

# SEEKING SCIENCE

by STEM Action Teen Institution



## IN THIS ISSUE

**PERSEVERANCE  
ROVER**

**GENDER INEQUALITY  
IN SCHOOLS**

**SMARTPHONES 101**

AND MORE...

A MONTHLY NEWSLETTER  
ON ALL THINGS STEM

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# TABLE OF CONTENTS

*Seeking Science*



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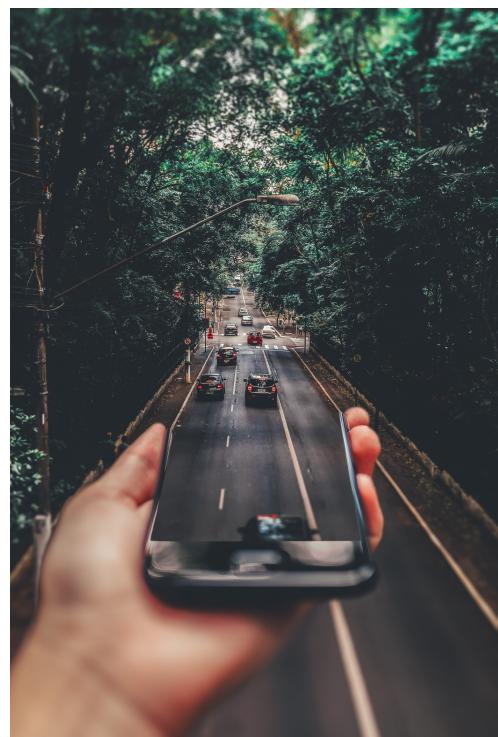
Smartphones 101 by Anna Y.....
Perseverance Rover by Aden S.....
Gender Inequality in Schools by Angelina C.....
Trees During Winter by Haobin L.....
The Tesla Coil by Mingfeng L.....
Astronomy 101 by Joshua H.....
The Physics Behind Light Waves by Lucas.....
Usefulness of Computers by Nathan C.....
Robotics 101 by Samuel.....
What is Electricity? by Xiulin G.....

# Smartphones 101

by Anna Y.

The universe without something to keep you focused on is crazy. The greatest invention of all time is the smartphone. Smartphones are known as the greatest because of its ubiquity, it's everywhere. Smartphones are a mobile phone that performs many of the functions of a computer, typically having a touchscreen, internet access, and an operating system capable of running downloaded applications. This gadget has been here forever since 1992.

Smartphones have adapted virtual assistants like Siri, Alexa, etc. It also produced 5G LTE where people can use their phone outside by using data. The very first smartphone was made in 1992, called Simon Personal Communication created by IBM, it couldn't text or facetime this phone can only call people. These past years smartphones have been getting better and better. In 2007, Steve Jobs released the very first iPhone and it went viral. Apple brought smartphones to a mass consumer market. Smartphone screens are becoming a reality in the future. When people want to charge their phone, they don't have to do it physically there is going to be a wireless charging phone which makes life easier. People are also trying to reduce the battery size and making the aforementioned battery bigger. It's likely that smartphones' glass screens are going to be a power surface.



# Perseverance Rover

by Aden S.

Currently Perseverance is on Mars looking for life forms. If they do find any life forms this could be a whole new history about the lifeforms on Mars. In India people have found paintings of alien looking people and flying disc. The people wouldn't make it up so there is a high chance there are more lifeforms in space. It took perseverance a pretty long time to get to Mars; it took about 7 month. Also we could hear audio on Mars because of Perseverance.

This is very cool because we could hear audio. Many are excited to find some cool facts. This will change history and if there are life forms and if they are dangerous they could break perseverance.



# Gender Inequality in Schools

by Angelina C.

There are many myths about boys and girls' ability to do well in school, such as "girls are bad at critical thinking" or "boys can't do well in school". According to the article "Brains of girls and boys are similar, producing equal math ability" by Carnegie Mellon University, Jessica Cantlon, who is a professor of Developmental Neuroscience, led a research team to examine the brain development of young boys and girls. The team has proven that the myths are erroneous through their research: by showing the results of this research, no gender difference in brain function or math ability.

