INCORPORATING STEAM INTO PUBLIC LIBRARY PROGRAMMING FOR PRE K-12

STEAM: Science, Technology, Engineering, Art, Math

Build, Make, Play @yourlibrary

STEAM programming in public libraries complements what students are learning in the classroom helping to establish local libraries in the minds of patrons as not only repositories of knowledge, but also as places of active learning. STEAM promotes creative problem-solving, discovery, and curiosity in both children and parents while highlighting the library's facilities and collection.

"All of science is nothing more than the refinement of everyday thinking

- Albert Einstein

http://www.pinterest.com/gcls/stem/

Science Station @ Freetown Community Center

STEAM

- ♦ Pre-School
- ♦ School Age
- ♦ Tween
- ♦ Teen

Children Explore Sound

Mini-Makers: Ages 2-5
Creative Learning

Literacy inspired programming where books lead to interactive and fun creative activities.

Children Explore Gravity

Resources:

Go To Authors:

- Janice Van Cleave
- Gail Gibbons
- Steve Jenkins

Go To Blogs:

- Library Makers
http://librarymakers.blogspot.com/

- Abby the Librarian
http://www.abbythelibrarian.com/

- Read Sing Play
http://klmpeace.wordpress.com/

- Library Bonanza
http://librarybonanza.com/

- Never Shushed
http://nevershushed.com/

- Teach Preschool
http://www.teachpreschool.org

- PreKinders
http://www.prekinders.com/

- So Tomorrow
http://www.sotomorrowblog.com/

- Gadgets, Gizmos, and Goo (G3):
The Mad Scientists Club
https://cheshirelibraryscience.wordpress.com/

- The Show Me Librarian: All Things STEAM
http://showmelibrarian.blogspot.com/

Go To Websites:

- Steve Spangler Science
http://www.stevespanglerscience.com/

- Little eLit
http://littleelit.com/

- Start With a Book
http://www.startwithabook.org/

- Wonderopolis
http://wonderopolis.org/

- Mixing in Math
http://mixinginmath.terc.edu/

- Bedtime Math
http://bedtimemath.org/

InBetween

Craft:

4th-7th grades

Any program can become a STEAM program by letting children measure materials for craft programs. Open-ended projects encourage creativity, problem solving, and experimentation.

Ideas:

- ♦ **Faux Wrought Iron (Engineering)**

- ♦ **DIY Hula Hoops (Math)**

- ♦ **T-Shirt Hacking Workshop (Math)**

- ♦ **Beginning Quilting (Math)**

- ♦ **Recycled Marionettes (Engineering)**

- ♦ **Solar Prints (Science)**

Science Station: Oobleck

Science Station: Ages 6-12

Hands-on Learning and Exploration

Resources:

- ♦ SLJ's STEAM Pinterest Board

    http://www.pinterest.com/sljournal/steam/

- ♦ Specific Love: One family's YouTube journey with science

    http://www.youtube.com/user/SpecificLove7

- ♦ Abby The Librarian

    http://www.abbythelibrarian.com/

- ♦ Show Me Librarian

    http://www.showmelibrarian.blogspot.com/

Tech Thursdays: Ages 13-17

Building Bridges to Technology Careers

- Scratch
  http://scratch.mit.edu/

- MIT App Inventor
  http://appinventor.mit.edu/explore/

- Code Academy
  http://www.codecademy.com/es/learn

- Beat Lab
  http://www.beatlab.com/

- Sketch Up
  http://www.sketchup.com/products/sketchup-make

- Popcorn Maker
  https://popcorn.webmaker.org/

Teens & Tech Library Books:

- *Creating Adventure Games for Teens*
  Jason Darby
  ISBN 978-1133728023

- *Arduino for Teens*
  Robert Patterson
  ISBN 978-1285420899

- *iPhone Game Development for Teens*
  Clayton Crooks
  ISBN 978-1435459922

- *Careers Ideas for Teens in Information Technology*
  Diana Reeves
  ISBN 978-0816082674

- *Learning to Program with Scratch*
  Majed Marji
  ISBN 978-1593275433

- *Super Scratch Programing Adventure*
  The LEAD Project
  ISBN 978-1593275310

http://www.pinterest.com/gcls/stem/

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Visit us on the web at

www.greenvillelibrary.org

"Only 16 percent of American high school seniors are proficient in mathematics and interested in a STEM career. "

—*US Dept. of Education*

SCLA 2014

STEAM Program:

Books We Read Today:

Huff & Puff, Claudia Rueda

The Wind Blew, Pat Hutchins

Windblown, Èdouard Manceau

Other Books About the Wind:

Gusts and Gales: A Book About Wind, Josepha Sherman

Gilberto and the Wind, Marie Hall Ets

Comes a Wind, Linda Arms White

Can You See the Wind, Allan Fowler

Flora's Very Windy Day, Jeanne Birdsall

Whoosh Went the Wind, Sally Derby

Songs We Sang:

Blow, Blow, Blow the Wind by Diane Thom

Sung to the tune of Row, Row, Row Your Boat

Blow, blow, blow the wind

Gently through the trees.

Blow and blow and blow and blow.

How I like a breeze!

Blow, blow, blow the clouds,

Blow them through the sky.

Blow and blow and blow and blow

Watch the clouds roll by!

STEAM Program:

Continue the Experiments at Home

Experiment 1:

Experiment 2:

Experiment 3: