



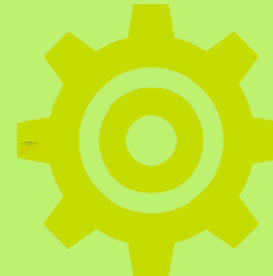
STEM in Early Childhood Education



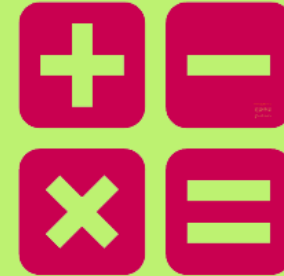
science



engineering



technology



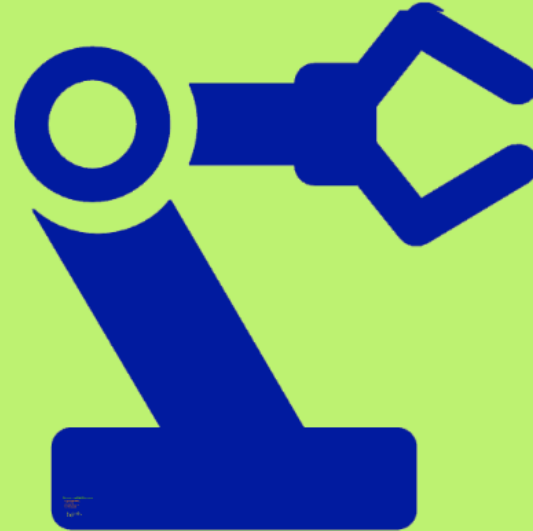
mathematics



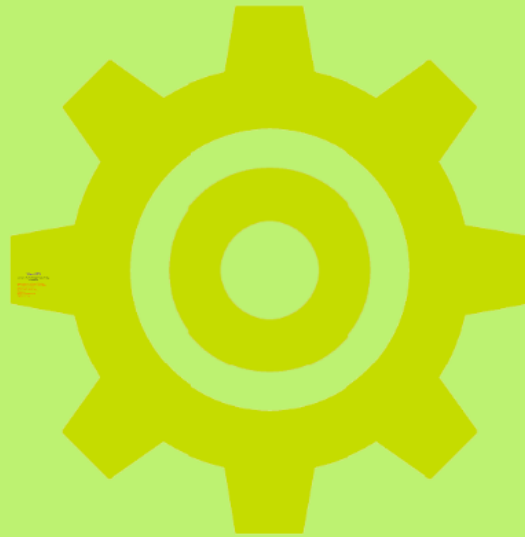
STEM in Early Childhood Education



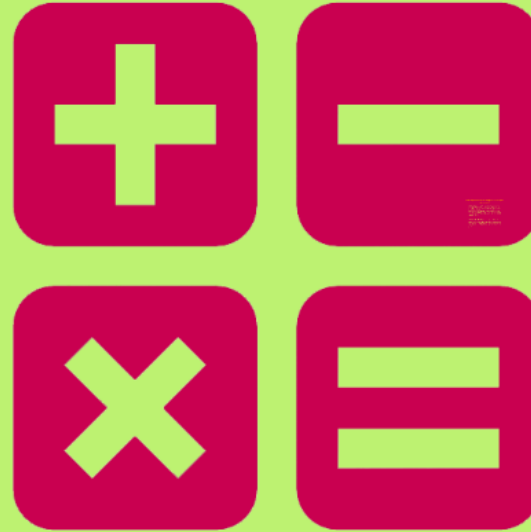
science



engineering



technology



mathematics

How do you feel about STEM lessons in your classroom??

