Light Review Sheet

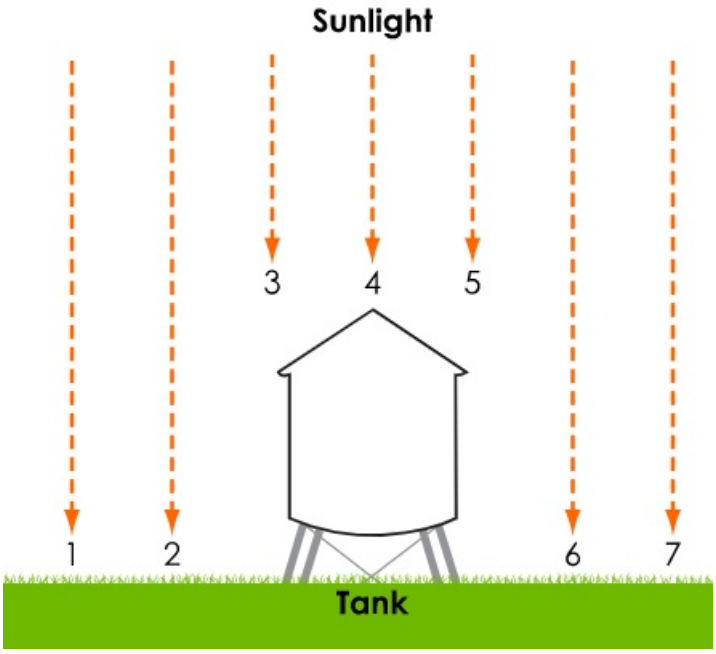
Assessment is on _____

Match the word to its definition.

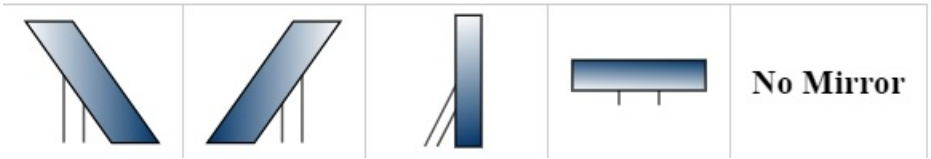
1 Reflection	A. the arrangement of colors created when white light is refracted by a prism
2 Absorption	B. bending light
3 Refraction	C. bouncing light
4 Spectrum	D. light is taken into an object
5 Straight line (ray)	E. the way light travels from a light source to your eye (through only air)

6. The picture shows how sunlight hits the top of a clear water tank in the tropics. The sunlight warms the water inside. An engineer wants to change the design of the tank and its area so that the water heats up faster. Which paint color will result in the tank absorbing the most energy from sunlight?

_____



7. Draw mirrors at the 7 locations in the picture to show where each type of mirror could be placed to reflect the most sunlight toward the tank.



8. Match the colors that are reflected when you see these items:

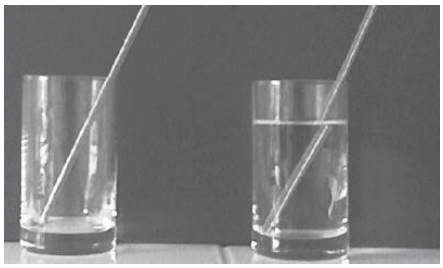
_____ Dozen eggs	A. green
_____ Black cat	B. all colors (ROYGBIV)
_____ Green leaf	C. no colors
_____ Plum	D. blue
_____ Blue Block	E. violet

9. Identify the colors that are absorbed when you see the following items:

a. Dozen eggs _____

b. Black cat _____

c. Blue flower _____



10. A student places a pencil in a cup of water. The image shows that the pencil appears to be split into two pieces. This happens because _____ _____ light.

11. A teacher asks his students to design a dog house choosing from the following materials. On each line, describe the way that material would affect the temperature of the doghouse.

- White paint _____
- Dark blue paint _____
- Black paint _____

Roof materials:

- Large sheets of aluminum metal _____
- Wooden boards _____
- Clear plastic _____

