



Water Rockets

by Caitlin and Lauren



Featuring:

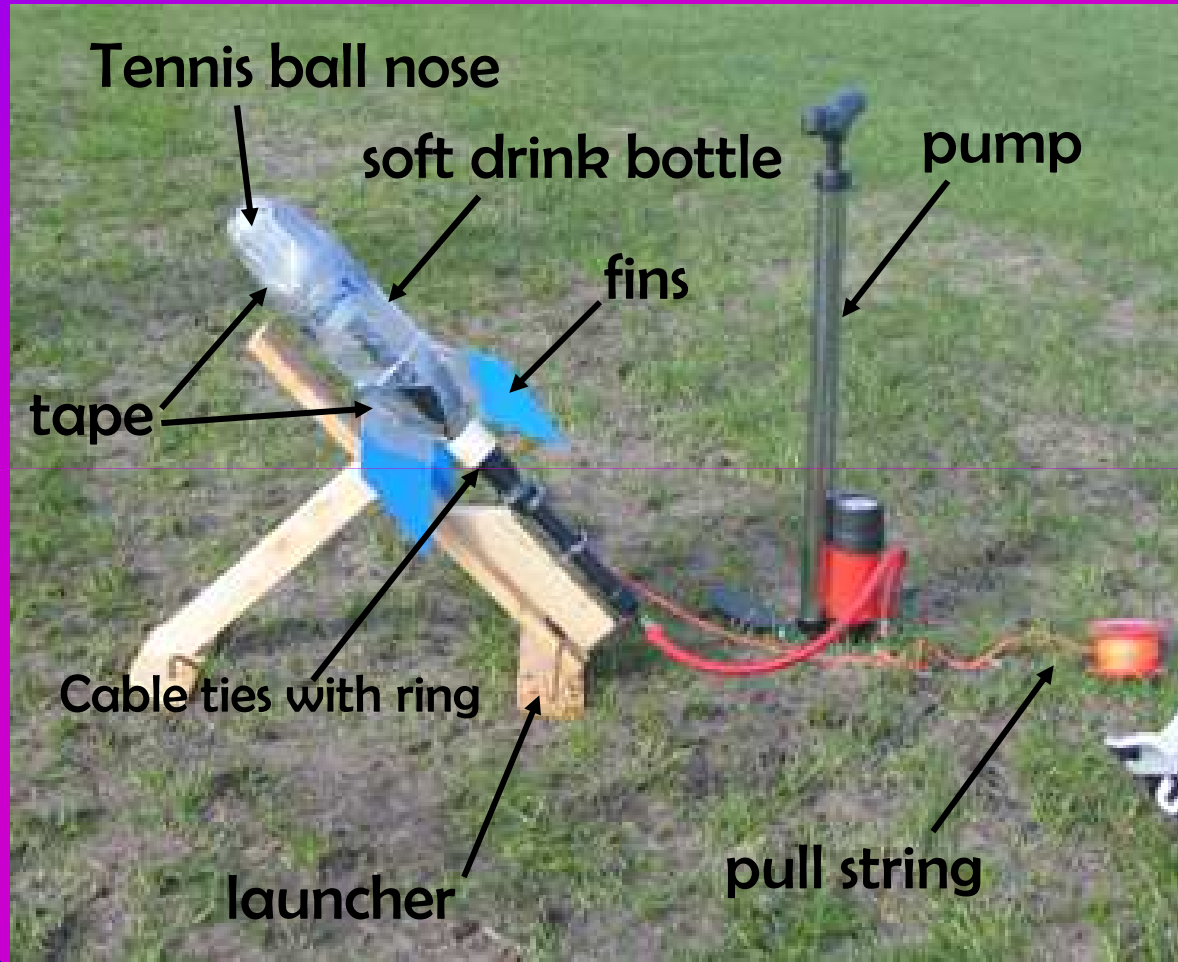
Lashes, the flying Zucchini



What we Used!!!!!!!

Parts!

