**Chapter 14: Sound and Light Test**

**Use your textbook and the completed study guides to complete this page.**

1. How does the plucking of a guitar string create sound? Page 39

Plucking the string causes it to vibrate, so the air vibrates too. The vibrations travel as sound waves, which carry energy. If the waves reach our ears, we hear the sound.

1. What kind of vibration is required to create a low pitched sound? Page 44

Objects that vibrate slowly.

1. What is the most important light source on Earth? What would happen if we didn’t have this source of light? Page 48

The sun without it the planet would not survive.

1. Plants convert light energy into \_Chemical energy\_\_\_\_. (heat energy/chemical energy)
2. What does your shadow look like when the sun is lower in the sky? Why does this happen?

The angle that the light strikes an object affects its size, so when the sun is lower, the shadow is longer.

1. List three ways that lasers can be used today. Page 57

1) to store info on it

2) used to read bar codes

3) Since it has a great deal of heat energy, it can cut, drill and bond materials together.

1. Describe what happens to light when it travels through solids, liquids, and gases. List the order of matter that light travels through from fastest to slowest.

Fastest:\_GAS \_\_LIQUID slowest:\_SOLID

When light travels at an angle through different states of matter, it changes speed which causes it to refract– bends.

**Vocabulary:** Write the definition for each word.

*Reflection: Page 52. Occurs when light bounces from a surface. Exp. Mirror.*

*Refraction: Page 54. The bending of light due to its changing of speed as it passes through different materials.*

*Absorption: Page 52. Occurs when an object takes in light which then becomes a form of light energy.*

*Transparent materials*: Page 53. Materials the transmit nearly all light rays.

Give an example of a transparent material: clear glass.

*Opaque materials: Page 53. Materials that transmit NO light through. You cannot see through the material.*

Give an example of an opaque material: aluminum foil, wood.

*Translucent materials*: Page 53. Material that lets some rays pass through.

Give an example of a translucent material: wax paper, lamp shade

Draw a convex lens. Does this lens make objects look smaller or larger? Page 56.

Magnifies things – makes them look bigger.

Draw a concave lens. Does this lens make object look smaller or larger? Page 56.

Spreads light out, making objects appear to be smaller.