12. Identify three things light can do when it hits a surface.

a. _____

b. _____

c. _____

13. Identify the colors of light in the spectrum, in order.

a. _____ e. _____

b. _____ f. _____

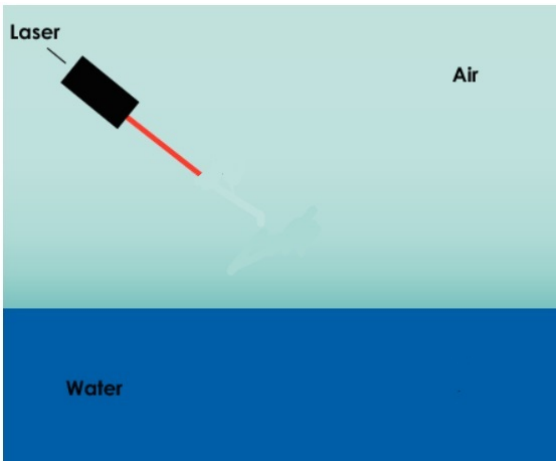
c. _____ g. _____

d. _____

14. A teacher has a car sun shade that is supposed to be placed behind his windshield to keep the inside of his car cool in the summer. The sun shade is shiny on one side and dark on the other side. Complete the following statement to explain how the sun shade should be positioned to keep the car coolest.

The _____ side should be facing outward to _____ the sunlight shining on the sun shade.

15. Draw light rays to show the reflection of light from a smooth flat mirror and the way light refracts from a laser in water.

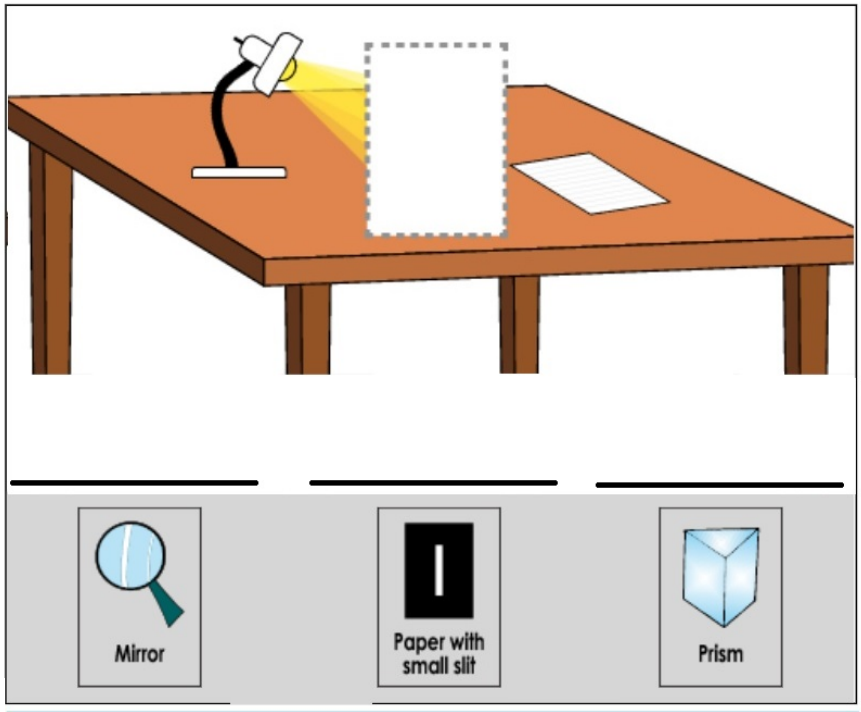


mirror

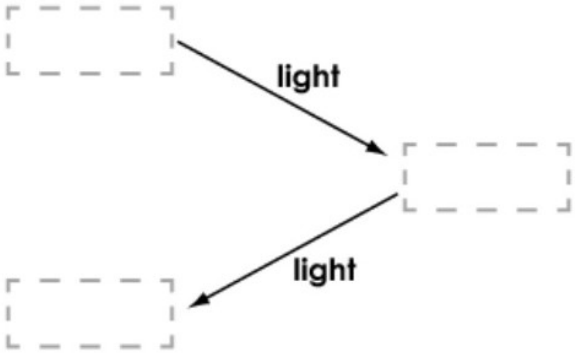
16. Several students are trying to determine which material would be best to use to cover the outside of the classroom windows so the sun does not heat up the room. They shine a beam of light at different materials and they record the path of the light for each material. Label each diagram based on the way the light interacts with that material.

_____ _____ _____ _____

17. Students want to set up a demonstration to show how with light can be transmitted, refracted, and reflected. Above each tool, write the property that could be moved into the blank box to correctly set up a white light demonstration.



Path of Light



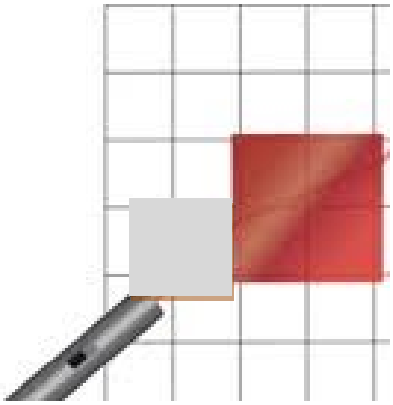
18. A student views a cookie in a mirror. Write words into the blank boxes to show how light travels from the cookie to the student's eye.

