Integrating STEAM into the ECE Classroom: Finding and Utilizing the Right Resources for Your Center

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Hello!

- Amy Koester, MLS
- Children’s Librarian
- All Things STEAM
- Children’s programs, services, and outreach
“Every kid starts out as a natural-born scientist.”

–Carl Sagan
What’s STEAM?
Why the “A”?

- Arts ≠ crafts
- Arts = creativity
- Open-ended creative activities
- Arts and STEM are not at odds
POLL!

Where in your classroom, if at all, do your children engage in STEAM elements?
POLL!
STEAM in the ECE Classroom: Storytimes

• Add non-fiction titles
• Choose fiction with STEAM content
• Take opportunities to talk
• Ask “Why?” questions
• Include counting rhymes & activities
STEAM in the ECE Classroom: Activities

- Cumulative projects
- Media creation
- Exploration walks
- Take-home activities & kits
STEAM in the ECE Classroom: Stations

- Observation stations
- Age-appropriate tools
- Water or sensory stations
- Creation stations
- Manipulables
SCIENCE

hypothesis
try
magnifying glass
investigate
experiment
try
explore
eyedropper
observe
Science Activities

- Weather demos
- Observe living things
- Physical and chemical changes
- Body science
Science Mix-Ins

- Extending stories
- Testing strength with *The Three Little Pigs*
- Primary and secondary colors with *White Rabbit’s Color Book*
- Realia
Technology Activities

- Exploring tools
- Book apps and games
- Content creation
- Chain reaction machines
Technology Mix-Ins

- Picture book apps
- Media supplements
- Simple machines to solve problems
ENGINEERING
make

test
blocks
invent
stack
build
plan
solve a problem
Engineering Activities

• Building projects
• Sink and float structures
• “How it Works” investigations
• Fixing/repurposing broken toys
Engineering Mix-Ins

- Recreate story components
- Building name games
- Talk about ways to solve problems
Have you ever intentionally used arts activities with the goal of promoting creativity and innovation?
POLL!
Arts Activities

• Process vs. product
• Open-ended
• Let kids pick the media
• Encourage exploring the media
• Display creations
Arts Mix-Ins

- “What happens next?”
- Story maps
- Retelling stories in other formats (songs, dance, yoga, flannel)
MATH

chart patterns shapes count numbers weight measure sort
Math Activities

- Compare & contrast
- Identify & create patterns
- Sorting stations
- Shape scavenger hunt
Math Mix-Ins

• Make a story chart
• Counting songs & rhymes
• Measure & compare within activities
What to look for in STEAM books:

- High-quality images
- Vocabulary
- Explanation of concepts
- Accuracy
- Age-appropriate activities
STEAM Resources: Books

Leap! from Bullfrog Books (Publisher)
STEAM Resources: Books

Pebble Plus (Publisher)
STEAM Resources: Books

Gail Gibbons (Author)
STEAM Resources: Books

Steve Jenkins (Author/Illustrator)
STEAM Resources: Books

Janice VanCleave (Author)
STEAM Resources: Books

Williamson Kids Can! (Publisher)
STEAM Resources: Books

Children’s Dictionary
STEAM Resources: Blogs

Utilize a variety of preschool blogs:

- Early childhood educators
- Homeschool caregivers
- Libraries & library staff
STEAM Resources: Blogs

Teach Preschool

http://www.teachpreschool.org/category/science-and-nature/
STEAM Resources: Blogs

PreKinders

http://www.prekinders.com/science-page/
STEAM Resources:

Blogs

Library Makers

http://librarymakers.blogspot.com
STEAM Resources: Blogs

Little eLit

http://littleelit.com
STEAM Resources: Blogs

All Things STEAM from The Show Me Librarian

http://showmelibrarian.blogspot.com/p/all-things-steam.html
Websites with preschool STEAM content:

- Science companies
- Non-profit initiatives
- Library & classroom support
- Academic standards
STEAM Resources:
Websites
Science Sparks

http://www.science-sparks.com
STEAM Resources: Websites

Fun Science from National Geographic Kids

http://kids.nationalgeographic.com/kids/activities/funscience/
STEAM Resources: Websites

Bedtime Math

http://bedtimemath.org
STEAM Resources: Websites

Flannel Friday

http://www.pinterest.com/flannelfriday/
## Missouri Early Learning Standards for Science

<table>
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<tr>
<th>Content Component</th>
<th>Process Standards</th>
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| I. Physical Science | 1. Explores physical properties of objects and materials.  
2. Investigates properties of objects and materials.  
3. Solves problems involving physical properties of objects and materials.  
4. Represents observations of the physical world in a variety of ways. |
| II. Life Science   | 1. Explores characteristics of living things.  
2. Investigates characteristics of living things.  
4. Represents observations about living things in a variety of ways. |
| III. Earth and Space | 1. Explores properties of earth and space. |
Keep two major factors in mind:

• Cost

• Reusability
STEAM Resources: Supplies

Dollar Store
STEAM Resources: Supplies
Leftovers (Recyclables Center)
STEAM Resources: Supplies
Lakeshore Learning

http://www.lakeshorelearning.com
STEAM Resources: Supplies

Constructive Playthings

http://www.constructiveplaythings.com
STEAM Resources: Supplies

Steve Spangler Science

http://www.stevespanglerscience.com
Use your community as a STEAM resource!

- A few key places to look
- How to approach potential partners
POLL!

Have you ever worked with your local public library in planning or providing services to your children?
POLL!
STEAM Resources: Community Partners

The Public Library!
STEAM Resources: Community Partners

Local Businesses
STEAM Resources: Community Partners

Local Professionals
In Conclusion

• STEAM belongs in ECE centers.
• There’s a STEAM fit for every ECE center, & every age child.
• Use your resources!
Questions?

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