

Concept-Development Practice Page

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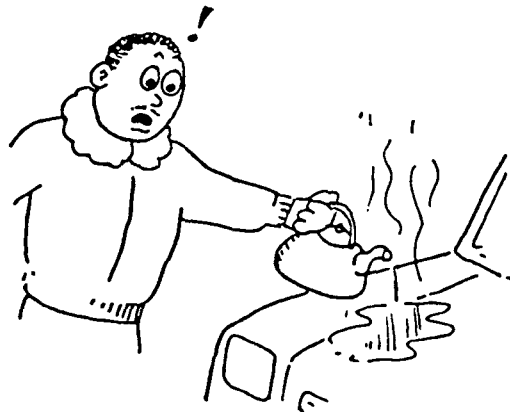
Evaporation

1. Why does it feel colder when you swim at a pool on a windy day?

2. Why does your skin feel cold when a little rubbing alcohol is applied to it?

3. Briefly explain from a molecular point of view why evaporation is a cooling process.

4. When hot water rapidly evaporates, the result can be dramatic. Consider 4 g of boiling water spread over a large surface so that 1 g rapidly evaporates. Suppose further that the surface and surroundings are very cold so that all 540 calories for evaporation come from the remaining 3 g of water.



- a. How many calories are taken from each gram of water?

- b. How many calories are released when 1 g of 100°C water cools to 0°C ?

- c. How many calories are released when 1 g of 0°C water changes to 0°C ice?

- d. What happens in this case to the remaining 3 g of boiling water when 1 g rapidly evaporates?
