

STEAM Newsletter

Ringwood Public Library

(973) 962-6256

STEAMing into Ringwood Public Library

Science

Technology

Engineering

Arts

Mathematics

What's coming up at the library...

3D Design: Ages 13+ up. Adults welcome, too! Sept 12

Gadget Gals: Teen girls ages 13 + only! Sept 14

Comic Drawing Club: Ages 6-13. Sept 18

Lego Mania: Ages 5+. Sept 20

Full STEAM Ahead: Color Changing Milk. Ages 4+. Sept 24

In our STEAM area: *The Art of Nature*

Come in to check out the beauty that can be found in natural things. Look at them under a digital microscope and draw the patterns you find!

See our full schedule here.
Call the library to register or email caldwell@ringwoodlibrary.org

Local News:

This summer, two regional lakes suffered from algal blooms. Last year, our very own Cupsaw Lake was affected. The "algae" affecting Lake Hopatcong and Greenwood Lake is a cyanobacteria, which is a *photosynthetic* bacteria. The blooms are attributed to several factors, including nutrient runoff from fertilizer, septic overflow, and laundry detergents, as well as increased air and water temperatures. This is not just a local problem, lakes in the Great Lakes region also suffered greatly from these blooms last year and coastal areas in Florida are experiencing the Red Tide, which is also an algal bloom. These blooms are harmful to organisms living in the water because they decrease the amount of oxygen in the water. They can also be toxic to people, with symptoms ranging from rash to nausea to numbness in the lips and face.

Read More Online:

[Smithsonian article about The Red Tide.](#)

[Sea Grant Michigan article about Harmful Algal Blooms.](#)

<https://ucmp.berkeley.edu/bacteria/cyanoalh.html>

Math Riddle:

A cell phone and phone case cost \$110 in total. The cell phone costs \$100 more than the phone case. How much does the cell phone cost?

See answer on page 2.



Anabaena, a group of species of cyanobacteria common in North American lakes that can produce toxins; from <http://oceandatacenter.ucsc.edu/PhytoGallery/Freshwater/Anabaena%20circinalis.html>

Vocabulary:

Photosynthesis: The process by which an organism produces energy from sunlight.

Resolution: The clarity of an image.

Magnification: The degree to which something is made to look larger by a lens.

There's an app for that...

Zedge has free wallpapers and ringtones for your Android phone. It's also a small app that doesn't take up much space.

Scenes from Space Camp



Using the *Engineering Design Process* and contemplating Apollo 13's CO₂ filter problem.



Bending space with gravity to create planetary orbits.



Modelling the lunar phases.

Riddle Answer:

The cell phone costs \$105 and the case costs \$5.00, for a total of \$110.

Tech for the Younger Set:

Relay: A screen-less phone & GPS tracker.

Check it out at relaygo.com

If you missed Space Camp, you can [build Rockets](#) with us on Oct. 9!

Mathematician Movies for 13+up:

A Beautiful Mind—A brilliant mathematician works in cryptography.

The Man who Knew Infinity— An Indian mathematician and his mentor change the field of mathematics forever.

Moneyball— Computer analysis is used to assemble a major league team.

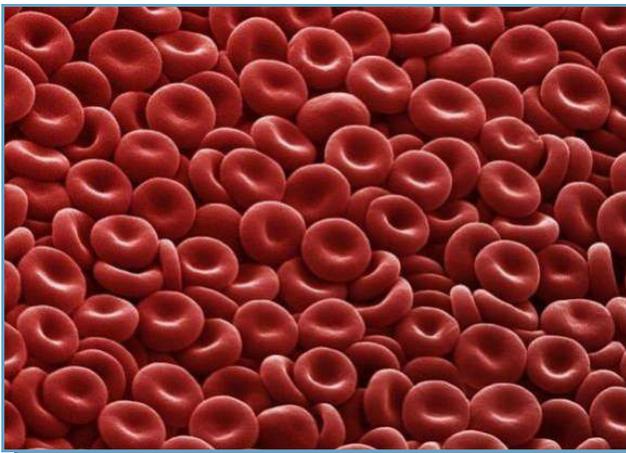
Sci-Fi PG movies:

Tron: Legacy—A game designer enters a digital world featuring a geometrical arena.

Back to the Future—A time travelling teen, a mad scientist, and a Chuck Berry song.

For the younger set:

Donald in Mathmagic Land—Donald Duck explains how math is useful in real life.



What is this picture showing? Hint: It is microscopic.

To find the answer, visit the library's STEAM area!

Most students are familiar with light microscopes, that use light and lenses to zoom in on that which the naked eye cannot see by itself. But, there are several types of microscopes that allow for improved *resolution* and high *magnification*, such as electron microscopes, scanning microscopes, and x-ray microscopes. Digital microscopes allow us to save and share images easily.

Robert Hooke and Antonie van Leeuwenhoek were two important figures in the development of microscopy. Learn about both of them on www.famousscientists.org.

Robert Hooke coined the term **cell** for the basic units of living things after observing the bark of a cork tree under a microscope. What was his inspiration for the term?