

Grade 5 – Assignment for week of (5/18 to 5/22)

Learning about Earth's Heat and Moving Air:

So far we have learned about the air part of the Earth, or the atmosphere, and how our water travels through what is called the "Water Cycle."

This week we will focus on the Sun's heat and the different kinds of moving air or wind.

Science Vocabulary:

Conduction:	When heat is moved through two things that touch
Convection:	When heat is moved by air or water from hot to cold
Radiation:	When light or heat moves through rays or waves
Equator:	The center line of the globe where warm air rises and air pressure is low
North & South Poles:	The top and bottom of the globe where cold air sinks and air pressure is high
Prevailing Winds:	Jet stream winds mixing hot and cold global air; blows in the same direction
Local Winds:	Winds caused by changes in temperature between the land and water

Task #1:

Use words from the science vocabulary listed above, to make an **acrostic** telling about the heat and moving air on Earth. An acrostic uses each letter in the word to describe the word or tell a story about what you are learning. Make an acrostic for (3) vocabulary words.

An example for the word ***Earth Day*** might be:

Earth is our planet.

April 22nd, we celebrate

Reduce, reuse, and recycle

Take pride in our planet

Help do your part

Doing a little each day helps

Animal and plants need our help

You can help every day



Task #2:

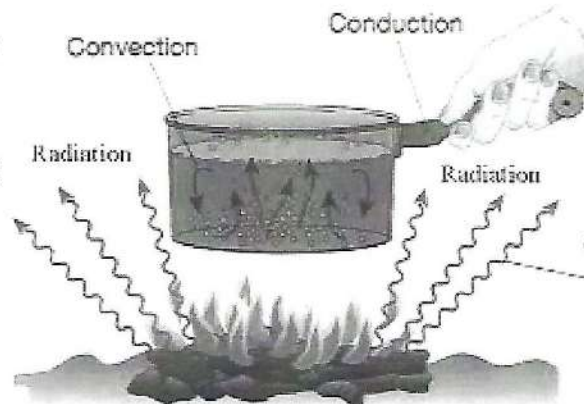
Read the page below entitled, "**Heat of the Earth.**" Pay close attention to the words in bold print and see how many science vocabulary words you can find. You will use the information on this page and your science vocabulary to complete the fill-ins at the bottom of the page.

Name _____

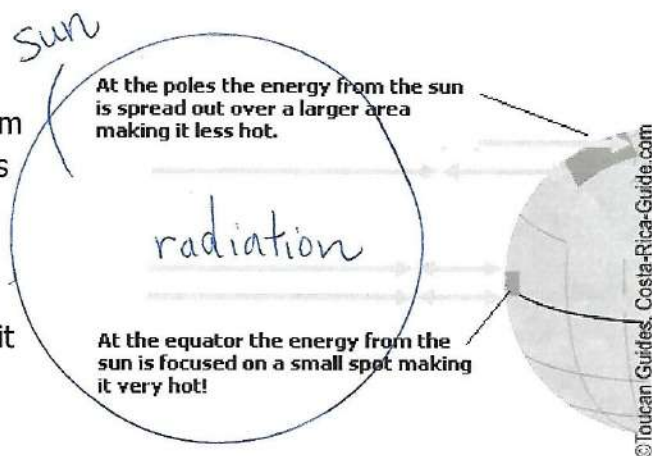
Heating of the Earth

Date _____

Heat is transferred or moved in three ways called **Conduction**, **Convection**, and **Radiation**. Conduction is when heat moves through physical contact (*touching the hot pot*). Convection is when heat is moved by air or water and transferred from hot to cold (*hot water warms the cold water in the pot*). When hot air moves upward and cold air moves downward, this air movement is called a convection current. Radiation is when heat or light travels through rays or waves of heat and light (*heat travels through waves from the fire to heat the pot*).



Because of Earth's ball-shape, heat from the sun travels through radiation and is more directly focused at the equator making it very hot. At the North and South Poles, sunlight radiates and is spread out over a larger area, making it less hot.



1. The heat from the sun strikes the earth more directly at the _____, making it more hot.
2. The transfer of heat through the movement of a gas or liquid is called _____.
3. The reason that temperatures around different places on Earth are not the same is because of the _____ - _____ of the Earth.
4. The uneven heating of Earth's surface causes the upward and downward movement of air called a _____ current.

Task #3:

Read the page below entitled, "**The Causes of Wind.**" Pay close attention to the words in bold print and see how many science vocabulary words you can find. You will use the information on this page and your science vocabulary to complete the fill-ins at the bottom of the page.

