Light Waves and Color

Use your textbook to help you fill in the blanks.

**Why do we see colors?**

1. Visible light from the Sun comes to Earth as light, traveling through space in the form of waves.

2. When light waves are refracted as sunlight passes through raindrops, their wavelengths are separated, and we see them as different colors

3. A triangular piece of glass or plastic called a bends light and separates it into the wavelengths that make up white light.

4. Light passing through slits on is refracted and the wavelengths that make up the light can be seen.

5. Sunlight striking an object can be reflected, refracted, or

6. The light that is reflected by an object determines the of that object.

**How many kinds of light are there?**

7. Energy from the Sun travels in many types of waves; the contains the full range of these wavelengths.

8. The spectrum is arranged from long waves, with the amount of energy, to short waves, amount of energy.

9. The wavelengths of visible light, which we see as colors that range from red to violet, fall near the

of the spectrum.

10. Infrared waves are typically felt as

11. Overexposure to rays and other high-energy waves can damage people’s skin and eyes.

12. X-rays are used to make images of hard parts of the body, such as teeth and

**How do colors mix?**

13. Colors not produced through the mixing process are called colors, which are blended to produce colors.

14. The traditional color model is the color model.

15. The RGB color model is an example of color mixing.

16. In the color model, the perceived color depends on the ability of the substance’s

to absorb wavelengths of light.

Match the correct letter with the description.

a. CMY color model b. electromagnetic spectrum c. pigments d. primary colors

e. prism f. RGB color model g. RYB color model

h. secondary colors i. visible light

1. a triangular piece of glass or plastic that bends light

2. colors that can be made by blending primary colors

3. the full range of wavelengths that travel from the Sun, which includes radio waves, microwaves, infrared waves, visible light, ultraviolet light, X-rays, and gamma rays

4. tiny solid particles that provide color by absorbing wavelengths of light

5. colors of light that are not produced through the mixing process

6. the color model in which primary colors of light combine and produce all other colors

7. waves of light that contain a mixture of wavelengths that the human eye can detect

8. the color model that uses subtractive color mixing

9. the traditional color model that may be useful in are but does not include all colors.