 and then add 31. It is a confusing process, but this is the most accurate way of calculating it.



Technology 101

by Xiulin G.

Technology is something that is made by small different parts and electricity. Technology is all around us! For example a computer is how you go to school on 2020-2021. You are using technology when you are playing online with friends. Some types of tech are robots that help people build cars. Tech is also the thing you need for the future, like robots! In the future robots are everywhere around the world!



Self-Driving Cars

by Joshua H.

To begin with, What are self-driving cars? Well, it's pretty self explanatory. Self-driving cars are cars that can drive without the help of the passengers. One company that is famous for their self driving cars is Tesla. Founded by Elon Musk, Tesla is one of the most famous electric car companies in the business. Self-driving cars are still a new topic so the concept is new to everyone. Self driving cars are powered by sensors around the car and it can be expensive. Self driving cars use LIDAR aka Light Imaging Detection and Radar. LIDAR uses lasers to create a real world map and it detects obstacles and identifies the shapes of boundaries. Self driving cars have sensors that see through the body panel to receive information about the outside environment.



SpaceX

by Aden S.

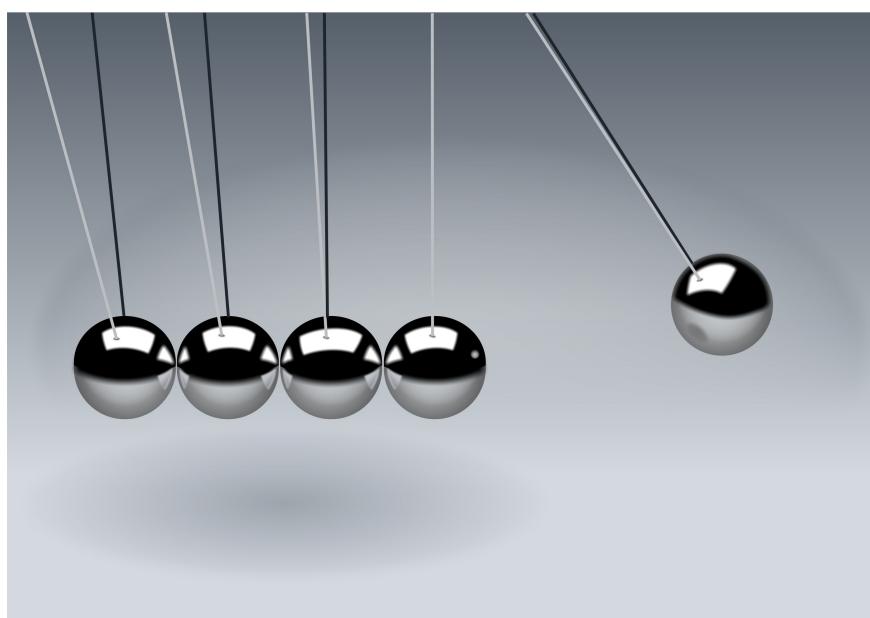
Currently SpaceX is launching a rocket into space. The 329 pound aircraft was supposed to land on Mars. It successfully landed on Mars and was supposed to study Mars which it did. SpaceX CEO was Elon Musk. Elon Musk a long time ago also launched a Tesla into Space. Space X has done wonderful stuff to study Mars. Although the landing of the rocket was unsuccessful it was destroyed and exploded while attempting to land. This is sad because that is a lot of money. Although they have gotten lots of information. SpaceX was started by Elon and was started in 2002. SpaceX also beat their competition. They launched first in 2010. These are some amazing facts about SpaceX. Hopefully, it will improve vastly.



Physical and Environmental Science

by Steve L.

I will tell you four ways of how to be environmentally conscious. First of all, you need to stop using plastic straws because sometimes animals will think it's food and eat it and end up hurting them. For example, do you want rare species to think plastic straws are food and eat plastic straw and up kill them or do you want to protect rare species. Next, don't waste food because about 7.3 million foods are wasted in a year and if you waste food you're wasting your money too. In addition, if you recycle then you are protecting animals. For instance, if you recycle you could protect rare species and other animals that are about to be extinct. Last, use reusable bags and straw so you can also protect the environment by doing that and less animals will go into extinction. For example, a lot of people use single-use bags and straws and sometimes they will be lazy and throw them on the ground once they use it and sometimes trash on the ground can go to the sewers and sewers usually lead to the ocean which will cause animals to eat it and die. In conclusion, these four ways can protect animals and our environment. Next I will talk about what I think of plastic bags from stores. I think plastic bags should get banned from grocery stores. First, if grocery stores banned plastic bags no one will be throwing plastic bags randomly on the ground and when it rains it might go in the sewer and sewer leads to the ocean. Next, if people throw plastic bags in the ocean. Some animals will think it is food and eat it. In addition, if animals eat plastic bags or get trapped inside of it, they might die and maybe some rare species will eat it or get trapped in it. The species might be gone just like dinosaurs. Afterward, over one million animals died from eating plastic bags or got stuck in plastic bags so if we want to stop that we need to stop using plastic bags. Last, if people keep throwing plastic bags in the ocean then there will be less animals in the ocean or animals in the forest plus the ocean will have a lot of plastic bags, glass, papers and plastic bottles in it if plastic bags didn't get banned. In my opinion, stores should allow reusable bags so less people will throw bags inside the ocean and even if it got thrown in the ocean it will be destroyed way earlier than a plastic bag being destroyed. In conclusion, If plastic bags get banned from grocery stores then rare species wouldn't go extinct.



