



STEM Ahoy! Submarine Simple Machine Challenge

Directions

Challenge:

Create a simple machine prototype to raise and lower a submarine for repairs!

Directions

In this challenge you are designing 2 things: Your submarine & simple machine device!!!

*To increase level of complexity- separate your family into 2 teams! (One team will design the submarine & the other team will design the simple machine device!)

1. Research and brainstorm the design of submarines!
2. Sketch your prototype/think about what the model will look like!
3. Create your submarine using materials supplied OR get creative and add other supplies found in your house!
4. Once submarine is created, your simple machine device needs to be capable of raising and lowering the designed submarine.
5. Research the design of cranes and hoists used in maritime and construction industries (what shapes are most often used?).
6. Create a model of your simple machine device using materials supplied.
7. For an additional challenge- the device cannot be taped to a counter or surface!
8. Test your machine device- connect it to your submarine and practice raising and lowering the vessel.
9. Doesn't work? Re-design!
10. Works? How can you improve the submarine and/or machine device to carry a heavier weight?
11. Share a picture of you completing your challenge on Twitter and tag @classr00mrescue to be entered into the Tech Prize drawing!

VDOE Engineering Design Process:



Materials:

Suggested Items
Popsicle Sticks
Bendable Straws
Cardstock Paper
Rubber Bands
Tape
String
Index Cards
Your Imagination!!!