

School Age STEM

Strategies and ideas for creating stellar science opportunities

A little about
myself

- Youth Collection Specialist at the Mount Prospect Public Library
 - Doing science programs there since 2010
- Worked at the Biology Library and ran the Limnology Library at UW-Madison while in graduate school



Circulating Science Kits

Science to Go: Engineering Kits

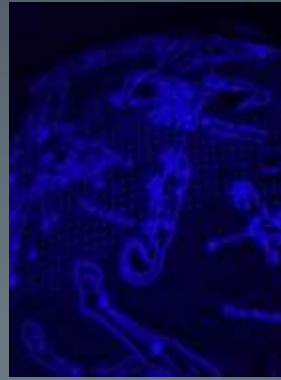
- First set of kits
 - Van De Graaff Generator
 - LEGO Simple Machines
 - LEGO Early Structures
 - Snap Circuits
 - Energy Lab
 - Straw Rocket Launcher
 - Electronics Project Lab



Energy Lab

New Science to Go Kits

- Second set of kits
 - Weather
 - Natural Disasters
 - Snap Circuit Rover
 - LEGO WeDo
 - Dinosaur Weighing
 - Celestial Globe



Celestial
Globe
Kit



Weighing Dinosaurs Kit

What is included in each kit

- Binder with information about the kit
 - Back ground information
 - Experiment ideas
 - Teacher's manual (if possible)
 - Other information on the topic
 - Science investigation log



Storage & Packaging



- Consider the size and weight – can a patron carry it?
- Accessible to the public?

Marketing

- Advertising in the library
- Promoting at school visits
- Display at programs
- Display in the lobby
- Make sure to tell patrons about the kits at the desk!



New! Science-to-Go Engineering Kits!

Enjoy science? Did you know that now you can check out science kits from the Library! These kits include everything you need to conduct simple experiments on a number of different topics. Try one today! Call or stop by Youth Services for more information. Kits are limited to MPPPL cardholders and can be checked out for 3 weeks, holds and renewals are allowed.

Van de Graaff Generator
A static electricity generator that can make your hair stand on end along with other experiments.

Energy Lab
A comprehensive kit giving many opportunities to experiment and encourage ecological awareness.

Other kits include:
Snap Circuits—Circuit components snap together to create working electronic circuits and devices. Includes green alternative energy packs.
Electronic Projects Lab—Use to learn and build 75 electronic experiments.
Early Structures—Learn basic structure concepts with hands-on exploration using Lego pieces.
Early Simple Machines—Contains Lego links and directions for building different simple machines.

Straw Rocket Launcher
Make rockets out of straws and see how they fly!

Mount Prospect Public Library
explore the opportunities

30 South Emerson Street • Mount Prospect, IL 60056 • 847/253-5675 • www.mpppl.org

Circulation

- Popularity
- Checking in the kits
 - Create clear instructions with details of how to inspect the kits
 - Photos help



Maintaining the Kits

- What to do when a problem comes up
 - Have one point person manage the problems
 - Work with Building Services to fix broken kits
 - Many replacement parts are inexpensive
 - Consider purchasing an extra kit for spare parts initially



LEGO WeDo

Tips when selecting kits

- Consider your patrons
- Get feedback from other libraries
- Amazon, Lakeshore Learning, Nasco, LEGO Education, Discover This, and Ramsey Electronics are some vendors



Natural Disasters Kit



Science Programs

What to do with the kits once you have them

Mad Scientists Club Overview

- How often
- How long it meets for
- Age range
- Number of participants
- Format/structure
- Budget
- Staff time
- Publicity
- Changes over time



How to do a science program without knowing much about science



- Good resources include:
 - *Stomp Rockets, Catapults, and Kaleidoscopes: 30+ amazing science projects you can build for less than \$1* by Curt Gabrielson
 - ZOOM
<http://pbskids.org/zoom/activities/sci/>
 - Pebble Plus Hands on Science Fun series

