

TRENDING NEWS:

1 How do glass frogs hide?

Glass frogs are nocturnal animals with translucent skin. They also have a special ability to hide when they sleep. When they sleep, they transfer 90% of their blood cells into the liver. There are pockets in the liver where they store the red-colored cells and disguise them under a mirror-like surface present in the pockets. The heart also works unusually. Instead of blood, the heart pumps a bluish liquid. Circulation of the blood is curbed. This has never been seen before in vertebrates and has left scientists in awe. This new way of camouflage increases the transparency of these frogs by almost two to three times.



Glass frogs hide their blood cells in their liver when they sleep.

You may ask, if the frogs store blood cells in pockets, will the blood not clot? To the surprise of the researchers, the blood doesn't clot. Further study could also help find a way to prevent blood clots in humans. There are other transparent animals found in nature as well, which are way more efficient than glass frogs. The Asian glass catfish, for example, is completely transparent.

2 Planet to fall into star

The Kepler Space Telescope was launched back in 2009 to observe more of outer space. The first planet that the telescope discovered would have never been known to exist if it weren't for the telescope! The discovery was written off as a faulty observation, but in 2019, astronomer Ashley Chontos confirmed the existence of the planet.



The Kepler Space Telescope

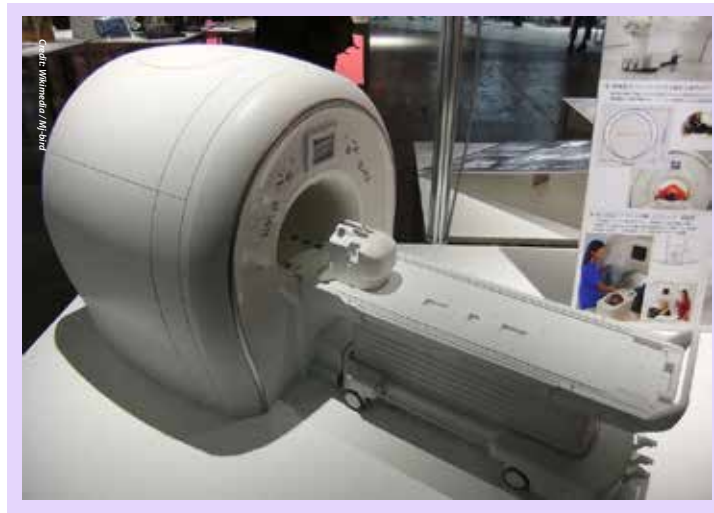
This exoplanet was named Kepler 1658b. However, Chontos has recently also informed us about the fate of this planet. It is only a matter of time before this planet dies. Planets stay in orbit due to the gravity of the star acting on the planet. However, sometimes this can also lead to the planet spiraling toward, and ultimately plummeting into the star. According to Chontos, the planet will meet its doom when it falls into its host star. The planet only has about another 2.5 million years before this happens, and in the cosmic timeline, this is quite a short period.

Science Everyday

How do MRI scans work?

The eyes of doctors cannot penetrate the skin. Although many diseases can be diagnosed by accounting for the symptoms alone, some diseases need more sophisticated observation. This is where MRI scans come in handy. MRI stands for Magnetic Resonance Imaging. The MRI machine contains a large tube-shaped magnet, which produces a magnetic field.

A magnetic field is a space around a magnet in which the effects of the magnet can be observed.



When a patient is put inside the MRI machine, the magnetic field acts on the water molecules inside the human body. The magnetic field changes the orientation of these water molecules. Then radio waves are pulsed through the body of the patient. These are the same type of waves that are used in mobile phones for communication. When these waves are passed through, the water molecules or other atoms are shifted out of position. On switching these radio waves off, the molecules quickly come back to their original position. This generates a radio signal that the imaging system uses to develop a 3D image. With the help of MRI scans, tumors in the brain and diseases in bone can be discovered. Liver and kidney diseases are also diagnosed with the help of MRI scans.

STEM Challenge/ Science Experiment

The slam dunk

- **Materials needed:** A ball made out of crumbled paper, and a bowl
- **Challenge Criteria:** You need to pick up the ball, without using your hand, or any object that is used to pick up objects (tongs, spoons, etc.). Then you have to transfer it to the bowl, kept alongside
- **Reflection:** Can your method be used in the real world to pick up an objects up and to transfer it to a different place? Is there any technology already using your method?



Did You Know?

Many bacteria that cause diseases do not cause disease under usual circumstances. There are certain viruses called bacteriophages that infect bacteria. These viruses induce toxins in the bacteria, and as a result, the bacteria cause disease. The bacteria that cause cholera or tuberculosis are pathogenic only when infected by these viruses.



Brain Teaser:

Imagine you have an unfair coin, one that does not land on each side 50 percent of the time. How could you use this coin to simulate the 50/50 odds of a fair coin flip?

