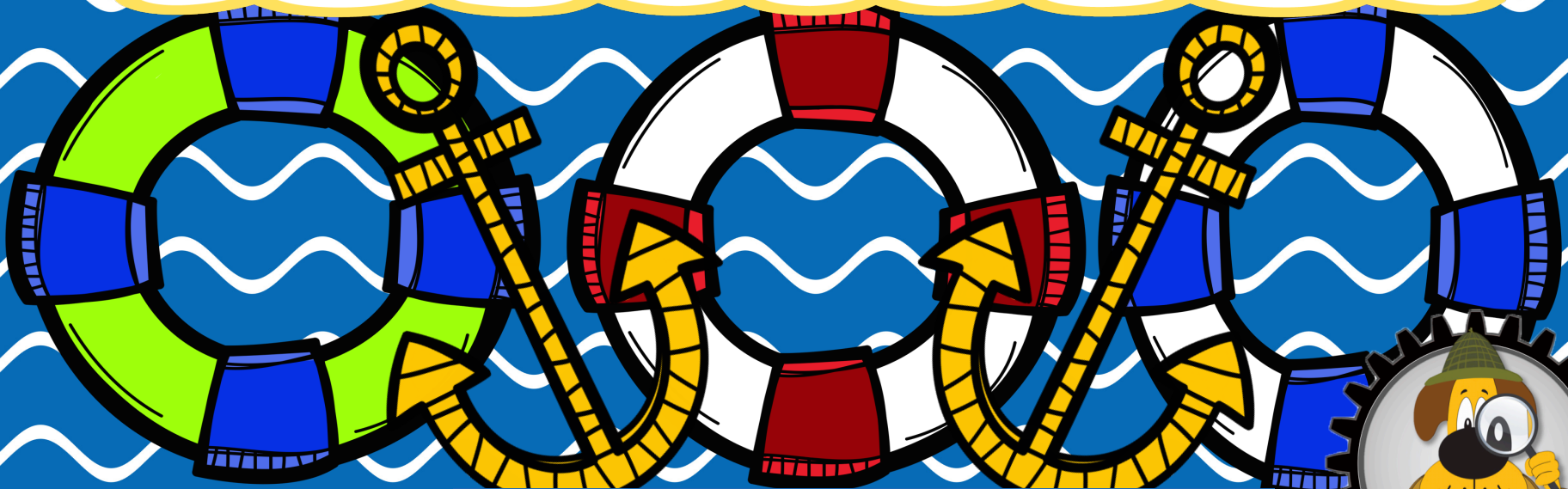


Save Sam with STEM

Problem Solving and Teamwork



©Get Caught Engineering

TM

Next Generation Science Standards (NGSS)

Grades K- 2: ENGINEERING DESIGN

K-2-ETS1-1: Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool

K-2-ETS1-2: Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem

Grades 3-5: ENGINEERING DESIGN

3-5--ETS1-1: Define a simple design problem reflecting a need or a want that included specified criteria for success and constraints on materials, time, or cost.

3-5--ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5--ETS1-3: Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

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Thank You

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getcaughtengineering@gmail.com

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Get Caught Engineering has lots of STEM resources for your classroom.

A Website and Blog: <http://www.getcaughtengineering.com>

A Facebook page: <https://www.facebook.com/GetCaughtEngineering>

A Pinterest page: <https://www.pinterest.com/getcaughtenging/>



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For updates on new STEM activities, posters, task cards and handouts for students and a monthly STEM newsletter for teachers please follow our store at:
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Save Sam with STEM

with
Problem solving and Teamwork



Engineering Energizers!

Quick Classroom Lessons to Activate the Design Process

Short on time?
Not a lot of materials?

Engineering Energizers

No time for an in depth engineering lesson? Our Engineering Energizers are just the ticket for a quick STEM lesson that provides a challenge and a “brain push up” in a short amount of time with just a few materials. An easy way to infuse engineering into your day!





