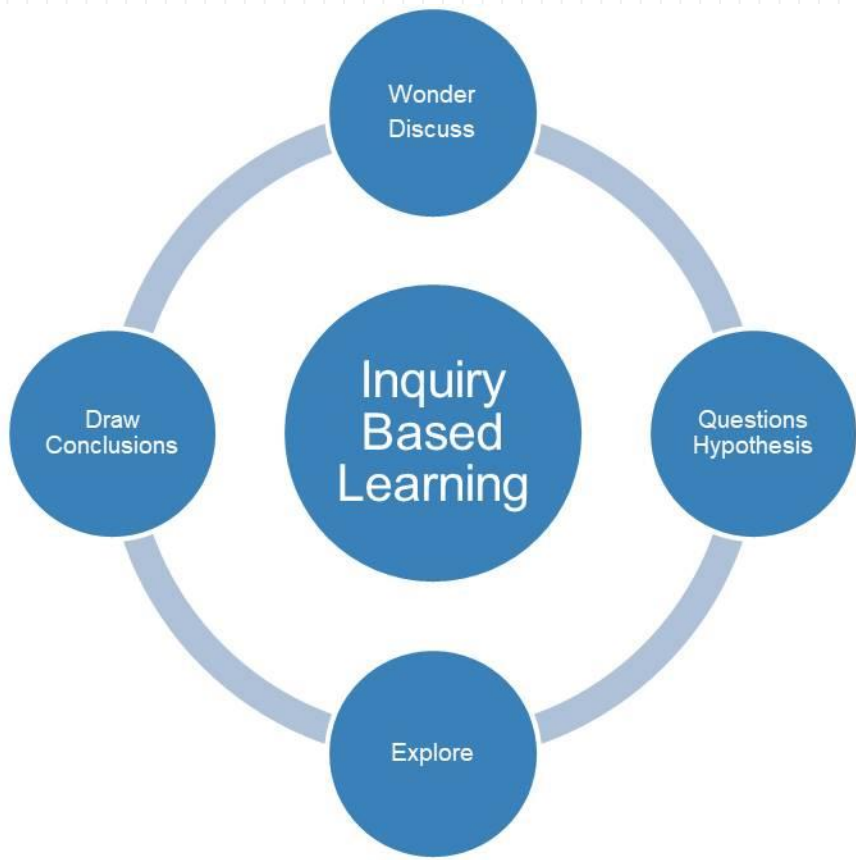


STEM Programs That Engage Youth on a Library Budget





10 (mostly) Free STEM programs



#1

Algorithms!

Math / Technology

This is a really easy way to introduce participants to the world of coding.



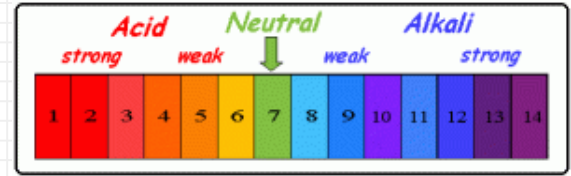
#2

pH Indicator



Science

Red Cabbage acts as a pH indicator and you can use household acids and bases to change the indicator color.



#3

Engineering Challenges

Squashed Tomato Challenge, Build a Bridge, Build a Tower, Drop an Egg, Build a Teepee...



#4

Projectile Motion Engineering

Talk Newton's 3 laws, build a rocket, and launch away.



#5

Soap Science

Science

Have you ever put ivory soap in the microwave?
(Fun was had by all!)

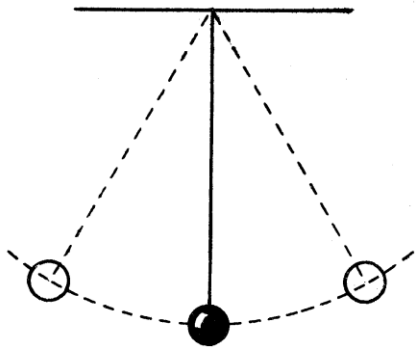


#6

Pendulums

Science/Engineering/Math

Swing a large washer or bolt from the ceiling
Make a 39.1 inch pendulum clock!



#7



Electricity

Engineering

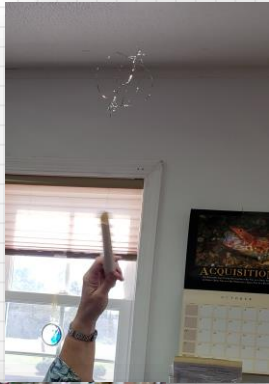
Save those broken Christmas lights and grab some aluminum foil for this lab.

#8

Static Electricity

Engineering

It's shocking... there are so many FUN things to do with static.



#9



Minor Explosions

Chemistry (Science)

A little vinegar... a little baking soda... some food coloring. What could happen?

