

Preparation



CLASS LEVEL	Fourth - Sixth classes	
SKILLS	Experimenting	
CURRICULUM LINKS	<p>English: Rockets and space can be used as a theme for different styles of writing about space</p> <p>Geography</p> <p>Art</p>	
CONTENT	Materials and change Forces	
MATERIALS/EQUIPMENT	Film canister (no hole), any tablet that dissolves and fizzes e.g. Alka-Seltzer, Vitamin C tablets, blu-tack, water	
PREPARATION	Collection of materials, test the activity.	
BACKGROUND INFORMATION	<p>When water is added to the tablet the gas carbon dioxide is released. The pressure of the carbon dioxide gas builds up inside the canister until it becomes so great that it blows the canister from its lid. The gas rushing out of the end of the canister pushes it in the opposite direction. The 'rocket' can shoot up to 5 metres into the air.</p>	

Activity

TRIGGER QUESTIONS	<p>What is a rocket? A cylinder full of materials which can produce gases.</p> <p>What are rockets used for? Signalling; sending space machines with great force into the air to get outside earth's gravity</p> <p>What gives a rocket its energy to 'blast off'? A jet of gases released from the back of the rocket sends it forwards.</p> <p>The children can blow up a balloon and let it go. Ask them which direction the released air goes and which direction the balloon goes. They go in opposite directions.</p> <p><i>Note: You may have done the Rocket Launch activity in the Activity Support Booklet. This works on the same principle.</i></p>
SAFETY	<p>Keep the children (and yourself) well back from this activity as the lid can take off with some force and could damage eyes and faces. This activity is probably best done outside – it can be messy.</p>



Make Rocket

ACTIVITY

Attach the tablet (one-quarter to one-half tablet) to the inside of the lid of the film canister.

Put water into the canister until it is about one-quarter full.

Put the lid (+ tablet) on the canister and turn it upside down.

Wait!

(The canister comes away from the lid with some force).

FOLLOW UP ACTIVITY

- (1) Vary the temperature of the water and note if there is any difference in the height to which the 'rocket' shoots.
- (2) Vary the 'fuel' mixture used in the 'rocket' (e.g. Vitamin C tablet and vinegar, and see if there is any difference in how the 'rocket' behaves). Be aware, vinegar leaves quite an odour!
- (3) A launch pad can be made using a cardboard tube (e.g. a toilet roll) and a paper plate. Cut three slits about 2.5 cm high in the bottom of a tube. Bend the cardboard strips so that they can be taped to a paper plate. Place the launch pad paper plate down and the film canister on top of the tube. Watch what happens.

Review

FOLLOW-UP ACTIVITIES



What is a rocket? According to NASA it is a long, narrow, jet-propelled device or vehicle that is used as a signal or weapon, for fireworks, or to provide the power for spacecraft. http://www.nasa.gov/audience/forchildren/glossary/index_r_s.html

What does your dictionary say?

Did you know? Rockets are used to send flares as distress signals, in fireworks and to launch spacecraft.

Did you know? Fireworks are illegal, apart from licensed fireworks displays. Fireworks are dangerous and can cause accidents to people using them. They also upset blind people and dogs. For more information look up <http://www.ispca.ie/behaviour/fireworks.html>.

Read about Irish children travelling to NASA Cape Canaveral as part of the FÁS Science Challenge. http://www.fas.ie/science/primary_diary.html

Other types of rockets to make:

Lemon juice rocket

<http://pbskids.org/zoom/activities/sci/lemonjuicerockets.html>

Why not try to make a straw rocket?

http://www.nasa.gov/audience/forchildren/activities/A_Straw_Rocket.html

Here's a more advanced rocket to make:

Build a bottle rocket

<http://teacherlink.ed.usu.edu/tlnasa/units/Rockets/18BottleRocket.pdf>

See www.primaryscience.ie for flashbased version of activity.