



Marvelous Manatees

K-3 Classroom Activities

The Weight of Water

OBJECTIVE

Students will discover that seawater is more dense than fresh water.

ACTION

1. Lead the students in a discussion about why a manatee needs to float (breathe air) and why it needs to sink (find food). Explain that manatees float very well due to their body fat and large lungs. The manatees' heavy bones help them sink. Ask students if they can float.
2. Ask the students if they think water has weight. Using a gallon milk jug filled with water and an empty gallon jug,, bring each student up to see which jug is heavier. This demonstrates that water has weight.
3. Have the students speculate what types of objects will float in water. Let the students vote on whether the pencil, crayon, paper clip, or eraser will float or sink. Tally their votes on the blackboard next to the name of that object. Then test each object in the pint jar to find out what floats and what doesn't float. Were the students correct?
4. Divide the class into four or five groups (each group consists of at least three students). Have the students fill their pint jars three-fourths full of water.
5. Pass out the eggs, warning students that they'll break if not handled correctly. Have them vote on whether the egg will sink or float. Have them place the egg gently in the water. Does it float? (it shouldn't-be sure to use a fresh egg) Lead the students to the conclusion that the objects that were lighter than water floated and objects heavier than water didn't float. Take the eggs out of the water.
6. Add 1/ 2 ounce of salt to their pint jar of water. Let the students mix the water with the spoons. This mixture will simulate seawater (each gallon of seawater contains approximately 1/4 pound of salt).
7. Let students put the egg in the salt water. What happens? The egg should float. Why does this happen? (by adding salt, the water becomes heavier and more dense than fresh water and the egg; that's why it's easier for us to float in the ocean than in a pool or lake.) As a group, discuss why some objects float and others don't.

DEEPER DEPTHS

Take out the egg and add four ounces of salt to the pint jar to simulate the Dead Sea (the Dead Sea contains an amount of salt nine times greater than regular seawater). Let the students taste how salty this water is. Add the egg to the salt water. Is there a difference in buoyancy between the water containing 1/2 ounce of salt and the water containing 4.5 ounces of salt? (the egg should float higher in the water that contains more salt.) Let the students experiment with the objects that sank during your demonstration (eraser, crayon, etc.).

MATERIALS

For each student group:

- wide-mouth pint jar
- fresh egg
- large serving spoon
- water

For teacher:

- one wide-mouth pint jar filled with water
- gallon milk jug full of water
- empty gallon milk jug
- measuring cup
- pencil
- crayon
- plastic paper clip
- eraser
- salt



Manatees float very well due to their body fat and large lungs.



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K-3 Classroom Activities

Manatee Musical Chairs

OBJECTIVE

Students will learn factors that affect manatee populations.

BEFORE CLASS PREPARATION

Before playing this game, prepare the index cards by printing a threat to the manatees on each card with the marker. These can be repeated as many times as necessary to make enough cards to hang on the back of each student's chair. The threats include:

- | | |
|-------------|-------------------------|
| poaching | boating accidents |
| traps | boat propellers crab |
| weather | fishing hooks cold |
| flood gates | fishing line |
| trash | habitat destruction |

ACTION

1. This game is played like musical chairs. Make a double row of chairs, back to back so they're facing both directions. There should be enough chairs for every student. Place an index card on the back of each chair, facing down so the students can't read it.
2. Explain that the students are going to pretend that they're manatees swimming in their habitat. The chairs represent this habitat. While there are enough chairs for everyone to sit on, the manatees' habitat is safe.
3. Lead the students in a discussion about factors that make the manatees' habitat unsafe. Explain that on the back of each chair there's an index card with a habitat threat written on it.
4. Explain that this game is played like musical chairs. Tell the students that you're going to play a tape of them singing the manatee song (or another musical selection).

While it's playing, the students will march around the chairs. When the music stops, they need to quickly find a seat.

5. The first time the music stops there should be enough chairs for every student. Have the student standing in front of one of the chairs on the end remove the index card from the back. Read the index card to the class. Explain that this threat has entered the manatee's habitat. Ask the students if they think all of the manatees will still be safe with this threat in their habitat. Have the students describe what they think could happen to the manatees because of this threat. To show how the manatee's habitat is affected, remove the chair that had the index card on it.
6. Point out that there will no longer be enough chairs for every student to sit. This signifies the loss of a safe place for the manatees to live. Since there are no longer enough chairs, one of the students will be left standing when the music stops. This student represents a manatee that has died as a result of the threat in its environment. This student must stand or sit on the sidelines.
7. Play the game until only one student is left. Discuss the implications represented by this game. Ask the students to describe what happens if there are too many threats in

MANATEES

(to the tune of "This Old Man")

(italics indicates hand motions)

Manatees, big and gray

spread arms out to sides indicating large size

Eat plants and grasses every day

hold both hands up while opening and closing

Swimming slowly through the waterway

move arms like oars on a boat

Manatees swim in the bay.

make large circle with both arms

Manatees, swim real slow

move arms like oars on a boat, like manatees swim

Boats much watch out where they go

put one hand over eyes to indicate searching

With their agile flippers manatees will steer

hold hands out in front

And grab food to pull it near.

bring hands up to mouth

Manatees, must stay warm

hug yourself

In the water where they roam

move arms like oars on a boat

Take a breath, and surface when they have to breathe

breathe in deep and stretch neck upward

Air is what they really need

move arms freely through the air

MATERIALS

- chairs (one for each student)
- index cards (one for each student)
- marker
- tape
- tape recorder
- tape recording of students singing the manatee song (left) or another musical selection