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Fact or Fake Sound Questions

1. Sound energy travels through the air in waves.

**FACT –** Sound must have a medium in which to travel. The air molecules transfer the energy by compression waves from one molecule to its neighbor.

1. Sound travels faster in water than in air.

**FACT –** The particles are closer together in a liquid, than a gas thus the energy is more quickly transferred to its neighboring molecule.

1. Sound can travel in outer space.

**FAKE –** Sound must have a medium in which to travel.

1. Loud sounds can damage your ear drum.

**FACT –** Loud sounds can vibrate your each drum so much that it can rupture your ear drum and can cause damage to you auditory nerves**.**

1. Refraction happens when a sound wave hits a solid flat surface.

**FAKE –** When a sound wave hits a solid flat surface, it is reflected.

1. To increase the loudness of a wave, you would increase the pitch.

**FAKE –** To increase the loudness, you would increase the amplitude**.**

1. A sound wave is a type of kinetic energy.

**FACT –** Sound is the transfer of kinetic energy in the form of vibrations from one particle to the next.

1. Sound is produced by vibrating objects.

**FACT –** If nothing is vibrating, there is no sound.

1. The pitch of a sound on a guitar can be altered by changing the length of a string.

**FACT** – If you shorten the wavelength, you raise the pitch.

1. Unlike light, sound waves cannot be reflected.

**FAKE –** A sound reflection is an echo.

1. Sound can travel in all directions from a source.

**FACT –** You can still hear my voice if you turn around.

1. Loud sounds can alter an ecosystem.

**FACT –** Predators and prey will not have the same advantages if their hearing is altered by human sounds such as traffic, construction, etc.