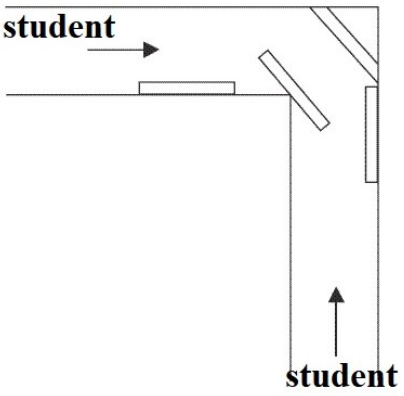
19. A student shines the light from a flashlight at two different surfaces. Where the light hits the first surface, the light looks just as bright as when it left the flashlight. Where the light hits the second surface, the light looks dimmer than when it left the flashlight. Complete the table of observations of the light's behavior as it interacts with each surface.

Experiment Results

Surface	Behavior of Light
First	
Second	

20. A student shines a light into a piece of Jell-o. The light changes _____ when it hits the Jell-o, and is _____. Complete the diagram.

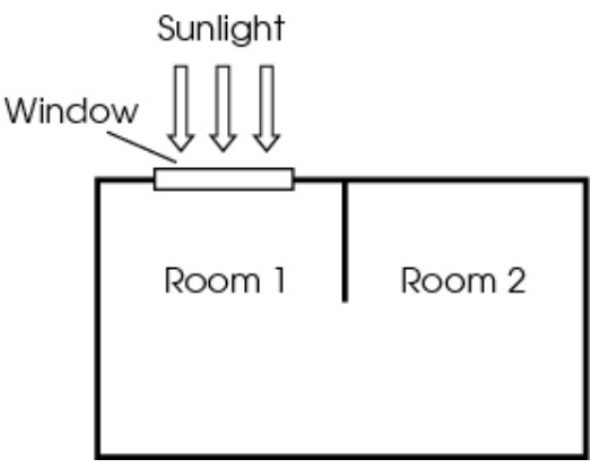




21. Students bump into each other when they walk through the hallway. They want to place a mirror in the hallway so they can see each other before they reach the corner. Circle the location they should they place it.

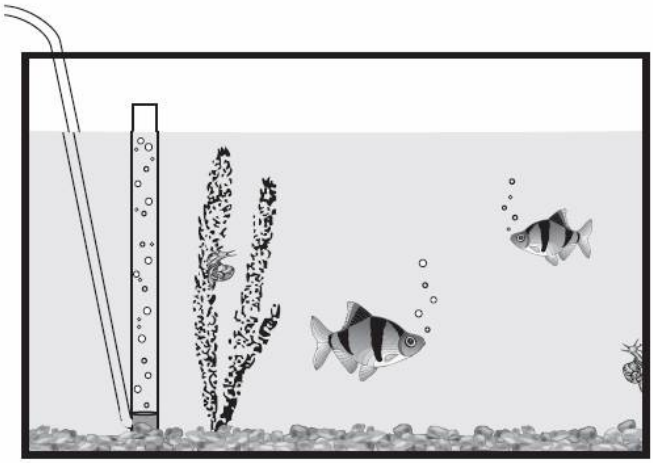
22. Sunlight shines through a window into Room 1. A student wants to set up a mirror so that sunlight will reflect into Room 2. Draw mirrors in the correct position so that the sunlight is reflected to Room 2.

Two Rooms in a House



Match the terms to the meanings or examples of each:

23. Transparent	A. lets no light pass through because all light is absorbed
24. Translucent	B. lets all light pass through
25. Opaque	C. lets some light pass through but it is blurry
26. Transparent	D. metal, cardboard
27. Translucent	E. milk jug, waxed paper
28. Opaque	F. windows, glass



29. An air hose extends above and below the surface of the water.
The air hose looks broken at the surface of the water because _____ is _____ by the _____.

30. A student investigates how light can change the temperature of water in cups. She shines a red light on a white, a red and a black cup, each filled with water, and measures the temperature changes of the water in each cup after two hours. The results of her experiment are shown in the table. Complete the table by explaining why there is or is not a temperature change in each cup.

Cup Color	Temperature Before (°C)	Temperature After (°C)	Reason for temperature change
White	24	24	
Red	24	24	
Black	24	26	