

# the Daily STEM

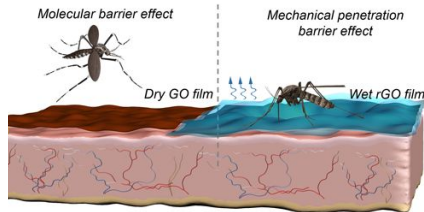
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## STEM + Mosquitoes

Have you ever been walking around outside and feel a sharp prick on your arm or neck? You probably experienced a mosquito having a quick snack. Female mosquitoes use their straw shaped mouth to suck a bit of blood. But entomologists, scientists that study insects, are always trying to prevent mosquito bites. This is especially important since some can cause sickness. Laura Harrington is an entomologist who is testing a way to make fabric that stops mosquitoes. She coated fabric with graphene oxide, a layer of carbon atoms attached to oxygen. It usually works, but not when it's wet. Have you ever tried to solve a problem? Did your first solution work? What problem would you like to solve?

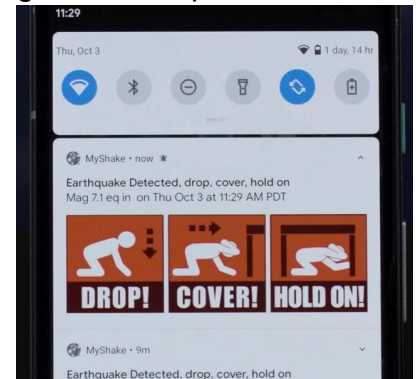
To learn more:  
[bit.ly/36sRcdC](http://bit.ly/36sRcdC)



## STEM in the News

Have you ever experienced an earthquake? There are hundreds of small earthquakes each day in the world, but usually only one major earthquake per year. Scientists called Seismologists study earthquakes, and nothing is more important than trying to detect and warn people when one is happening. Because California has many earthquakes, scientists at the University of Cal Berkeley have just created an app called MyShake. It warns people in California when an earthquake is happening. The app sends out an emergency message as soon as sensors in the ground detect a quake. Even a 10-20 second warning can be enough to help people prepare. What other types of apps could be created to help save lives? What kind of app would you develop?

To learn more: [lat.ms/2C7bDik](http://lat.ms/2C7bDik)



## STEM Challenge

Secret codes have been around for thousands of years. One of the earliest examples, the Caesar Cipher, was used by Julius Caesar 2000 years ago. By shifting the alphabet, you can create a simple code. For example, a shift of +9 makes A=J, B=K, and C=L. That would turn the word SECRET into BNLANC. You can even make your own Cipher Wheel by attaching two circles with a brass fastener. Learn how: [bit.ly/2oEIsQk](http://bit.ly/2oEIsQk)



## The Puzzle

Suppose  $63=1$ ,  $85=2$ ,  $682=3$ ,  $8175=2$ , and  $9896=5$ , what does 58269 equal?

*Last week's answer:* Adding 1-100 is accomplished quickly by splitting them into 1-50 and 51-100, then adding one from each group to make 50 groups of 101...which totals 5050.

## Mystery Photo

What's under the microscope?  
(answer next week)

Last week's answer:  
Pepper



## Cool STEM Careers

Do you like the outdoors or how food is grown and turned into meals? Agricultural and Food Scientists work in labs or farms to make sure we get healthy food to eat. They can test soils to determine the best growing conditions, study animals to help them stay healthy, or even find ways to stop weeds. Learn more about this career at: [bit.ly/33n7Rgo](http://bit.ly/33n7Rgo)



Chris Woods

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