



STEM Academy
Barber Middle school
Parent Information Night

Meet The Stem Team

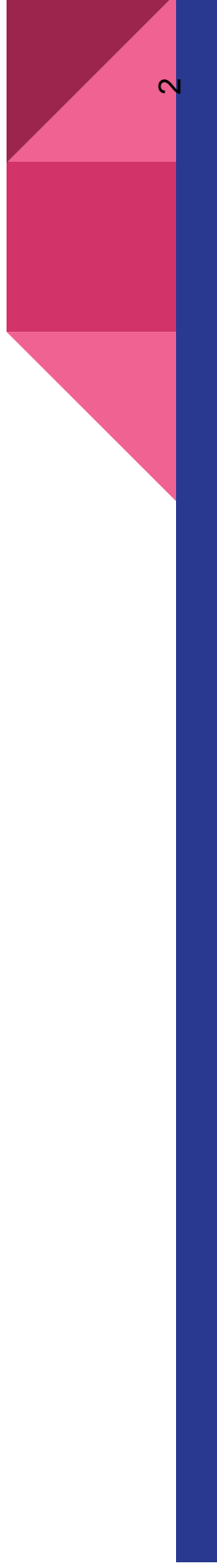
English- Mrs. Holly Sanderson

Social Studies-Mrs. Britta Carter

Math- Mrs. Loucindy Pieper

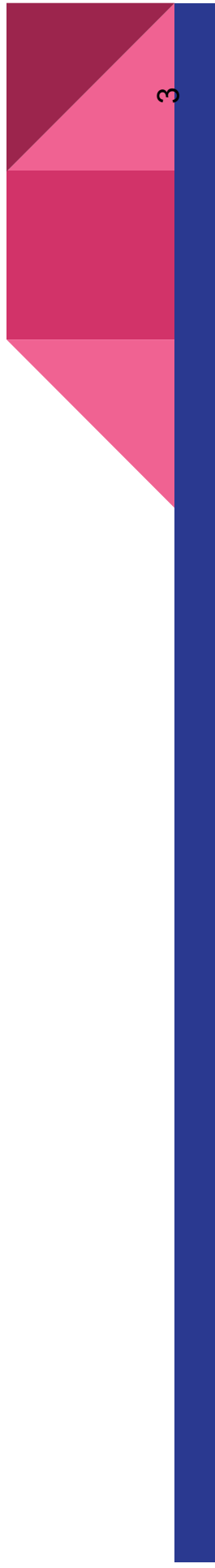
Science-Mrs. Holly Yoes

Academic Coach-Mr. Brendan Fitzpatrick



What is STEM?

There is no universal definition of STEM, however experts generally agree that STEM workers use their knowledge of science, technology, engineering, or math to try to understand how the world works and to solve problems.”

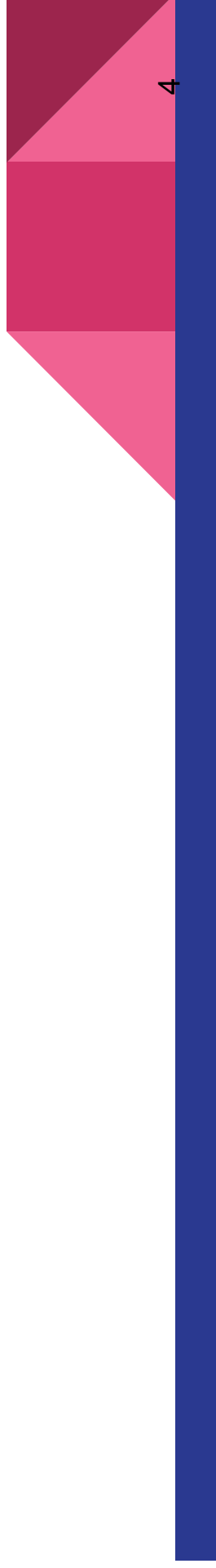


Why Choose STEM?

