Radiation, Conduction and Convection

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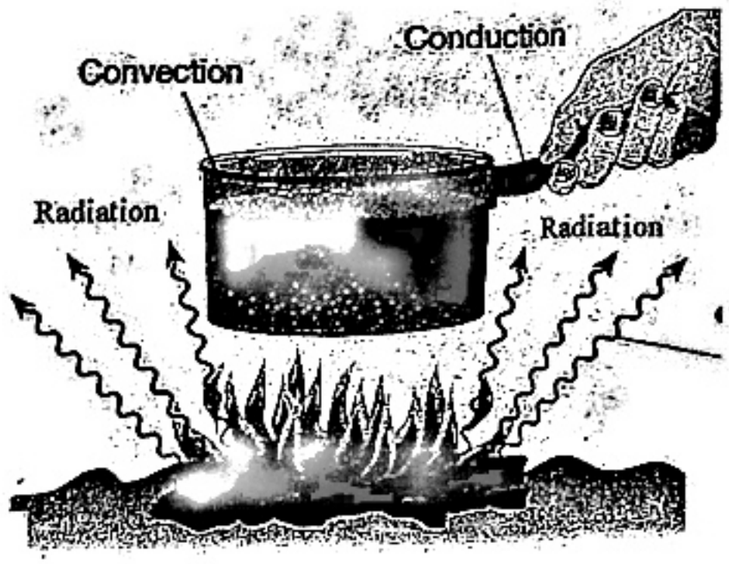

Goal: ***To describe how heat flows through our atmosphere.***

1. Copy the class list of ways that heat is transferred.

Read the section *Heat Flow in Our Atmosphere* and study the diagram on page 19. Then answer the following questions:

2. Explain what Radiation is. List an example of radiation.

3. What is conduction? Explain how it happens. Give an example of conduction.

4. What is convection? Explain how it works. Give an example of convection.

Lava Lamp Observations

5. In the space provided at the right, diagram what is happening to a lava lamp. Be Descriptive in your drawing showing the heat transfer that occurs in the lamp and the movement of the 'lava.'

6. How does a lava lamp model the air in the atmosphere (or the movement of water in the oceans)?

7. Warm air rises or falls? What about cold air?

The order of heat flow below is incorrect. Write out each step in the correct order on the diagram at the right.

- Warm, less dense air rises carrying the heat upward by **convection.**
- As the air rises through the surrounding regions of greater density it begins to cool and contract, becoming less dense.
- Solar energy reaches Earth's surface through **radiation.**
- Energy is absorbed by Earth's surface causing it to warm.
- The rising air pushes the cooler air out of its way. Eventually the density of the rising air equals the density of the surrounding air and it stops rising.
- The heat energy of the Earth's surface is transferred to the air in contact with this surface by **conduction.**
- The cold dense air continues to sink through the less dense, warmer air and eventually reaches the ground.
- The cooled and more dense air pushed aside by the warm, rising air begins to sink.