Teacher Notes and Materials List

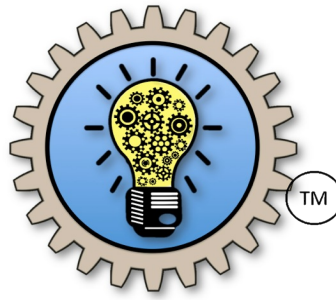
Time: 30 minutes

Material:

- **Sam (gummy worm)**
- **Life preserver(gummy life saver)**
- **1 5 oz. plastic cup**
- **2 Paper clips**

Teacher Notes:

This activity has been used by teachers for several years and is readily available on the internet with the title "Save Fred". There are also YouTube videos available online. To begin the activity, the students should put the gummy lifesaver underneath the overturned cup. Sam should be placed on top of the cup. Remind the students that if he falls to the table, he has fallen into the water and they must begin again. Encourage the partners to discuss the problem and possible changes to the paperclip before beginning.

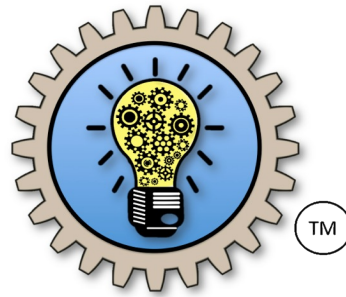


Save Sam

Sam has been enjoying boating on the lake but he frequently forgets to put on his life preserver. He never learned to swim and disaster has struck. Sam's boat has capsized! He was able to crawl on top of his boat but as luck would have it, his life preserver is under his boat. Sam needs your help to not only reach the life preserver but to put it on so he won't drown.

You and your partner will each receive one paper clip. You may touch the boat, life preserver and Sam with only this paper clip. At no time may you injure Sam by stabbing him. If you drop him, he has drowned and you must start over.

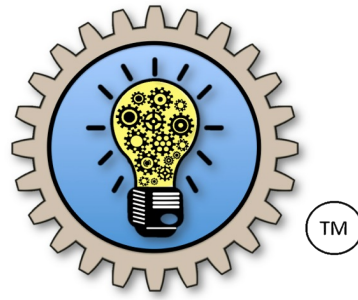
Think...Create...Think...

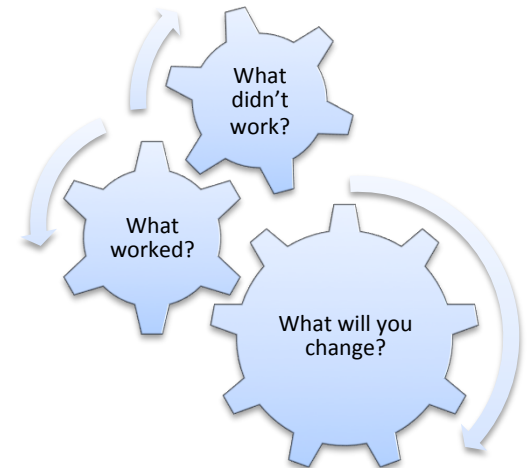


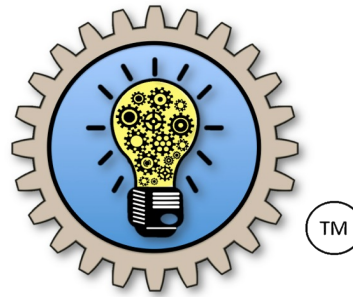
...Think...Create...Think

My Design

A large, empty rectangular area with a thick blue border, intended for drawing or writing a design.





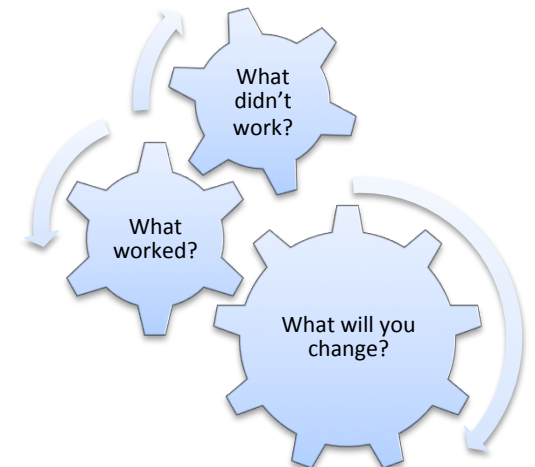


How We Solved the Problem!