“The future of the economy is in STEM...”

“That’s where the jobs of tomorrow will be.”

James Brown, Executive Director of STEM Education Coalition



MISSION



The mission of the STEM Academy is to increase student achievement by engaging students in innovative science, technology, engineering and math instruction.

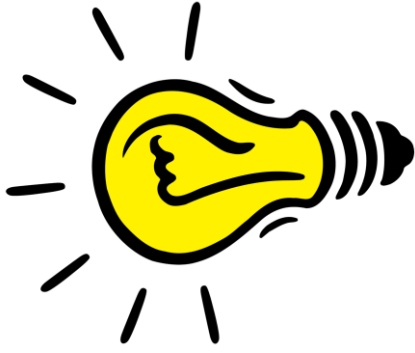




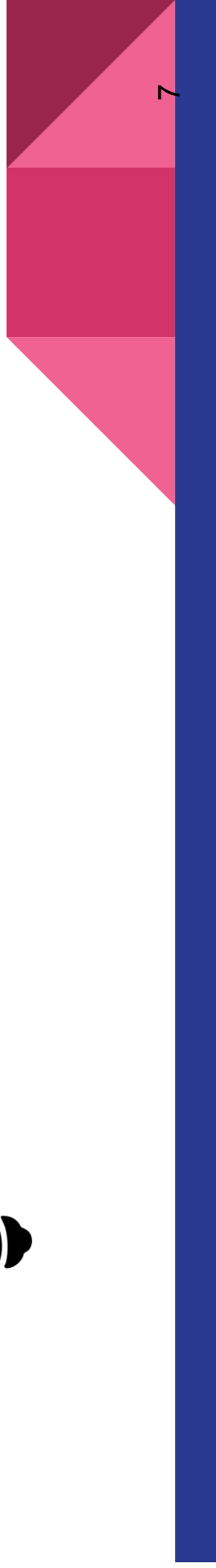
The STEM Academy will provide a continuous pathway of education through opportunities that create STEM-literate graduates ready to accept the challenges of advanced education beyond high school to meet the needs of future workforce.

“Persistence, Patience, Perseverance

When something doesn’t work, there is always another solution.”



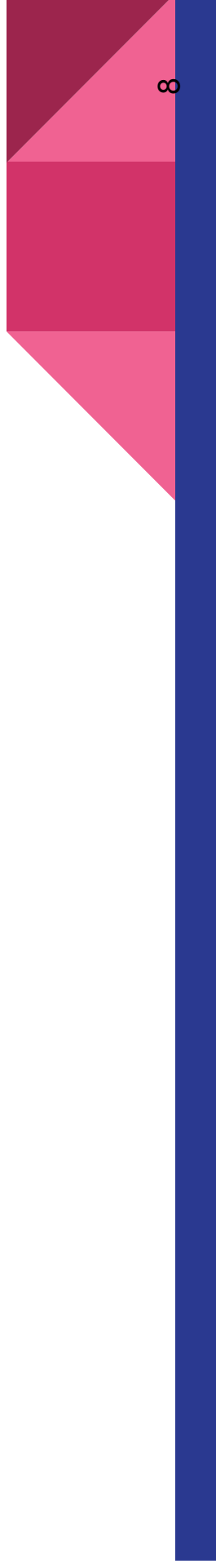
Thomas Edison



How will STEM be different from regular education program?

