Coke and Mentos

You will need

- 2 litre bottle of Diet Coke (it's said that the sugar substitute in Diet Coke kick starts the reaction and gives a bigger geyser)
- 1 package of Mentos (the original mint flavour)
- a place where you can get messy

What you do

1. Place the bottle of Diet Coke squarely on a flat surface.
2. Open the bottle.
3. Drop the Mentos candies into the bottle.
4. Stand back and watch the geyser spray!

You could do…

Any scientist will tell you that while it's fun to blow things up, you always need to make a hypothesis and compare a few things in order to have a successful experiment. What could make this a successful experiment? Well, what about trying different types of pop? Does regular Coke have the same reaction as Diet Coke? Is the geyser taller? What about the candy? Would a Skittle have the same reaction as a Mentos, what about a fruit flavoured Mentos?
There are so many different variables you can put into place with this one and who knows, maybe you'll find a combination that yields an even more amazing eruption!

What's happening?

You may have done a similar experiment where you combine baking soda and vinegar. Maybe you did this in a volcano model? That reaction is a chemical reaction where a new material is formed. This reaction, the Mentos and Diet Coke reaction is a physical reaction, where all the pieces of the reaction remain but are simply rearranged.

The Coke:
The soda is filled with carbon dioxide. That's what gives the drink all those bubbles and what makes you burp when you drink too much soda. When the bottle is unopened the pressure from the bottle keeps the bubbles in the liquid. When you open a bottle of soda, depending on whether you shook it up beforehand, the bubbles stay in the solution because the surface tension of the liquid traps it in.

The Mentos:
Have you ever seen the surface of a Mentos? Have you ever *really* seen the surface of a Mentos? Though at first glance a Mentos may seem like it has a smooth surface, there are actually a whole bunch of tiny little dimples covering its surface. All these little dimples provide a place for the carbon dioxide in the soda to latch on and undergo a physical reaction. Scientifically speaking each little

dimple on the Mentos is called a *nucleation site* where the carbon dioxide from the soda can attach and escape the liquid solution (the coke). Because there are so many dimples on the Mentos and because there is so much carbon dioxide in the soda solution the reaction is a big one, which you can't help but notice when you give this experiment a shot.