



## **What's the Buzz?**

## **Primary Audience:**

**Description:** Can a rubber band sound like a bee? Create a device that causes a rubber band to buzz.

**Keywords:** rubber bands, bees, vibration

### **Concepts:**

- Vibration causes sound.
- Air rushing over the rubber band causes it to vibrate and a sound is produced.
- When the buzzer spins faster, the rubber band vibrates more quickly, creating a sound with a higher pitch.

### **Materials:**

- craft stick
- half of a 3x5 index card (3x2.5)
- rubber band
- 2 pencil top erasers
- 20" piece of string
- tape

### **Instructions:**

1. Lay the craft stick along one long side of the card, so equal segments of the stick extend beyond the card at each end. Tape the stick to the card along both sides of the stick.
2. Place an eraser on each end of the stick, then tie the string to the stick beside one eraser.
3. Stretch the rubber band around the ends of the erasers, making sure that it is not twisted.
4. Wrap the free end of the string around your fingers a few times and hold it tightly. Whirl the buzzer over your head or in front of you.

What causes the sound that you hear? Try making one without a card. What happens? What purpose does the card serve? What happens if you stretch the rubber band on the buzzer so one side of the rubber band is more taut than the other? What happens when you whirl the buzzer at different speeds? Why?

### **Possible Interactive Questions:**

Other



### **What's Going On?**

Vibration causes sound. Air rushing over the rubber band causes it to vibrate and a sound is produced. When the buzzer spins faster, the rubber band vibrates more quickly, creating a sound with a higher pitch. The card acts as a rudder and improves the stability of the buzzer as it whirls. When one side of the rubber band is more taut than the other, you may hear two different pitches.

### **Further Exploration:**

1. Compare rubber bands of different sizes. If the card provides stability, does the size of the card affect the sound? Can you create a musical melody with the buzzer? Can you make a huge buzzer using a yardstick instead of a craft stick?

### **Relevant Ohio Science Content Standards:**