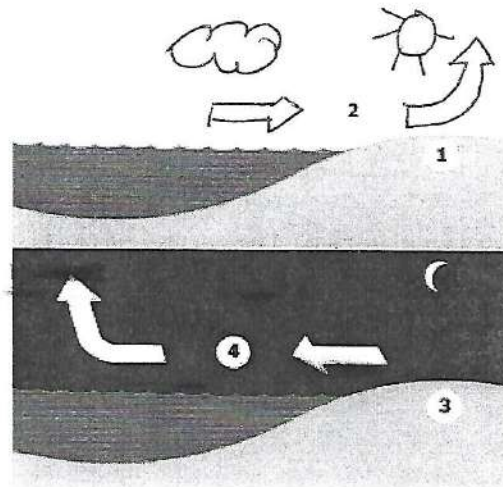
Name _____

The Causes of Wind

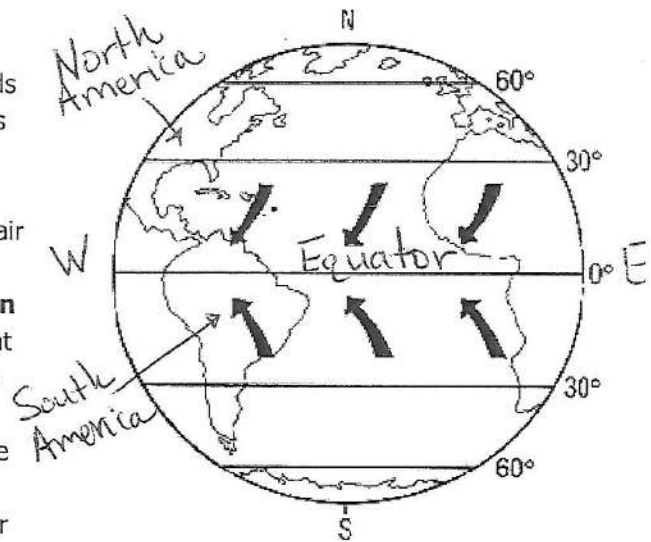
Date _____

Local winds are caused when the land heats up and cools down more quickly than the sea. These winds blow from areas of high pressure to areas of low pressure.

1. **During the day** the air above the land heats up, expands and therefore becomes less dense and rises.
2. The atmospheric pressure above the land drops and **air moves in from above the sea**, where the air pressure is higher. This is a sea breeze to the land.
3. **During the evening**, the temperature of the land drops much faster than the sea.
4. The air above the sea becomes hotter than the air above the land, so it rises and **a breeze flows from the coast out** to sea, reversing the effect.



Prevailing winds are global winds that blow constantly from the same direction. Prevailing winds are **caused by the uneven heating** of large parts of the Earth's atmosphere. Cold, heavy polar air would flow toward the equator, forcing an upward movement of the warmed air at the equator. This air then would flow north and south toward the poles. However, **the Earth's counterclockwise rotation** makes the north and south winds curve. Winds that blow toward the poles curve east. Winds that blow toward the equator curve west. Over the United States, the **jet stream** winds high up in the sky are caused by temperature differences between air masses. The jet stream winds blow at 150 miles per hour and blow from west to east.



1. In a convection current _____ air rises and _____ air sinks.
2. A sea breeze is a local wind that blows during the _____ from the water to the _____.
3. Winds blow from areas of _____ pressure to areas of low _____.
4. Jet Stream winds blow over the United States from _____ to _____.
5. Prevailing winds are caused by the _____ heating of Earth's _____.

Task #4:

Use what you have learned to complete (page 121), the multiple choice quiz below. Complete (page 121) by circling the letter that correctly answers the question. You can check your answers, listed on the answer key on the following page, when you are done.

Name _____ Date _____

Circle the letter of the best answer for each question.

- 1** Where does sunlight directly strike Earth?
 - A** at the North Pole
 - B** along the equator
 - C** at the South Pole
 - D** in the Western Hemisphere

- 2** Which of the following explains how air moves in a convection current?
 - A** warm air rises, cold air rises
 - B** warm air rises, cold air sinks
 - C** warm air sinks, cold air rises
 - D** warm air sinks, cold air sinks

- 3** Which of the following describes high-speed winds caused by temperature differences between air masses?
 - A** global winds
 - B** the jet stream
 - C** trade winds
 - D** front winds

- 4** Why does Seattle, Washington generally receive less heat energy from the Sun than San Diego, California?
 - A** It is closer to the equator.
 - B** It is farther from the ocean.
 - C** It is farther from the equator.
 - D** It is closer to the ocean.

- 5** The transfer of heat through the movement of a gas or liquid is called
 - A** convection.
 - B** condensation.
 - C** freezing.
 - D** reduction.

- 6** Temperatures are different around the world because of
 - A** Earth's gravity.
 - B** Earth's color.
 - C** Earth's shape.
 - D** Earth's distance from the Moon.

Circle the letter of the best answer for each question.

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