

STEAM Programs for Youth

Amy Koester | September 2015

Hello!

- Amy Koester
- Youth & Family Program Coordinator, Skokie Public Library
- The Show Me Librarian
- Building STEAM with Día Toolkit for ALSC



Our Agenda

- STEAM in the library setting
- STEAM with preschoolers
- STEAM with school-age youth
- Community collaborations & Go-to resources
- Final Q&A

science
technology
engineering
arts
STEAM
math

- **Arts ≠ Crafts**

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- Arts ≠ Crafts
- Arts = Creativity
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*“The arts and sciences are avatars of human creativity.”
-Mae Jemison*



- Arts ≠ Crafts
- Arts = Creativity
- Arts = Open-ended

Open-ended activities promote “the problem-solving, the fearlessness, and the critical thinking and making skills.” -John Maeda



Why STEAM in the Library?



Why STEAM in the Library?

- Literacy is our mission, and literacy is multifaceted.
- Lifelong learning is our mission, and that means all ages.
- We can facilitate discovery.
- Interest is a powerful motivator for future success.

Questions so far?

STEAM with Preschoolers

What are the benefits?

- Tap into natural curiosity
- Introduce basic concepts
- Reinforce concept knowledge
- Build vocabulary
- Facilitate kinetic learning

STEAM with Preschoolers

STEAM Stories

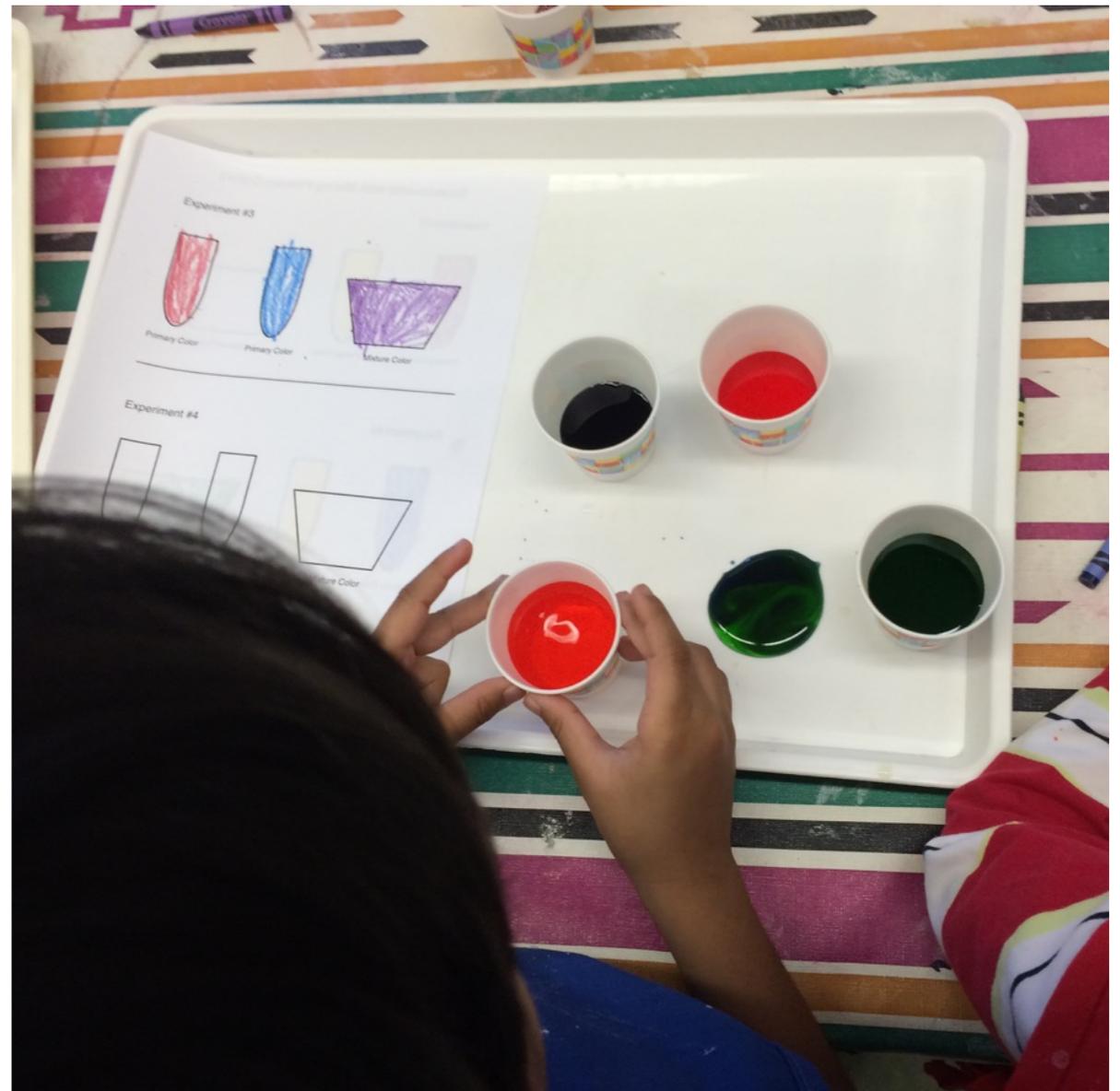
- Be intentional about choosing books
- Incorporate non-fiction
- Tap the STEAM concepts in fiction stories
- Talk about it!