- Empty soft drink bottle.
- Tennis ball
- Tape.
- Fins (thin plastic)
- Pump with a gauge
- Launcher (wood)
- Cable ties with ring
- Pull string.



How to Make a Water Rocket

To make our water rocket, first we needed a bottle and fins. We measured three fins on plastic and cut them out. After that we had to measure the bottle, so we would know where to put the fins so they were equally placed.



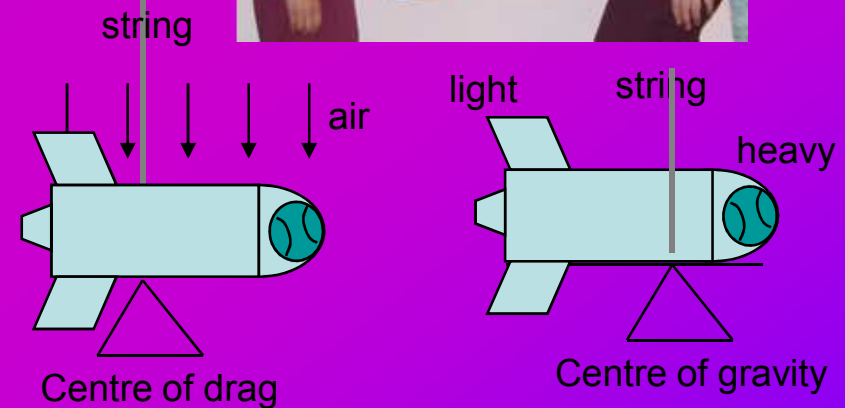
We had a choice of putting a tennis ball taped on as a nose, or a removable nose with a parachute that would come out. We chose the tennis ball. A tennis ball helps with the landing because it puts more weight on the nose and it will land on the tennis ball, and it will help protect the rocket after lots of landings.



How a rocket flies straight

We tied a piece of string around the water rocket, so that it balanced. This is called the centre of gravity. Then we made a cutout of the rocket on paper to find the centre of drag. We had to find the right place to tie the strings and compare them. We read that to make a good rocket, the centre of gravity should be in front of the centre of drag, or it wouldn't fly very well in the air.

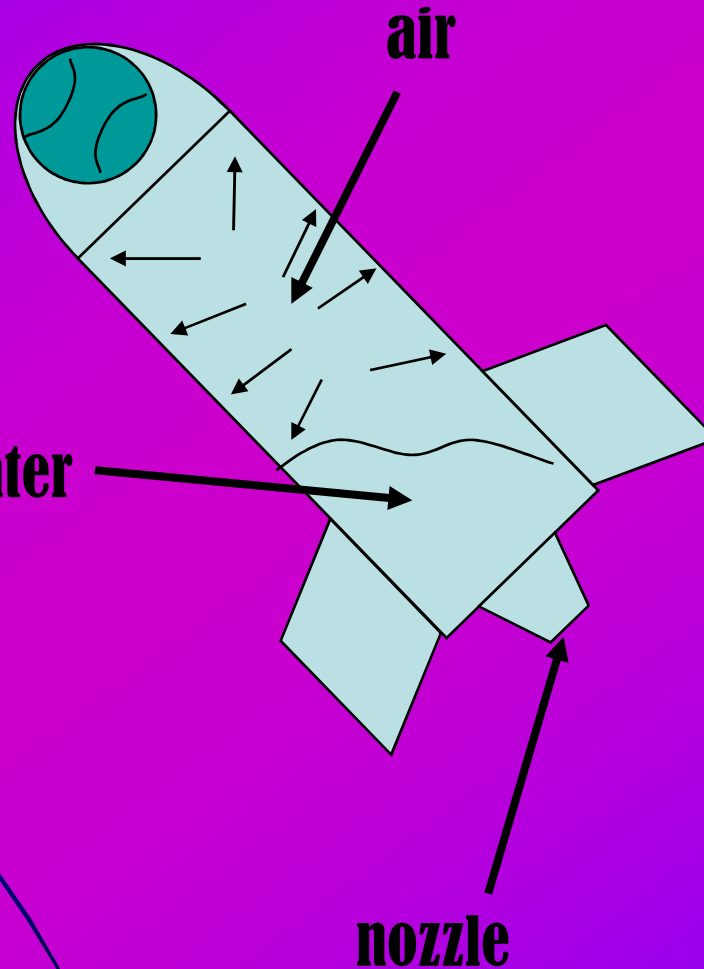
After we had finished making the water rocket we finally thought of a name, we called it Lashes the Flying Zucchini.



