RECORD SHEET

Activity 4: Water, Sound, and Earthquake Waves

Name Date Class

Key Question

Explore Your Ideas

Part A: Explore Water Waves

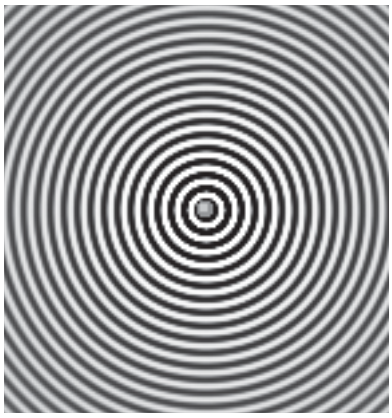
1. What do you think the motion of the cork would be like as the water wave passes it by?

2. Do you think energy is being transferred from your moving finger to the cork? Give your reasons.

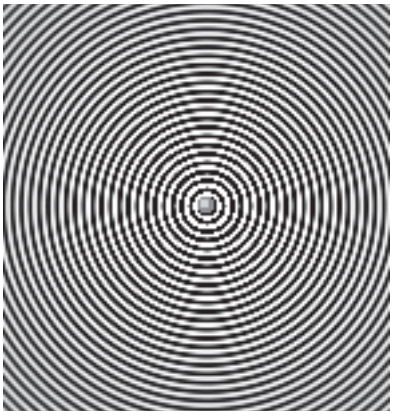
Look at the snapshots from the simulator when the frequency of the source has been set at four different values: 1 Hz, 2 Hz, 3 Hz, and 4 Hz.

(a)

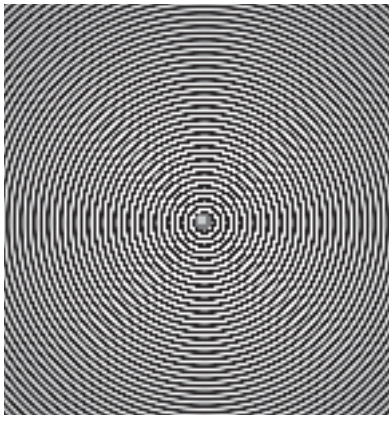
(b)



(c)



(d)



3. Which picture represents the 2 Hz wave? How do you know?

4. Which picture represents the 4 Hz wave? How do you know?

Part B: Explore Sound Waves

Look at the snapshots of three different tuning forks vibrating at frequencies of 150 Hz, 300 Hz, and 600 Hz.

5. Which of the frequencies corresponds to the highest pitch sound?

_____

_____

_____

(a)

6. Which of the frequencies corresponds to the lowest pitch sound?

_____

_____

_____

(b)

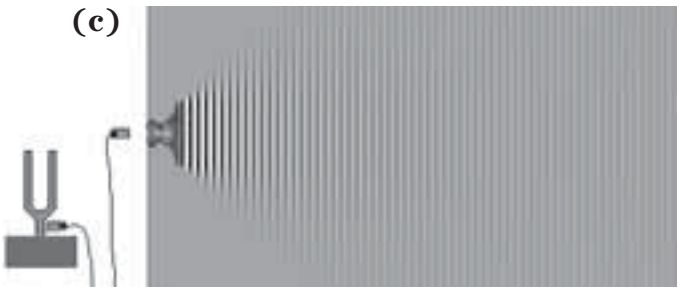
7. What is the difference between the wave patterns produced by the 150 Hz, 300 Hz, and 600 Hz sounds?

_____

_____

_____

(c)



8. What happens to the sound from the buzzer when air is removed from the jar?

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_____

Make Sense of Your Ideas

1. What is the relationship between the frequency of a wave and its wavelength?

2. What seems to be the relationship between the frequency of a sound wave and the pitch of the sound you hear?

3. Why didn't you hear the sound from the buzzer in the glass jar when the air was removed from the jar?

4. What do you think is the relationship between the amplitude of an earthquake wave and the reading of the earthquake on the Richter scale? Why?

Our Consensus Ideas

The key question for this activity is:

What are some properties of water, sound, and earthquake waves?

You addressed this question when answering questions throughout the activity.

Look over the *Scientists' Consensus Ideas: The Mechanical-Wave Interaction* form, which lists ideas that scientists use to think about mechanical waves. Provide evidence from this and the previous activities that support each idea. Record this on the form.