

# STEAM Newsletter

Ringwood Public Library  
(973) 962-6256

## STEAMing into Ringwood Public Library

**S**cience

**T**echnology

**E**ngineering

**A**rts

**M**athematics

### What's happening this month at the library...

**Simple Machines** in our STEAM area: Come play with examples of simple machines!

**Brainflakes:** Feb. 5 at 4:00 p.m. Ages 5-13. Use your imagination and build!

**3Doodlers:** Feb. 25 at 4:00 p.m. Ages 8-13. Pre-register!

**Sphero:** Feb. 19 at 3:30 or Feb. 28 at 6:30. Ages 10+. Learn to program these rolling robots. Call the library to sign up.

**Gadget Gals:** Feb 23 at 12:30. Girls and tech! Grades 8-12.

[See our full schedule.](#)



### Answer to January's Contest:



Can you identify this type of leaf?  
This is a Tulip Poplar tree leaf.

## RINGWOOD 3D: A New Jersey Makers Day Event

March 22 and 23!

Activities for all ages! Virtual Reality,  
Drones, Crafts, Coding, Contests,  
Building, and more!



Don't miss it! We'll be revealing our NEW 3D Printer!!

Thanks to the New Jersey State Library and the PSEG  
Foundation for funding this event!

### *Qualitative and Quantitative: What's the difference?*

Scientists make observations in their work every day. From their observations, they collect data and analyze the data to draw conclusions about what they are observing. They can use these conclusions to support or deny a claim or to formulate hypotheses.

There are 2 main types of data scientists collect: qualitative and quantitative. Qualitative data is descriptive, collected by the senses, and are much more subjective. Examples are color, texture, odor, taste, etc. Quantitative data is based on what is measurable and is objective. Quantitative data is in the form of numbers, such as seconds, centimeters, or grams.

### Science in the Movies:

#### Flash of Genius

Rated PG-13

The story of Robert Kearns, who invented the Intermittent Windshield Wiper and pursued a legal battle with the auto industry for recognition of his involvement.

[Place on Hold here.](#)

### Recommended Reading:

#### How We Got to Now, by Steven Johnson

The history of innovative ideas and inventions that have changed the course of humankind forever.

[Get the AudioBook version here.](#)

[Place the Young Readers Adaptation on hold here.](#)

[Check out the PBS series here.](#)

## Celebrating Black History Month:

Here are four African-Americans who have had significant impact in science:

- **Bennet Omalu:** A physician and neuropathologist who discovered chronic traumatic encephalopathy (chronic head trauma) and its associated neurological conditions in American Football players. The movie [Concussion](#) is based on his achievements.
- **Henrietta Lacks:** A cancer patient at Johns Hopkins in the 1950s. Her cells were cultured into a research cell line, without her knowledge or consent. Her cell line has contributed greatly to medical research over the years. The book [The Immortal Life of Henrietta Lacks](#), by Rebecca Skloot, exposes the bioethics of this case.
- **Frederick McKinley Jones:** Invented a refrigerated unit that mounted on trucks and containers that could be moved between ships, trains, and trucks, revolutionizing food distribution before and after World War II. Read about him in the library's new book, [How we got to now](#).
- **George Washington Carver:** Born a slave and college educated, Carver made significant contributions to agriculture: he developed resistant strains of cotton, ways to convert trash to fertilizer, and a system of crop rotation. The Ringwood Library has several [biographies](#) on Carver.

### What's New?

Science reported on Jan. 15 that plant seedlings are, for the first time ever, growing on the moon! Well, they are growing inside a canister on China's Chang'e-4 Lunar Lander. Researchers believe that their experiments can help establish a future lunar base.



## Simple Machines Sort:

In mechanics, simple machines make work easier by changing the direction or magnitude of the force being applied. Here are 5 simple machines:

1. **Inclined Plane:** moves objects up or down a level
2. **Pulley:** raises or lowers objects or turns multiple wheels at once
3. **Wedge:** pushes objects apart
4. **Lever:** lifts objects
5. **Wheel and axle:** turns objects or moves objects distances

Match the pictures with the correct type of simple machine. (Hint: There are 2 for each type of machine. Go to the [Vex](#) website for more information on simple machines.)

