

# The Cola and Mentos Explosion!



This is a science experiment that everyone talks about. Even adults! Explosive and messy, it sends a fizzy drink fountain that rockets into the air.

## You will need



- A large bottle of fizzy drink. Diet cola is best (its colourful and, because it contains less sugar, its not too sticky!) but any fizzy drink should work.
- A tube of Mentos sweets
- An outdoor space. This experiment is very messy!

- 1** Take the bottle of cola and the Mentos outside and place the bottle on a firm flat surface.
- 2** Take some mints out of the packet ready for the next stage - five or six should be right for a 2 litre bottle of cola and 2 or 3 for a 1 litre bottle.
- 3** Unscrew the top of the bottle and as quickly as possible drop the mints into the bottle.
- 4** **Run!** (Well move away quickly) and watch the show.





# Essential Science

All fizzy drinks contain carbon dioxide which is normally a gas and is part of the air we breathe.

When the drinks are made, carbon dioxide is forced into the bottle with great pressure and it dissolves in the water. When you undo the bottle (to drink it, not to make a messy fountain!) the pressure is released and the carbon dioxide starts to form bubbles which rise to the surface of the drink and escape back into the air.

Although the Mintos look very smooth the surface of them is actually covered with tiny tiny holes.

When you drop the Mintos into the bottle these tiny holes cause the bubbles of carbon dioxide to form much much faster and then they all rush to the surface pushing the cola out of the bottle and ... Boom!

You can see the same thing happen (only much gentler) if you sprinkle salt into a glass of fizzy water. The salt crystals act like mintos and make the bubbles form more quickly.

The scientific name for what is happening is nucleation.

## Why is Nucleation important?

Our Cola and Mentos Explosion is great fun but the same thing happens in lots of really important science.

For example scientists and engineers use nucleation to produce electricity from hydrogen gas and the only waste product is water. The electricity can then be used in our homes, schools and workplaces and also to power electric lorries and cars. This process is an important part of the fight against climate change.

By the way the scientists don't use Mentos to make the electricity. They use platinum which is a metal that is more valuable than gold!