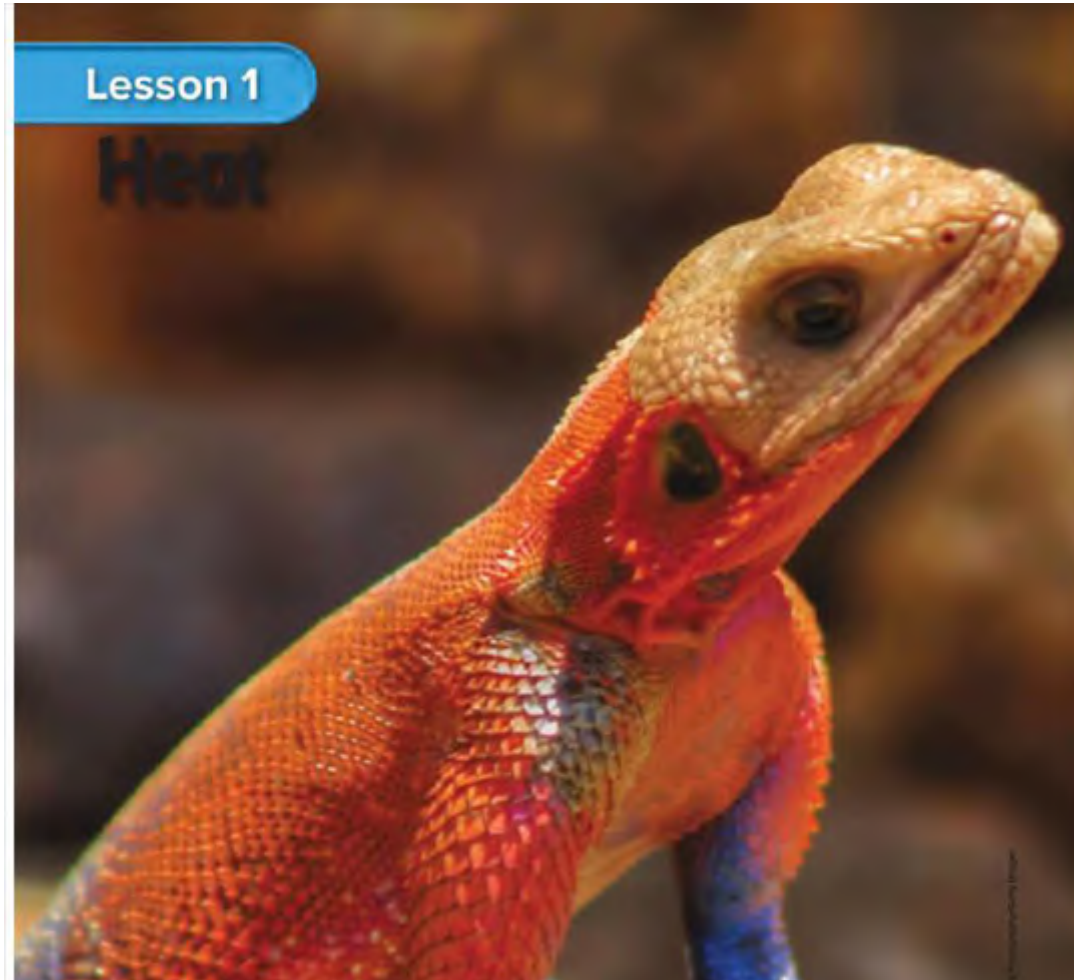


What is Heat?

Lesson 1



We Are Learning About:

- What is heat?
- How is heat transferred?
- What is temperature?

This is what I need you to know: I CAN

- Explain what heat is
- Understand how heat is transferred
- Understand the difference between heat and temperature

