

**Physical Principles in Living Systems**  
**Infrared, Visible Light, & Ultraviolet**

Name: \_\_\_\_\_  
Period: \_\_\_\_\_

Use Chapter 3, Section 1 of your textbook to answer the questions below.

**Infrared Waves (p.78)**

1. The sun makes you warm because it gives off \_\_\_\_\_ waves.
- \_\_\_\_\_ 2. Which of the following statements about infrared waves is NOT true?  
a. Infrared waves from the sun warm Earth.  
b. Only the sun gives off infrared waves.  
c. Warm objects give off more infrared waves than cool objects.  
d. All things give off infrared waves.
- \_\_\_\_\_ 3. The amount of infrared waves an object gives off depends on what?  
a. the wave's speed and weight  
b. the wave's frequency and surface properties  
c. the object's weight and temperature  
d. the object's temperature and surface properties
4. Look at the dog in Figure 4. Which part of the dog's head has the highest temperature? \_\_\_\_\_

**Visible Light (p.78)**

5. As humans, we can see \_\_\_\_\_ light.
6. Plants use visible light during the process of \_\_\_\_\_ .



**Visible Light from the Sun (p.79)**

7. White light is made when visible light of all wavelengths is \_\_\_\_\_ .
8. Light from lamps is \_\_\_\_\_ .

**Colors of Light (p.79)**

9. We can see different \_\_\_\_\_ because cells in our eyes react differently to different \_\_\_\_\_ of light.
10. The range of colors we can see is called the \_\_\_\_\_ .
- \_\_\_\_\_ 11. What do the capital letters in the name ROY G. BiV stand for?  
a. the last letter of each color of visible light  
b. the first letter of each color of visible light  
c. the first letter of each type of EM wave  
d. the first letter of the word indigo

**turn over for more questions**

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**Ultraviolet Light (p.80)**

12. Ultraviolet light is made of \_\_\_\_\_ wavelengths than visible light.

**Bad Effects (p.80)**

13. You can get a \_\_\_\_\_ if you are exposed to too much ultraviolet light.

\_\_\_\_\_ 14. What type of cancer is caused by getting too much ultraviolet light?  
a. bone cancer      b. lung cancer      c. skin cancer      d. breast cancer

\_\_\_\_\_ 15. How can you protect your skin from getting too much ultraviolet light?  
a. Wear a short-sleeved shirt.      c. Use sunscreen with a high SPF.  
b. Use sunscreen without an SPF.      d. Wear short pants.

16. True or False? You can get a sunburn on a cloudy day. \_\_\_\_\_

**Good Effects (p.81)**

\_\_\_\_\_ 17. Which of the following is a good effect of ultraviolet light?  
a. Ultraviolet light kills bacteria on food.      c. Ultraviolet light attracts bacteria.  
b. Ultraviolet light can damage your eyes.      d. Ultraviolet light converts light energy into chemical energy.

\_\_\_\_\_ 18. What do skin cells produce when they are exposed to ultraviolet light?  
a. vitamin A      b. vitamin B      c. vitamin C      d. vitamin D

19. Look at Figure 9. What does Vitamin D help your body to absorb? \_\_\_\_\_

