The year 1916 involved a number of significant events in science and technology, some of which are listed below.

No Dates
- Gilbert N. Lewis and Irving Langmuir formulate an electron shell model of chemical bonding.
- Sydney Chapman and David Enskog systematically develop a kinetic theory of gases.
- Jan Czochralski invents a method for growing single crystals of metals.
- Albert Einstein publishes “Die Grundlage der allgemeinen Relativitätstheorie” on general relativity in Annalen der Physik and shows that the field equations of general relativity admit wavelike solutions. This will be demonstrated in 2016.
- Karl Schwarzschild solves the Einstein vacuum field equations for uncharged spherically symmetric non-rotating systems.
- Chemist Chika Kuroda becomes the first woman in Japan to receive a Bachelor of Science degree.

Births
- January 10: Sune K. Bergström (died 2004), Swedish biochemist, winner of the 1982 Nobel Prize in Physiology or Medicine.
- April 14: Lawrence Hogben (died 2015), New Zealand meteorologist.
- June 8: Francis Crick (died 2004), English-born molecular biologist, co-discoverer of the nucleic acid double helix structure in 1953, winner of the 1962 Nobel Prize in Physiology or Medicine.
- July 1: Iosif Shklovsky (died 1985), Ukrainian astrophysicist.
- October 4: Vitaly Ginzburg (died 2009), Soviet Russian theoretical physicist, astrophysicist, one of the fathers of the Soviet hydrogen bomb, winner of the 2003 Nobel Prize in Physics, member of the Soviet and Russian Academies of Sciences.
- December 15: Maurice Wilkins (died 2004), New Zealand-born English molecular biologist, co-discoverer of the nucleic acid double helix structure in 1953 using X-ray diffraction, winner of the 1962 Nobel Prize in Physiology or Medicine.

Deaths
- February 12: Richard Dedekind (born 1831), German mathematician.
- February 19: Ernst Mach (born 1838), Austrian-born physicist.
- May 11: Karl Schwarzschild (born 1873), German astronomer and physicist.
- July 16: Élie Metchnikoff (born 1845), Russian zoologist and immunologist, winner of the 1908 Nobel Prize in Physiology or Medicine.
- November 13: Percival Lowell (born 1855), American astronomer.
- December 31: Alice Ball (born 1892), African-American chemist.

Note: This information is from https://en.wikipedia.org/wiki/1916

What Causes Hiccups?

Wonder where those hiccups are coming from? The part to blame is your diaphragm. This is a dome-shaped muscle at the bottom of your chest, and all hiccups start here.

The diaphragm almost always works perfectly. When you inhale, it pulls down to help pull air into the lungs. When you exhale, it pushes up to help push air out of the lungs. But sometimes the diaphragm becomes irritated. When this happens, it pulls down in a jerky way, which makes you suck air into your throat suddenly. When the air rushing in hits your voice box, you’re left with a big hiccup.

Some things that irritate the diaphragm are eating too quickly or too much, an irritation in the stomach or the throat, or feeling nervous or excited. Almost all cases of the hiccups last only a few minutes. Some cases of the hiccups can last for days or weeks, but this is very unusual, and it’s usually a sign of another medical problem.

You’ve probably heard lots of suggestions for how to get rid of hiccups, and maybe you’ve even tried a few. Holding your breath and counting to 10 is one way some people can get rid of their hiccups. Other people say that drinking from the “wrong” side of a glass of water is the way to become hiccup-free.


doi:10.4195/nse2016.06.0099
Did you know that it’s easy to change the color of your blue or pink hydrangea flowers? Now there is a short video that show easy-to-follow instructions that will soon have your flowers blooming in a different shade.

Your garden soil has a measurement of alkaline or acid composition. The pH number of 7 is neutral. From neutral to 14 means your soil is alkaline, and from neutral to zero it is acidified. So to change your pink blooms into blue, you will need to add aluminum sulfate to your soil.

This is available at your garden center, or ask your pharmacist for powdered alum. Mix one tablespoon to a gallon of water, and apply it around the base of your plant. Be patient. Everything in nature takes time.

To change your blue hydrangea to pink just add a cup of garden lime to your soil. The lime in the soil helps the plant absorb nitrogen while it causes it to be unable to absorb aluminum. Your blossoms will soon become pink.

You can even develop purple flowers by starting with a deep red variety and adding aluminum sulfate. Gradually the red changes, and soon you’ll have a purple hydrangea.

What could be more fun in the garden than to use a little scientific experimentation, and you don’t have to spend money on a new shrub.

Now that you have reconnected with some of your basic high school science, you can accomplish great things in your garden. You deserve a beautiful garden.

See the video and read more here: http://goo.gl/Exyqow

When a person breaks a leg, they might get a splint, cast, or boot to cradle the bone as it heals. But what happens when a locust breaks a limb? Instead of a cast on the outside, the insect will patch itself up from the inside. These patches can restore up to 66 percent of a leg’s former strength, a new study finds.