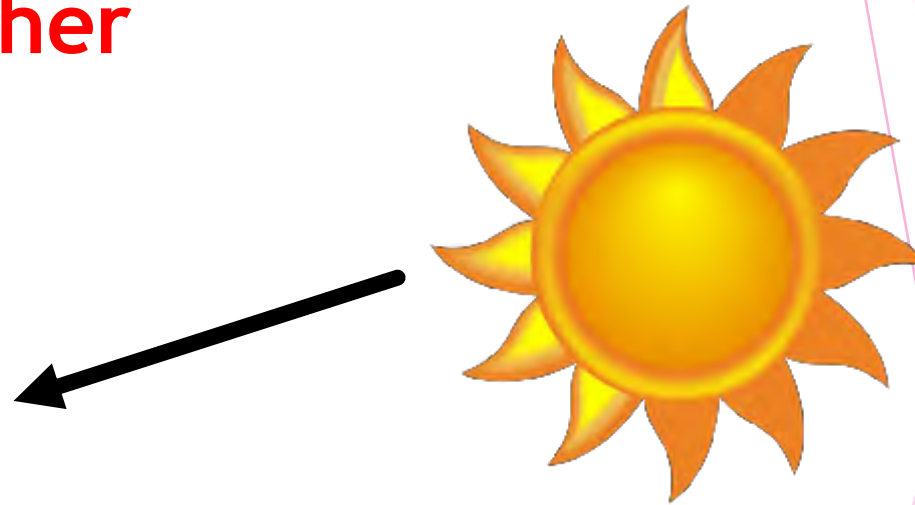
Let's start with the picture



Why do you think the lizard is sitting in the sun?

What is heat?

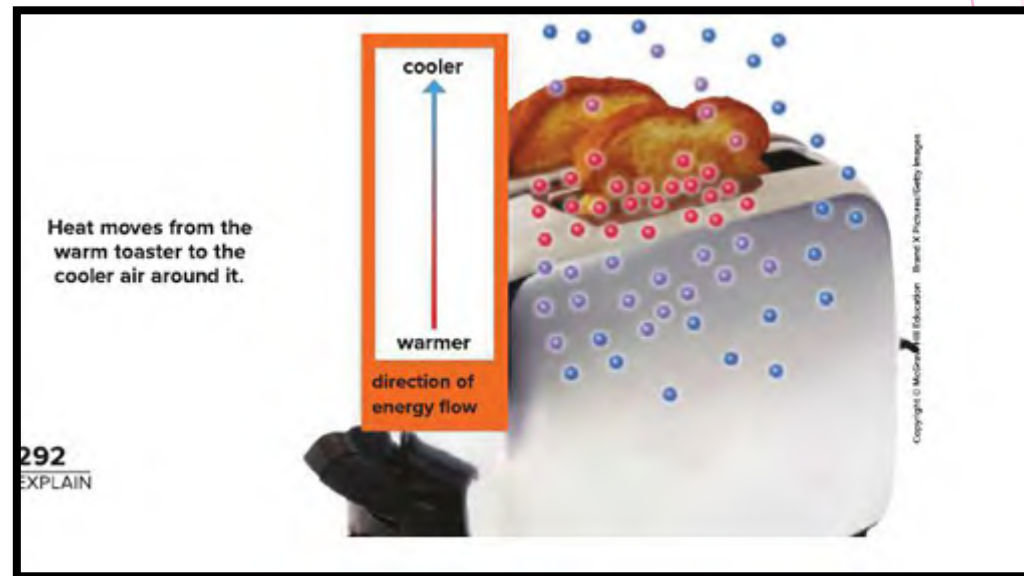
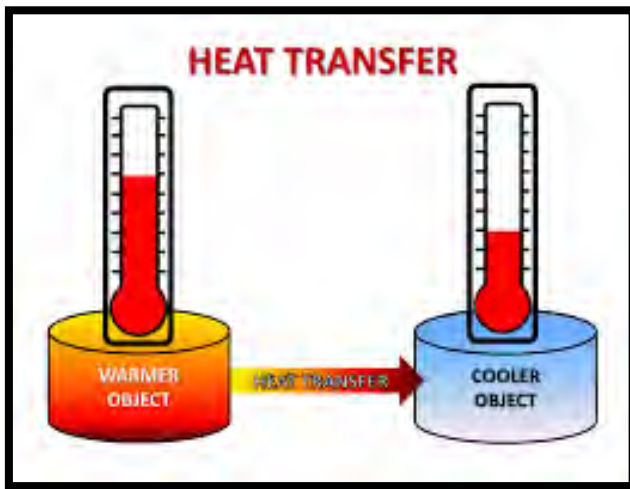
Heat is the flow of thermal energy from one object to another



What are the two objects here?

How is heat transferred?