Jessica Cantlon's team used MRI to measure the brain activity in 104 young children, ages through 3 to 10 year olds. The team provided an educational video covering early math topics, like counting and addition, and the team will use the MRI to measure the brain activity. Jessica Cantlon's team also compared the brain activity with adults, using the same video. After the comparisons between boys, girls, and age groups, the team found no difference in the brain development of girls and boys. Surprisingly, the team also found that math ability was equivalent among the children and adults.

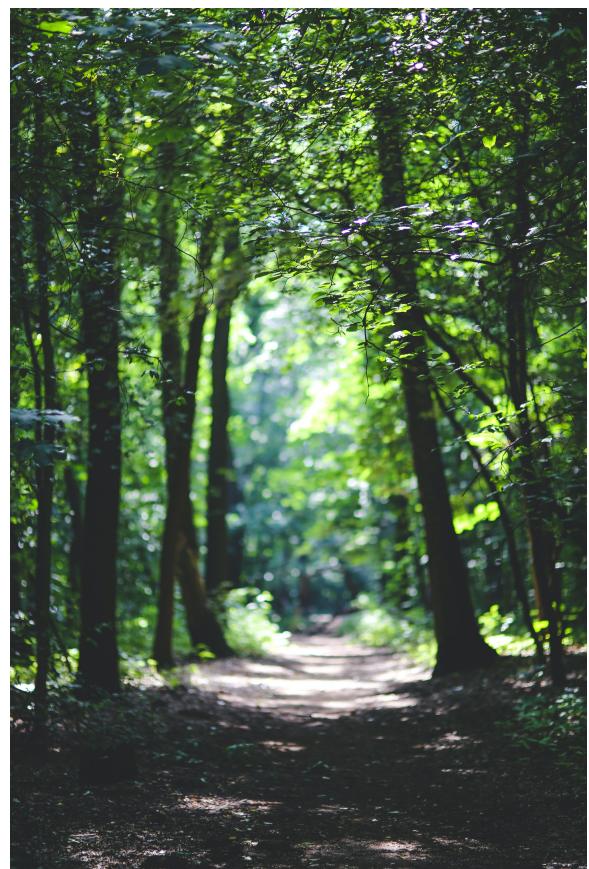
Overall, it may be said that boys and girls' ability to use their understanding on the materials are equivalent, including age groups. There may be cultural differences on how girls only stay in the kitchens, and boys go out and work, because the culture influences that boys can process information better than girls. Now, there is research and information to prove that it is incorrect.

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# Trees During Winter

by Haobin L.

Trees survive the winter by having thin pipes and have shedding leaves. Many trees have plumbing systems that will freeze and have bubbles. The plumbing systems only use water attraction to pump. The plant will die if the water is gone. The water will break apart because of embolism. To avoid that the trees need to have thinner pumping systems so they will have less dangerous bubbles. Leaf cells that break are also bad. Many plants will shed their leaves and will stay safe. The pines and other trees like evergreens will stay forever green because the leaf cells are stored with sap and won't puncture it.



# The Tesla Coil

by Mingfeng L.

In 1891, tesla has invented a tesla coil, it can make lighting, it mainly used two coils, the first one is primary coil and the second one is secondary coil, each of the coil have a separate capacitor, a capacitor is like a battery, it can hold charge, and two coils are connected through the ignition gap, and the ignition gap penetrates the air to start a fire, when two coil is connected through the gap, they will have a oscillating circuit.

When coils are connected through the ignition gap, they will have a oscillating circuit, this make secondary coil a big voltage, so the secondary coil can produce lighting, when we put our hand on the lighting, the the lighting is hitting our hand, we are fine as long as the battery's power is not high, because the secondary coil can make a  $10^5$  to  $10^6$ , and the current is very low as the battery has less power.

Near the coils, when we put a light ball near the second coil, the light ball is going to light up, because the coils have a high voltage, and we will have a strong electric field, then the air will be air ionization, and the air will like conductive, and make the light ball up, this can only have one centimeter, if we want to fater away the distance, it will have a big voltage, about one centimeter per ten thousand volts, so, this is much less used in the business, because it is too much energy for it to run.



# Astronomy 101

by Joshua H.

Astronomy is the study of celestial objects and phenomena. It is very interesting since it allows us to explore the world outside of the world. Nowadays, us humans have developed a lot of technology that allows us to explore outer space and its planets. A couple days ago, NASA just sent out its rover called Perseverance into outer space and it has landed on mars successfully. This shows how we humans are improving our technology to get into outer space.



# The Physics Behind Light Waves

by Lucas.

