

PHYSICAL AND CHEMICAL PROPERTIES OF MATTER

A. Fill in the blanks:

1. Physical properties are characteristics that can be observed or measured without changing the composition of the substance. Examples include _____ and _____.
2. A substance's ability to undergo a change that transforms it into a different substance is known as its _____.
3. The _____ of a substance is the amount of matter it contains, while _____ is the space occupied by matter.
4. Ice melting to form water is an example of a _____ change.
5. The state of matter with a definite shape and volume is _____.
6. _____ is a measure of the average kinetic energy of particles in a substance.
7. _____ properties describe how a substance interacts with other substances, while _____ properties involve the ability of a substance to undergo changes that transform it into a different substance.
8. The ability of a substance to dissolve in another substance is an example of a _____ property.
9. A change in size, shape, or state of matter without any change in identity is a _____ change.
10. The smallest particle of an element that retains the properties of that element is a _____.

Heat Transfer

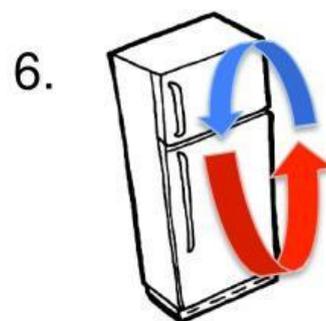
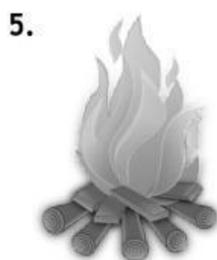
Using words from the word boxes below, complete the paragraph about heat transfer.

faster	matter	solid	hotter
conduction	contact	energy	waves
warmer	convection	temperature	
radiation	colder	vibrate	

All _____ has heat. Heat is a form of _____ caused by particles in an object that _____. The _____ the particles of an object vibrate, the _____ the object will be. Because particles of an object are always moving, heat always flows in the same direction: from _____ objects to _____ objects. Heat transfer will stop once two objects reach the same _____. This is known as equilibrium.

There are three key ways that heat transfers. With _____ objects, heat transfers when the objects come into direct _____ with other things. This is known as _____. Liquids and gases are different because these two states of matter flow, are fluids, heat transfer happens when warmer dense particles rise and cooler dense particles sink. This ongoing process is known as _____. Heat can also be transferred through space (distance) in the form of _____. This process is known as _____. All objects give off or emit some heat. All objects also take in, or absorb heat.

Identify the method of heat transfer that takes place in each illustration. Write the method of heat transfer underneath the picture.



In each of the following situations, identify the method of heat transfer taking place. Write **conduction**, **convection**, or **radiation** on the line next to the statements. Choose the best answer.

1. You are stirring a bowl of hot soup with a metal spoon. The spoon starts to feel warmer because of _____.
2. You buy a lava lamp from the store. As the lamp heats up, blobs of liquid rise to the top then sink back down to the bottom. This process continues because of _____.
3. You are doing your homework at a desk that is underneath a lamp. You start to feel hotter because of _____ from the lamp.
4. Your best friend has a bunk bed. You move from the bottom bunk to the top bunk and notice that the air is warmer. The warm air rises because of _____.
5. You are in science class and want to see if the hot plates were used recently. You place your hand over the hot plate. Without touching the hot plate, your hand feels warmer. Heat is transferred to your hand by _____.
6. You are roasting marshmallows at a campfire. The metal skewer (stick) that you're cooking your marshmallow on burns your hand because of _____.