

**CONCEPTUAL Physics** PRACTICE PAGE**Chapter 17 Change of Phase**  
**Evaporation**

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

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

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

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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?

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

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

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

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