

Heavy Water

Summary

The relative weight of water, in different types of containers, is explored.

Materials

For the Teacher:

2 containers of the same size

Water

For the Student: (Groups of 4-6)

4-6 containers of varying sizes

Bucket of water

Scales (if available)

Paper towels

Student recording sheet (attached below)

Background for Teachers

Water has weight. As you increase the volume of water in a container, the weight increases.

Intended Learning Outcomes

Make observations and measurements.

Collect and analyze data.

Instructional Procedures

See preface material at links listed below.

1. Fill 1 container half full of water. Ask, "What is in the container?" (Water.) "How do you know it is water?" (I saw the teacher fill it up at the sink.)
2. Using the two identical containers, have a student first hold the one which contains water. Ask, "How does it feel?" (Heavy.) Give the empty container to the student. Have him/her hold one in each hand. Ask, "What is different about the empty container?" (It is lighter.) "Why is it lighter?" (It has no water in it.)
3. Take one of the empty containers and ask, "What will happen if I fill it up with water?" List predictions on the board. (Feel heavier.)
4. Experiment with the containers and water in groups. Have students determine which container, when filled with water, is heavier and lighter. Separate the containers based on weight. If using a balance, record the results on the student sheet by drawing the containers on the balance.
5. Share results of groups' findings. Help students understand that "heavier than" and "lighter than" are relative terms. Provide evidence by selecting a container in the "heavy" group and showing how it is "lighter than" a second container that is also found in that group.
6. Find real world applications of where water in a container makes it heavy. (Examples: carrying a jug/bucket of water, tipping over a pool, a wet versus a dry sponge.)

Extensions

1. Weigh other objects such as toys, blocks, paper clips.
2. Compare water in a balloon with air in a balloon.

Authors

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