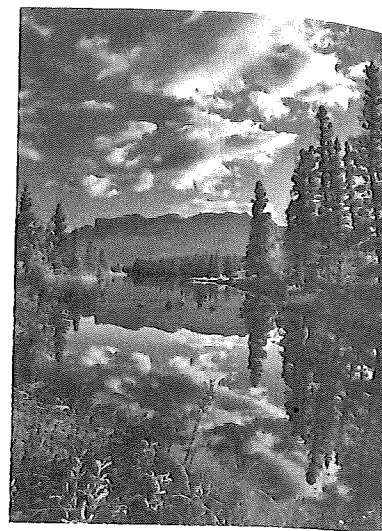


# 5th Science Blizzard Bag Assignment #3

## Lesson #109

## Light Energy

Light is another form of energy that travels in waves. Like sound waves, light waves travel until they run out of energy. Light waves spread out in all directions and bump into things also. Although sound needs to travel through a *medium* like air, water, or solids, light waves can travel through empty space. When light waves bump into objects, some of their energy is absorbed, and some of the energy bounces off of the object. Light bouncing off a shiny or smooth surface is **reflection**. Reflection allows you to see yourself or other things in a mirror or a window pane. Some objects, like clear water, glass or plastic, allow light to pass through them. These “see-through” objects are called **transparent**. Other objects like tinted glass, sheer curtains, and waxed paper allow only a little light to pass through. These materials are called **translucent**. Objects that do not allow any light to pass through are called **opaque**. Dark curtains, plaster walls, and most solids are opaque.



The lake reflects light from the sun in a pattern that creates a “mirror image” of its surroundings.

As light moves through one transparent substance into another, it bends. This bending is called **refraction**. A common example is light passing from air to water. If you put a pencil in a clear glass of water, it will look like the pencil is bent. This is because of refraction.

- Objects that you cannot see through are called \_\_\_\_\_.  
opaque      transparent      translucent
- You are able to see your own image in a mirror because of \_\_\_\_\_.  
translucence      refraction      reflection      transparency
- An experiment tests a \_\_\_\_\_.  
constant      communication      hypothesis      conclusion
- Fill in the blanks using these terms: systems tissues cells organs

\_\_\_\_\_ work together to form tissues.

\_\_\_\_\_ work together to form \_\_\_\_\_.

Organs work together to form \_\_\_\_\_.

5. When the number of protons is greater than the number of electrons in an atom, the atom is \_\_\_\_\_.

neutral    unstable    positively charged    negatively charged

6. What causes prevailing winds?

- A) cold air above the poles moves toward the equator
- B) warm air at the equator rises and moves toward the poles
- C) water vapor forms as water evaporates from oceans
- D) both A and B

7. Which of these is a renewable resource?

waterpower    petroleum    natural gas    coal

8. \_\_\_\_\_ is the amount of space that matter takes up.

9. An example of converting chemical energy to thermal energy is \_\_\_\_\_.

fire    water    dry ice    turbines

10. Which of these would absorb sound the best?

rocky cliffs    concrete walls    foam insulation    steel doors

11. Which of these are nonrenewable natural resources? Underline all that are.

wind    coal    water    natural gas    oil

12. The Law of Conservation of Matter states that mass is neither created nor destroyed. When a sheet of paper burns, \_\_\_\_\_.

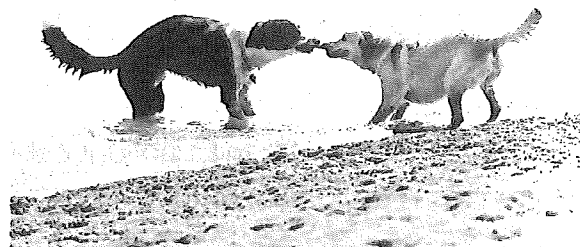
- A) some of the paper molecules disappear
- B) mass is created
- C) the molecules change but are not destroyed
- D) water is added to the environment

## Lesson #114

### Force

A **force** is a push or a pull that acts on an object. A force may cause the object to move, to stop, or to change direction. Some forces act by coming into contact with objects, like a golf club hitting a ball or the wind blowing against a curtain. Other forces, like gravity, magnetism, and electricity act at a distance, that is, without touching the object. All the things in our environment have forces acting on them all the time. **Gravity** is a force that is always acting on everything, and there may be other forces acting at the same time.

When you lean against a wall, you are applying a force. But the wall doesn't move and neither do you. That's because gravity and other forces are holding the wall in place, and those forces are equal to your push. When the forces acting on an object are **balanced**, the object's motion does not change. Another way to say this is that the forces are equal in strength, and they cancel each other out. When the forces acting on an object are **unbalanced**, its motion will change. If the object is still, it will move; if it is moving, the object may slow down, speed up, stop, or change direction.



When forces acting on an object are balanced, there is no change in motion.

1. What is a force?

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2. If a car begins to slow down, the forces acting on it must be \_\_\_\_\_.

- |             |                   |
|-------------|-------------------|
| A) balanced | C) unbalanced     |
| B) fragile  | D) equally strong |

3. What will cause a still object to move?

a balanced force      an unbalanced force      neither      both

4. Which of these has the greatest temperature?

ice cream      chocolate bars      fresh fruit      boiling milk

5. Matter is anything that \_\_\_\_\_.

- A) takes up space                      C) has mass  
B) is made of atoms                      D) all of the above

6. Put a check next to three ways of being more energy efficient.

- \_\_\_\_\_ using long lasting light bulbs  
\_\_\_\_\_ using water-saving toilets  
\_\_\_\_\_ planting trees  
\_\_\_\_\_ insulating windows and doors  
\_\_\_\_\_ wrapping garbage in newspaper



7. Sometimes loose electrons move through matter. This creates \_\_\_\_\_.

- electrical currents      new atoms      new elements

8. The Periodic Table of Elements is a list of what?

- A) all the known elements  
B) Earth's prehistoric periods  
C) scientists that have discovered atoms  
D) minerals and their properties

9. The condition of the atmosphere over long periods of time in a given place is \_\_\_\_\_.

- temperature      air pressure      climate      air quality index

10. What does a circuit need in order to be complete and to work properly?

- A) switch, insulator, and light bulb  
B) power source and conductor  
C) conductor and insulator  
D) switch and power source



When the forces acting on an object are unbalanced, the object will move, stop, or change direction.