Name: _____ Period: _____ Due Date: _____

Energy, Work, and Heat Transfer

E-Learning Day #3 Heat Transfer: Radiation

STANDARDS:

- 7.4.1 Understand that **energy is the capacity to do work.**
- 7.1.2 Describe and give examples of **how energy can be transferred from place to place** and transformed from one form to another through **radiation, convection and conduction.**

GENERAL DIRECTIONS:

a) **READ:** Read and analyze the text that goes with each specific e-Learning day. Scan over the text once and then go back and read more carefully. Mark important information however you need to.

b) **WATCH:** There are one or more videos that go with each text's topic. These will help you make even more sense of the text.

c) **QUIZ:** After reading and watching the videos complete the quiz. You can find the quiz button on my Weebly page.

↪ You may refer back to the text and videos as often as needed to complete the quiz. Each question is worth TWO points.

Day #3 Heat Transfer: Radiation

Focus Questions:

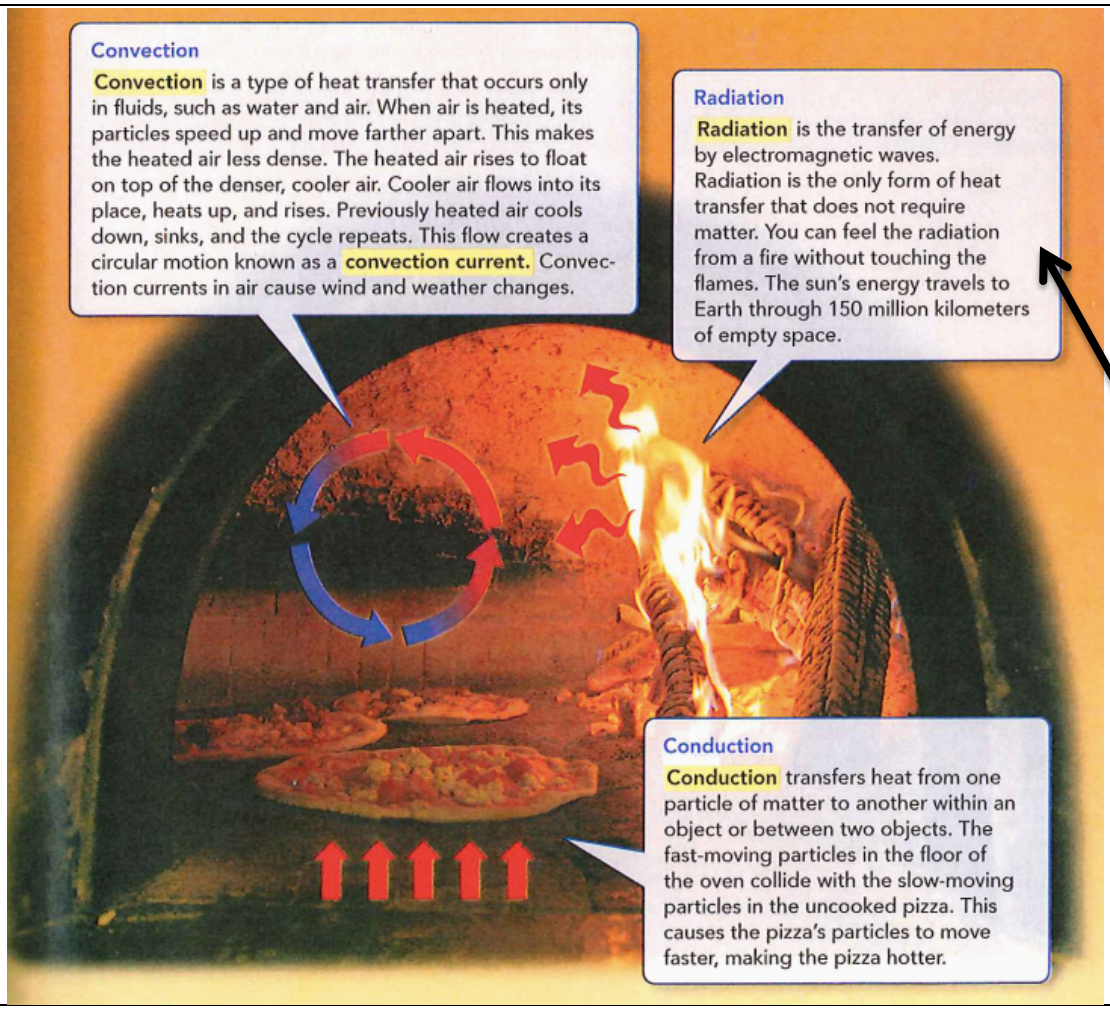
a. **What is radiation?**

b. **How does heat move through radiation?**

What is radiation?

Radiation is another way in which heat can be transferred. **Radiation** is the transfer of energy by electromagnetic waves. Some examples of electromagnetic waves include visible light, microwaves, and infrared light. The sun is the most significant source of radiation that you experience on a daily basis. However, all objects—even you—emit radiation and release energy.

When radiation is emitted from one object and then absorbed by another, the result is often a transfer of heat. Like conduction and convection, radiation can transfer heat from warmer to cooler objects. However, radiation differs from conduction and convection in a very significant way. Radiation can travel through empty space, as it does when it moves from the sun to Earth.



LOOK HERE

DON'T FORGET TO WATCH THE VIDEO TITLED: "Radiation (Heat, Temperatures, and Energy)" AND

You may also want to review the video from Day #1: "Temperature and Heat" starting at the 3:40 mark.

QUIZ – These questions will need to be answered online.

1. Which form of heat transfer can occur without matter present (in empty "space")?
   A) conduction
   B) convection
   C) radiation
   D) all of the above

2. Energy can change from one form to another.

   A) false
   B) true

3. Heat transfers in radiation from:

   A) warmer to cooler in a straight "line"
   B) cooler to warmer in a "circular" pattern
   C) cooler to warmer through waves in empty "space"
   D) warmer to cooler through waves in empty "space"

4. In order for radiation to occur, molecules/materials:

   A) do not need to be touching
   B) need to be touching

5. Heat energy from the sun heats **water** on earth's surface. The heated water evaporates and the water vapor (a gas) rises into the air. As the water vapor rises, it cools and condenses around dust particles, and returns to earth's surface as precipitation (such as rain or snow). This is

   A) the water cycle
   B) the oxygen cycle
   C) the heat cycle
   D) the carbon cycle

6. In which form is energy from the light of the Sun?

   A) mechanical
   B) sound
   C) chemical
   D) radiant

DON'T FORGET TO SUBMIT YOUR ANSWERS ONLINE IN THE GOOGLE FORM