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Swiss Nanoscience Institute



EINE INITIATIVE DER UNIVERSITÄT BASEL
UND DES KANTONS AARGAU

An underwater candle

A candle that burns underwater? No way! As you can see, the flame is not actually underwater, but it is below the surface. This experiment works wonderfully with a Christmas tree candle. And you'll have plenty of water on hand to extinguish the flame if you need to.

What you'll need:

- a glass bowl or tall glass
- a Christmas tree candle
- water

Instructions:

1. Fix the candle to the bottom of the bowl with some molten wax so that it remains firmly in place.
2. Pour water into the bowl until the top of the candle is just 0.5 to 1 cm above the surface.
3. Light the candle and watch what happens.

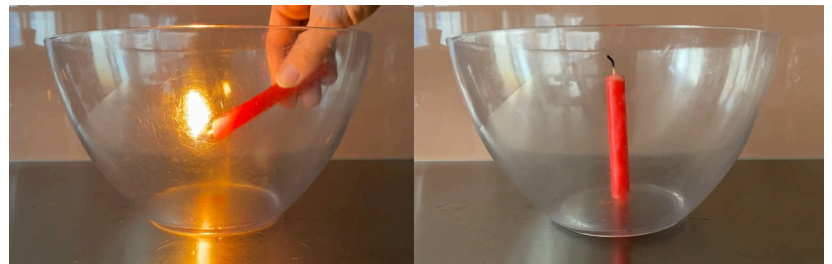
What you'll see:

As the candle burns, the flame gets closer and closer to the surface of the water. This may take a while.

Although the candle is now level with the surface of the water, the flame doesn't go out. It flickers and almost goes out, but then it returns.

What happens:

Normally, a candle burns down evenly. However, when the candle is surrounded by water, this keeps the candle's outer layer cool, so the wax only melts on the inside. The outer layer in contact with the water remains solid. It is only when this thin wax wall collapses, flooding the flame with water, that the candle goes out.



source: simply science