Picking the right theme

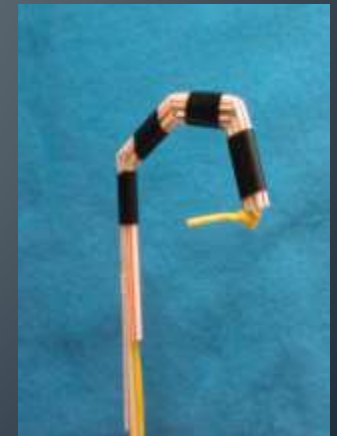
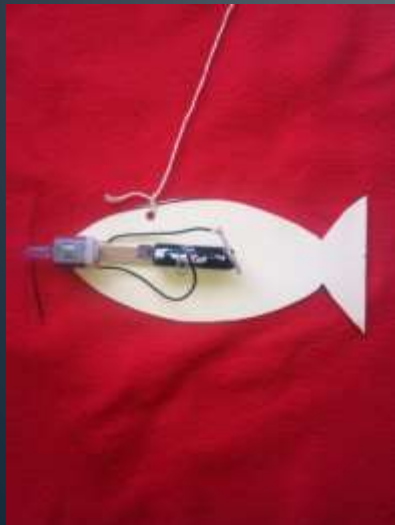
- Previous themes include:
 - Chemistry
 - Motion
 - Shadows
 - Simple machines
 - Spies
 - Food
 - Flight
 - Structures
 - Electricity
 - Human biology



Choosing the right experiments

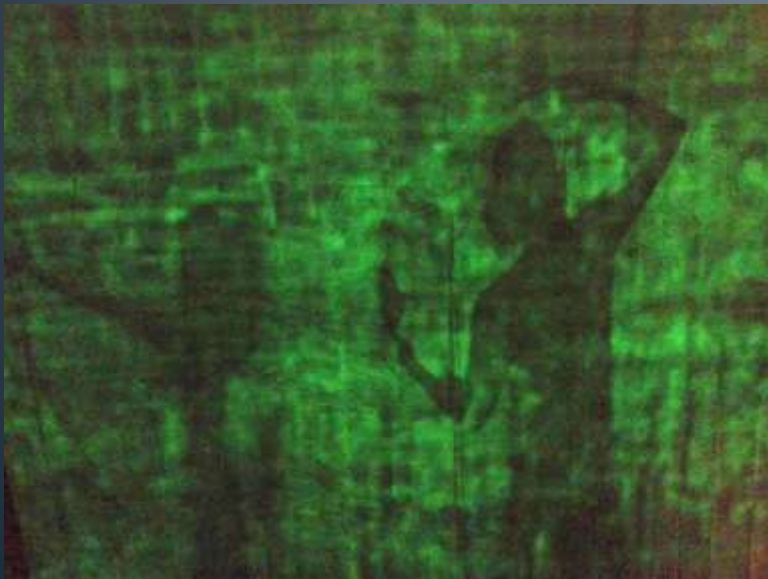
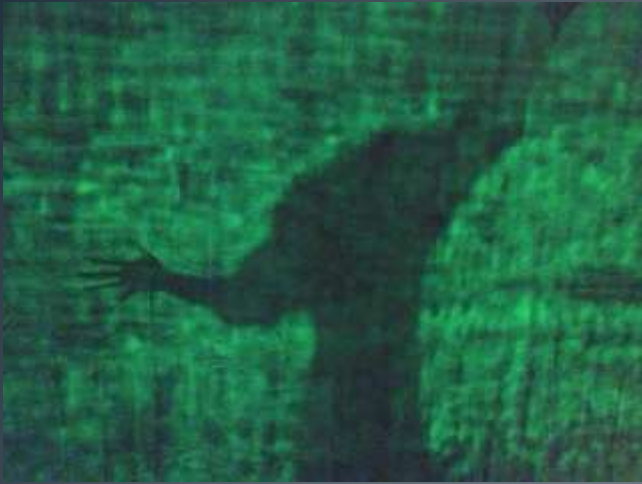


Some of the projects we have made



My Favorite Activities

- Shadow Wall
- Van de Graaff
- Tallest Tower Competition
- Name that Candy Bar
- Fingers of the Hand
- Catapults



The Shadow Wall

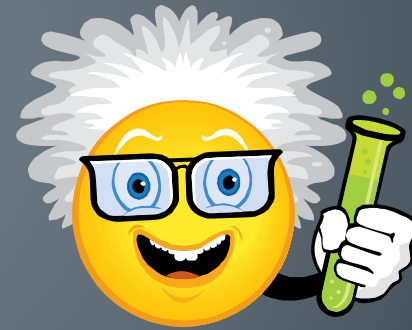
My Least Successful Activities

- Ice Cream making
- Secret Codes
- Giant Hand
- Flashlights
- Un-Mixed Mix Up
- Catapults

Modifications for younger kids

Jr. version of Mad Scientists Club

- Different set up
- Why not include these kids in the other program



What worked and what didn't

- Format – balancing help and independent work
- Simplicity – don't underestimate difficulty
- Over planning
- Behavior – how to have fun but not go crazy
- Keeping kids engaged with hands on projects



Prepare for mess

Before...



After...



Include team work!

Make sure to finish the projects – that's what makes kids leave happy!



Questions?

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