



FREE Teacher Download

LEMON BOATS

TARGET AUDIENCE

- Ages 6 and up
- Appropriate for introducing or reinforcing concepts around sink/float
- Appropriate for small group work, individual, or can be done as a class

FOCUS

How can you explore density using a lemon?

MATERIALS

This list makes one project. Items with an "*" can be duplicated for the number of students or small groups.

Lemons*
Thin dowels*
Paper*
Scissors*
Tape*
Large container
Water
Mini figurines or small objects*
Modeling clay*

VOCABULARY

Float
Sink
Density
Air pockets
Solid

PROCEDURE

1. For younger students, half and hollow out several lemons leaving just the rind before starting the lesson. For older students, they may be able to do this part during the lesson.
2. Provide students with the lemon rinds and scissors.
3. Ask them to decide on and cut the best shape for their boat.
4. Have students create a mast and sail using the dowel, paper, scissors, and tape.
5. Have students secure the mast to the inside of the lemon using a small amount of modeling clay.
6. Place the boats in the container of water to see if they float.
7. Add more objects to the lemon boats to see if they still float.

QUESTIONS TO ASK

- What do you think caused your lemon boat to float?
- What other fruits do you think could be used as a boat? Why?
- If you keep adding items to your boat, do you think it will eventually sink?
- Do you think the inside part of the lemon will float or sink?
- If you had to redesign your lemon boat, what would you do differently?



Another way to extend this would be to put the whole lemon in water first and predict what will happen if it is cut in half. Will the half float with the inside of the lemon still intact? Does it float with the rind on the water? With the cut half on the water? Then, what will happen when the lemon is hollowed out?

The following pages can be printed and distributed as a student guide during the program.



LEMON BOATS

Ahoy, matey! A pirate crew has chosen YOU as their shipwright. Your task? To build a boat! Using a lemon peel and the other materials provided, build a ship that floats across the seven seas.

Don't land on the rocks! Plan your design and track your outcomes on this paper.



STEP 1

Draw your boat concept

STEP 2

Make your boat and compare it to your concept drawing.

What best describes your actual boat? Circle the best option.

My boat looks like my drawing.

My boat looks a little bit like my drawing but I had to change a few things.

My boat does not look like my drawing and I had to change a lot of my ideas.

STEP 3

Write your hypothesis. Do you think your boat will float or sink? Why?

STEP 4

Evaluate your hypothesis.

Was your hypothesis correct? If you could re-design something about your boat, what would you change?



LEMON BOATS

Words to Know

Write the word's definition in each box. Then cut out the boxes to make flashcards or a game out of your new words! Use the open box to write a word you learned not on this list.

FLOAT	SINK	DENSITY
AIR POCKETS	SOLID	