STEAM with Preschoolers

STEAM Activities

- Hands-on is vital
- Add an experiment
- Use and explore tools
- Make something
- Provide options



STEAM with Preschoolers

Observation Stations

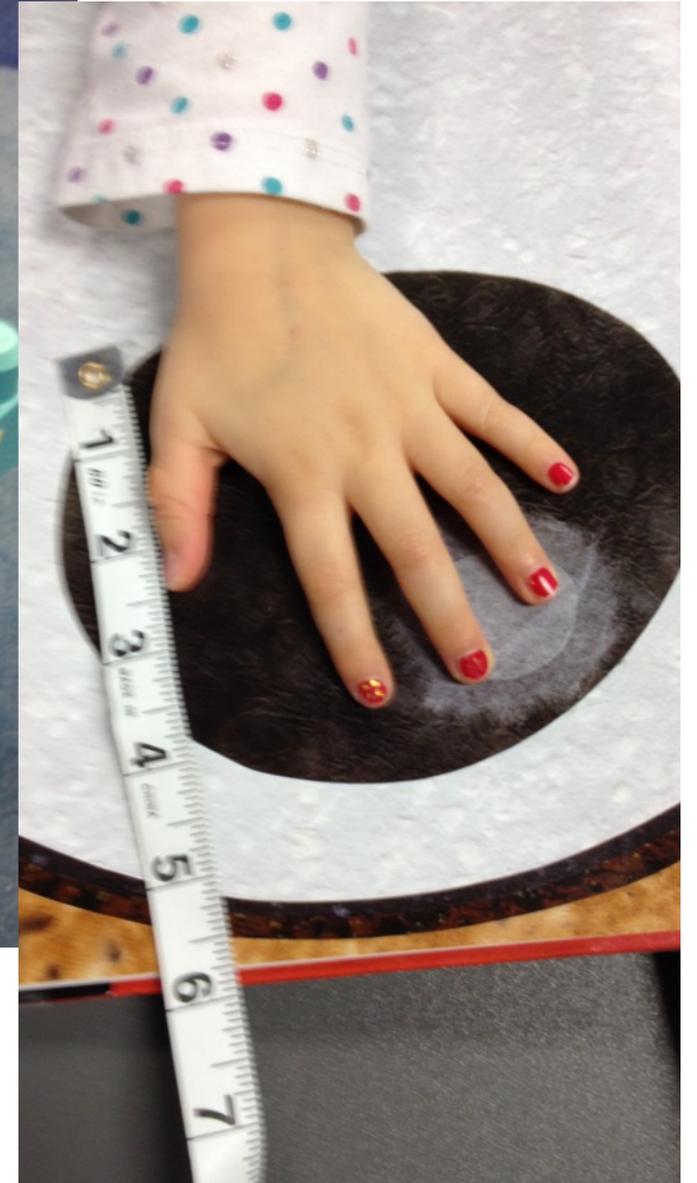
- Explore things close up
- Provide sensory experiences
- Include things that grow & change
- Tie it back to books



