

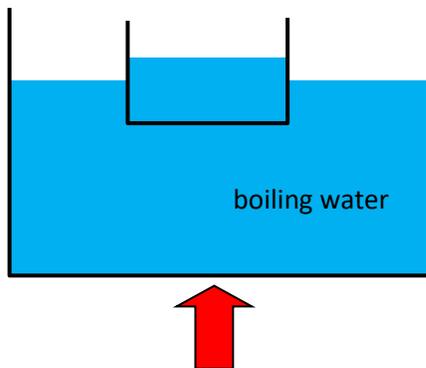
Teacher notes

Topic B

A temperature difference puzzle

Good for class discussion.

A large container full of water is placed in contact with a source of thermal energy and the water starts to boil. A smaller container filled with water at 80°C is placed inside the large container as shown.



Will the water in the small container come to a boil?

Answer

The water in the small container will reach 100°C . At that point there is no temperature difference between the water in the small and large containers and so no more transfer of thermal energy can take place. To boil, we need to provide the latent heat of vaporization to the water in the small container and this is therefore not possible.

The water will not boil.