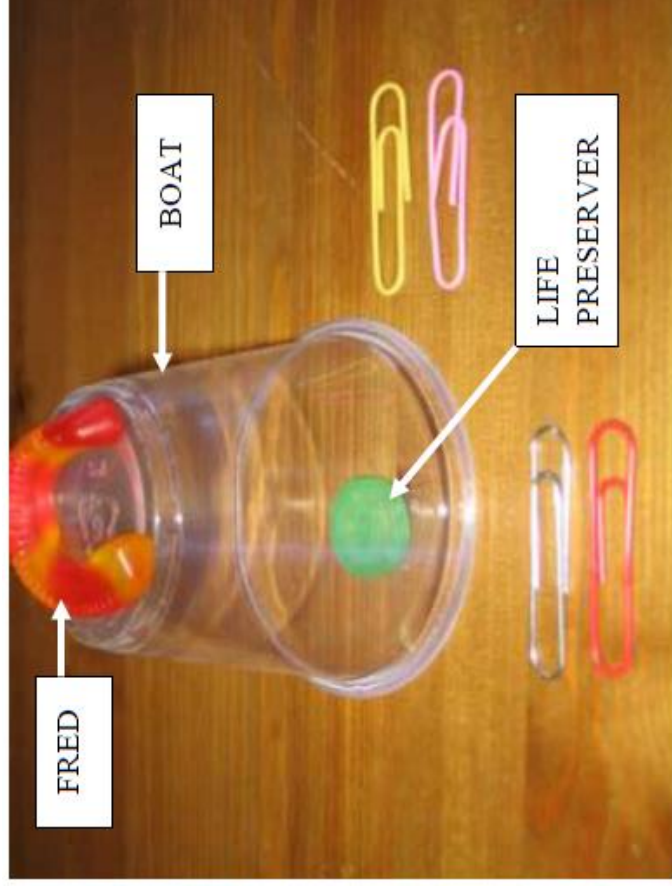
- Project-Based Learning
- Further research and higher level questioning
- Increased use of technology
- Integrated lessons between all 4 content areas
- Engineering
- Robotics

[Example STEM Program Video](#)



Sample STEM Activity: Save Fred!

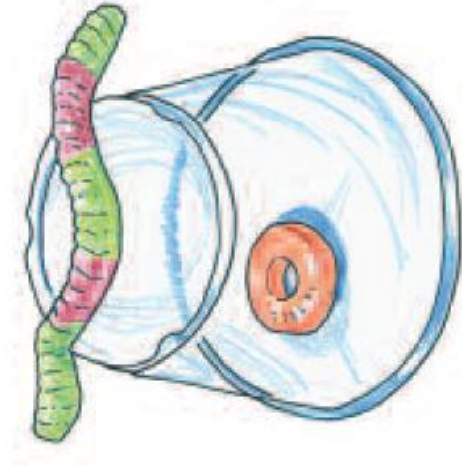
Instructions: Poor Fred! He was sailing along on a boat (your plastic cup) when a strong wind blew it upside-down. Fred (your candy worm) ended up on top of the upside-down boat. Unfortunately for Fred, his life preserver (your candy life preserver) is still trapped under the boat.



Save Fred!

Problem:

How can you and your partner save Fred using only 4 paper clips?



Your job is to place the life preserver firmly around Fred's body, but you must obey three rules:

1. Fred may not fall into the "sea" (onto the table) more than one time; if he does, Fred "drowns."
2. You may not injure him in any way.
3. You may use only the four paper clips to move Fred, the boat, and the life preserver. You may not touch anything except the paper clips.

Science Example for 1st 9 Weeks: Classifying Matter based on Physical Properties

Regular	STEM
Teacher led, whole group lecture, videos, notes to explain	Student design and build a package for a single pringle chip
Teacher demonstrations	Classes will collect samples of materials tested in their design
Students follow provided lab investigation steps to observe physical properties of substance	Students will design methods to observe the physical properties of the material and classify them into groups
Students will complete worksheets and multiple choice questions for assessment	Students will act as crime scene detectives and crime lab scientists

Math

Regular	STEM
<p>Teacher Lead</p>	<ul style="list-style-type: none"> ● Exploration based lessons with many projects. ● Students use the engineering design/scientific method process to discover mathematical patterns. ● Failure is reframed as a necessary part of learning.
<p>Copying Notes then Independent Practice Worksheets</p>	<ul style="list-style-type: none"> ● Limited Notes. ● Student use manipulatives and technology to bring abstract mathematical concepts into concrete understanding. ● Students will productively work collaboratively in teams.
<p>Lower level Computation Based Questioning with A Single Set of Computation Procedures</p>	<ul style="list-style-type: none"> ● Higher level questioning that develops metacognitive skills and critical thinking skills. ● Questions are focused on real-world problems. ● Problems can be solved using multiple processes.