STEAM with Preschoolers

STEAM Programs & Storytimes

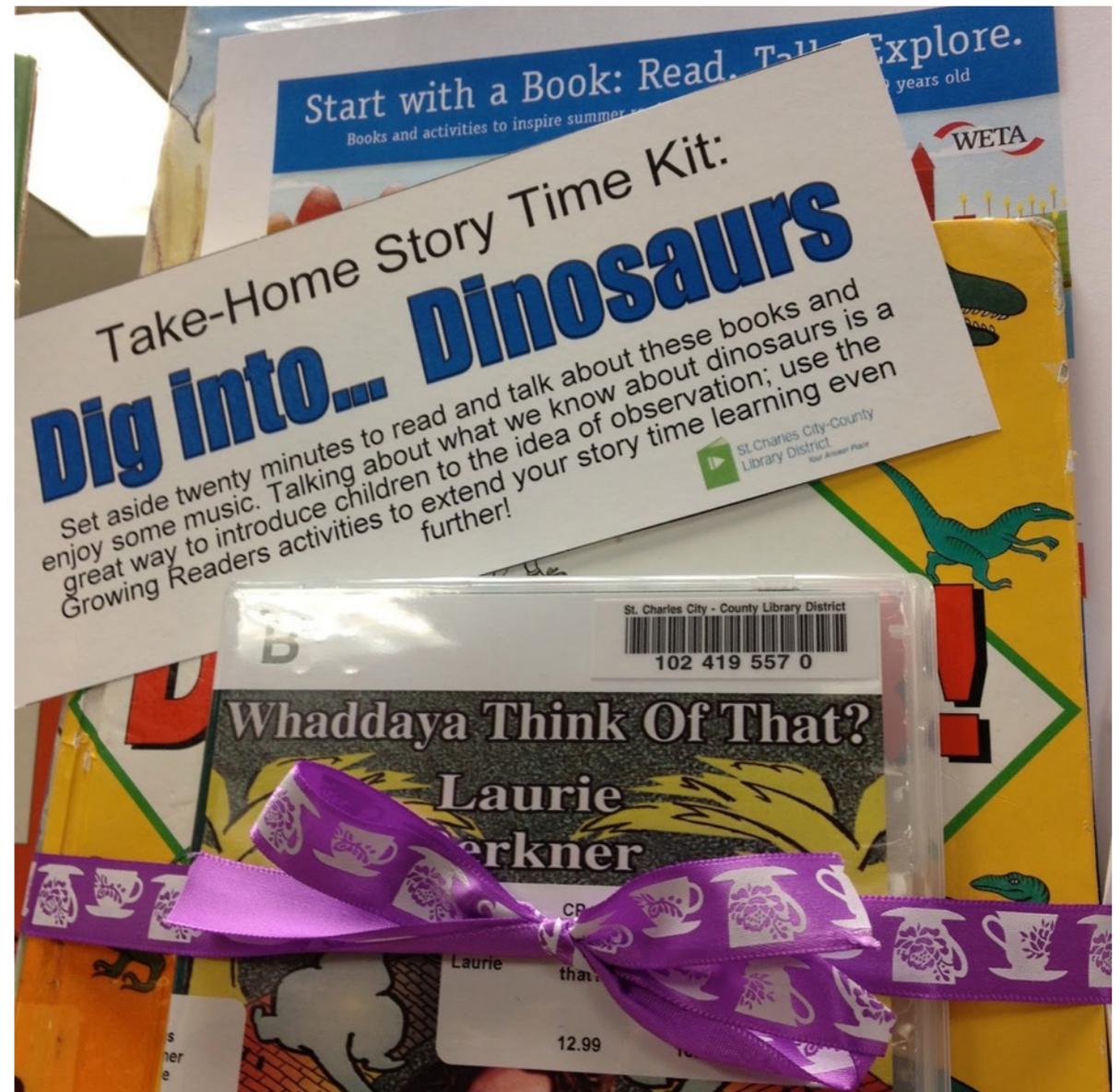
- Start with a name game & book
- Talk about the STEAM concept/s
- Ask (and answer) questions
- Provide hands-on activities
- Supply at-home options



STEAM with Preschoolers

STEAM Take-Home Kits

- Build kits around a topic
- Pack a few books
- Add some songs
- Include instructions for activities



Questions so far?

