

# Activity

## Making Music

### Lab Preview

**Directions:** Answer these questions before you begin the Activity.

1. Why do you need to wear an apron or other clothing protection?

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2. Do you put the same amount of water in each of the test tubes?

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*There are many different types of musical instruments. You can also make music using everyday objects that are not formal instruments, such as pots and pot lids, garbage can covers, or boxes of matches. How can you create a musical instrument that requires air to be blown across it in order to make sound?*

### What You'll Investigate

How can you make different tones using only test tubes and water?

### Materials

test tubes  
test-tube rack

### Goals

- **Demonstrate** how to make music using water and test tubes.
- **Predict** how the tones will change when there is more or less water in the test tubes.

### Safety Precautions

### Procedure

1. Put different amounts of water into each of the test tubes.
2. **Predict** any differences you expect in how the tones from the different test tubes will sound.
3. Blow across the top of each test tube.
4. In the Data and Observations section, **record** any differences that you noticed in the tones that you heard from each test tube.

### Data and Observations

Test tube	Amount of water	Tone difference
A		
B		
C		
D		

**Activity** (continued)**Conclude and Apply**

1. Describe how the tones changed depending on the amount of water in the test tube.

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2. How did the pitch depend on the height of the water?

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3. Why were the tones different from the different test tubes? Explain.

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4. **Explain** how resonance amplifies the sound from a test tube.

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5. **Explain** how the natural frequencies of the columns of air in each of the tubes differ.

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6. **Compare and contrast** the way the test tubes make music with the way a flute makes music.

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**Communicating Your Data**

When you are listening to music with family or friends, describe to them what you have learned about how musical instruments produce sound.