

TRENDING NEWS:

1 Mauna Loa volcano wakes up after a four-decade nap

The world's largest active volcano, Mauna Loa, stole the headlines in the last week of November. An active volcano poses the risk of eruption at any time. After spending 40 years dormant, the volcano spewed lava on 27th November. Streams of molten rock radiated down the flanks of the volcano towards Saddle Road, the main highway for the Island of Hawai'i.



Mauna Loa breathes fire after forty years

Mauna Loa usually erupts every seven years, and so this gap was quite a large one according to geophysicists. Scientists can keep tabs on possible eruptions by recording changes in landforms and earthquakes. For Mauna Loa, there had been signs of an impending eruption since 2015. Those signs waned for a considerable time before spiking again six months before November, which served as a sign of the oncoming eruption. The eruption has cut off power to Mauna Loa Observatory but has not caused any threat to human life as of now.

2 How a parasite makes wolves reckless

Wolves might be puppets to a certain parasite, which makes them take risks. Wolves infected with *Toxoplasma gondii* are more likely to go solo or challenge other wolves to become the pack leader, both of which are reckless and bold decisions for wolves. These actions can go either way: the wolves could benefit from these decisions, but on the flip side, they could meet death.



Wolves might go solo or be puppet pack leaders due to parasites

Toxoplasma gondii has quite a reputation for its ability to bend animal behavior. Cats are one of its most important hosts, as these parasites breed in cat intestines. The effects of the mind-altering powers of this parasite on wolves are stunning. Wolves infected by *T. gondii* are 11 times more likely to become pack leaders or go solo. These results were observed in wolves in Yellowstone, a region in which cougars are infected with the same parasite. It is also possible that infected wolves might intrude into cougars' territories, putting themselves at risk of picking up even more parasites.

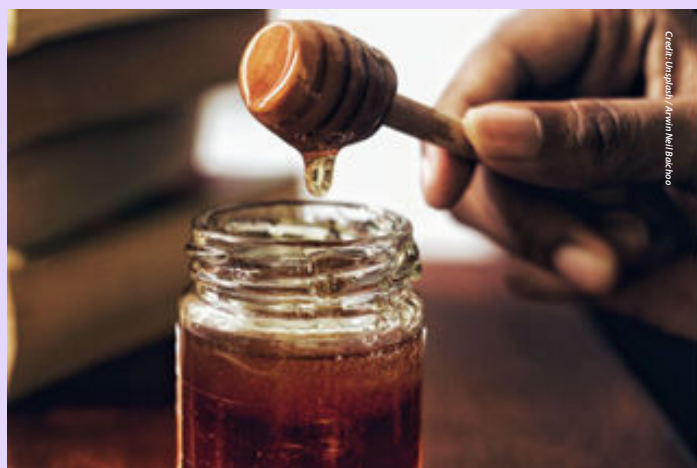


Science Everyday

Why does honey never go bad ?

Along with jewelry and wine, royal tombs in ancient Egypt contained jars of honey. They included the honey because they thought it would make their trip to the afterlife more pleasant.

Even though the graves were found 3,000 years later, the honey in them was still tasty.



Is honey always fresh?

How is it that honey never goes bad?

Germes and bacteria can't live in honey because it kills them. Honey is a sugar containing a low amount of water and an acidic pH. This makes an environment in which bacteria can't live and grow. Other foods, like molasses, also fit this description. Those foods can be kept for a long time, but not forever. What makes honey so unique? The answer is both horrible and interesting.

Bees "process" honey by eating nectar, then spitting it back up into honeycombs. In their stomachs, the nectar is broken down into gluconic acid and hydrogen peroxide.

Does hydrogen peroxide ring a bell? It is a natural antibiotic that can be bought at drugstores. It can be used to treat a wide range of wounds and illnesses. In other words, honey is naturally resistant to germs, and the hydrogen peroxide in it keeps away any microbes that try to get in.

Honey has been used as a medicine for thousands of years because of the amazing properties it possesses. It was made into ointments and used to treat burns and other wounds. Even the ancient Egyptians used it for medicine as well.

