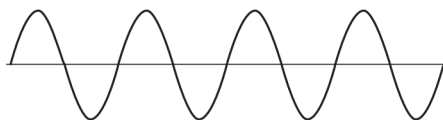


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- What causes a blue block to appear blue in the sunlight?
 - The block absorbs all blue light.
 - The block bends (refracts) all blue light.
 - Only blue light is reflected by the block.
 - Only blue light passes through the block.
- When light waves pass through the surface of a prism, they bend a certain amount, which varies depending on the wavelength of the light. This is called refraction. Based on the observation that a beam of white light refracted through a prism displays a spectrum of many colors, which of the following statements would be true?
 - Different colors of light travel at different speeds.
 - Different colors of light have different wavelengths.
 - All colors of light have the same wavelength.
 - All colors of light travel at the same speed.
- How do radio waves and visible light waves differ?
 - Radio waves have a shorter wavelength than visible light waves.
 - Radio waves move faster than visible light waves.
 - Radio waves have a lower frequency than visible light waves.
 - Radio waves have more energy than visible light waves.

- The diagram below represents a wave pattern.



Which type of wave is represented?

- longitudinal wave
 - transverse wave
 - sound wave
 - primary wave
- Which object would reflect the most light?
 - cloth
 - wood
 - mirror
 - construction paper

- Which part of the electromagnetic spectrum has frequencies that are *greater* than the frequency of visible light?
 - microwaves
 - infrared light
 - radio waves
 - ultraviolet light
- Which is the lowest point of a transverse wave?
 - amplitude
 - crest
 - period
 - trough
- Which is true of infrared waves?
 - They have shorter wavelengths than X-rays.
 - They give off more energy than gamma rays.
 - They have longer wavelengths than ultraviolet waves.
 - They have higher frequencies than visible light waves.
- Which statement regarding red and green visible light is correct?
 - The speed of green light is greater than that of red light.
 - The wavelength of green light is longer than that of red light.
 - The energy of green light is lower than that of red light.
 - The frequency of green light is higher than that of red light.
- How are earthquakes, sound, and light waves alike?
 - They transmit energy.
 - They carry matter.
 - They travel in space.
 - They can be seen.
- Which *best* explains the relationship between the electromagnetic spectrum and sight?
 - Visible light is the part of the electromagnetic spectrum that can be seen with the eye.
 - Ultraviolet light is the part of the electromagnetic spectrum that can be seen with the eye.
 - Visible light and infrared light are the parts of the electromagnetic spectrum that can be seen with the eye.
 - Ultraviolet light and infrared light are the parts of the electromagnetic spectrum that can be seen with the eye.

12. An x-ray can be used to see inside a person's body. What body system can an x-ray *best* examine?
- A. Skeletal B. Nervous
C. Circulatory D. Respiratory

13. Angelina wakes up on a sunny but cool day and can choose to wear a T-shirt in one of the following four colors:
- Black
 - Pink
 - White
 - Yellow

She decides to wear the black T-shirt because it will take in more of the sun's light than the other T-shirts.

Which property of light is Angelina using to stay warm?

- A. Absorption B. Brightness
C. Reflection D. Refraction
14. Cell phones, radar, and televisions are examples of devices that function by using electromagnetic waves. What property of electromagnetic waves makes them useful for phone, radar, and television signals?
- A. Electromagnetic waves cannot be changed.
B. Electromagnetic waves can travel long distances.
C. Electromagnetic waves travel at different speeds.
D. Electromagnetic waves are harmful at high frequencies.

15. A sewer system operator would like to use electromagnetic radiation to destroy bacteria and other organisms in filtered wastewater before it is released into the environment.

Which type of electromagnetic radiation is capable of treating the wastewater?

- A. Ultraviolet B. Infrared
C. Visible D. Radio

16. Infrared light is often used in reptile habitats.

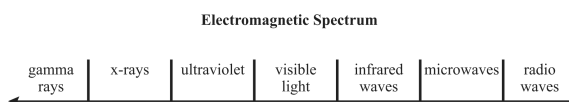
Which of these explains how a reptile benefits from infrared light?

- A. Infrared light destroys bacteria and other microorganisms.
B. Infrared light increases the body temperature of the animals.
C. Infrared light makes it possible for reptiles to see their surroundings.
D. Infrared light makes it possible for humans to see the animals in their natural habitat.

17. Why is lightning seen before thunder is heard?
- A. Light travels slower than sound.
B. Light travels faster than sound.
C. Lightning has more energy than thunder.
D. Lightning has less energy than thunder.

18. When comparing the types of electromagnetic waves, which has the *greatest* energy?
- A. ultraviolet B. X-rays
C. gamma rays D. visible

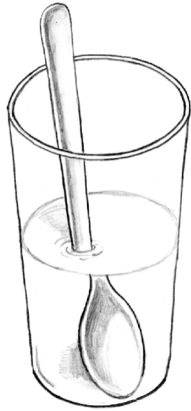
19. A diagram of the electromagnetic spectrum is shown below.



Sunscreen is a lotion used to protect skin from exposure to the Sun. This sunscreen protects a person's skin from wavelengths that are

- A. longer than radio waves but shorter than x-rays.
B. longer than x-rays but shorter than infrared waves.
C. longer than microwaves but shorter than infrared waves.
D. longer than visible light waves but shorter than radio waves.
20. A radio station transmits to a receiving antenna. The radio wave sent is a
- A. sound wave. B. torsional wave.
C. longitudinal wave. D. transverse wave.
21. Which of the following choices best explains why grass on a distant hillside appears green?
- A. Grass reflects all colors except green.
B. Grass absorbs only green light from the sun.
C. Grass reflects green light more than any other color.
D. Grass transmits green light in the same way that green-colored cellophane does.

22. Use the picture below to answer the following question.



The spoon appears to be broken where it enters the water because

- A. the light is reflected by the water.
- B. the light is absorbed by the water.
- C. the light is bent by the water.
- D. the light is dissolved by the water.

23. Which diagram below illustrates the absorption of light energy?