English

Curriculum will incorporate reading, writing, and presentation skills

In depth word study including latin/greek prefixes, suffixes, and roots

Analogies

Literature circles, poetry slams, reader's theater

Research skills, techniques, and reporting

Collaboration with all other content areas

Please read "The Giver" by Lois Lowry over the summer and be prepared to discuss and be tested the first week of school!

Social Studies: Unlocking the Mysteries of History-

A History Detective is somebody who looks at evidence from the past.



Example of First Project: Operation “Gatortown” Design your own Colony. (We will use Jamestown Colony as an example). ELAR: Read a Historical Fiction Novel, Math: Use measurements to design your colony, Science: study the environment, Technology: 3D SketchUp for architecture. History: research original 13 colonies.

Virtual Field trips/On-Line wax Museum/ Technology: create historical games/Skype/Padlet/Historical Document Analysis/Mock trials (government)/use of topographic maps

What we expect of our students:

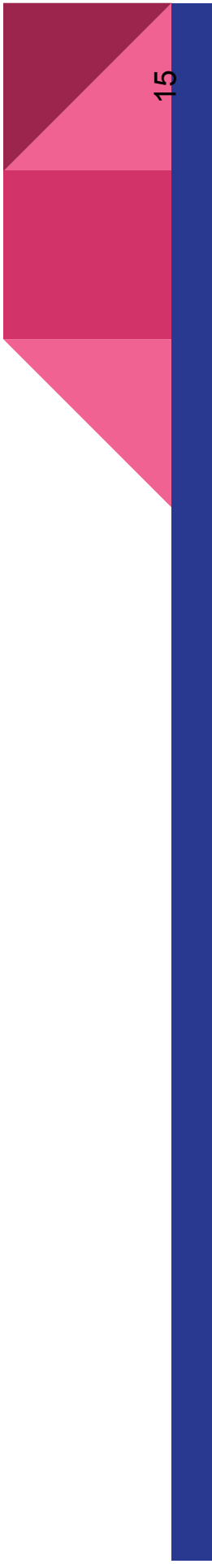
Work Collaboratively within a group

100% engagement

Accept failure and learn from it (engineering process)

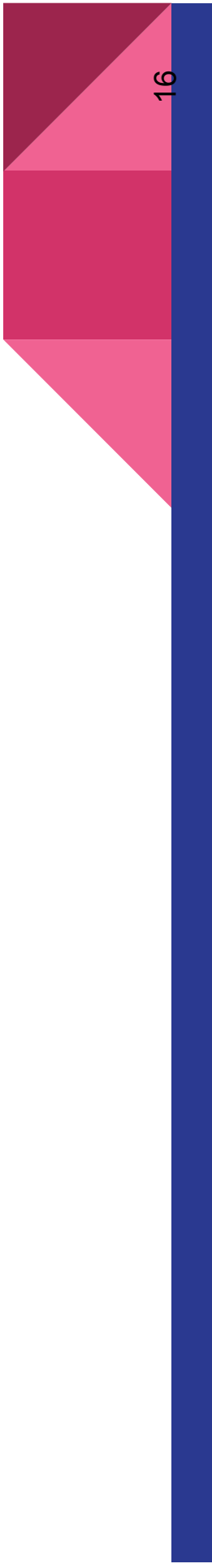
A Growth Mindset!

Participate in GT Project



Family Involvement

- Guest Speakers- please volunteer in your area of expertise or recommend someone you know
- Classroom helpers
- Chaperones for field trips
- Support by having your child read each day



Questions?

Next Steps: Complete Summer Reading: [The Giver](#)

Stem Academy Shirt Design Contest

Door Prizes

