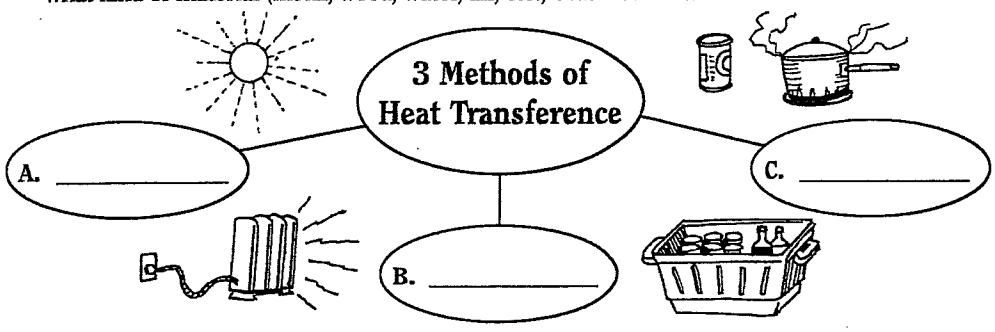
THE HEAT IS ON

You reach out to stir the soup and the spoon burns your hand. Your can of soda was icy cold just half an hour ago, but now it's lukewarm. The basement of your house is cool, even on a sweltering hot day. You're sweating in your black shirt on a sunny day, but your friend is comfortable in her white shirt. You ski outside all day on a sub-zero, blizzardy day. You're warm in your living room even though you're 20 feet across the room from the heater. All these things are true because of the amazing talent of heat energy (it can be transferred) and the equally amazing talents of some materials that put up resistance to heat transfer. Use your knowledge about heat energy to do these two tasks:

I. Fill in the diagram below, and write a brief explanation for each method. Be sure to mention what kind of material (metal, wood, water, air, etc.) that method works in.



II. Give explanations that answer these questions. Use the back of the page if you need to.

1. How does heat get from the stove burner into your soup?
2. How does a cooler keep drinks cold on a hot day?
3. When two cars sit in the sun all day, the one with the black roof gets hotter than the one with the white, shiny roof. Why?
4. How does the heat from the sun, thousands of miles away, reach your body?
5. Why is the metal spoon in your cup of hot chocolate hot?
6. Why doesn't a plastic spoon in hot chocolate feel hot?
7. Why is your house warm on a cold day, even if you haven't turned on the heat?
8. When you turn on a heater, how does the warmth get to you?
9. Why are you warmer with several layers of clothes than with one heavy jacket?
10. Why do some cooking pots have wooden handles?
11. How does a cold can of soda become warm on a hot day?
12. How does a microwave oven get your food hot?
13. How can a solar heating system heat your water on a day when there's no sun?
14. How is a refrigerator an example of a heat mover?
15. How can temperature (heat) be pollution?
16. Why does clean snow melt more slowly than dirty snow?
17. Why is the attic of a house always warmer than the basement?

Name _____

