

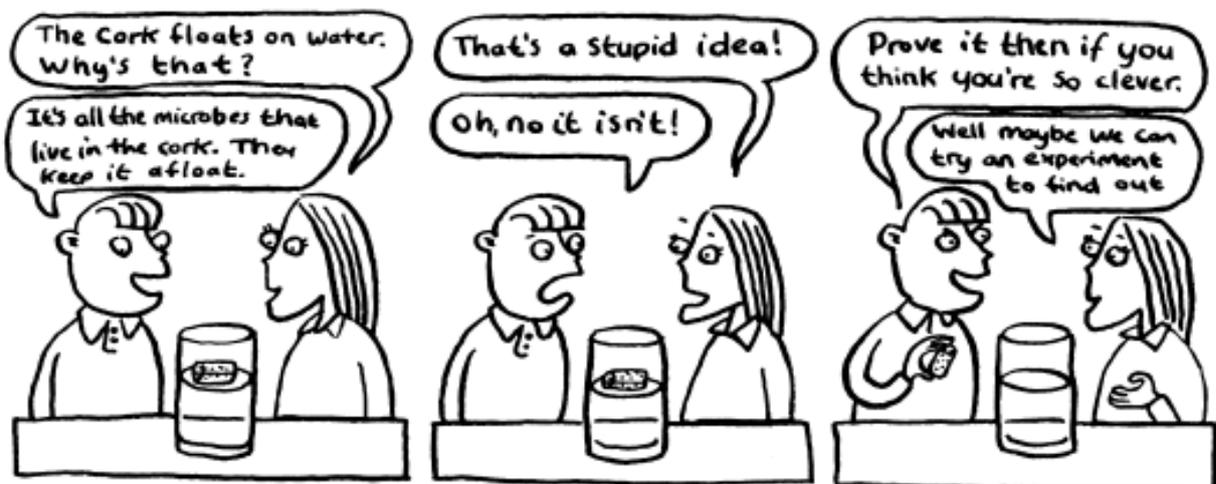
Developing a theory – inquiry activity

The big bang theory is one of the most famous scientific theories, but how did it become a theory?

When an experiment is done a conclusion is normally written. This will describe what was found out in the experiment and explain scientifically why it happened.

It is the why it happened section that is very important. If you can answer the why it happened question then you are using scientific theories.

A theory is a way of explaining what has happened. Anyone can come up with a theory but not all theories are scientific. Facts need to be fitted to the theory, it needs to be an idea which can be tested (where have you heard that definition before?).



Above John thinks that a cork floats because there are thousands of tiny microbes living in it and that they start swimming when it goes in water. This may seem silly but this is an idea which can be tested. The cork can be placed in disinfectant or boiling water which will kill anything living to see if it still floats. After you did this you would realise the theory is wrong and so accept that your theory is wrong.

The big bang theory is slightly different because we can't restart the Universe, but we can recreate the conditions and test on a small scale what might have happened in the beginning.

Remember

Most new theories are not believed when they are first suggested.

If an experiment doesn't back up a theory scientists tend to think the problem is with their experiment first. Only when a lot of different experiments come up with the same conclusion do they accept their theory is wrong.

You can never prove a theory to be absolutely true. Scientists learn more and more as time goes on and so we change our ideas and understanding of how things work around us.

Questions

- ① Create a short summary of the big bang theory.
- ② All theories need to be tested to be believed. Research what experiments have been carried out to prove or disprove the big bang theory.
- ③ What is the difference between a scientific theory and a theory?
- ④ What evidence of big bang do we have?
- ⑤ Why do most people not believe in theories when they are first shared?