

Names: _____

Section: _____

Conduction

Guide Questions:

1. What happened when the stove is turned on?

2. Which handle looks like it would become hot faster—the metal or the wooden one?

3. Do both handles heat up in the same way?

4. Why do you think one handle heats up faster than the other?

5. Does the heat move through the air or through the handle itself?

6. How did heat reach the handle?

7. What do we call the transfer of heat through direct contact?

Convection

Guide Questions:

1. What do you notice about the movement of the air particles in the room?

2. Which part of the room looks warmer? Which part looks cooler?

3. Do warm and cool air move in the same direction?

4. What do you notice about the movement of **warmer air** near the stove? Does it move up or down?

5. What do you notice about the movement of **colder air** near the air conditioner? Does it move up or down?

6. Why do you think warm air rises while cool air sinks?

7. Is heat being transferred by direct contact here?

8. What do we call heat transfer that happens because a fluid (air or liquid) moves?

Radiation

Guide Questions:

1. What is the source of heat in the simulation?

2. Is the object touching the Sun or heat source?

3. Is there air between the Sun and the object?

4. Does the object still heat up even though there is empty space between it and the Sun?

5. What does this tell us about how heat can travel through space?

6. Is heat transferred by direct contact in this situation? Why or why not?

7. What kind of heat transfer happens when energy travels through empty space?

Fill in the Blanks:

Conduction is the transfer of heat through _____.

_____ is a better conductor than _____.

Convection is the transfer of heat by the movement of _____.

Warm air _____, while cool air _____.

Radiation is the transfer of heat through _____.

| | |
|---------------|----------------|
| Empty space | Direct Contact |
| Liquid or Gas | Metal |
| Rises | Wood |
| Sinks | |