Scientist _____ Date_____ Period_____

Heat Transfer

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

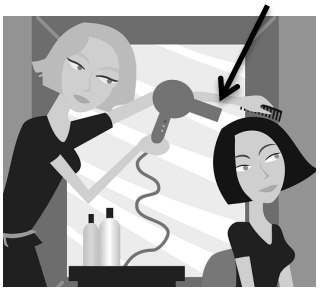
faster	hot	less	solid	fluid
conduction	more	convection	energy	emit
warmer	matter	transfer	absorb	temperature
radiation	contact	cold	vibrate	waves

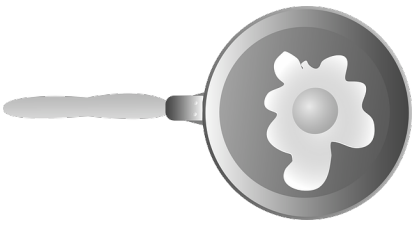
All _____ has heat. Heat is a form of _____ caused by particles in an object that _____. The _____ the particles of an object vibrate, the _____ the object will be. Because particles of an object are always moving, heat _____ is always happening. Heat always flows in the same direction: from _____ to _____. 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, or are _____, heat transfer happens when warmer, _____ dense particles rise and cooler, _____ dense particles sink. This ongoing process is known as a _____ current. Heat can also be transferred through space (distance) in the form of _____. This process is known as _____. All objects give off, or _____, some heat. All objects also take in, or _____, heat.

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

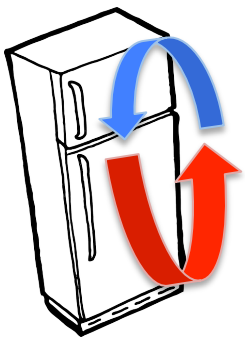
1. 

2. 

3. 

4. 

5. 

6. 

In the boxes below, draw an example of each type of heat transfer. Explain how heat is being transferred in your example.

Conduction	Convection	Radiation
Explanation: _____ _____ _____ _____ _____	Explanation: _____ _____ _____ _____ _____	Explanation: _____ _____ _____ _____ _____

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 <u>best</u> 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 _____.

Scientist KEY Date_____ Period_____

Heat Transfer

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

faster	hot	less	solid	fluid
conduction	more	convection	energy	emit
warmer	matter	transfer	absorb	temperature
radiation	contact	cold	vibrate	waves

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

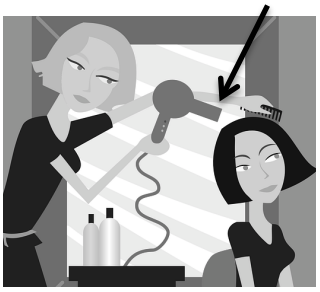
There are three key ways that heat transfers. With solid objects, heat transfers when the objects come into direct contact with other things. This is known as conduction. Liquids and gases are different. Because these two states of matter flow, or are fluid, heat transfer happens when warmer, less dense particles rise and cooler, more dense particles sink. This ongoing process is known as a convection current. Heat can also be transferred through space (distance) in the form of waves. This process is known as radiation. 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.

1.

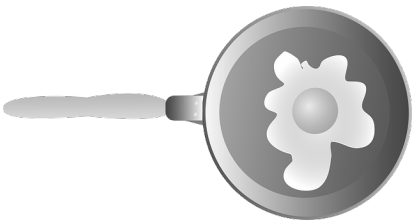
radiation

2.



convection

3.



conduction

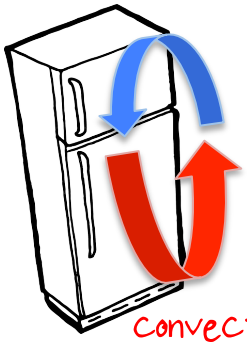
4.

conduction

5.

radiation

6.



convection

In the boxes below, draw an example of each type of heat transfer. Explain how heat is being transferred in your example.

Conduction	Convection	Radiation
Answers should vary		
Explanation: _____	Explanation: _____	Explanation: _____

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 <u>best</u> answer.

1. You are stirring a bowl of hot soup with a metal spoon. The spoon starts to feel warmer because of ___conduction___.
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 ___convection___.
3. You are doing your homework at a desk that is underneath a lamp. You start to feel hotter because of ___radiation___ 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 ___convection___.
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 ___radiation___.
6. You are roasting marshmallows at a campfire. The metal skewer (stick) that you're cooking your marshmallow on burns your hand because of ___conduction___.