What worked?

What was really difficult?

Did teamwork make a difference in your success?



Inquiry Questions

What are some different things you could try?

What would happen if you...?

What might you try instead?

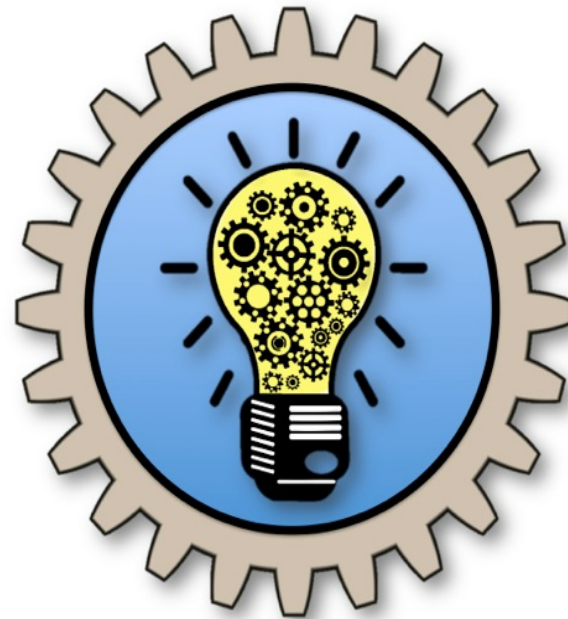
What will you do next?

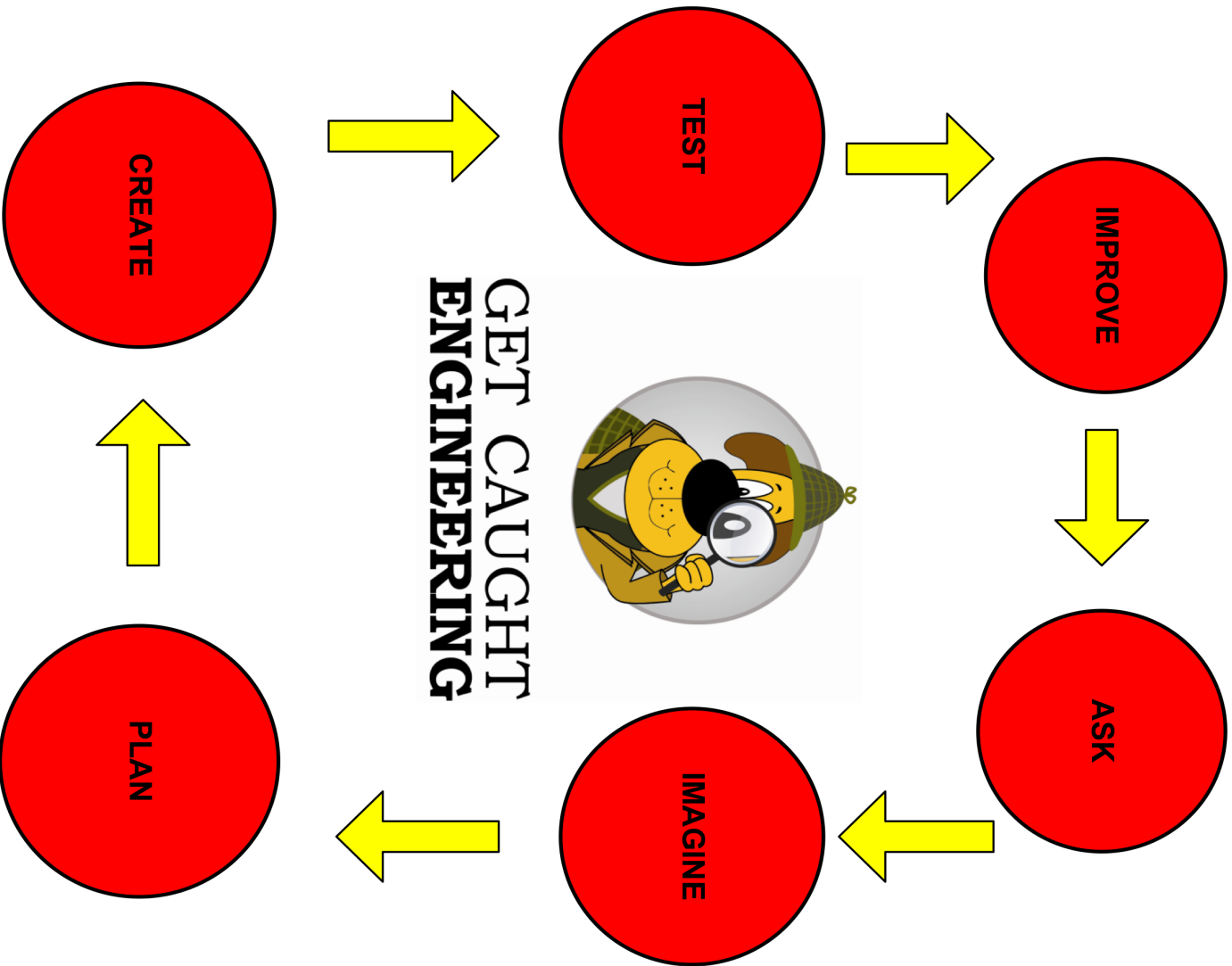
Tell me about your materials?

