# Specific heat

## Questions

1. Hot water is the preferred liquid for circulating through pipes to centrally heat buildings. What properties of water make it suitable for this task, compared to other liquids?

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2. Water at a temperature of 40–50 °C can be extracted from the earth by drilling a bore hole to a depth of 1000 m. Suggest ways in which underground water is heated to this temperature.

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3. A student notices that it takes longer to raise the temperature of a litre of water by 10 °C than to raise the temperature of an equal volume of cooking oil. Suggest several reasons why this may be the case.

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4. Olympic sized swimming pools, approximately 50 m x 25 m x 2 m, can be heated using a variety of methods. Estimate the quantity of heat required to raise the temperature of such a pool from 20 °C to 28 °C.

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5. One way of heating a swimming pool uses underground water at a temperature greater than that required in the pool. Water is pumped from underground and circulated, in pipes, through the pool. If the pool needs to be kept at a temperature of 28 °C, suggest the minimum temperature needed for the geothermal water. Explain your choice.

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