STEAM with School-Agers

What are the benefits?

- Encourage curiosity
- Reinforce basic concepts
- Facilitate development of multiple literacies
- Invite creative problem-solving
- Develop personal interests

STEAM with School-Agers

Science Programs

- Introduce your concept
 - Books! Images! Videos!
- Take questions
- Pose a challenge
- Provide time to experiment & tinker
- Test & observe



STEAM with School-Agers

Technology Programs

- Meet kids where they are
- Introduce new technology
- Learn a skill, practice, and apply
 - ➔ Tablets & media creation
 - ➔ Circuitry
 - ➔ Programming & gaming



STEAM with School-Agers

Engineering Programs

- Build something
- Give direction, but leave room for creativity
- Provide a variety of materials
- Share examples
- Test & compare structures



STEAM with School-Agers

Arts Programs

- Infuse a creative project with STEM elements
 - Constellation books
 - Camouflage patterns
 - Art Bots
 - Art Market



STEAM with School-Agers

Math Programs

- Make math an element of a larger activity
- Find the math in games
 - Puzzles, board games
- Spatial thinking
 - Origami, simple weaving
- Don't call it a math program



Questions so far?

Community Collaborations

Who do you go to?

- Local experts
- Local businesses
- Hobby groups
- Cultural institutions
- Institutes of higher education

Community Collaborations

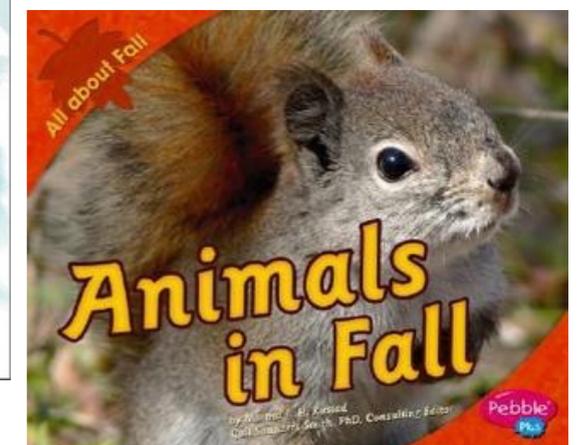
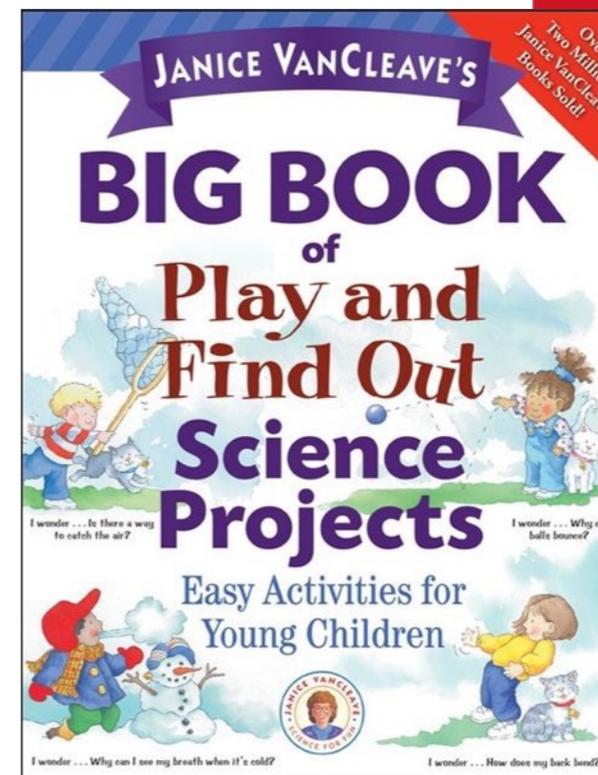
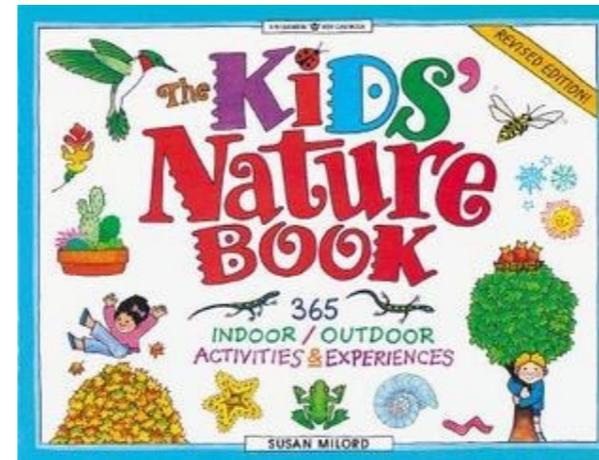
How do you reach out?