History of Electronics

by Ioifei L.

What if electronics didn't exist? Is it a good thing or a bad thing? Have you ever wondered if electronics didn't exist? There are many electronics people might not yet discovered that might be useful for people to solve people's problems. If electronics didn't exist it might be a good thing because most electronics can damage their eyes. It can also harm people's mind when it harms the person's eye. But it might also be a bad thing because many people mind electronics useful with no paper used and easy use. It may also be bad because electronics can help people with everyday things, things like programming a robot, and many other things that may contain electronics. In fact, the person who invented electronics, Michael Faraday, the father of electronics. It is also used by people all around the world and could help people communicate, information processing, to share one person's knowledge to another and communicate when people can not meet together. All in all, if electronics didn't exist it may be a bad and good thing for everyone.



Utility of iPads

by Nathan C.

These are reasons on how iPads are useful. First of all, iPads can still download and run many different games even if it is small. Some examples of the games are Minecraft, Roblox, Bloons TD 6, and Bloons TD battles. Secondly, there are many other apps you could use and not just games for example maybe an app that could be like a map. Another example would be a calculator if you need to do some hard math. Third, it's really easy to open and close it so you can easily use it if in a pinch. Also, it's pretty small depending on what kind of iPad you have but it can be easily carried around because of its small size.



The State of Coronavirus

by Ocean Y.

The Wuhan coronavirus is currently thought to be more mild than SARS and MERS and takes longer to develop symptoms. Patients to date have typically experienced a mild cough for a week followed by shortness of breath, causing them to visit the hospital, explains Peter Horby, professor of emerging infectious diseases and global health at the University of Oxford. So far, around 15% to 20% of cases have become severe, requiring, for example, ventilation in the hospital. Depending on how virulent the virus is, a cough, sneeze or handshake could cause exposure. The virus can also be transmitted by touching something an infected person has touched and then touching your mouth, nose or eyes. Caregivers can sometimes be exposed by handling a patient's waste, according to the CDC. The name "coronavirus" is derived from the Latin corona, meaning crown or halo, and refers to the characteristic appearance of virions under electron microscopy with a fringe of large, bulbous surface projections creating an image reminiscent of a royal crown or of the solar corona. This morphology is created by the viral spike peplomers, which are proteins that populate the surface of the virus and determine host tropism.

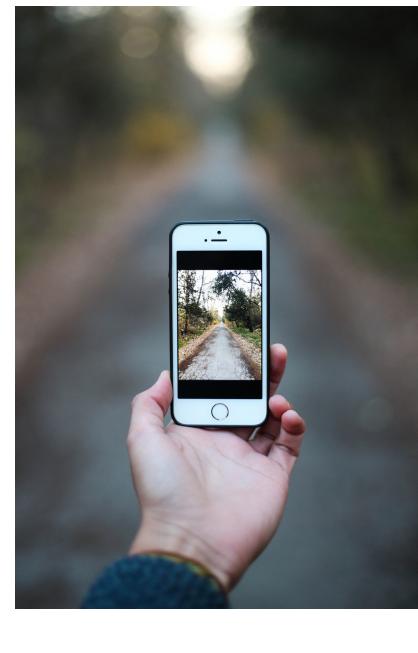
Proteins that contribute to the overall structure of all coronaviruses are the spike , envelope, membrane and nucleocapsid. In the specific case of the SARS coronavirus (see below), a defined receptor-binding domain on S mediates the attachment of the virus to its cellular receptor, angiotensin-converting enzyme 2. Some coronaviruses, specifically the members of Betacoronavirus subgroup also have a shorter spike-like protein called hemagglutinin esterase. The country is responding to a new virus known as Coronavirus Disease 19 or COVID-19. COVID-19 rapidly spreads from person-to-person contact and is also transmitted as it can stay alive and contagious for many days on surfaces. COVID-19 has resulted in our hospitals and health care system being strained by the number of critically ill people. Your doctor will discuss with you what factors will influence whether your surgery should be done now or delayed. There are many surgical procedures that are not an emergency. Examples may be cataract surgery, knee or hip replacements, hernia repair, or some plastic or reconstructive procedures. Your doctor will determine if your condition will worsen without the surgery and whether other treatments are available. Your doctor will also assess the individual risk to you by coming to the hospital, office, or surgery center for surgery during the pandemic.