Answer to be published in the next edition

Previous edition answer:

- Flip over both the 11-minute and the 7-minute hourglasses to start them both.
- When the 7-minute hourglass runs out, that is the moment when you start to measure the target 15 minutes.
- Four minutes after the 7-minute hourglass runs out, the 11-minute hourglass will run out.
- Flip the 11-minute hourglass over immediately to measure another 11 minutes, landing you at 15 minutes exactly.



Science Video:

How does a color laser printer work?

Imagine how the world would have been without printers. There would be no newspapers. Books would not be available, and acquiring documents would have been so much harder. But how do these devices work? For starters, printers make use of four colored inks only: cyan, magenta, yellow, and black. Different combinations of these inks give the full spectrum of colors. Inside the printer, there are two parts. One of them is called the charging roll and the other is the drum.

The charging roller rolls over the drum and gives the surface of the drum a negative charge. Imagine pressing your palm into sand. What do you see? You will find an imprint of your hand in the sand. In the same way, lasers are fired onto the surface of the drum in a way that leaves an imprint of the image. In those imprints, positive charges develop. Ink is transferred to this drum with imprints using a separate roller, and it covers the imprint. The drum then rolls over the printing paper and transfers the ink to the paper. This paper then passes through a heat roller that bakes the ink or toner and gives the final image..



Scan QR code to see the video

Quiz:

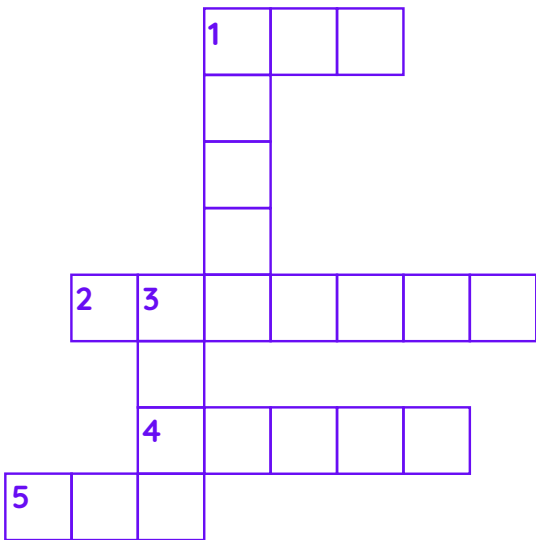
A burning candle extinguishes when an inverted glass is placed on top of it. This occurs because the air supply to the flame is cut off. Which gas is present in the air and helps in burning?

- A. Oxygen
- B. Nitrogen
- C. Hydrogen
- D. Carbon Dioxide



Scan for more science trivia quiz

Can you do a Crossword?



Across

- 1. Short form for local area network
- 2. The horn-like structures of deer
- 4. The gas present in the stratosphere
- 5. The closest star to the Earth

Down

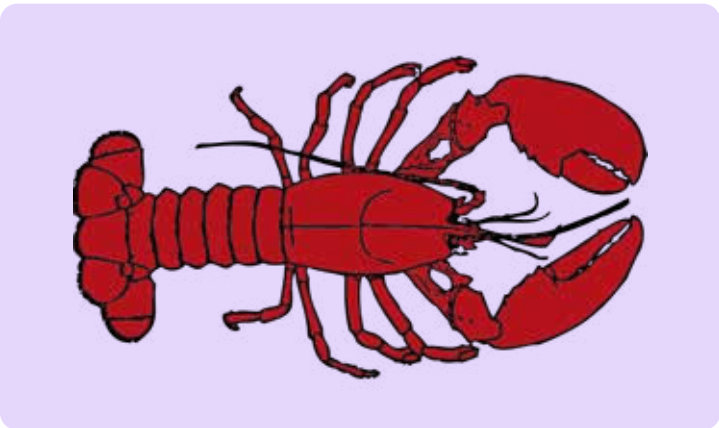
- 1. The fastest thing in the universe
- 3. A noble gas



Science in Depth

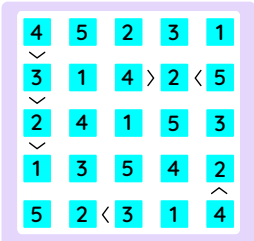
Why Does Lobster Turn Red When Cooked?

If you enjoy seafood, or love watching cooking shows on TV, you must be familiar with the bright red color of a lobster shell or the slight orangish hue of shrimps. Surprisingly, if you look at these shelled animals when alive under the sea, they look quite different. Their shells come in different colors, ranging from blue to green to yellow, and even a muddy shade of brown, but rarely any red. However, as soon as lobsters or shrimps are cooked, the shell turns into a bright pink-orange color. What's up with that?



What do a carrot, a flamingo, and a lobster have in common?

Apart from the fact that they are exclusively found on earth, they are bound together by their looks. Or, we could say, the molecules responsible for their distinct looks.



Previous edition
Futoshiki answer

The bright orange color of a carrot, the stunning pink of flamingo feathers, and the greenish hue of a lobster are all caused by **carotenoids**—a group of colored organic compounds.



