

Material Needed

- 12 clear plastic cups or similar containers
- 12 opaque plastic cups or similar containers
- 4 pennies
- 4 marbles or small rocks
- 6 small paper clips
- 6 small plastic items (caps, straw pieces, hair clips, beads, etc.)
- 2 tablespoons salt
- 2 tablespoons rice
- Tape

Grade Range

Pre-K

Topics/Skills

Science: Observation, Sounds; Physical Development: Motor Skills

Learning Standards

NGSS: [Wave Properties](#);
Desired Results Developmental Profile (DRDP): [Physical Development](#)

Duration

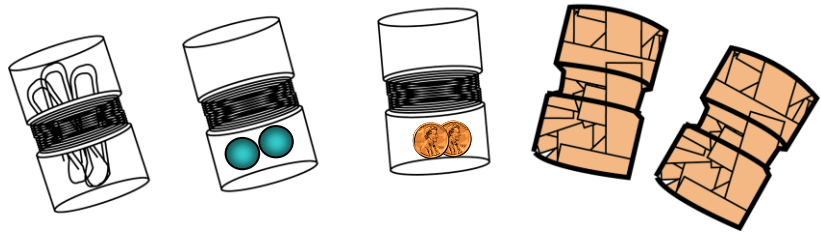
15-20 minutes

Prep Time

5-10 minutes

Match the Sounds

Investigating Similar Sounds with Simple Stuff



Preschool age children practice observation and motor skills while listening to sounds made by various objects sealed within pairs of cups.

Activity Challenges

Match the sounds made by shaking objects enclosed within clear and opaque cups.

Preparation

1. Review the materials list and gather the needed items.
2. Make 6 sound shakers each using 2 clear cups and each containing one of the following: 2 pennies, 2 marbles/rocks, 3 small plastic objects, 1 tablespoon salt, 3 paper clips, or 1 tablespoon of rice. Use tape at the junction to secure the cups together.
3. Make another set of shakers containing the same items but this time use the opaque cups.

To Do

1. Have students observe the contents of the clear shakers.
2. Students shake each one while listening carefully to the sounds.
3. Students shake the opaque sound shakers, listening carefully.
4. Let them try matching the opaque shakers with the clear shakers based on the sounds.
5. Provide hints as needed so they correctly match the shakers.

Observations

- How many sound shakers were you able to match?
- What was inside the shakers you matched?

Extensions

- Make more containers with varied objects inside (flour, beads, rubber bands, and other small items from around the home).

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 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 the shakers by like sounds, students are also thinking scientifically: gathering data on each container and analyzing the data to answer questions.