



# Junior Think Like an Engineer

**While we wait for others to join...**

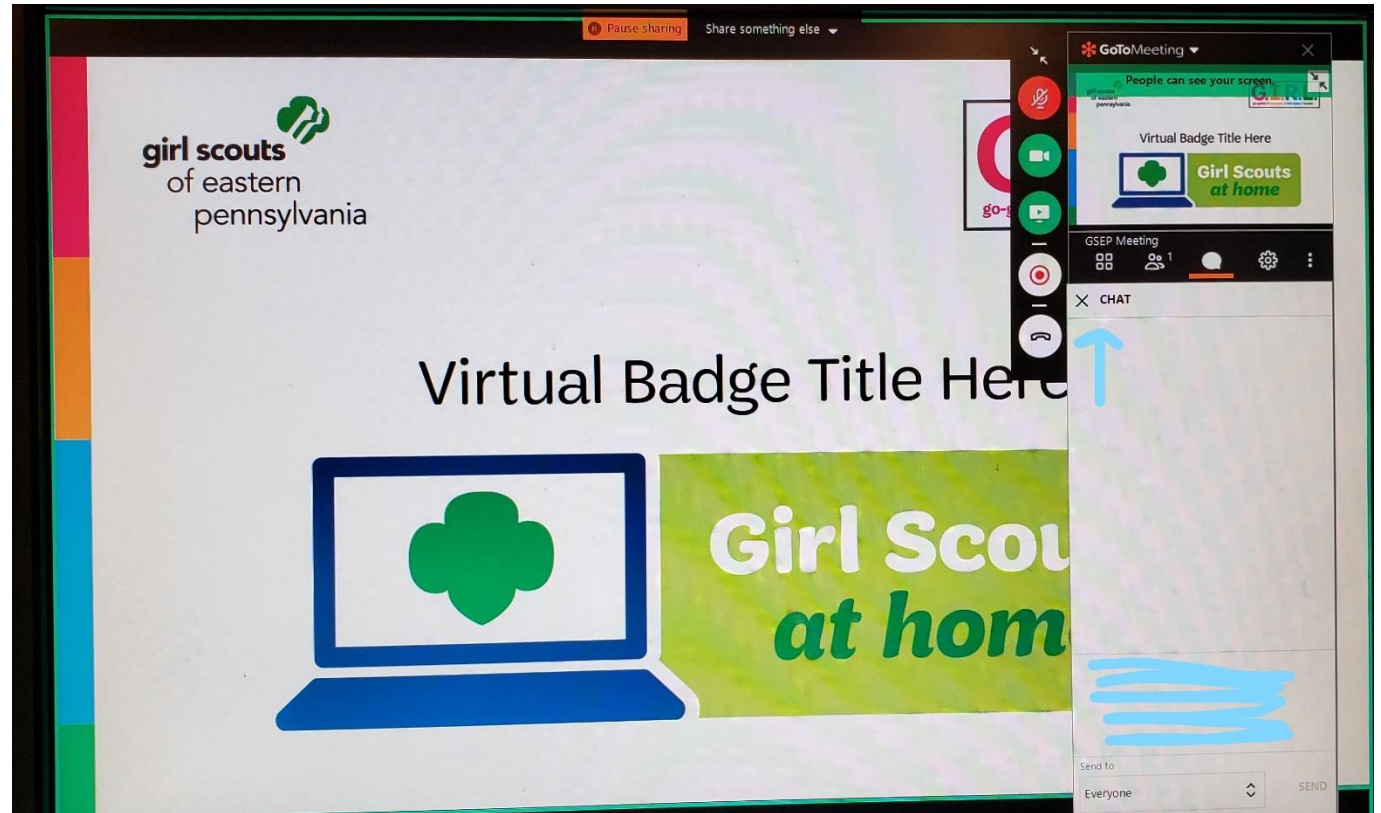
**Using your pencil and paper, draw a picture of something you use everyday that an engineer may have helped design.**

**Materials you will need....**

- Pencil
- Paper
- Duct Tape- 8 inch strip
- Plastic wrap- 10 inch strip
- 1 paper cup (8oz or larger)
- 10 drinking straws
- 25 pennies
- Aluminum pan (or other container) with water

# How will this Virtual Troop Meeting Work?

- On the right side of your screen, there is a control panel. You should see a microphone, a video camera and a chat bubble.
- If you have a webcam, clicking on it will let everyone else in the meeting see you too.
- The Chat Log looks like a cartoon thought bubble...see it underlined in red? You can type questions or comments into the chat log and everyone will be able to see what you write!