- Option 1: Figure out what you want, then ask for support.
- Option 2: Form a general plan, then ask for input and support.
- Option 3: Set up an advisory team with community partners and start from scratch together.

Go-to Resources

Books

- Explore the stacks
- Books with experiments & activities
 - ➔ Janice Van Cleave, Kids Can Press
- Find your go-to authors
 - ➔ Gail Gibbons, Melissa Stewart, Steve Jenkins



Go-to Resources

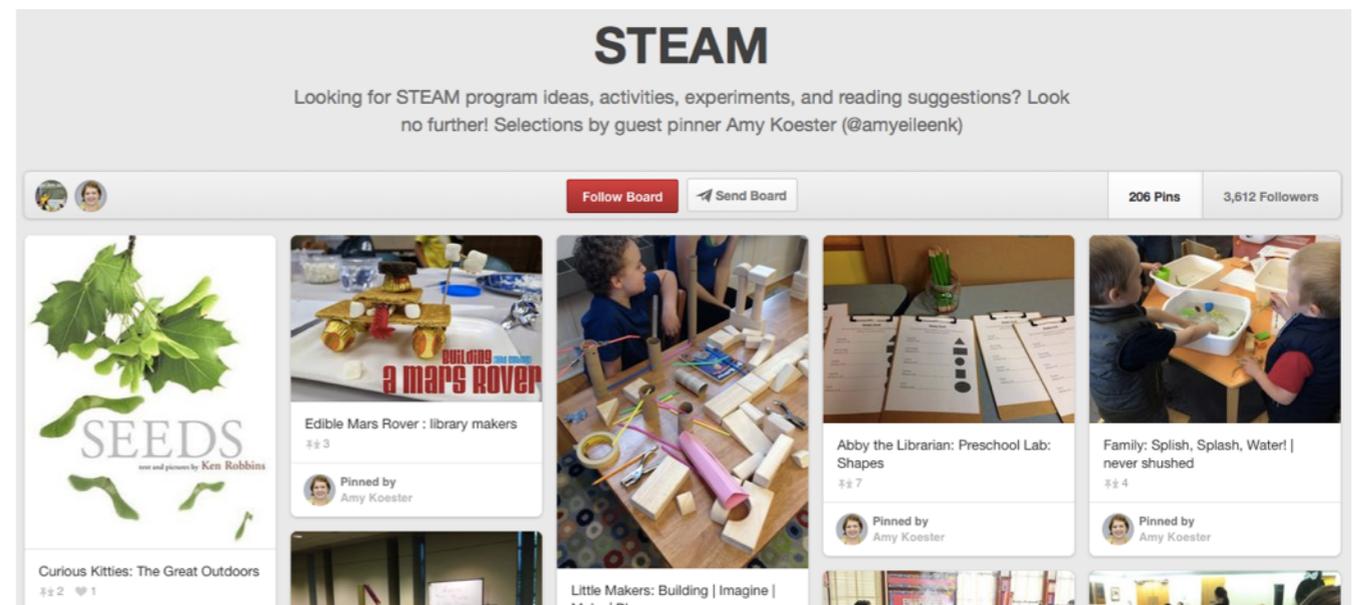
Blogs

- **Library Makers**
- **Abby the Librarian**
- **Never Shushed**
- **Adventures of a Children's Librarian**
- **Gadgets, Gizmos, & Goo (G3): The Mad Scientists Club**
- **Robot Test Kitchen**
- **The Show Me Librarian All Things STEAM**

Go-to Resources

Websites

- Steve Spangler Science
- Wonderopolis
- Start with a Book
- Mixing in Math
- Bedtime Math
- Pinterest



Thanks for participating!

Final questions?

Amy Koester

amy.e.koester@gmail.com

[@amyeileenk](#)

<http://showmelibrarian.blogspot.com>