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/steam/

STEAM

♦ Pre-School
♦ School Age
♦ Tween
♦ Teen

Science Station @ Freetown Community Center
Mini-Makers: Ages 2-5
Creative Learning

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

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/sijournal/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
  [Link](http://scratch.mit.edu/)
- MIT App Inventor
  [Link](http://appinventor.mit.edu/explore/)
- Code Academy
  [Link](http://www.codecademy.com/es/learn)
- Beat Lab
  [Link](http://www.beatlab.com/)
- Sketch Up
  [Link](http://www.sketchup.com/products/sketchup-make)
- Popcorn Maker
  [Link](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 Programming Adventure
  The LEAD Project
  ISBN 978-1593275310

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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
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.
How I like a breeze!
Blow, blow, blow the clouds, Blow them through the sky.
Watch the clouds roll by!
STEAM Program:

Continue the Experiments at Home

Experiment 1:

Experiment 2:

Experiment 3: