

SCIENCE
CHALLENGE

16

FIRE EXTINGUISHER



THE
JAMES
DYSON
FOUNDATION

FIRE EXTINGUISHER

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The brief

Create your own invisible fire extinguisher.

The method

1. With the help of an adult, light the candle.
2. Mix a little baking soda and vinegar together in the jar to make a frothing mixture.
3. Tip the jar over the candle so only the gas from the reaction comes out. Be careful not to tip the mixture out.
4. The flame will be extinguished.



Materials

Matches

(with adult supervision)

Baking soda

Vinegar

Candle

A glass jar

Design icons

Dry chemical extinguishers are filled with powder, which is usually sodium bicarbonate or baking soda. When released over the fire, the powder decomposes at 158°F releasing CO_2 , smothering the fire.



How does it work?

The mixture of baking soda and vinegar creates carbon dioxide. CO_2 is heavier than air so it sits at the bottom of the glass. When you tip up the glass, the CO_2 comes out and suffocates the candle.