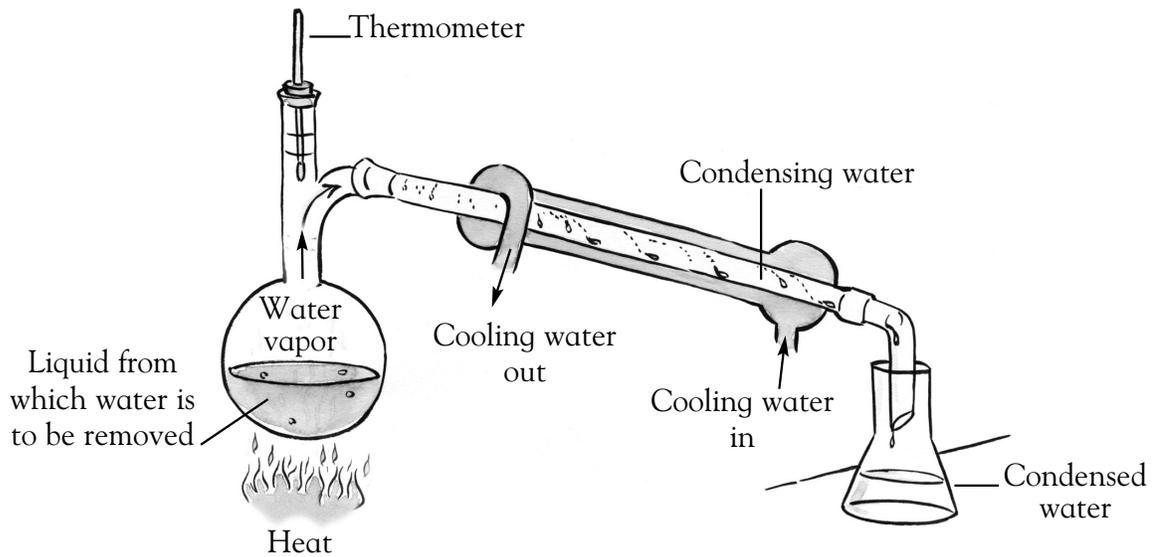


# A device that condenses water



## Background knowledge

*Condensers* are devices that turn gases into liquids by cooling the gas quickly. You can find condensers in many places, such as air conditioners, power stations, and laboratories. A condenser can change water vapor to a liquid. The water vapor comes in contact with a cold surface and condenses back into liquid water. It is important to keep the surface cold. The surface normally gets heated by the vapor and so becomes less efficient. In a laboratory condenser, this warming up is prevented by placing the cold surface inside a jacket of cold, flowing water.



## Science activity

When Juan gets out of the shower, he notices that the mirror is all “steamed up.” He also notices that when he drinks iced tea, there is moisture on the outside of the glass. Explain Juan’s observations.

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## Science investigation

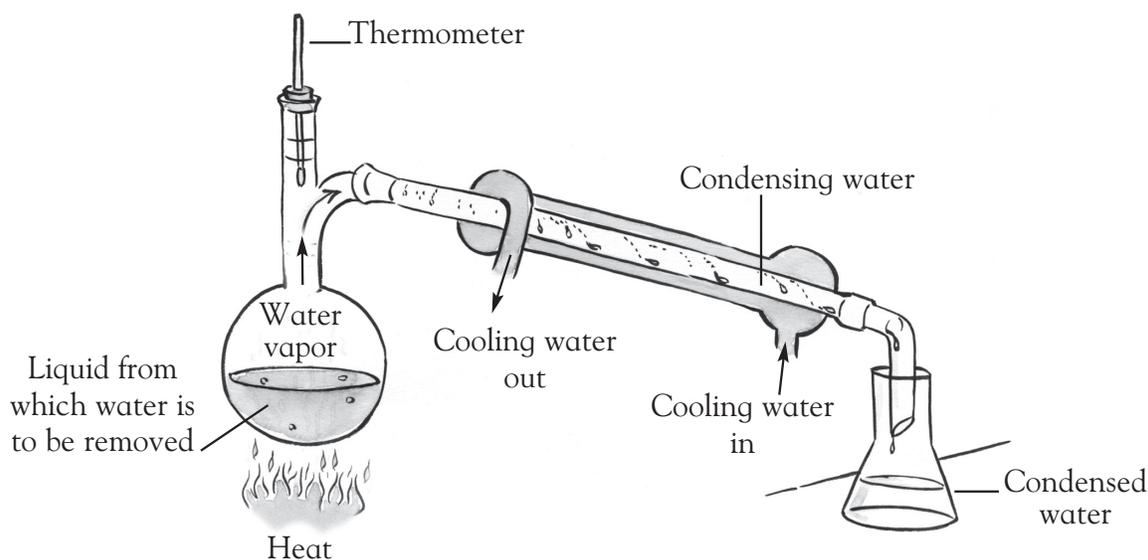
Design and conduct an experiment to determine the best surface for condensing water vapor. Predict which surface you think will be best and explain why you think so. One suggestion is to place water in paper cups and place a cover made of a different type of matter over each cup.

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## Science activity

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*As the steam heats up the pane, the condensed water evaporates. The surface is no longer cold enough to condense water.*

## Science investigation

Colder surfaces, such as metals, are better at condensing water vapor. Some surfaces feel cooler than others because of a property called specific heat. Matter with high specific heat does not change temperature as quickly as matter with low specific heat.