

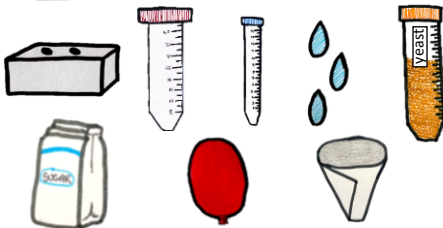


LIVING THINGS

HOW DOES BREAD RISE?

You Will Need:

- Cardboard test-tube rack
- 50 mL Tube
- 15 mL Tube
- Water
- Yeast
- Sugar
- 1 Balloon
- Paper Funnel

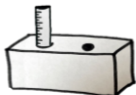


1. Stretch the neck of the balloon out and blow it up a few times.

2. Using the funnel, fill the 15 mL tube with sugar up to the 5 mL mark.



3. Put the 15 mL tube in the cardboard test-tube rack



4. Ask the teacher to fill the 50 mL test-tube with warm (37°C) water and put the tube in the test-tube rack.

5. Add the sugar from the 15 mL tube to the water in the 50 mL tube.



6. Using the funnel, fill the 15 mL tube with yeast up to the 7 mL mark.



7. Pour the yeast into the 50 mL tube.



8. Screw the cap tightly onto the 50 mL tube. Make sure it is closed! Shake!



9. Remove the cap and stretch the opening of the balloon over the top of the 50 mL tube.



10. Place the 50 mL tube standing upright in a container of 35°C water.

Watch what happens!

What Happens?

After a while, the balloon begins to slowly inflate and get bigger.

Why does this happen?

Yeast are alive! Yeast is a tiny, single-celled organism and a type of fungus. An **ORGANISM** is another word for a living thing. Some living things make energy by breaking down sugars. The yeast in this experiment is also known as a "sugar-eating fungus". As the yeast breaks down the sugars, it releases **CARBON DIOXIDE** or **CO₂** gas. This process is called **RESPIRATION** and it is how living things break down food for energy. The CO₂ fills the tube and then the balloon. This causes the balloon to slowly inflate.

What do I need this for?

Some yeast are harmful to humans, but most are very useful, especially in making food and drinks. Yeast is used in baking to make bread rise. The yeast do this by feeding on the sugars in the flour and releasing **CARBON DIOXIDE** gas. The **CO₂** gas forms little air pockets in the dough which expand even more during baking. This causes the bread to rise, just like how it caused the balloon to inflate in the experiment.

Did you know?

Yeast can be used to study and understand some biological processes in humans as many essential cellular processes seen in yeast are the same in humans!