How a rocket works

1 - The rocket starts off with water and air trapped inside.

2 - when we pump more air inside, it starts to build up pressure.



3 - when we launch the rocket the pressure is released out of the nozzle.

4 - the force of the air pushing the water out of the nozzle so fast makes the rocket move forward and fly through the air.

What Happened on Launch Day

On launch day we set up our stand, and poured 300mls of water in the rocket. Then we attached it to the tube and pumped air into it. We stood back and un-wound the string. Then we pulled the string and...

...nothing happened so an adult was called and he nudged it with a stick and ... BOOM... the rocket went off into the air. When we made higher pressure, the rocket took off properly without us pushing it.

This is the remaining of a rocket that has just been launched. As you can see, that the water has been forced out of the bottle, because of the pressure of the air inside.



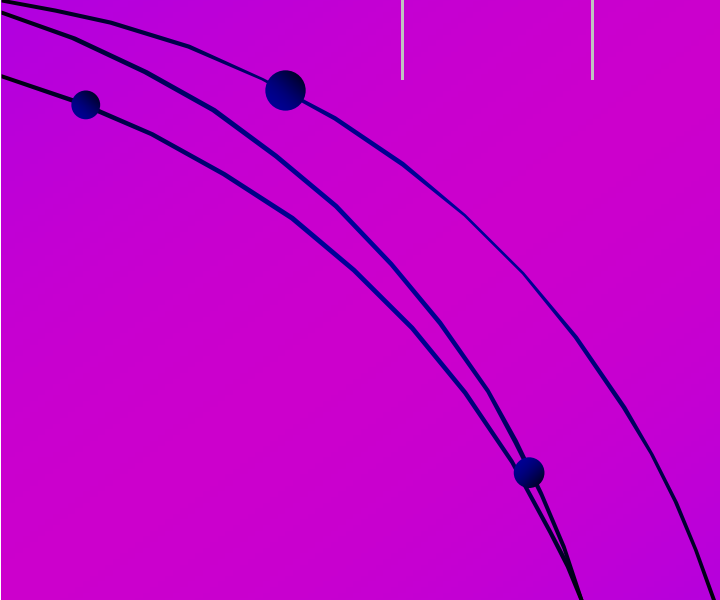
Launch Day

Date: 11/6/2007

Rocket: Lashes the Flying Zucchini

Angled Launch = 45 degrees

Launch:	1	2	3	4	5	6	7	
Pressure:	20	30	40	50	60	70	80	
Distance:	42.35m	44.15m	71.10m	73.65m	90.25m	80m	87m	
Flying Time:			4.6 sec.	4.56sec	.6.2sec.	5sec.	3.82sec.	



We think the distances changed around on some launches because there was a slow leak in the pump. If we waited too long, lots of air leaked out.

This is a rocket that had trouble taking off so an adult had to nudge it with a stick. It has just taken off.

Pictures!

This is a rocket in mid air. Again you can see the force of the air pushing the water out of the bottle.



Launch Video still pictures

Our Dads video taped the rocket launch, then stuck together stills from the video. The video runs at 25 frames per second. Each frame is one 0.04 of a second.



1 Meter

Water is pushed out of rocket

When all the water is gone, the air inside blasts the trail of water

The rocket flies away

By Caitlin and Lauren!!!!!!!!!!!!

**Thanks to our rocket
Lashes the flying
zucchini we got loads of
information and learnt
alot about WATER ROCKETS.**

THANK-YOU FOR WATCHING
OUR PRESENTATION ON THE
WATER ROCKET!!!!!!!!!!!!!!

