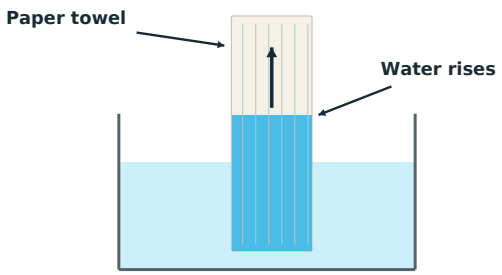
S CURIOUS SCIENCE

HAMSTER LESSON #0000004

Can water climb?

Watch capillary action in a paper towel.



Observe. Measure. Compare.

TRY IT TODAY

Dip a paper towel in water. Mark its rise.

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1. ❓ Why does water travel up a paper towel when only the bottom touches the water?
2. 💆 Capillary action allows water to move through tiny spaces, sometimes against gravity.
3. ⏳ Ancient Romans used oil lamps with wicks made from materials such as linen. A wick draws liquid fuel toward the flame by capillary action, putting this principle to work long before electric lighting.
4. 💡 Water is attracted to the towel's fibers: adhesion. Water molecules also attract one another: cohesion. These interactions, together with surface tension, help water move through the towel's tiny spaces.
5. 🔍 Gravity still acts. The height water reaches depends on the material and its tiny spaces. Capillary action helps water move in plants, but other processes also help water reach the tops of tall trees.
6. 🌎 The same principle helps explain absorbent materials and the movement of water through soil. Everyday objects can invite us to investigate the order and detail of God’s creation.
7. 🎯 Cut equal-sized strips from two types of paper towel. Fill matching cups to the same level with colored water. Dip both strips equally deep and mark the wet edges after one, three, and five minutes. Compare heights. What does your test suggest?

References · USGS: Capillary action · Arbeia Museum: Roman lamps
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