Heat ALWAYS moves from the warmer object to the cooler object

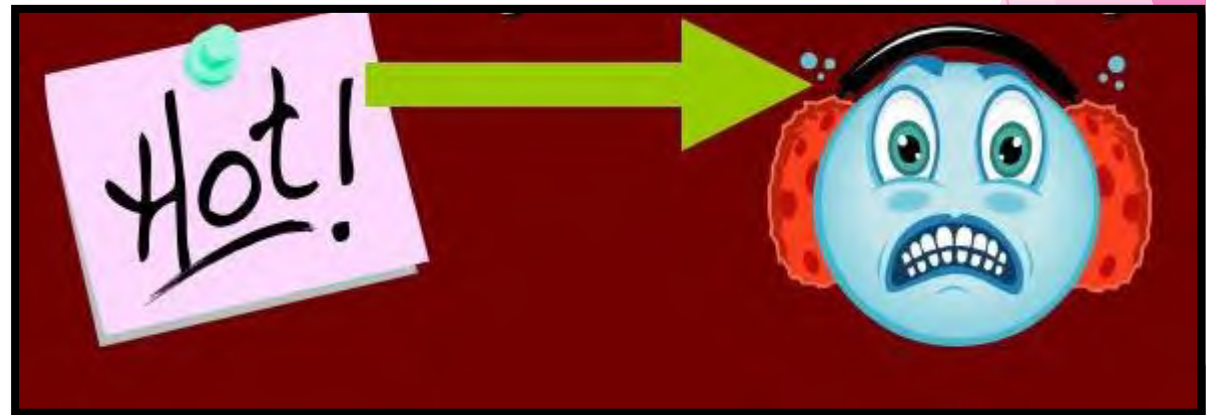
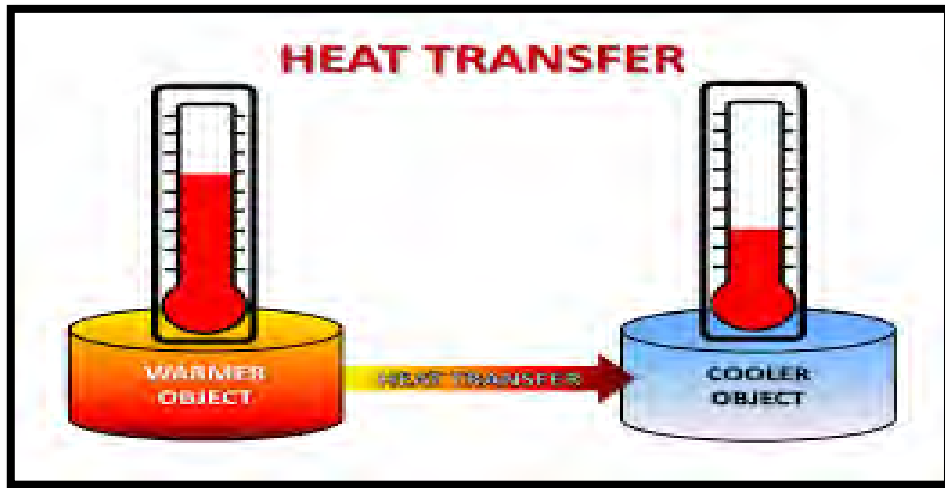


How is heat transferred?

Rub your one hand on your leg.

