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EINE INITIATIVE DER UNIVERSITÄT BASEL
UND DES KANTONS AARGAU

Flame effects

To spice things up during the Advent season, why not try out some magic tricks? Who can blow out a candle through a funnel? And it's not just anyone who can blow out a candle behind a bottle. Find out why!

Candle and funnel

What you'll need:

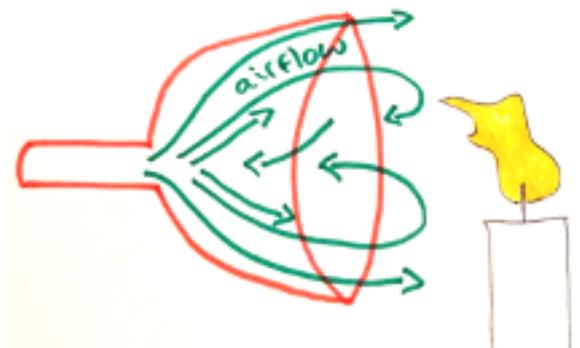
- a candle
- a funnel
- matches or a lighter

Instructions:

1. Light your candle.
2. Point the wide end of the funnel toward the middle of the flame.
3. Try to extinguish the candle by blowing through the narrow end.

What happens?

If the funnel is pointing exactly toward the middle of the flame, it's almost impossible to blow out the candle through a funnel. This is because of how the funnel walls direct the flow of air. The air simply flows past the flame. This creates a suction effect that pulls the flame toward the funnel. If the candle is closer to the edge of the funnel cone, you will be able to blow it out.



Candle behind a bottle

What you'll need:

- a candle
- a large round bottle
- a square round bottle/tetrapack
- matches

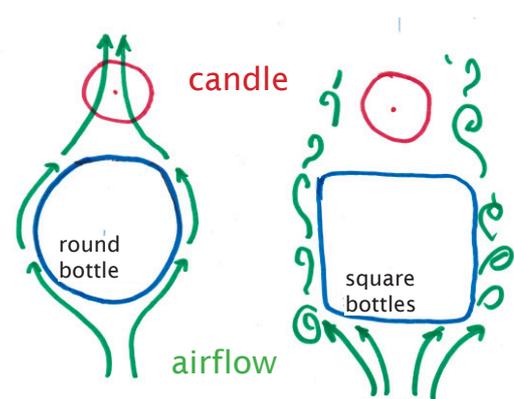
Instructions:

1. Light your candle.
2. Place the square bottle in front of the candle and blow toward the bottle at the level of the candle flame.
3. Now do the same thing with the round bottle.

What happens?

With the round bottle, the air is able to flow around the curved bottle wall and reach the candle flame, extinguishing it.

With the square bottle, the corners interrupt the airflow, weakening it so that it is no longer able to reach the flame.



Bernoulli effect

What you'll need:

- 2 candles
- a thin pipe
- a lighter or matches

Instructions:

1. Position the candles a few centimeters apart and light them.
2. Blow through the pipe while pointing it between the two candles.
3. What happens to the flames?

What happens?

The flames do not bend outward, but inward. This is known as the Bernoulli effect. It is caused by the pressure differential between the surrounding air and stream of air from the pipe.

