



by jok church

Dear Jax,

How can the string in candles burn for so long?

Neha & Amit Sanyal  
Pittsford, New York

Beakman or Jax  
P.O. Box 30177  
Kansas City, MO 64112  
Questions, name & address

Dear Neha and Amit,

First a friendly warning: Fires caused by candles can destroy your home and cause you serious burns. Never light a candle unless you have permission from a grown-up in your family.

Think of a candle as a solid oil lamp. The wick is really the thing that moves the fuel to the flame. The fuel is the solid wax, which melts into a liquid and moves up the fibers of the wick into the flame where the wax then turns into a gas – wax-vapor. That *wax-gas* is what's burning.

So What?

So lots! Really. That little demonstration shows us a lot about how a candle works.

When you lighted the candle the first time, the heat from the match melted the wax and it flowed up the fibers of the wick as a liquid.

Then the wax vaporized. It turned into a gas.

**A:** Wax-gas is what's burning in a candle flame. The heat from the flame turned the wax from a

## Experiment #1

**WHAT YOU NEED:** Grown-up helper - candle

**WHAT TO DO:**

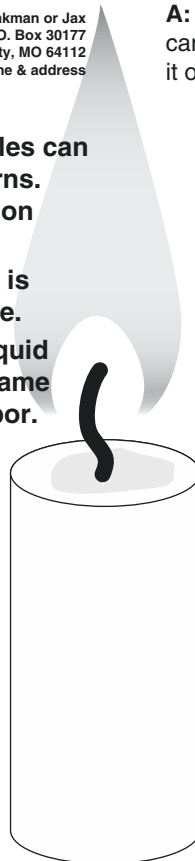
Explain to your grown-up that you're going to show how to light a candle without flame ever touching the candle's wick.

**A:** Ask your grown-up to light a candle. After a moment or two, blow it out.

**B:** Notice the gray *mist* that lifts up off the wick, but notice it *quicky*.

**C:** Before the mist disappears, ask your grown-up to bring a lighted match down toward the wick. *Do not* let the match-flame touch the wick.

**D:** The candle will light.



solid into a liquid, and then it turns into a gas, and that's what's burning.

**B:** When you blew out the candle, that gray mist had wax-gas in it, still drifting up off the wick.

**C:** When your grown-up lowered the flame toward the wick, the wax-gas caught on fire, and that fire jumped back down the wax-gas to the wick, (**D**) lighting the candle again.

P.S. from Jax: Candles are usually made from paraffin (PEAR-a-fin), which is made from crude oil. In olden times, candles were made mostly from animal fats called tallow (TA-low).