Tell me what happened?

What does this make you think of?

What will you do next after you finish this part?





Get Caught Engineering

Starting a STEM Program at your school? We have many helpful STEM and engineering lessons that will get you off to a good beginning.

We have put together 15 pages of general information that will provide an overview for teachers and a generic student notebook that could be used with any engineering project

<http://www.teacherspayteachers.com/Product/Ready-SetSTEM-An-Introductory-Packet-to-Start-A-STEM-Classroom-1210120>

The STEM-A-THON includes 12 engineering activities as well as a collection of Get Caught Engineering materials for a center or bulletin board. Activities use recyclable and easy to find materials. Perfect for the small STEM budget!

<http://www.teacherspayteachers.com/Product/Back-to-School-STEM-A-THON-Get-Caught-Engineering-for-a-Year-1313732>

We have chosen twelve of our most popular engineering lessons that can be integrated into many different subject areas from math to literature to history, as well as science. We have included student handout packets, detailed teacher notes, design process posters, and rubrics. They range from 60 minute activities to lessons that will take several hours.

<http://www.teacherspayteachers.com/Product/Get-Caught-Engineering-All-Year-Long-Twelve-STEM-Lessons-for-Your-Class-820886>

Visit our TPT store to find many more STEM and Engineering activities for grade K-8 :

<http://www.teacherspayteachers.com/Store/Get-Caught-Engineering-Stem-For-Kids>

Why Engineering?

Engineering for children? Really?

Exciting activities that combine math, science, reading and writing?

Lessons that promote planning and problem solving?

Strategies that develop perseverance and patience?

Teacher friendly instruction that easily integrates into one's units?

Get Caught Engineering does all that and more, providing a unique application for the learning benchmarks.

Get Caught Engineering was created to inspire elementary students to explore the world of engineering and apply the design process to problem solving. After investigating what is already available in this area, we found there are some great materials but they are either dedicated to gifted and talented classes, for after school programs, or are lengthy units that are too expensive or too time consuming. Get Caught Engineering has been developed to introduce all children to engineering concepts in a teacher friendly approach that easily integrates into subject areas. Simple low cost materials, lesson templates, and teacher tips all add up to user friendly activities that will inspire children to consider engineering as a cool career choice, and a reason to pursue math and science classes during their school years.

The engineering profession is concerned within ten years there will not be enough engineers to meet America's needs. Studies show that the time to inspire students' interest in these fields is at the elementary level. Through introductory engineering lessons, elementary level teachers can plant the seeds of inspiration for future engineers for our country.

Questions? Need an engineering lesson to fit your curriculum? Want some ideas for engineering resources?

Please contact Wendy Goldfein and Cheryl Nelson at Getcaughtengineering@gmail.com

In addition visit our blog , Facebook page, and Pinterest page for lots of great STEM ideas and resources for your classroom

- <http://www.getcaughtengineering.com>
- <https://www.facebook.com/GetCaughtEngineering>
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