

Lesson 1.4
Activity Sheet
Using the properties of materials
to improve a model boat

Name: _____

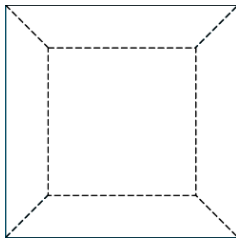
Date: _____

ACTIVITY

Materials

- Paper boat template
- Tape

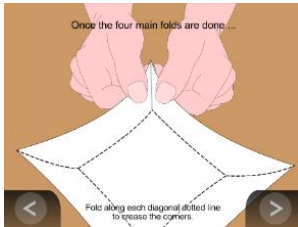
1. Follow your teacher's instructions and the pictures below to fold and tape the paper square to make a boat.



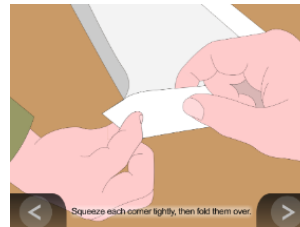
1. Lay your boat template flat on your table or desk



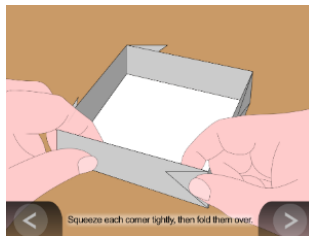
2. Fold each side in along the dotted line and make a nice crease.



3. Open the sides up and then fold the corners.



4. Squeeze each corner and fold it toward a side of the boat.



5. Fold each corner to the side of the boat. Be sure the sides stand up well.



6. Tape the corners securely to the sides of the boat.

2. Your teacher put a paper boat in water and added pennies to the boat.

How many pennies did the boat hold before sinking? 26

What happened to the paper that the boat was made from?

The paper absorbed water and became weaker and collapsed.



ACTIVITY

Question to investigate:

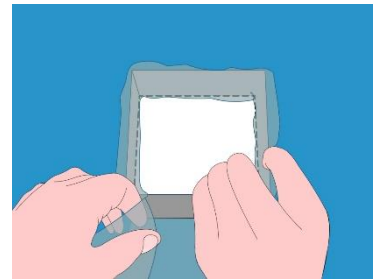
How can you use paper, plastic, and aluminum foil to design and build a boat that holds the most weight without sinking?

Materials

- Centimeter ruler
- 80+ pennies
- Plastic (15cm x 15cm square)
- Copier paper (15cm x 15cm square)
- Aluminum foil (15cm x 15cm square)
- Scissors
- Tape
- Container with water

Procedure

1. Use plastic, aluminum foil, and tape to cover your boat.



3. Make a prediction

How many pennies do you think your boat will hold now that it is covered with plastic and aluminum foil?

I think that our boat will hold 40 pennies before sinking.

2. Put your boat in the water and test it to see how many pennies it can hold without sinking.



4. What actually happened

We discovered that our boat help 36 pennies before sinking.

5. Why you think adding aluminum foil and plastic helped your boat hold more pennies before sinking?

Both the aluminum foil and the plastic are waterproof, so water didn't absorb into the paper and weaken it. Also, the aluminum foil made the boat more rigid, so it did not bend as much under the weight of the pennies.