

CURIOSITY AT HOME

DANCING SALT



Percussion instruments make sounds by being struck, shaken, or scraped. The percussion family is the largest and oldest instrument family, following the human voice. In music, percussion instruments are used for special effects, mood, and to keep the beat or rhythm. Try this activity to both hear and see percussive sounds in action!

MATERIALS

- Bowl
- Plastic wrap
- Salt
- Tupperware containers with lid (at least two different sizes)
- Pencil or chopstick
- Science notebook or paper
- Something to write with

PROCEDURE

- Cover a bowl with plastic wrap. Be sure to stretch it tightly. To keep plastic wrap tight, wrap it far enough that it overlaps on the bottom of the bowl
- Sprinkle a small pinch of salt in the center of the plastic wrap.
- Position the Tupperware container, with lid in place, next to the bowl without touching it. Hit the lid of the container hard with the pencil or chopstick.
- Observe the salt. What do you notice happens to the salt when you hit the lid of the container?
- Repeat with a different sized Tupperware container. How does the sound of the other container compare to the first? What do you notice about the movement of the salt?
- What are some different types of sounds you can make using your “drum?” What kinds of sounds make the salt move more or less? What else affects the movement of the salt?



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



CURIOSITY AT HOME

DANCING SALT



EXPLORE MORE

- Try using a different material instead of salt, such as rice, lentils, or paper confetti. Does it move the same way when you hit the container? In what ways does it move differently?
- Try making your own drum using materials you find around your home. All you need is an empty container or can. Cover the opening of the container with tightly stretched plastic wrap or a balloon (cut off the mouthpiece first). Secure the flexible membrane with tape. Try playing your drum with your hands or by using pencils as mallets. What kinds of sounds can you make? Try using different sized containers. How does the size of the container affect the pitch of the sound? Does covering the flexible membrane with other materials, such as paper, affect the sound?
- Listen to your favorite song. Can you hear the beat? Try playing a percussion instrument of your choice to the beat (remember your body can also be used as a percussive instrument- pat your knees or clap your hands!). Can you make a sound that matches the mood of the song?

WHAT'S HAPPENING?

When a drum is struck, energy is transferred through the impact causing the instrument to vibrate. These vibrations cause the air particles around the drum to vibrate as well, forming sound waves. As sound waves move through the air, they continue to transfer energy. When they reach the plastic wrap, it vibrates, which makes the salt move. The sound waves are also what allow you to hear the sound of the pencil hitting the container.



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



CURIOSITY AT HOME

DANCING SALT



K–2 GRADE EXPLORATION

- Volume describes how loud or soft a sound is. How does the amount of pressure you use (in other words, how hard you hit the “drum”) affect the volume? What do you notice happening to the salt when you play the “drum” more loudly? What happens when you play more softly? Write your observations in your science notebook.
- Pitch describes how high or low a sound is. Listen carefully to the sound each container makes when you hit the lid. Which container makes a higher pitched sound when hit? Which container makes a lower pitched sound when hit? How does the size of the container affect its pitch? Does changing the pitch affect the movement of the salt? Write your observations in your science notebook.



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



CURIOSITY AT HOME

DANCING SALT



3–5 GRADE EXPLORATION

- Do you notice any signs of energy present when hitting the “drum”?
- Volume describes how loud or soft a sound is. Pitch describes how high or low a sound is. Make observations about the different sounds you can make when you hit the lids of the containers and how these sounds affect the movement of the salt. Record your observations in the chart below, or in your science notebook.

ACTION	OBSERVATION
Hit the lid of larger container hard	
Hit the lid of larger container softly	
Hit the lid of smaller container hard	
Hit the lid of smaller container softly	

- Listen carefully to the sound each container makes when you hit the lid. Which container makes a higher pitched sound when hit? Which container makes a lower pitched sound when hit? How does the size of the container affect its pitch? What other experiments could you do to test if your idea is correct?



Show us how you're being curious! Share your results with us.



CURIOSITY AT HOME

DANCING SALT



6–8 GRADE EXPLORATION

- Do you notice any signs of energy present when hitting the “drum”?
- Draw a diagram in the boxes below or in your science notebook to explain what is going on when you use more or less pressure to hit the lid of the container. Make sure you include all of the items used for the experiment in your drawing along with labels and descriptions, as needed. Be sure to also include the vibrations of the air molecules, or sound waves, in your diagram.

Hitting the lid of the container with more pressure	Hitting the lid of the container with less pressure

- Try hitting the container with the same amount of pressure, but moving it closer to the salt. What do you notice happens to the movement of the salt as you move closer? Can you use your observations to explain why sounds that are further away sound softer than sounds that are close by?



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER

