Spark Science Lesson: How to Build a Rocket?

ENGINEERING&TECHNOLOGY

Get curious

Watch a film showing the launch of a space shuttle.

You can ask the students: What happens at the moment a spacecraft (space shuttle) is launched? How is a space shuttle built? What shape is it? Does the rocket fly straight up or does it change direction? How fast can a rocket fly? How much does it weigh?

Get going

Experiment
The students see what happens when an inflated but untied balloon is released into the air and find out what forces act on it.

Each group receives a balloon. The students blow up their balloons, but without tying them. They then let go of them in the air. What will happen to the balloon? Why does this happen? The same law of physics applies to the flight of a rocket.

Constructing
The students construct a model rocket, which will fly upward in the air.
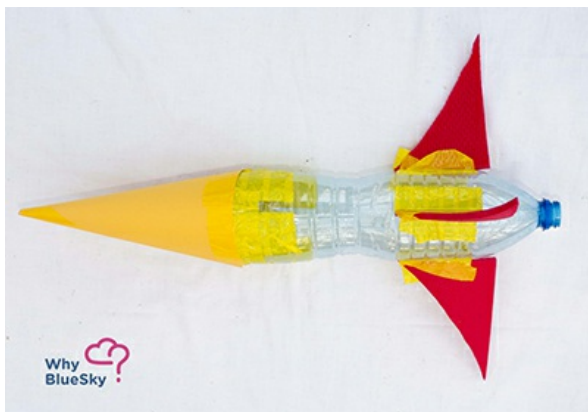
While students are making their model rockets they will perform an aerodynamic test – they will check whether the center of gravity is located in the right place.

The students draw their first conclusions on the construction of their models and the factors which must be taken into account if the rocket is be able to shoot upwards. If, because the ballast is poorly positioned on the rocket, the model fails the test the students improve their model and then perform another test.

Presenting results
See whether your rocket shoots up into the air!

Perform your rocket tests outside, e.g., in the school yard. Before you do, watch a film about testing rockets:

Conclusions
Which rocket flew the highest?

Exchange observations and conclusions on the flight of your rockets.

Get practicing

Video/Slide show
The students watch a film about a plane taking off and compare it with the launch of a rocket they saw at the beginning of class.

What differences did they notice during the lift off of each machine? What did they see that was similar? What shape do these machines have? They can note down their observations. Talk about them in the next class.