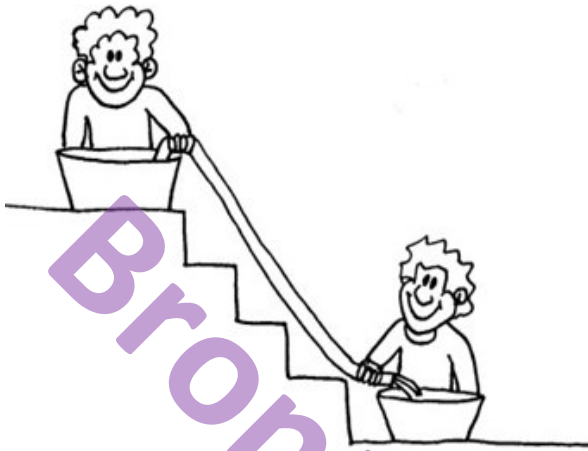


Brontosaurus Learning

Making science fun!



An Experiment about

Liquids

Water Siphon

What you will need:

- Clear plastic hose
- 2 buckets
- Water

What you will do:

- 1 Work in small groups. It's best to do this experiment outside.
- 2 Half fill one bucket of water and place it on a higher surface – the top of a small flight of stairs is ideal, or perhaps on a chair.
- 3 Put the empty bucket on the lower surface – the bottom stair or the floor in front of the chair. **Check that the hose will reach from one bucket to the other.**
- 4 One of your team will need to pinch their end of the hose tight so that no water escapes, while another person fills the hose using the tap. Then they pinch closed their end of the hose too.
- 5 Take the hose back to your buckets, being very sure not to loose any water from the hose on the way. Place one end of the hose into the empty bucket. **Keep pinching!**
- 6 Place the other end UNDER THE WATER in the half full bucket. On the count of 3 both of you should stop pinching the hose. **Be careful – you should still hold the hose under the water, just not pinched tight.**

What is going on?

Air pressure pushes down on the surface of the water all the time. Normally the air pressure pushes down but the bucket holds the water so nothing moves. If you give the water a way out though, it will take it – going up the hose and flowing into the other bucket.

As soon as the top hose comes out of the water, the siphon will stop.

Challenges:

- What would this property of water be useful for? List some of the ways you could use this.
- Lift the lower end of the hose up higher. What do you notice? Why?



TEACHING NOTES:

Brontosaurus Learning Experiment:
Liquids LQ14

Topic: Liquids

Suitable for Ages: 6 -12+

Key Concepts:

- ♦ Water and air pressure can be used to make a siphon

Resources:

- Investigation Record IR01– one copy per student
- Experiment Description Liquids LQ14 – one copy per student
- 2 buckets, hose, water

Lesson Notes:

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".

Remind students that the experiment will not work if they let any water leak out of the hose before they have one end under water in the top bucket.

What should happen in this experiment, and why?

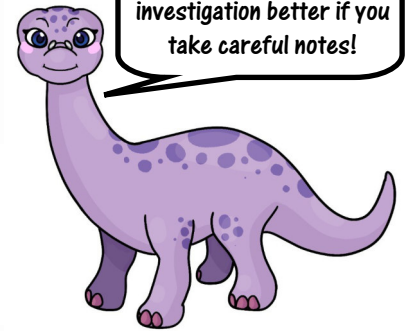
The water should flow from the top bucket, down the hose into the lower bucket, but only while:

- ⇒ The hose end remains under water in the top bucket
- ⇒ The other end of the hose remains lower than the surface of the water in the top bucket

Follow up discussion questions:

- Can you explain why the siphon stops working when you lift the lower end of the hose higher than the top end?
- Can you explain why the siphon stops working when you lift the top end out of the water?
- List some possible uses for this kind of siphon (emptying a pool, taking fuel from a fuel tank, emptying a broken washing machine, emptying a fish tank etc)

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!