



Science Virtual Learning

**6th Grade Science:**

**Heat Transfer**

May 21, 2020



## 6th Grade Science

### Lesson: May 21, 2020

### **Objectives/Learning Targets:**

Students will understand how heat is transferred in three different ways.

## Warm Up

Watch the [video](#) over the three types of heat transfer. Then, write an example of each type on a piece of paper. See if you can think of an example of each on your own. Record these too.





## Warm Up - Answer Key

From the video:

Conduction - Metal spoon heated by a match

Convection - A lit match

Radiation - The sun

On your own: Answers may vary

Conduction - Cooking on the stove

Convection - A lava lamp

Radiation - Light from a candle

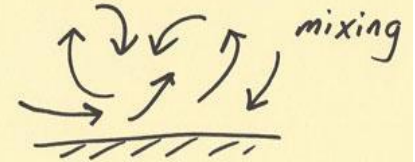
## Types of Heat Transfer

- **Conduction** - This is a flow of heat by direct contact. Heat travels from a warmer object toward a colder object. A pan warming on a stove is an example.
- **Convection** - This is a transfer of heat by mixing a fluid, such as a gas or liquid. Examples include boiling water and when warm water mixes with cold water.
- **Radiation** - Radiation is the transfer of energy in waves by electromagnetic radiation. Examples include the sun and waves.

### conduction



### convection



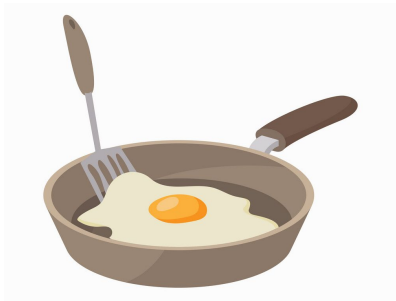
### radiation



## Background Information

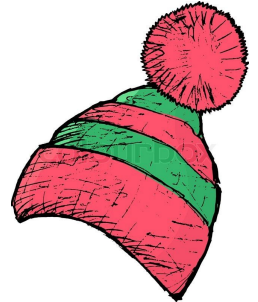
### Conductors:

Materials that transfer heat easily are called conductors. One example of a good thermal conductor is metal. This is why metal is used to make saucepans for cooking food.



### Insulators:

Materials that slow the transfer of heat are called insulators. One example of a good thermal insulator is wool. This is why wool is used to make winter coats, scarves, hats, and gloves.





## Practice

Determine if the following scenarios are examples of conduction, convection, or radiation. Refer back to the definitions as needed.

1. Walking on hot sand
2. Feeling the sun's rays while floating in a pool
3. Touching a hot mug
4. The sun warming the Earth
5. Currents in Earth's mantle
6. An egg cooking on a hot skillet
7. Feeling hot & cold spots in a lake



## Practice - Answer Key

Determine if the following scenarios are examples of conduction, convection, or radiation. Refer back to the definitions as needed.

1. Walking on hot sand - **Conduction**
2. Feeling the sun's rays while floating in a pool - **Radiation**
3. Touching a hot mug - **Conduction**
4. The sun warming the Earth - **Radiation**
5. Currents in Earth's mantle - **Convection**
6. An egg cooking on a hot skillet - **Conduction**
7. Feeling hot & cold spots in a lake - **Convection**





## Practice

Read the [article](#) on heat transfer, then answer the questions.


1. How is air temperature usually measured? \_\_\_\_\_
2. At what temperature on the Celsius scale does pure water freeze? \_\_\_\_\_
3. At what temperature on the Fahrenheit scale does water boil? \_\_\_\_\_
4. Name the three ways by which heat is transferred.
  - A. \_\_\_\_\_
  - B. \_\_\_\_\_
  - C. \_\_\_\_\_
5. How is heat transferred from the sun to Earth? \_\_\_\_\_
6. Heat is moved through the troposphere mainly by \_\_\_\_\_

## Practice - Answer Key

Read the [article](#) on heat transfer, then answer the questions.

1. How is air temperature usually measured? Thermometer
2. At what temperature on the Celsius scale does pure water freeze? 0 degrees
3. At what temperature on the Fahrenheit scale does water boil? 212 degrees
4. Name the three ways by which heat is transferred.
  - A. Conduction
  - B. Convection
  - C. Radiation
5. How is heat transferred from the sun to Earth? Radiation
6. Heat is moved through the troposphere mainly by Convection

## Additional Practice



Remember heat flows from warm to cool areas!

1. IXL - [Thermal Energy](#)

*Remember you do not need to log in. Simply complete the 5 free practice problems.*

2. More [practice](#) on the 3 types of heat transfer.

3. Here's a [song](#) to remember heat transfer!