UMMAHLIT
Transportation Device
ENGINEERING CHALLENGE

Background Story

The children of UmmahLand need your help! A shipment of books is stuck on the other side of the river. We need YOU to build a transportation device that can float on top of the water and carry the books to the safe shores of UmmahLand. Will you help?

The Engineering Challenge

In this engineering design challenge, the shipment of books is represented by 6 pennies. You must build a transportation device that meets the 3 requirements below.

Transportation Device Requirements

1. Transportation device must be made using at least 3 different materials.

2. Transportation device must be at least 5 inches long.

3. Transportation device must be able to carry 6 pennies without sinking.

List of Material Ideas (Optional)

- Plastic/foam cups
- Carton box
- Aluminum foil
- Waterproof clay
- Toothpicks
- Straws
- Paper
- Glue
- Tape
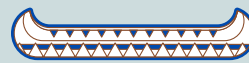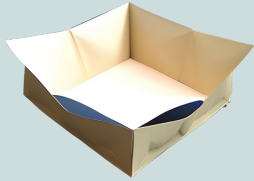- Stapler
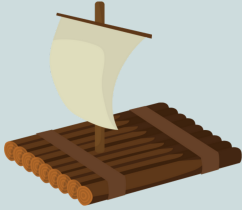- Popsicle sticks
- Scissors
- Rubber bands

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Instructions

1. Find an assistant (adult helper).
2. Draw a design of what you want your transportation device to look like.
3. Collect material (at least 3) to make the transportation device that you've designed.
4. Build your transportation device, make sure it is at least 5" long.
5. You'll need a container of water big enough to test your device. Place 6 pennies on top of your device, if it floats - success!
   If it does not, then make a change. Example:
   a. Change the shape of your design
   b. Add or change materials
   c. Change how you place the 6 coins
   Once you make a change, test your transportation device. Keep making changes until the coins are able to float on the water.
6. Finally, discuss this engineering project to talk about what you learned.

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Draw your Transportation Device

List the Materials You Will Use

- _____
- _____
- _____
- _____
- _____
- _____

Keep Track of Your Changes

What change did you make?

What was the result?

Discussion Questions

- What was easy and difficult about this challenge?
- What important part made your device be able to float?
- Any ideas on what to do if you had to carry 100 pennies?