

Brontosaurus Learning

Making science fun!

An Experiment about

Chemistry

Bi-carb Balloon



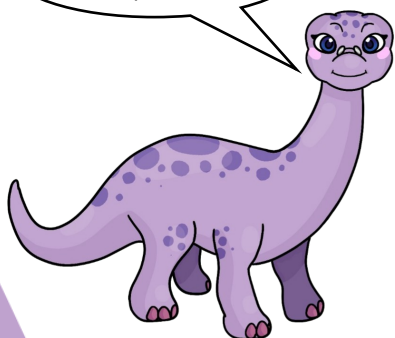
What you will need:

- A clear soft drink or soda bottle
- Bicarb soda
- Vinegar
- A balloon
- A funnel

What you will do:

- 1 Add about 1/4 cup of vinegar to your bottle.
- 2 Use the funnel to add 2 teaspoons of bicarb soda to the balloon.
- 3 Stretch the neck of the balloon over the neck of the bottle. **Be careful not to tip any bicarb soda in just yet!**
- 4 When you are ready hold up the balloon so that the bicarb tips into the bottle, then let it go and watch what happens!

How can a chemical reaction
blow up a balloon?



What is going on?

When bicarb soda, a solid, and vinegar, a liquid, mix, they react together to create a gas, carbon dioxide (CO_2). This gas takes up much more space than the chemicals that formed it. This is an endothermic reaction which means that it uses heat so you may be able to feel the bottle getting cooler as the gas is produced.

Challenges:

- Research other chemical reactions that produce gas.
- Find out what chemical reactions can produce solids.

TEACHING NOTES:

Brontosaurus Learning Experiment:
Chemistry CH08

Topic: Chemistry, States of matter

Key Concepts:

- ♦ How chemical reactions can produce gas

Resources:

- Investigation Record IR01– one copy per student
- Experiment Description Chemistry CH08 – one copy per student
- Bicarb, vinegar, soda bottles, funnels, balloons

Lesson Notes:

Remind students to listen carefully to instructions, and to OBSERVE their experiment.

As a class discuss the experiment prior to undertaking it, and students should complete the sections of their Investigation Report IR01 from "Title to "Hypothesis".

The amounts of bicarb and vinegar listed in the experiment should be sufficient to inflate the balloon, however if you are using a large bottle you may need to add more of both substances.

What should happen in this experiment, and why?

Chemical reactions can also create changes in states of matter. Students will generally be able to describe how changes in temperature can change the states of matter, particularly in water, however this experiment shows them that there are other ways gases can be produced.

Follow up discussion questions:

- Have you ever used bicarb and vinegar to make a volcano model? What happens?

Investigation Record



Experiment Title:

Scientist (that's you!):

Materials: What will I need?

Investigation—what am I going to do in this experiment?

Diagrams are a great idea!

Hypothesis: What I think will happen:

Observation: What I SAW happen:

Diagrams are a great idea!

From my investigation I learnt:

Great work scientist!