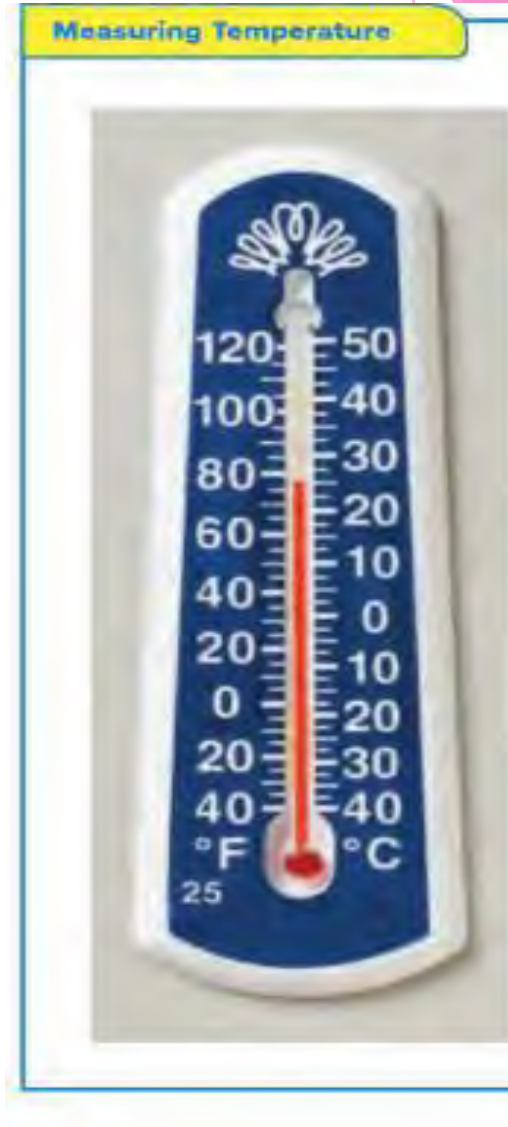
Now touch your other hand.

That is heat transfer. Heat from your warm hand went to your cooler hand



What is temperature?

- Heat is NOT temperature
- Temperature measures thermal energy
- How hot or cold it is
- We measure in degrees Celsius (C)
- We use a thermometer to measure temperature
- Look at the thermometer in your textbook. What is the temperature in Celsius?



Lesson 1.1 How does heat travel?

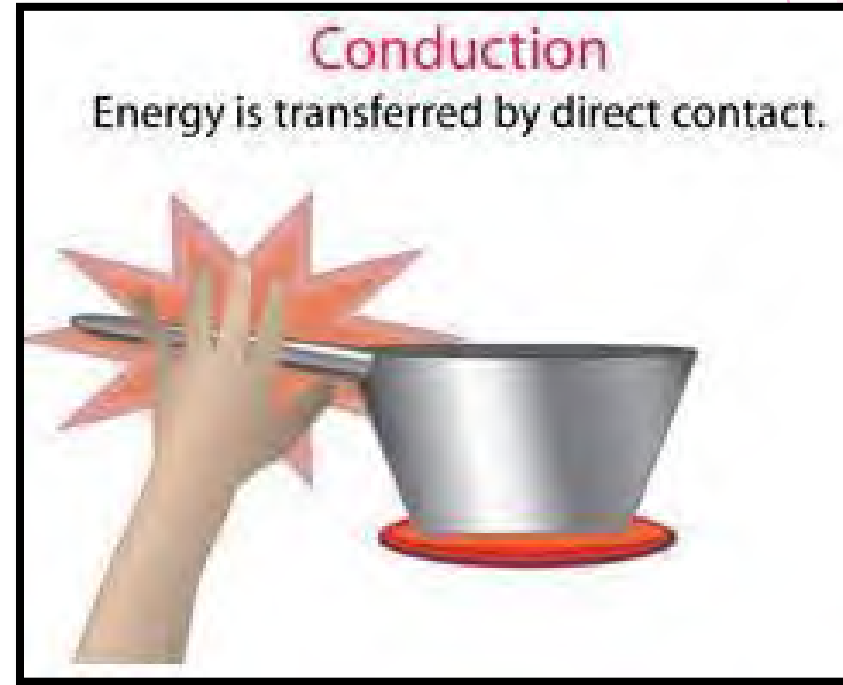
- Conduction Convection Radiation



Lesson 1.1 How does heat travel?

- **CONDUCTION**

Heat travels between two objects that are touching
A pot on the stove



Lesson 1.1 How does heat travel?