How does honey change with time?

Honey can be eaten for years or even decades. But since it comes from nature, it will change over time. Honey can become darker in color or thicker in consistency. The way it tastes can also change.

The fact that honey changes is a good sign. It shows that your honey is of good quality and hasn't been heated. Honey is heated to make it pasteurized. This process kills the yeasts that are already there, and may also get rid of some of the comb's natural dirt. It keeps the honey smoother for a longer time, but it isn't necessary for food safety.

Why does honey in the store have a best-by date when it never goes bad?

Dates on honey made for sale are more of a reminder for businesses than anything else. They serve as a reminder to put newer, fresher items on the shelves. Most of the honey will be gone long before then. But even if you buy a bottle with only a few months left on its "best-by" date, you can be sure that the honey will be fine for a long time.



STEM Challenge/ Science Experiment

How to amplify cell phone volume

Materials needed:

- Cardboard toilet roll
- 2 paper or plastic cups
- Pencil
- Scissors
- Craft knife

Procedure:

- Take your phone and trace its short end along the side of the toilet roll.
- Cut out the slot in the roll. You can use a craft knife to make a rough cut first, before using scissors.
- Trace the end of the toilet paper roll on the wall of the cup.
- Slot the toilet roll into the cups. Put the phone, speaker-side down, into the slot made in the toilet roll.



Did You Know?

Graphite sticks better to eraser than it does to paper, which makes erasing possible. Modern erasers are rubber-based.

In the early days, moistened pieces of bread that had been balled up were used as erasers.

Brain Teaser:

You have an 11-minute hourglass and a 7-minute hourglass. You need to measure exactly 15 minutes. How do you do it? There are two methods possible.

Answer to be published in the next edition

Previous edition answer: 40\$

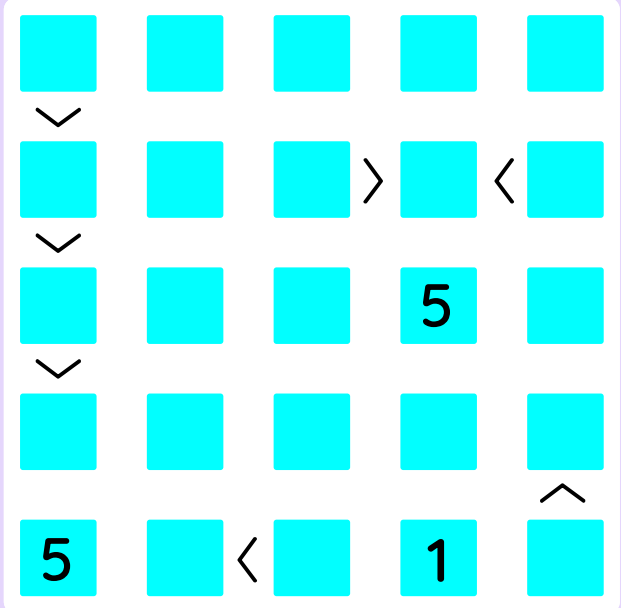
Science Video:

Amoebae are organisms made up of only one cell. They are predatory and eat other, smaller microbes. The liquid present within a cell is called the cytoplasm, and it can be categorized based on its texture. The cytoplasm towards the periphery of the cell is more rigid and is called ectoplasm (Greek: *ektos*; which means outer). The portion of cytoplasm in the rest of the cell and the core is called the endoplasm (Greek: *endon*; which means inner). Imagine filling a polythene bag with water. If you play around with it, you will notice that the water inside the bag changes the shape of the bag as it moves around. Similarly, cytoplasm moves around inside the amoeba cell to form structures that protrude outwards, called pseudopodia. In the video, you will see how the amoeba engulfs a microbe, called Paramecium, using these pseudopodia. You may ask, how do the two pseudopodia re-join on the other end? If you have seen bubbles, you may have noticed that two bubbles often merge into one bigger bubble when in contact. The cell membrane, or the covering that keeps the cytoplasm and cell structures contained, acts similarly. Check out this video to watch an apex predator under a microscope.