A wooden signpost with multiple directional arrows pointing in various directions against a blue sky. The signpost is made of a dark wooden pole with several light-colored wooden arrows attached to it. The arrows point in different directions, some horizontally, some diagonally, and some vertically. The background is a clear blue sky with a few small white clouds.

## Meeting Norms:

- Staying muted unless asked to unmute by the presenter***
- Only using the chat log for VTM related messages***
- Use of appropriate language during VTMs***
- Behavior modelling the GS Promise and Law***

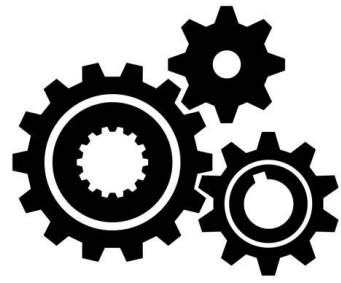
# Girl Scout Promise and Law

## The Girl Scout Promise

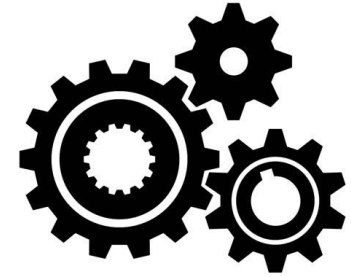
On my honor  
I will try  
to serve God  
and my country,  
to help people at all times,  
and to live by the Girl Scout  
Law.

## The Girl Scout Law

I will do my best to be  
Honest and Fair,  
Friendly and Helpful,  
Considerate and Caring,  
Courageous and Strong,  
Responsible for what I say and do,  
and to  
Respect myself and others,  
Respect authority,  
Use resources wisely,  
Make the world a better place,  
and be a sister to EVERY Girl Scout.



# Think Like an Engineer



## What we are doing today....

- Learn who engineers are and what they do
- Discover the Engineering Design Process
- Complete a hands on design challenge



## Materials you will need....


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# What do engineers do?





**Engineer:**  
a person who designs,  
builds, or maintains  
engines, machines, or  
public works.

# THE DESIGN PROCESS

Used by engineers, inventors, and other problem solvers, the design process is a series of steps that help people think creatively and come up with solutions.



DEFINE THE NEED



BRAINSTORM



DESIGN



BUILD



TEST &  
EVALUATE



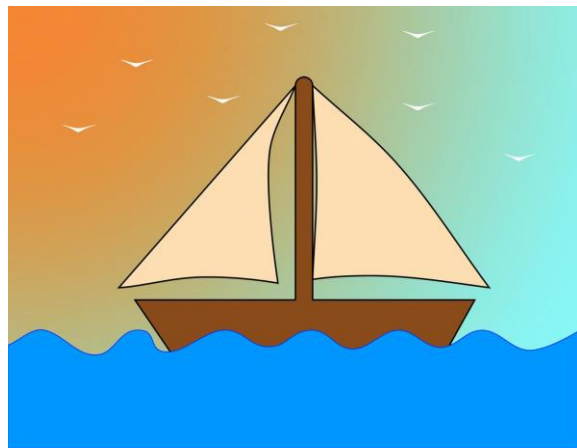
REDESIGN



SHARE SOLUTIONS

# Design Challenge: Float it!

Design and construct a boat only using the materials listed. When completed the boat must be able to hold 25 pennies and float for 10 second without sinking!



Materials you can use:

- Duct Tape- 8 inch strip
- Plastic wrap- 10 inch strip
- 1 paper cup (8oz or larger)
- 10 drinking straws

# Test Your Design!



**Can you make your boat float? Try these things if your boat:**

- a. Sinks quickly to the bottom—find the leak and waterproof it**
- b. Tips over—find out how to evenly distribute the weight of the boat**
- c. Won't float- try changing the shape of the boat. Take a look at the depth and height of the sides.**

What happened? What worked and  
what didn't work? Why?



# What We Did Today....

## Completed:

- Learned who engineers are and what they do
- Discovered the Engineering Design Process
- Completed a hands on design challenge

## To finish the journey....

- Complete two additional design challenges- they can be anything!
- Complete your Take Action project! (see follow up email for details)



Goodbye.

{for now}