



PLTW Virtual Learning

7th and 8th Grade Design and Modeling

May 11, 2020



Lesson 25: Stranded Design Process Day 1

Objective/Learning Target:

Students will use the engineering design process to design, model and test floating escape vehicle.

Warm-Up:

What does it mean for an object to float?

Name 10 objects that float in water (try them out if you want to).

What characteristics to these objects share that allow them to float?

Lesson Introduction/Background Information:

It was a beautiful day at the ocean. You decided to take your boat out for a drive.



At midday an unexpected storm blew in. The wind and waves became too violent for your small boat.

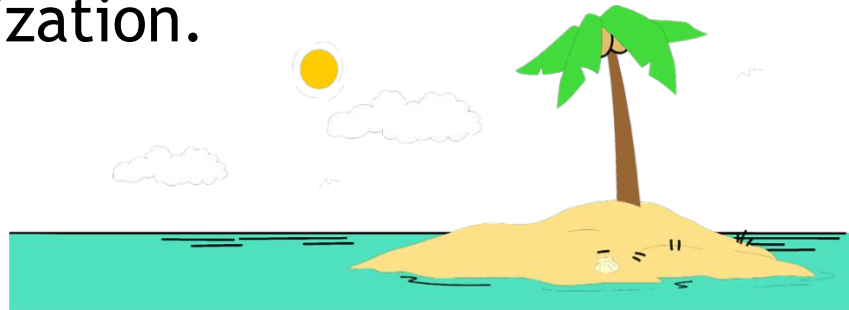


Lesson Introduction/Background Information:

All of a sudden you were thrown from your boat into the ocean. Don't worry, you were able to grab onto your lifejacket to keep you afloat.

When the storm had passed, you found yourself stranded on a small island surrounded by the ocean.

With no cell service or way to call for help, it is your job to get off the island and back to civilization.

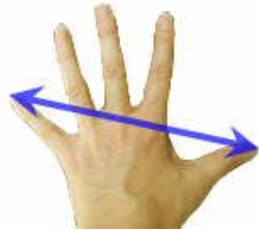


Practice:

Time to gather the supplies you need. Since you are on an island, you can only use what you find out in nature.

Go outside and look for building materials to create your escape vehicle. Try sticks, leaves, rocks, etc.

The size of the escape vehicle will be 1 handspan by 1 handspan.



Handspan is the distance from thumb to pinky when you stretch your fingers out.

It will also need to hold some weight to simulate a person riding on the vehicle.

Self-Assessment:

Make a list of the materials you found outside. Next to each material, write what purpose they could serve in the building of your escape vehicle. You may have to be creative.

If your raft is going to carry you across the ocean, then it must float. Grab some water and test out each of your materials.

If you need to find more materials go back outside.

Extend Your Learning/Continued Practice:

Watch this video to give some inspiration. This kid took what he could find outside and build a raft.

[Banana Branch Raft](#)