- Using the post it note that is on your supply bag, go and mark the poster that best describes your comfort level with teaching STEM in your early childhood classroom.
- Using the 1/2 sheet of paper that is under your supply bag, take a moment to reflect on why this poster represents

Getting Started with the Technology

Using the iTunes gift card download the following apps -

- Peg + Cat Big Gig (\$1.99)
- Dinosaur Train Classic in the Jurassic, Jr! (\$1.99)
- Wild Kratts Creature Math (\$1.99)
- SUPER WHY Phonics Fair (\$2.99)
- Peg+Cat: The Tree Problem (\$.99)

FREE

- Martha Speaks Story Maker
- Learn with WordFriends



Prezi PBS KIDS Video

What is STEM

Science , Technology, Engineering and Math

- Opportunities for Critical Thinking
- Development of Organizational Skills
- Options for Creativity
- Practice Communicating
- Relevance
- Time for Collaboration
- Digital Literacy

The 4 C's of STEM Education

1. Critical Thinking
2. Creativity
3. Communication
4. Collaboration

How are these skills
used in your classroom
each day??





Curious George™

Math & Engineering Instruction

The Three Little Pigs Build Houses

Students will explore different modes of building "houses" and the air force that it takes to "blow them down"

Pendulum

Students will investigate the motion of a simple pendulum with a magnetic wand as the bob. Students will explore, through discovery and collaboration, whether or not the wand picks up a paper clip and if the position of the paper clip has any effect on whether or not it is picked up by the magnet.





Math Instruction

Float Your Boat

Students will estimate the optimum shape for their boats and the mass their boats can carry. Each group will test their boat's cargo-carrying capacity and use that data to modify the design of their boat.





Science Instruction

Balancing Act

Students will build a balance toy from a given set of objects. As a class, gravity and center of gravity will be topics of exploration. In this activity, through discovery and discussion, students will learn that objects balance more easily when the center of gravity is below the support point.

Speedy Spider

Students will make a toy spider to discover, through the use of estimation, measurement, and comparison, to explore the concept of inertia in an object at rest and in an object that is moving.



Technology Integration



Videos

iPads

Computers

Digital Cameras
Listening Centers
Google Docs



PBS Kids Technology

<http://www.pbslearningmedia.org/>

<http://www.pbskids.org>

STEM Education in Early Childhood

Misty Gerber

OETA Ready to Learn

STEM Professional Development Background Essay

Curtis Calvin

February 25, 2015

STEM Education in Early Childhood

STEM (Science, Technology, Engineering and Math) education is something that is in the forefront of public education. In recent years it has started to receive more and more recognition, funding and discussion in the academic sector. This is due to many different reasons, one of these reasons is the need for technology savvy individuals in today's work force as well as the continuing breakthroughs with science. While STEM seems to be something that is up and coming, something that hasn't been around in years past, this isn't actually the case.

STEM education has been around for years, though maybe it wasn't called *STEM*. Instead it took place within our everyday math and science classrooms. It was present in tech schools and shop classes as well as typing courses and computer classes. While today there is a special acronym that has been associated with these types of courses which allows additional money to be spent, it isn't something that is new.

In fact, STEM education can happen in any classroom. How you ask? STEM lessons can be accomplished through the use of a ruler, an iPad, a magnifying glass, digital cameras, beakers and vials and of course computers. STEM is not something that has to be taught in a secluded classroom or a specially built building. Instead it should be integrated and taught in each classroom.

Not only is it important that STEM lessons be taught in the classrooms, but even more importantly, it needs to be taught in early childhood classrooms. Chesloff (2013) tells us that "young children are natural-born scientists and engineers" (para. 11). How many children in your life does this describe? I cannot think of a single child that I have ever had an encounter with that was not highly interested in exploring the world around them, discovering how things work and building with anything they could get their hands on. Chesloff goes on to discuss the

brain chemistry of young children, saying “research confirms the brain is particularly receptive to learning math and logic between the ages of 1 and 4, and that early math skills are the most powerful predictors of later learning”.

Due to a child’s natural ability to explore freely, without feeling that they are going to do something wrong they are able to make the most unique discoveries. They continually expand their knowledge and become more and more comfortable with the science, technology and math of their generation. These abilities are just one reason that STEM should be taught consistently and efficiently in all early childhood classrooms.

References

Chesloff, J. (2013, March). STEM education must start in early childhood. *Education Week*.

Retrieved from <http://www.edweek.org/ew/articles/2013/03/06/23chesloff.h32.html>