Fresh orange carrots

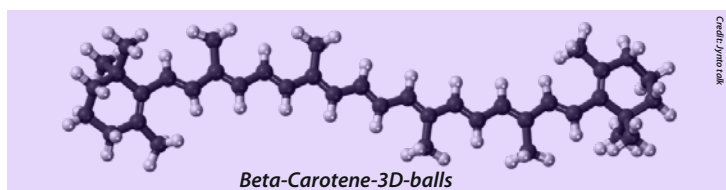


Greater flamingo galapagos



Panulirus gracilis

Carotenoids are bright yellow, orange, and red-colored organic pigments that are naturally found in many plants and vegetables. They were first extracted from a natural source and isolated by German chemist Ferdinand Wackenroder in the year 1831.



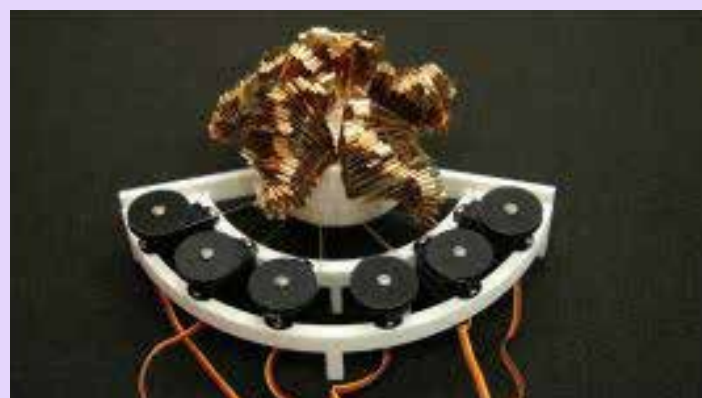
Beta-Carotene-3D-balls

He was actually working to extract medicinal chemicals from plants that could be used to treat intestinal worms, but accidentally ended up extracting beta-carotene, a red-orange fat-soluble pigment that is abundant in carrots, tomatoes, and sweet potatoes.



Scan QR code to know more

Busy, her mother told her to “go do something constructive.” To five-year-old Cynthia’s brain, that meant her mom wanted her to do something with construction paper. Cynthia’s mom found her later surrounded by a mess of paper and deep in the process of “building a house.”



Starfish Robot

Cynthia’s love of science and math also had early starts, even leading her to take part in a mental math competition in her spare time. When a new robotics club formed in her last year of high school, Cynthia had her first chance to build a physical machine. Though their methods were generally limited to trial and error, the club and the parent who started it got Cynthia excited about mechanical engineering.



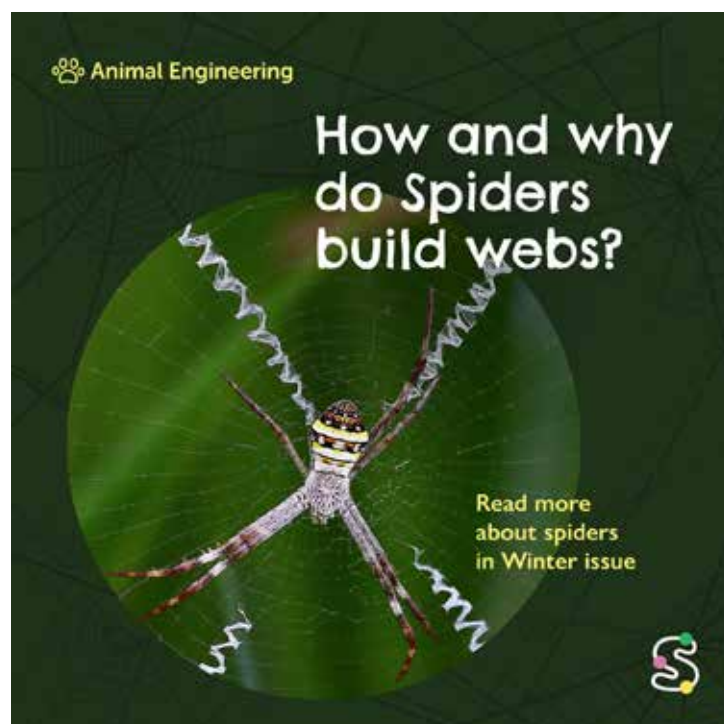
Scan QR code to know more



STEM Career:

Science Like A Girl: Robotist Cynthia Sung

Why is it that so many of us think of the things we do for fun and the things we do for school as two separate parts of who we are? Art and science. Hobbies and homework. But sometimes two parts that feel separate can come together in a way that is better than either part on its own. For Dr. Cynthia Sung, who runs her own robotics lab at the University of Pennsylvania, her passion for robotics and love of origami have come together in a career that feels like a perfect fit. Cynthia’s family tells a story that brings her love of working with paper back to her early childhood. Cynthia was vying for her mother’s attention.



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