

Science - STUDY GUIDE
Light & Sound Units



Name _____
Date of test _____



Vocabulary words to know:

- 1) volume _____
- 2) refraction _____
- 3) reflection _____
- 4) concave lens _____
- 5) convex lens _____
- 6) pitch _____
- 7) vibration _____
- 8) translucent _____
- 9) transparent _____
- 10) opaque _____
- 11) frequency _____

- 11) Explain and draw a diagram of how light is reflected by a mirror.

- 12) Explain how light travels, what happens to it when it hits a prism, and what happens to the speed of light when it hits an object.

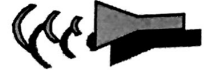
- 13) Explain why a banana looks yellow and not blue.

- 14) Draw a picture of a convex lens. Explain what it does.

- 15) Draw a picture of a concave lens. Explain what it does.

- 16) Explain how you can change the pitch of the strings on a guitar.

- 17) Draw a diagram to show the path of light from a flashlight, through a glass of water, and onto a mirror in the bottom of the glass. Place an X on the place where the light is the fastest. Place an S on the place where the speed of light slows down.



Vocabulary words to know:

- 1) **volume**- The loudness of sound (more energy = louder)
- 2) **refraction**- The bending of light as it moves from one medium to another
- 3) **reflection**- The bouncing of light off an object
- 4) **concave lens**- A lens that is thicker on the edges than the middle
- 5) **convex lens**- A lens that is thicker in the middle than the edges
- 6) **pitch**- How high or low a sound is
- 7) **vibration**- back and forth movement of matter
- 8) **translucent**- Allowing only some light to pass through
- 9) **transparent**- Allowing (most) light to pass through
- 10) **opaque**- Not allowing ANY light to pass through (light is absorbed)
- 11.) **frequency** - Number of vibrations per second
- 11) **Explain and draw a diagram of how light is reflected by a mirror.**

Light travel in a straight line. As the light hits the hard, shiny surface of the mirror, the light bounces back or is reflected.

- 12) **Explain how light travels, what happens to it when it hits a prism, and what happens to the speed of light when it hits an object.**

-Light is a form of energy that travels in all direction. When white Light passes through a prism, the change in the medium slows down the speed of light. The light bends into the visible spectrum (red, orange, yellow, blue, indigo, & violet).

- 13) **Explain why a banana looks yellow and not blue.**

-The banana reflects only the yellow light in white light and absorbs all other colors of light. The light reflected to our eye is yellow light.

- 14) **Draw a picture of a convex lens. Explain what it does.**

-A convex lens bends light into a focus point which makes object appear larger (and sometimes upside down) EXAMPLE: Magnifying glass

- 15) **Draw a picture of a concave lens. Explain what it does.**

-A concave lens makes light spread out which makes an object appear smaller (always upright)

- 16) **Explain how you can change the pitch of the strings on a guitar.**

-You can change the pitch of a string on a guitar by tightening/loosening The strings and making them shorter/longer

- 17) **Draw a diagram to show the path of light from a flashlight, through a glass of water, and onto a mirror in the bottom of the glass. Place an X on the place where the light is the fastest. Place an S on the place where the speed of light slows down.**