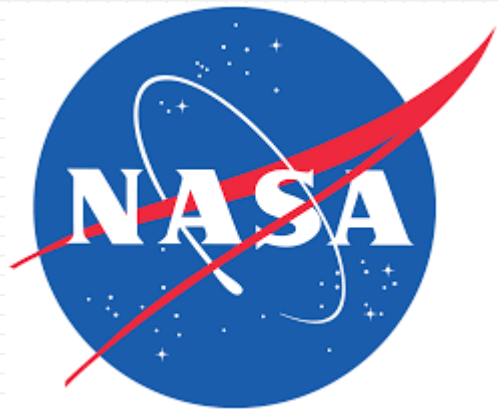
#10



Benham Disk

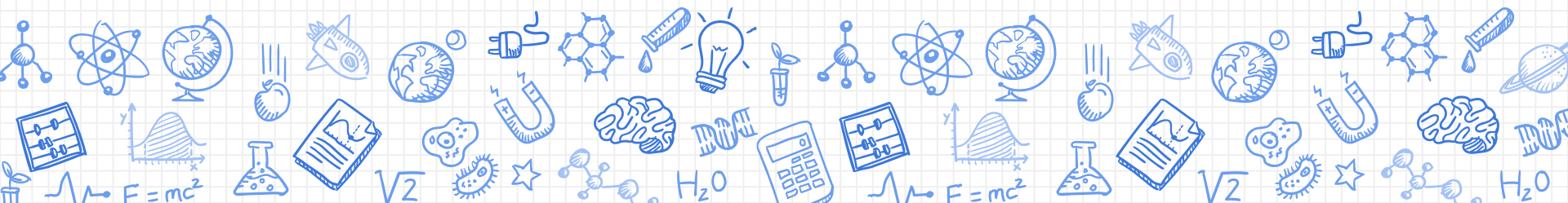
Science

Optical Illusion using old CD, a marble, and paper.



NASA

And How They Can Help WV Libraries with STEM



NASA's Independent Verification and Validation Facility (IV&V) & Educational Resource Center (ERC)

X Address: NASA IV&V Facility
100 University Dr.
Fairmont, WV 26554

X Email: erc@ivv.nasa.gov

X Phone: 304.367.8200

X Phone: 304.367.8438 (ERC)

X <https://www.nasa.gov/centers/ivv/education/educators.html>

X <https://www.nasa.gov/centers/ivv/education/educators.html>

X Facebook:
IV&V's ERC -

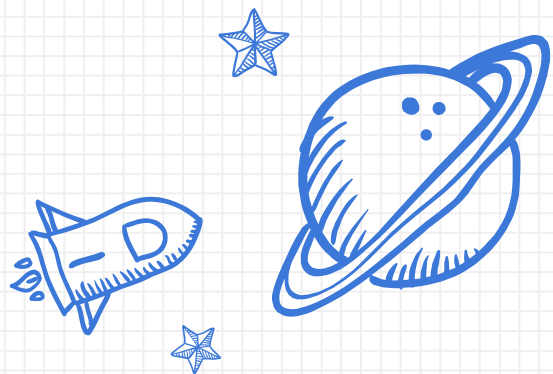
<http://www.facebook.com/groups/nasaerc>

WV FIRST® LEGO® League (WVFL) -

<http://www.facebook.com/wvfl>

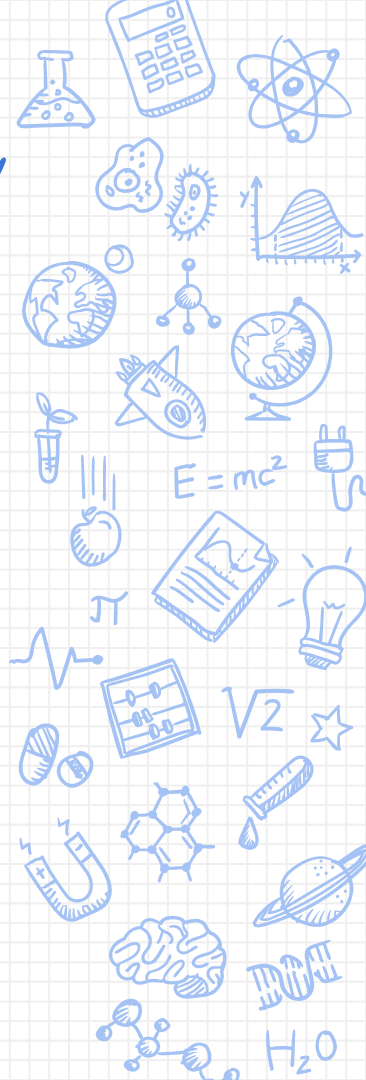
West Virginia VEX Robotics -

<http://www.facebook.com/wvex>



NASA @ My Library Grant

(Applied through ALA)



Resources discovered through NASA @ My Library

NASA Subject Matter Expert (SME) Networks

X NASA Speakers Bureau

<http://www.nasa.gov/about/speakers/nasa-speakers-howto.html>

Through the NASA Speakers Bureau, libraries may request a presentation about NASA's human space exploration, rockets, or aeronautics programs.

X NASA Educator Resource Center Network

www.nasa.gov/offices/education/programs/national/ercn/home

NASA Educator Resource Centers are located throughout the United States and provide educators with demonstrations of educational technologies, such as NASA educational websites, as well as training using NASA instructional products.

Resources discovered through NASA @ My Library



NASA Subject Matter Expert (SME) Networks continued...

X NASA Night Sky Network

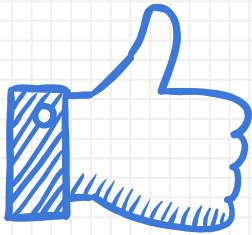
<http://nightsky.jpl.nasa.gov> | [Find an Event or Club](#)

A coalition of over 450 astronomy clubs across the US. They share their time and telescopes to provide you with unique astronomy experiences both inside and under the real night sky. The collaboration possibilities are endless.

X NASA Solar System Ambassadors

<http://solarsystem.nasa.gov/ssa>

Solar System Ambassadors Program is a public outreach program designed to work with volunteers across the nation who communicate the excitement of NASA's space exploration missions and information about recent discoveries to people in their local communities.



THANKS!

Any questions?

You can find us at

X dana.phelps@mbcpl.org

X sarah.shewbridge@mbcpl.org

This presentation and Handouts can be found at:

www.MBCPL.org/wvla-stem-2018

