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**Sink or Float Experiments**

**Simple STEM Activities You Can Do at Home**

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| **Purpose:** | The purpose of this activity is to observe and explain whether assorted objects sink or float based on their relative heaviness.  |
| **Standard:** | **SKP1. Obtain, evaluate, and communicate information to describe objects in terms of the materials they are made of and their physical attributes.** c. Plan and carry out an investigation to predict and observe whether objects, based on their physical attributes, will sink or float. **S2P1. Obtain, evaluate, and communicate information about the properties of matter and changes that occur in objects.** a. Ask questions to describe and classify different objects according to their physical properties. **S8P1. Obtain, evaluate, and communicate information about the structure and properties of matter.** a. Develop and use a model to compare and contrast pure substances (elements and compounds) and mixtures.  |
| **Materials:** | Clear glass or plastic cup, spoon, water, assorted items like marbles, toothpicks, paper clips, grapes, beads, etc.  |
| **Procedures:** | 1. Fill a glass about ½ way with water.
2. Carefully add your objects one at a time and observe whether they sink or float. Remove the object before adding another one.
3. Record your observations on a data sheet.
4. Explain why you think each object is sinking or floating.
5. Discuss your ideas with your partner.
6. If possible, try 1-2 of your own objects.
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| **Science Behind It:** | The density of an object refers to the “relative heaviness” of the object. Objects sink when they are heavier than the liquid that surrounds them considering how much space they take up. In other words, objects sink when they are denser than the liquid that surrounds them. Since the earth is about 70% water and water is the most important substance on the planet, it makes sense to experiment with some objects to see if they sink or float in water. Because water is everywhere, students already have a good understanding of its relative heaviness. By observing whether objects sink or float in it, they can build their conceptions of the density of these objects compared to water. For older students, you can discuss and calculate density as a ratio equal to the mass per unit volume of an object or substance. The fact that water has a density of 1 gram/ml is no coincidence. Rather, it serves to emphasize the fundamental importance of water on our planet.  |
| **Questions to Ask:** | 1. Explain why some of your objects floated and other objects sank in your experiment.
2. Explain why most people can swim better in a salty ocean than a freshwater lake.
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