Communication Technology

by Mingfeng L.

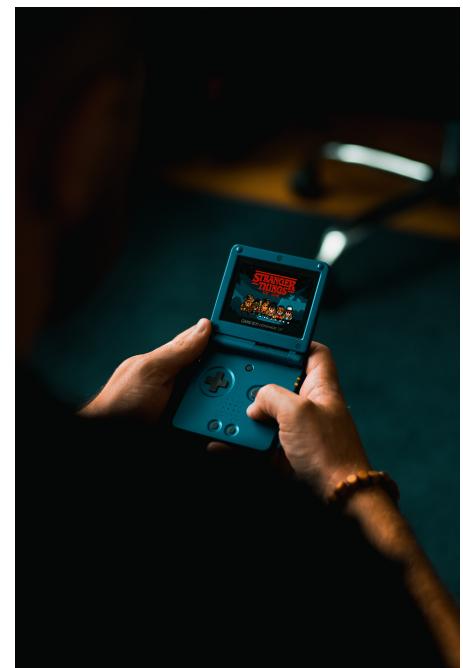
Communication Technology When humans are created, we need to communicate. In China, we have smoke signals to communicate, and in Africa, they are using drums to communicate with each other. 1960, the 1G first generation of wireless cellular technology was invented, and this is a theory, it is like we can use a way to communicate with each other using something like a honeycomb, it can use base station, and put it one for area and areas, and it covers the earth. When we are in the 1980, the 1G has invented, because 1G is using analog signal, so 1G only can be transfer only voice, and not text message, so it has a low confidentiality, after 10 year, the 2G has invented, the second generation communication, this is using digital signal, digital signal means that it can be transfers to the binary, after 10 years, the 3G is invented, 3G has a lot of function, like CDMA, this change a lot of thing, and until now, CDMA is the base rule of the communication sieves, when 3G is out, people start to go to the smartphone market, they discover that smartphone is playable, and after 10 years, the 4G is out, and it has a new technology that is called OFDMA, this function is using more than one signal to communicate, but each signal is not the same big and small, after 10 year, we are going to 5G, 5G is more faster than 4G, and it has 10 trillion per second, 5G is fast, and low delay, and big capacity.



Evolution of Technology

by Hison Z.

Have you ever wondered about the future? Well, read this paragraph and learn more Flying cars have you ever thought of flying cars? Well guess what there might be flying cars they could hover but that might be in like 20 years. But it might have propellers that make it fly and wheels so that it can also drive. And there could be hover cars too. And you can unattach it and play all the games and connect it to a tv or a computer and use all of the controllers and with a bunch of friends. 3. iPhone 13 it can have 4 cameras and has similar designs to the iPhone 12 5. Apple watch 13 can change with a click of a button. You can change it to a series 3,4,5,6,se, and more.



History of Technology

by Samuel.

Many and many more people started using technology from two million years ago until now. It all started with science technology. After years and years, they made an electronic device called phones. It was not actually called a phone before, it was called a Bell Telephone. What it does is contacting people from many different places. According to Google search, "How did Bell's telephone work? When Bell spoke into the open end of the drumlike device, his voice made the paper and needle vibrate. The vibrations were then converted into an electric current which traveled along the wire to the receiver. Read more about the history and development of the telephone." technology has been improving every year. After a few hundreds of years there is a new device coming out and it is called computer or pc, those old pc doesn't work that well and there are a lot of bugs when they came out, so they have been trying to improve it by switching graphic cards and graphic colors. After all those improvements, they now have Script to use, the first script that came out is javascript, what it does is coding apps and functions, then there are more scripts coming out, like Html codes, python. They all have their own uses, then until now they became our games apps, store and google.



Chemistry Atoms

by Lucas.

A chemical element is a general term for a class of atoms with the same nuclear charge. An element is the result of a quantitative change in the number of protons of an atom. Some common examples of elements are hydrogen, nitrogen and carbon. As of 2019, a total of 118 elements have been discovered, 94 of which exist on the earth. The nuclei of elements with atomic number 83 (bismuth and later) are not stable and will decay. The 43rd and 61st elements have no stable isotopes and will decay. The heaviest element in nature is neptunium 93.



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