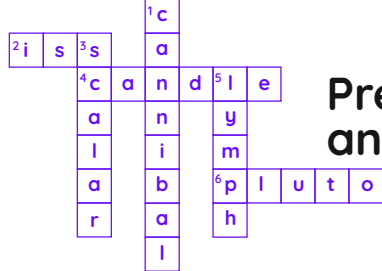
Scan QR code to see the video
Credits: mantismundi



Can you do a Futoshiki?



Answer to be published in next edition

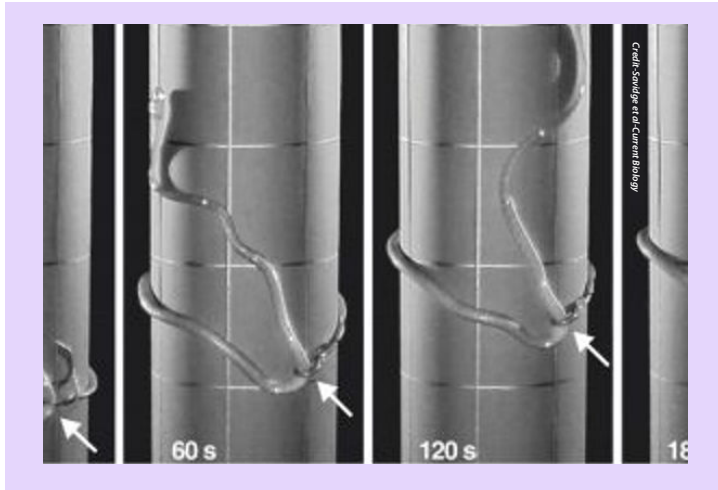


Previous edition answer

Science in Depth

These snakes slither up trees – by turning themselves into lassos

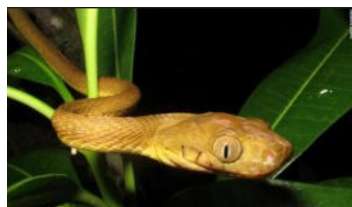
Scientists have discovered a new kind of snake movement. They found out that brown tree snakes can turn their bodies into lassos to climb up large, smooth surfaces like tubes or poles. The scientists were shocked by this discovery because they had never seen snakes move this way before.



How do snakes move?

Before the scientists discovered this new movement, they thought that there were only four kinds of snake movements: moving in a straight line, slithering, sidewinding, and a method of climbing called concertina movement. The lasso locomotion is totally new to science, and it is now officially known as the fifth type of snake movement.

How did the scientists discover this new snake movement?



The scientists found out about the lasso movement by accident. They were trying to protect some native birds in Guam. These birds were in danger

of being wiped out because of brown tree snakes. The brown tree snakes have been eating native birds in Guam. The snakes have caused 10 native bird species in the country to become extinct, and now only two species of native birds remain. To protect the birds, the scientists installed eight-inch-wide metal poles to keep snakes, raccoons, and other predators from climbing the birds' nests. The scientists also installed video cameras to monitor the birds' nests. While monitoring the birds, scientists were surprised to see that brown tree snakes were able to climb the poles. The snakes formed lassos by looping their bodies around the pole and hooking their tails around their bodies. Then, they wiggled up the pole.



Scan QR code to know more



STEM Career:

Animal keeper job description: watch animal keeper Deidre Ousterhout save animals at work

Currently I work as an Ambassador Animals Keeper at Zoo Atlanta in Georgia. That means I care for, train, and monitor the health, wellbeing, and safety of the Zoo's education animals. But my favorite part of my job is talking to the public about the importance of wildlife and the ways we can help them survive.

A love for animals has always been with me, but the first memory that stuck started in preschool.

My teacher, "Teacher Terri," was also a volunteer at the local Humane Society. She taught our class how to greet dogs safely and respect different species of animals.



Having a drama teacher for a father comes in very handy when giving animal presentations. Although this three banded armadillo is quite the crowd pleaser, my theater background and animal knowledge are key in keeping audiences excited about the animals I am describing.

Scan QR code to know more



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