Energy and Waves Activity Bag

Energy and Waves: Student Activity Guide

Forms of energy like light, radio, and radiant heat travel through empty space. Other forms of energy, like sound, water waves, and earthquakes travel through substances. All of these travel as waves. In this activity, we will explore energy traveling as a wave.

These directions will get you started. Your teacher will contact you with guidance and information.

Materials From The Bag

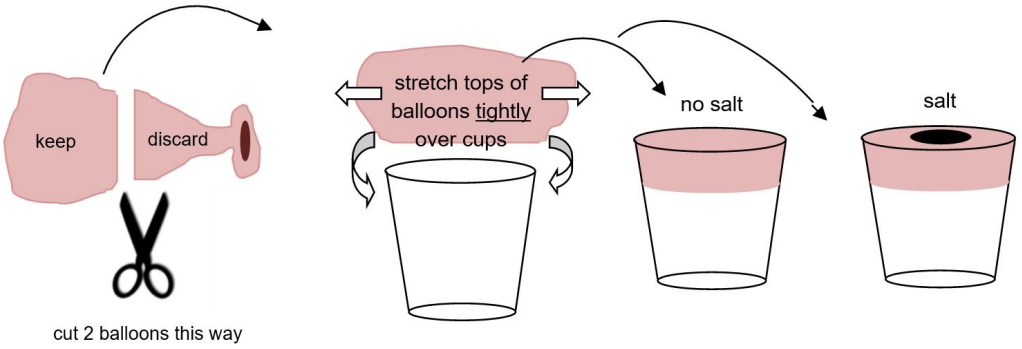
- 2 Plastic Cup, 9oz
- Plastic Cup Lid
- 2 Balloons (extras provided)
- Salt Packet
- Deli Tray
- Penny

You Will Supply These Materials

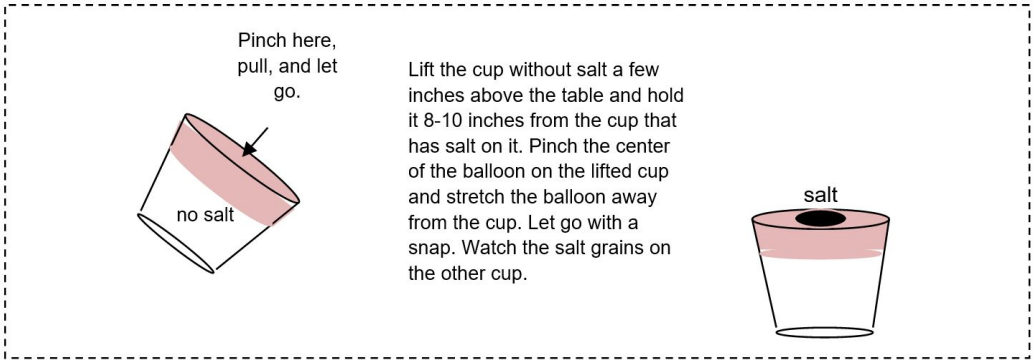
- Water
- Scissors

Part 1: Moving Sound - Investigate

1. Prepare two cups with balloons stretched over them. You will use one cup, without salt, to make noise. The other cup, with salt, will receive it. To make the cups, do this:



2. Follow the diagram below and record your observations.



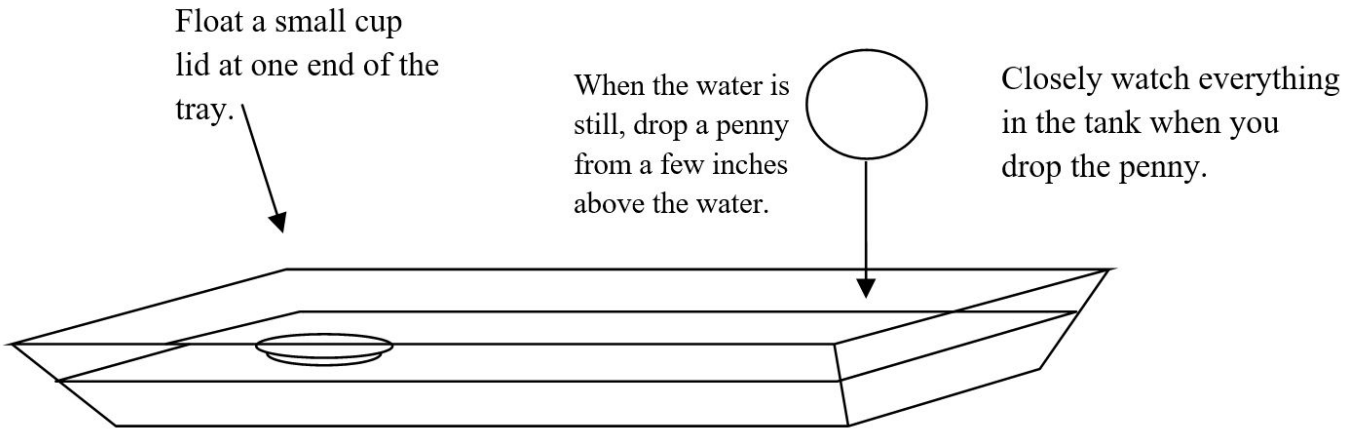
Where did the energy that moved the salt come from? How did the energy get to the salt? What substance did the energy go through to get to the salt?

Part 2: Moving Sound - Explore

1. Using the same setup, explore how sound moves:
    - How far can you space the two cups and still see salt move?
    - Can you set up a barrier to stop the sound from traveling from one cup to the other?
    - What other sounds can you make that will make the salt move?
    - What can you do to make the salt bounce higher? or faster?
2. Keep track of the things you tried and your observations

Part 3: Waves and Water

1. Fill the plastic deli tray ¾ full of water. Have the small cup lid and penny available.
2. Follow the diagram below and record your observations:



Where did the energy that moved the cup lid come from? How did the energy get to the cup lid? What medium did the energy go through as it traveled?

Part 4: Wave Simulator

To explore waves further, go to this website to use a wave simulator:
https://s3.amazonaws.com/NacreData/waves/project/wave-on-a-string/wave-on-a-string_en.html

Your teacher will share ways to use the wave simulator.