• CONVECTION

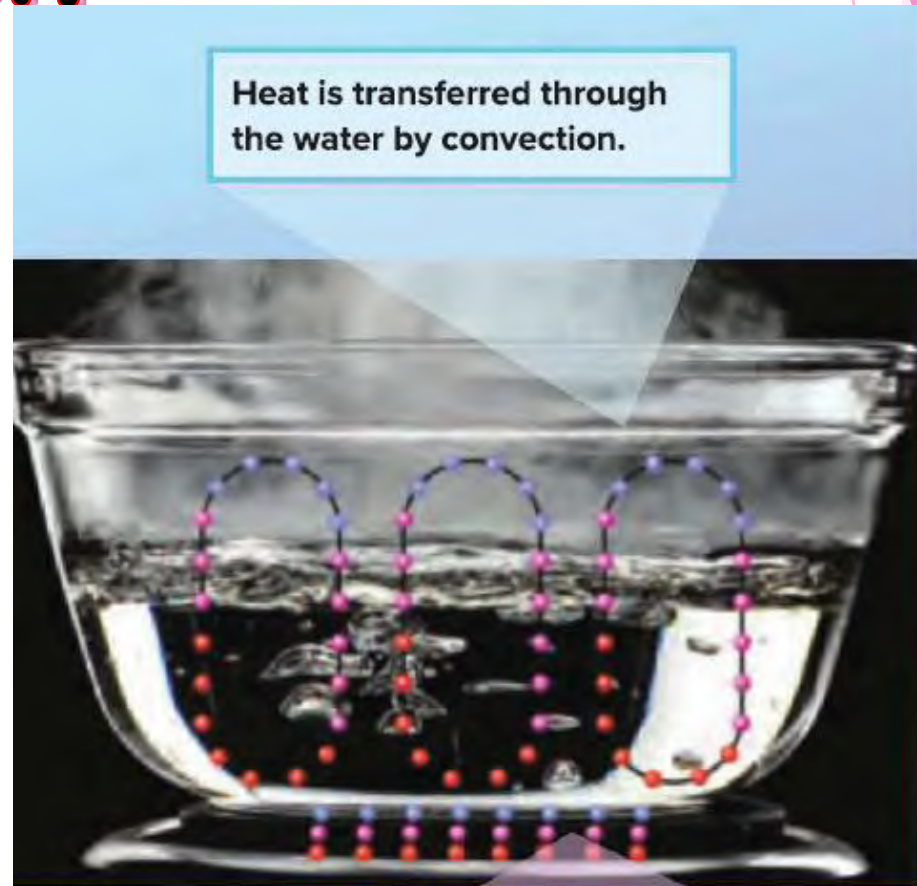
The transfer of heat through liquids and gases

Example

Boiling a pot of water

The pot heats up and transfers energy to the water

The water at the bottom will heat up first.



Lesson 1.1 How does heat travel?