The data also suggest new ideas for mending various types of pipes—from those in our homes to the living “pipes” inside our bodies.

Locusts and other insects rely on an exoskeleton—external support—made of cuticle (KEW-ti-kul). This material is made from a material called chitin (KY-tin). The cuticle has two layers. The outer one, or exocuticle (EX-oh-KEW-ti-kul), is tough and can be very thick. It forms a protective armor. The inner layer, or endocuticle, flexes much more.

When cut, the cuticle forms a clot to seal off the wound. Then cells on either side of the cut secrete new endocuticle. The secretion spreads across and under the cut and eventually it turns hard. This creates a thick patch on the inside.

Although scientists understood that insects patched themselves this way, Eoin Parle realized that no one knew just how strong the repaired sites were. He decided to find out. Parle is a bioengineer—a scientist who uses engineering to study living things. He began this research while working at Trinity College Dublin in Ireland (he now works at University College in Dublin).

“There’s a lot to learn from the natural world,” Parle says. Read more here: https://goo.gl/IIBLScX

Visit the online guide to snowflakes, snow crystals, and other ice phenomena. Learn about natural snowflakes, designer snowflakes, how to grow snowflakes, science of snowflakes, and snow and ice activities.

This site is all about snow crystals and snowflakes—what they are, where they come from, and just how these remarkably complex and beautiful structures are created, quite literally, out of thin air. There are photo galleries, guides, history, movies, FAQs, myths, and more.

The website is available at www.snowcrystals.com.

With more than 50 percent of the global population now living in urban areas, our relationship to soil has become more and more shallow. But for soil scientist and farmer Erin Schneider, who spends the bulk of her days elbow-deep in the loamy soils of Wisconsin’s Sauk County, soil carries a message worth delivering.

So when the United Nations declared 2015 the International Year of Soils, she took the opportunity to dig into dirt’s artistic side, sending a few dozen squares of sturdy cotton fabric to farmer friends and researchers across eight states. Her instructions: Bury them in the earth for two weeks before shipping them back. The idea was to make soil’s work more visible by encouraging its microbes to “paint” the swatches, which would then be stitched into a first-of-its-kind soil quilt.

The quilt would be equal parts science experiment and art installation—an ode to biodiversity as much as beauty—and a muse to inspire conversations about soil’s integral, life-supporting role.

Read more here: http://goo.gl/YTMtBE
Robots and new curricula developed for grades K–12 can improve student engagement in core subjects like reading, writing, and math. RobotLAB, headquartered in San Francisco, CA, builds robots that help students learn about abstract math and computer science; lessons focus on complex problems that become intuitive through interaction and manipulation of the robots.

Elementary School: Texting Is Not the Same as Writing. Many students might prefer to use abbreviations such as GR8, W8, and L8TR than “real” words, and limit writing to between 140 characters allowed by Twitter and the 33 characters allowed by Snapchat. Writing an essay with a beginning, middle, and end is difficult.

However, working with a robot is fun and exciting for them; the real value is that they finally understand why they have to spell words correctly. If they don’t, the robot won’t pronounce their words correctly. They also discover first-hand why less than 100 characters is too short to tell a complete story.

Middle School: Robots Teach by Dancing. Students are taught angles, such as “Here is a triangle, the sum of the angles is 180.” And, “Here is a square, the sum of the angles is 360.” Students need to memorize facts without a context or a meaning. But ask them to make a robot dance and “raise the roof” (a popular dance in schools today) and you will see them work hard on geometry in order to move the robot’s joints to a certain angle to perform the dance.

High School: Why Learn Something I’ll Never Use? In high school, students are usually taught quadratic equations without any meaningful real-life examples. The common refrain to school counselor and parents is, “Why do I need to learn that? Will I ever use it in my life?”

Robots show students they can measure the size of objects by just looking at them and knowing the distance from the object. When the robot is standing close to a wall, he can see a small area, but as he walks away from the wall, the area covered by the camera is getting larger and larger. This is a quadratic relationship, since the area depends on the distance covered by the camera.

Thanks to the teacher and robot, students also learn trigonometry, calculus, and programming, and apply that learning to playing soccer, finding the exit of a maze, and working on physics.

Friendly and Intuitive Technology. Using robots does not have to be complex. RobotLAB focuses on user-friendly technology for teachers. It’s an easy-to-use program that helps teachers demonstrate abstract concepts in math and science, without any experience in robotics or programming. Each lesson is 100% aligned with mandated standards like Common Core, NGSS, TEKS, and NGSS.

About RobotLAB, Inc. RobotLAB gets kids’ attention in order to build core 21st century skills including reading, writing, math, programming, and computational thinking, by using humanoid robots. RobotLAB Inc. is headquartered in San Francisco, CA.

More information is available at: http://www.RobotLAB.com