

The Eye and Light.

Commented [1]: Overall, excellent work!

Lesson • 1 What is light?

Page 125

1. What are the highest points of waves

The highest points of the wave are called crests. p.125(paragraph 2)

3. Identify Which electromagnetic wave has the shortest wavelength?

Gamma rays wave has the shortest wavelength. p.127(the chart)

4. You see a blue ball. What can you say about the wavelengths of the light waves that entered your eye?

The colors that you see depend on the wavelengths of the light that enters your eye.

Blue light has the shortest wavelength. p.127(paragraph 2)

Light and Matter

Lesson 2

Page 128

2. Compare About how much faster is the speed of light through water than through a diamond?

The speed of light through water than diamond is 102000 faster. p.127(the chart)

3. Explain What determines how much a light ray bends?

Light rays can move between two materials in which the speed of light differs. When this happens, the change in the speed of light causes the rays to bend. The amount of bending, or refraction, depends on the speed of light in both materials. The greater the difference between the speed of light in the two materials, the more the light will bend. p.130 (paragraph 2)

4. Identify the primary colors of light.

Red, green, and blue are called primary colors of light because mixing these three colors in different amounts can make almost any color. p.130(paragraph 4)

5. Identify Look at the angles marked in the figure. If the angle of reflection is 20 degrees, What is the angle of Incidence?

The angle of incidence is also 20 degrees.p.130(the chart)

6. Draw Conclusions Does your blue shirt absorb or reflect blue light?

Blue shirts reflect blue light.As white light strikes an object, some of the light is absorbed and some is reflected. The reflected light enters your eye and causes you to see the object.p.131(paragraph 2)

lesson ●3 Using Lenses

Page 131

1. Describe What happens to the light rays after they pass through a convex lens?

When light passes through a convex lens, the light bends.p.131(paragraph 2)

3. Identify the two types of telescopes.

There are two types of telescopes: refracting and reflecting. A refracting telescope uses two convex lenses placed on either end of a tube.p.134(paragraph 1)

4. Name three instruments that have lenses.

Cameras, telescopes, and microscopes are instruments that have lenses.p.134(paragraph 4)

lesson ●4 The Eye and Vision

Page 135

2. Define What is the function of the iris?

The iris controls the amount of light that enters inside your eye. When the light is dim, your iris is small and your pupil is large. This allows more light to enter inside your eye. When the light is bright, your iris is larger and your pupil is smaller, so that less light enters inside your eye.p.136(paragraph 1)

3. Explain What is the purpose of cone cells?

There are three types of cone cells. Each type responds to different wavelengths of light. One type of cone cell responds to the wavelengths of red and yellow light. These cells cause you to see the color red. The second type responds to yellow and green light and causes you to see the color green. The third type responds to blue and violet

light and causes you to see the color blue.

p.137(paragraph 2)

4. Summarize Name three common vision problems.

Three common vision problems are nearsightedness, farsightedness, and color deficiency.

Eyeglasses can correct both nearsightedness and farsightedness.p.137(paragraph 3)

5. Identify Where are light waves focused for farsighted people?

a. on the retina

b. in front of the retina

c. behind the retina