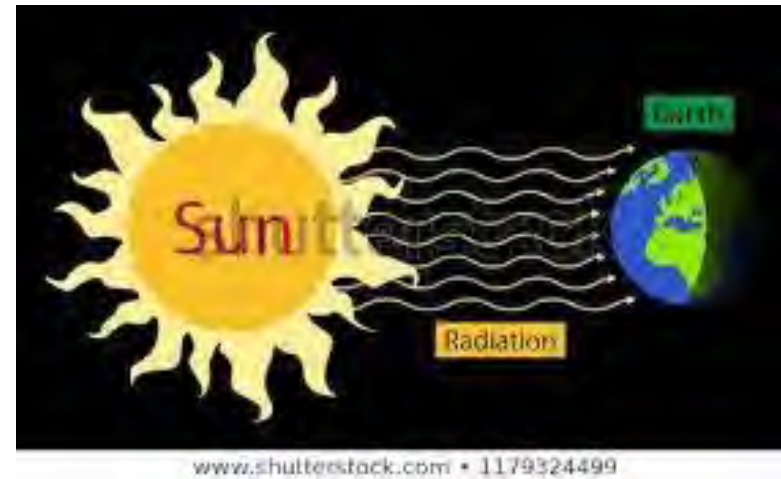
- **RADIATION**

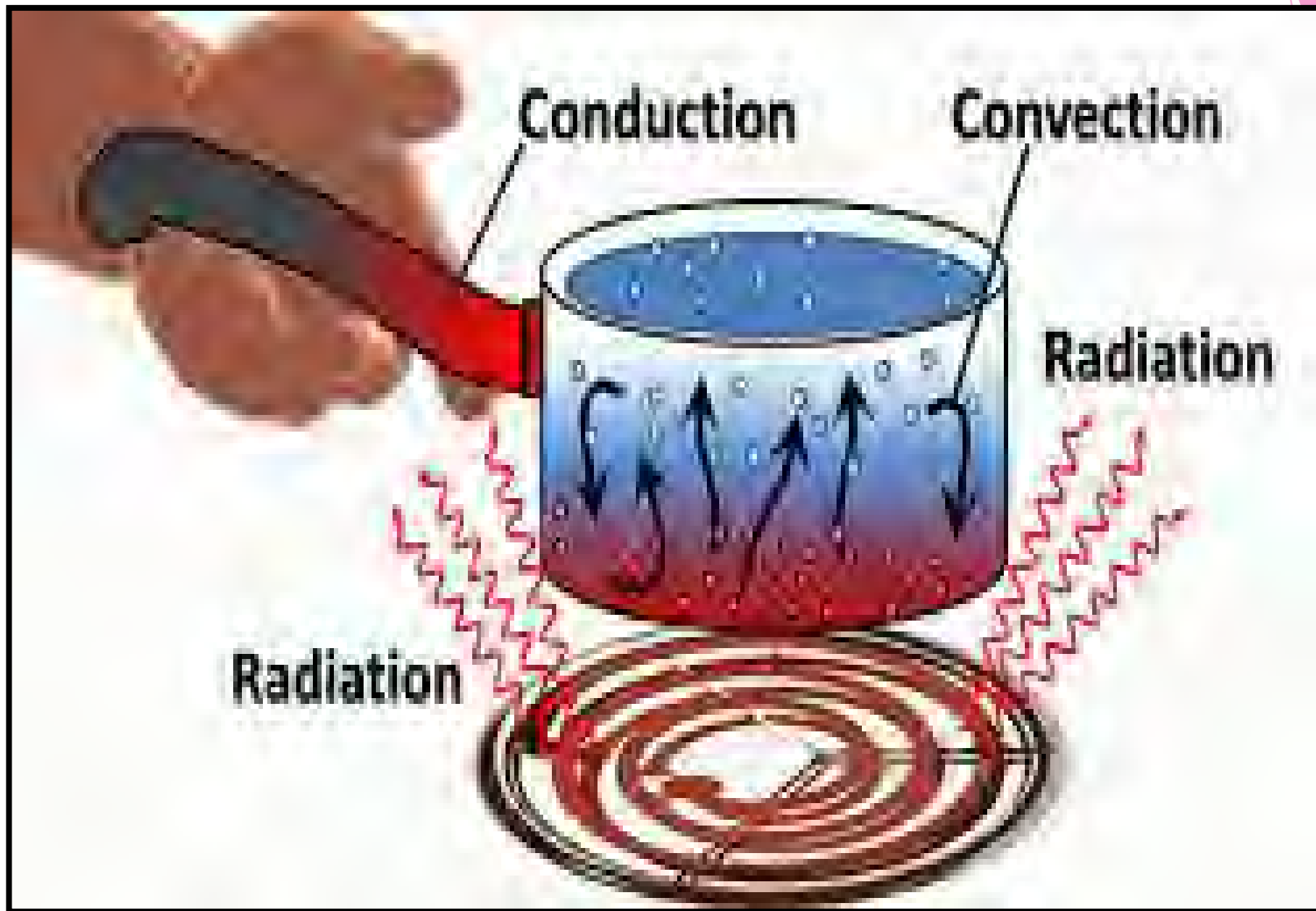
Radiation is heat that travels

- For example a fire burning



- Another example is the sun. The sun would not reach Earth if there was no radiation





Lesson 1.1 How does heat travel?

• INSULATORS AND CONDUCTORS

INSULATORS -

DO NOT transfer heat very well.
Fat is an insulator. It helps keep animals warm in cold places.



Lesson 1.1 How does heat travel?

• INSULATORS AND CONDUCTORS

CONDUCTORS -

Conductors are the OPPOSITE of insulators.

They can transfer heat easily

METAL is a good conductor of heat.

That is why pots and pans are made of metal.



LET'S REVIEW:

- What is heat?

The flow of thermal energy between objects

- What is temperature?

Temperature measures thermal energy

How hot or cold it is

We measure in degrees Celsius (C)

We use a thermometer to measure temperature

- How is heat transferred?

Heat flows from a warm object to a cold object

Heat can be transferred through:

Conduction- When two objects are touching each other

Convection- heat is transferred through liquids and gases

Radiation- Heat that travels through space - The sun

- What are insulators and conductors?

Insulators do not allow heat to transfer very well

Conductors transfer heat easily