

INFLATE A BALLOON... WITH MICROBES

Life on Earth comes in lots of shapes and sizes. The smallest are known as microorganisms, or microbes. Many microbes, such as bacteria, can survive in very hostile conditions, such as extreme heat or cold. It might be that the first signs of life we find on another planet are microbes.

Scientists study microbes in space because they are small, easy to transport and don't feel pain like other more complex living things, such as dogs. You can study microbes in your kitchen at home. Bakers' yeast is a microscopic fungus used to make bread. In this activity we will see that yeast is a living thing as it helps us to blow up a balloon!

YOU WILL NEED:

- a clear, clean and empty plastic drinks bottle
- some warm water
- a packet of yeast
- a teaspoon
- some sugar
- a balloon

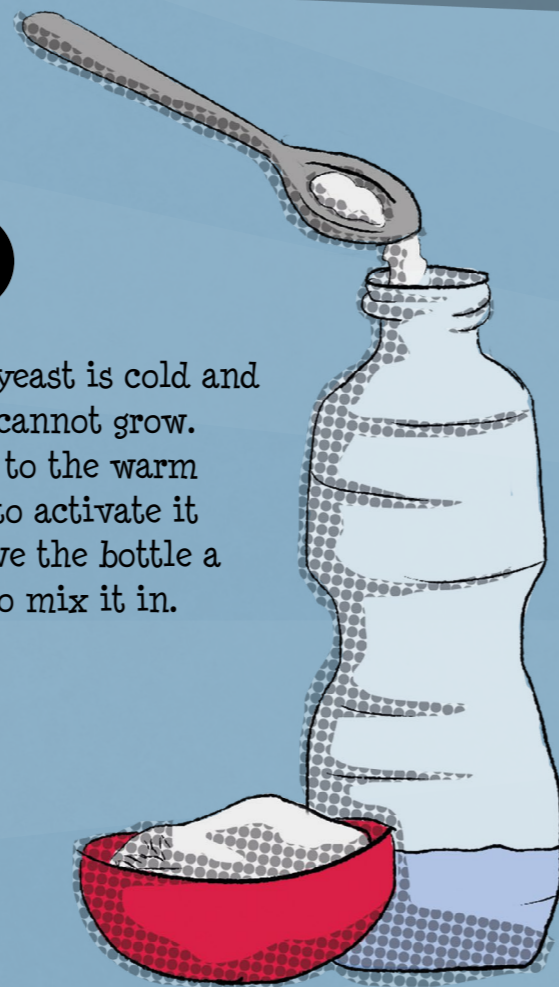
1

Fill the drinks bottle with about 4 cm of warm water.



2

When yeast is cold and dry it cannot grow. Add it to the warm water to activate it and give the bottle a swirl to mix it in.



3

Like many living things, yeast needs oxygen and food to grow. There is already air in the bottle, so add a teaspoon of sugar to the water and yeast mixture.



4

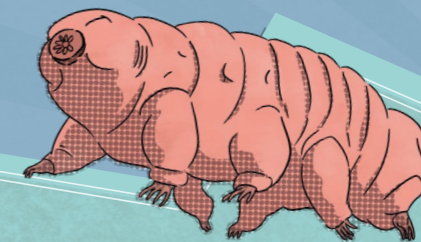
Place the balloon over the neck of the bottle and leave it in a warm place for about 30 minutes.



5

Check your balloon regularly and you should find that it has been blown up by the yeast!

As the yeast microbes use up the oxygen and eat the sugar, they give off a gas called carbon dioxide (the same gas that we breathe out), which blows up the balloon.



SPACE FACT

A tardigrade is a micro-animal that is about 0.5 mm long! These tiny animals are pretty tough and can survive in space for up to 10 days with no spacesuit or spacecraft to protect them.