Light is a mode of energy transmission. The light source emits light because of the movement of atoms and molecules in the light source. There are three main ways: thermal motion, transition radiation (including spontaneous radiation and stimulated radiation), and charged particles inside matter. The former is the most common in life, the second is mostly used for lasers, and the third is the generation principle of synchrotron radiation and Cherenkov radiation.

In short, light travels along a straight line, and no medium is required for the propagation of light. However, when light travels in a medium, due to the interaction of the medium, its propagation path will be deflected, resulting in reflection and refraction. In addition, according to the general theory of relativity, when light propagates near a massive object, due to the influence of the object's strong gravitational field, the propagation path of the light will also be deflected accordingly.

These are the answers I found on the Internet, but I also think differently from theirs. My idea is that the speed of light is so fast that you can't see it at all. If humans want to make a time machine Light must also be used. Only when the speed of the time machine is as fast as the speed of light or more than the speed of light can the time machine start successfully.



# Usefulness of Computers

by Nathan C.

Computers are useful in many different ways. First of all, computers can handle a lot more things than an Ipad or phone. Computers can download many more games and apps than an Ipad or phone.

Next, computers are big so it could be hard to carry around. Even if it is big, it could be a big benefit because then you could easily look at the screen. It being big could also be a bad thing because it will be hard to carry around.

Lastly, it can be easily used for Zoom classes or Google Meets classes. Ipads can't very easily do Zoom or Google Meets classes. Computers are a very useful device that is better than an Ipad in my opinion.



# Robotics 101

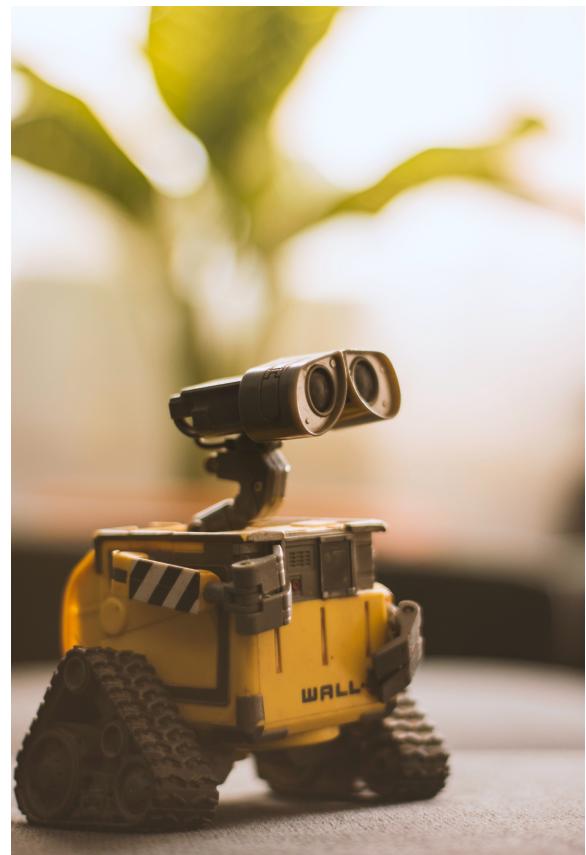
by Samuel.

Robotics is the intersection of science, Their similar word is robot. Robot is something that human build and use it for work or fun. Robotics is a skill that need to build a robot.

A robot is an automatically operated machine that replaces human effort. There are different types of robot, of course they have different uses. Some robots are only used for work, healing and helping people to do work. Sometimes Robot work better than human, because they are coded. Robot can also be an art by making their function portable and easy to use.

Robotics are so much different from robot, Robotics is a branch of technology that deals with physical robots. They substitute for human actions. It also requires a high level of coding experience in order to keep the skill balance.

In conclusion, robotics is a branch of technology and a requirement skill for a robot. Robot is an automatically operated machine that replaces human effort. They are all important for human, and they are getting Update every day.



# What is Electricity?

by Xiulin G.

Have you ever wondered what electricity is? Well electricity is the set of physical phenomena associated with the presence and motion of matter that has a property of electric charge. Do you know who discovered electricity? Benjamin Franklin discovered electricity absolutely! Today electricity is used for many different things! I'll give you several examples of how electricity is used. Electricity is used for light bulbs, buildings and even cars! Do you know what that means? That means electricity is now used all over the world! Now do you know what electricity is?



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