

RAFT IDEAS

Topics: Sound, Waves,
Senses (hearing)

Materials List

- ✓ 8 Preforms (with caps)
- ✓ 2 pennies
- ✓ 4 marbles
- ✓ 3 small caps
- ✓ 15 ml (1 tablespoon) salt
- ✓ 5 paper clips
- ✓ Water
- ✓ Masking tape

This activity can be used to teach:

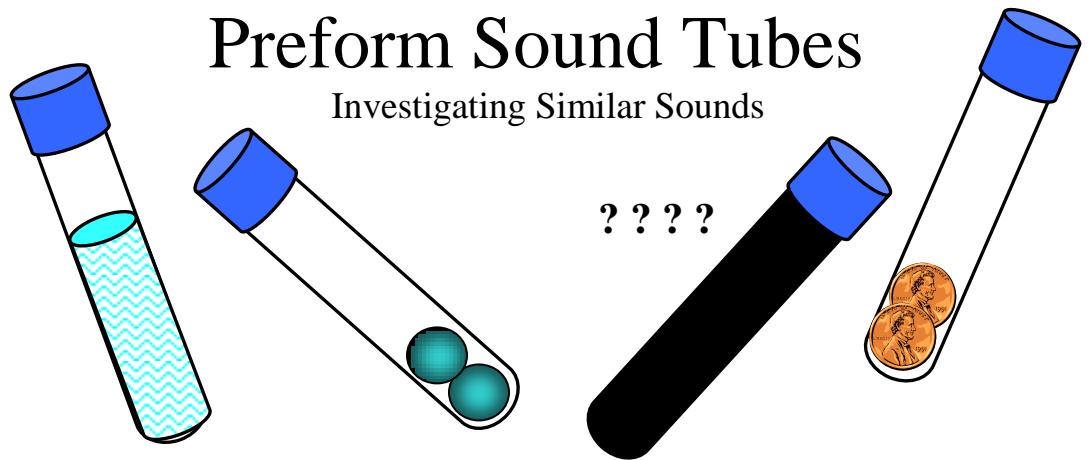
- Senses (Next Generation Science Standards: Grade 4, Life Science, 1-2)
- Sound (Next Generation Science Standards: Grade 1, Physical Science, 4-1 & 4-4)
- Science & Engineering Practices (Next Generation Science Standards: Grades K-4)
- Fine Motor Skills (Early Education: Desired Results Dev. Profile (DRDP-R), Physical Development, 40)



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Preform Sound Tubes

Investigating Similar Sounds



This activity gives pre-school age children an opportunity to explore sounds by hearing the different sounds made by small objects. All people learn in different ways. This activity appeals to both auditory and tactile learners. It helps develop observation skills and encourages attention to detail.

Assembly

1. Make 6 capped preforms, each containing 1 of the following: 2 pennies, 2 marbles, 3 small caps, 15 ml (1 tablespoon) salt, 5 paper clips, or 15 ml (1 tablespoon) water.
2. Make another capped preform with 2 marbles, and then cover the clear tube completely with masking tape, so that the insides cannot be seen.
3. Repeat step 2 using 15 ml (1 tablespoon) of water instead of marbles.

To Do and Notice

1. Allow students to explore the different sounds produced by the preforms when they are shaken.
2. Challenge the students to figure out what is inside the covered preforms based on the sounds that they make when shaken.

The Science Behind the Activity

Sound is caused by vibrations that travel in compression waves through the air (the medium) and into the ear. Once hitting the eardrum, the sound is sent to the brain's auditory cortex where it is analyzed and interpreted. Objects make different sounds (louder, higher pitch, etc.) because of their size, density, and intensity of the collision. By listening carefully to sounds, children develop their sense of hearing in the same way that handling small objects develops fine motor skills. By matching up preforms by like sounds, students are also thinking scientifically: gathering data on each bottle and analyzing the data to answer a question.

Taking it Further

- This activity can be used as a science center or as a group activity.
- To make this activity more challenging, make more capped preforms with varied objects inside. Good objects to include in the bottles are flour, rice, beads, rubber bits, and other small, common items from around the house or classroom.

Web Resources (Visit www.raft.net/raft-idea?isid=331 for more resources!)

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