Riverton Street Charter School Name: _____
Class: _____ Date: _____

Music to Your Ears

Purpose: This lesson is designed to help students understand that vibrations are responsible for the sounds we hear. Additionally, they learn that sound vibrations can travel through different mediums. Students experience vibrations using several of their senses:

Objective: Students design a test that uses their sense of hearing to judge the effectiveness of different solids to transmit sound vibrations. They will be able to recognize that vibrations can be changed to alter the pitch of a sound and determine that sound travels through solids as well as gases.

Skills: Students can demonstrate classifying, communicating, hypothesizing, observing and posing questions.

Materials/Preparation: plastic drinking straws, scissors, variety of sizes of cans, balloons, index cards, rulers, pencils, grains of rice, rubber bands,

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Background: Sound is a form of energy that travels in invisible waves. A sound begins with a vibration. A vibration is the oscillating, reciprocating, or other periodic motion of a rigid or elastic body or medium forced from a position or state of equilibrium. the analogous motion of the particles of a mass of air or the like, whose state of equilibrium has been disturbed, as in transmitting sound. Seriously?

Yes, that is the definition of vibration. Which basically just means continuous small and rapid movements back and forth. A medium is a substance that makes possible the transfer of energy from one location to another. Sound can travel through air, liquids, and solids. For example,.when a vibration travels through the air and into the ear canal it vibrates the eardrum.

Sound waves interact with the surfaces they contain and with each other. Sound waves reflect off of objects, diffract through narrow openings, and around barriers, and interfere with each other.Sound waves travel at different speeds in different mediums. The speed of sound depends on the elasticity, density, and temperature of the medium the sound travels through.

Please answer the following questions in complete sentences.

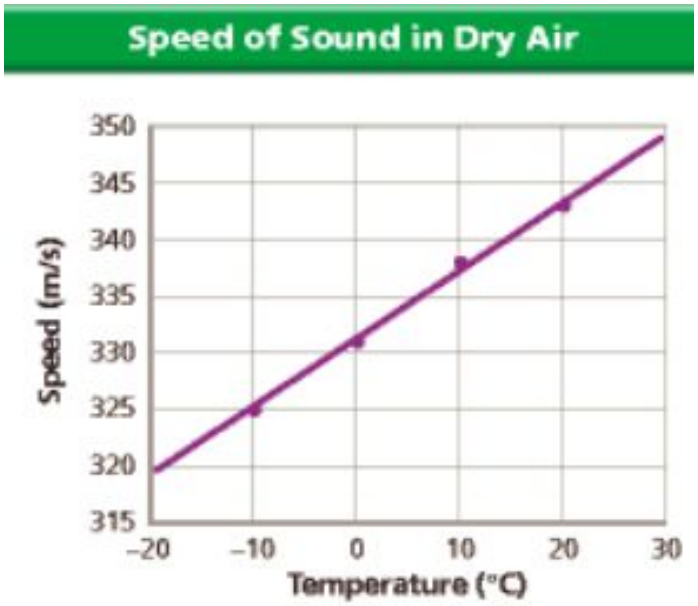
1. Define the word vibration. _____
_____

2. What are three types of mediums sound can travel through. _____
_____
_____

3. How do sound waves interact with different surfaces? _____
_____
_____

4. What does the speed of sound depend on? _____
_____
_____

Analyze the data shown for speed of sound in dry air for questions 5 and 6.



5. What is the speed of sound in air at −10°C? _____

6. Does the speed of sound increase or decrease as temperature increases? _____
_____

7. What instrument did you create?! THOROUGHLY describe the materials you chose and why.
_____
_____
_____
_____
_____
_____