

Rock-it Science Observations For Winter Lessons 2010

Laser Sound Waves

Students put a thin rubber diaphragm (balloon rubber) with a small mirror on one end of a tube and yelled into the other end. A laser pen was used to bounce light off of the mirror.

Students may have noticed:

- The sound in the tube (or cup) seemed to echo.
- The diaphragm tickles lips when they yell closely.
- Older balloon rubber splits easily.
- The mirror vibrates when yelling into the cup.
- The laser creates patterns on the wall when the mirror vibrates.
- Some sounds make the mirror vibrate a lot.
- Other sounds hardly vibrate at all even though they are louder.
- Sometimes the laser makes shapes like a figure eight on the wall.
- Small changes in pitch can make the patterns slowly rotate.
- A constant note like a singer singing makes simple shapes.
- Yelling makes splotches of jagged shapes.
- With stage fog, it was easier to tell one person's patterns from another's.
- The laser looks brighter in the fog when the beam is coming toward you.