

Rocketry for Kids



Science Level 4

Basic Rocket Science



Department of Education and
Early Childhood Development

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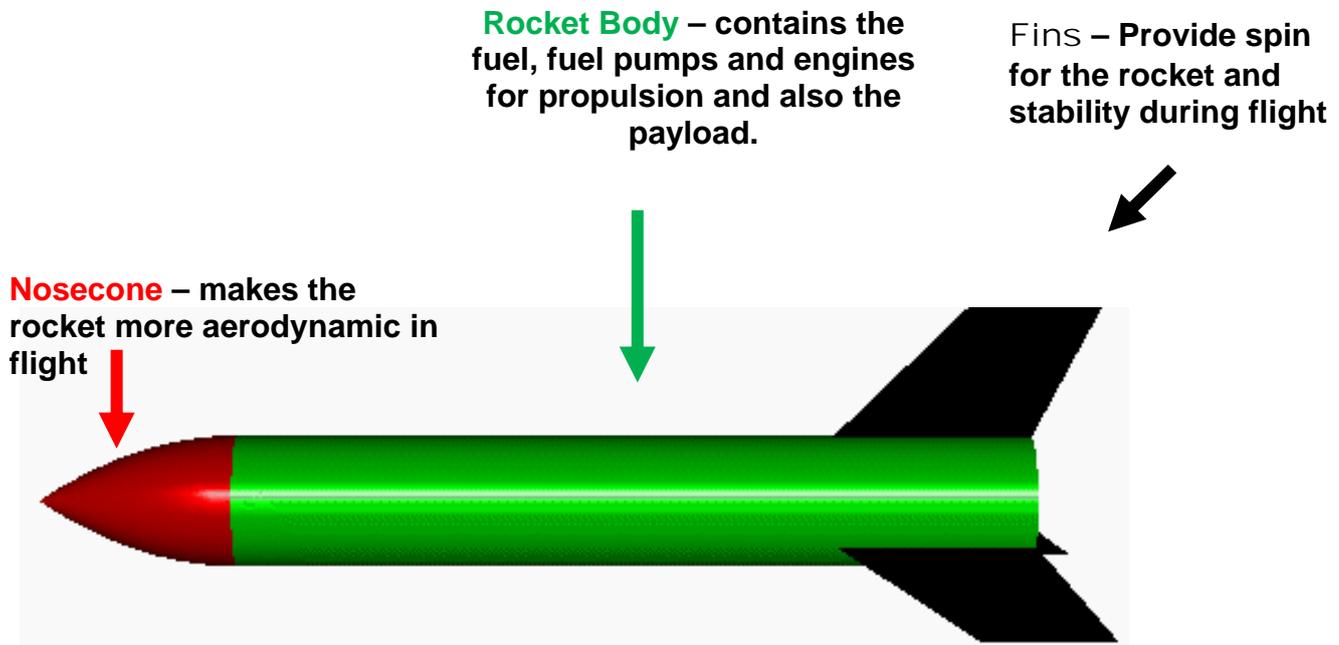
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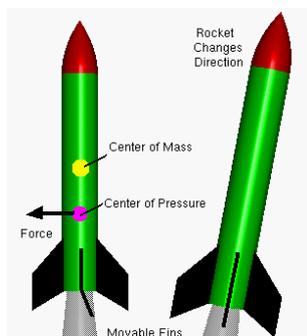
How Rockets Work



There are many components in a rocket, but in order for it to launch and fly, it only needs a few. The main components of a rocket are the body or fuselage, this is where the storage tanks and the fuel are stored. This is also where the reaction chambers for the ignition of the thrusters is held. Rockets also have a nozzle (like the end of a balloon) which restricts exhaust flow and creates thrust (much like letting the air deflate from a balloon will send it careening around a room).

To help direct movement of a rocket in flight, some rockets have the ability to control the direction in which exhaust fumes are expelled through what is known as a gimbaled nozzle. This special nozzle is capable of changing its angle and direction sending the rocket's exhaust along that angle, changing the direction the rocket moves in.

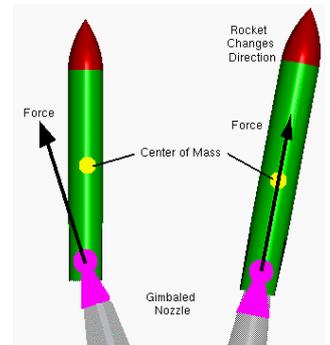
Most rockets will have a nosecone, this is the tip of the rocket and makes it more aerodynamic in flight.



Mobile fins

Finally, the rocket needs fins. In the 19th Century William Hale's idea was to create spin in the rocket's flight by fitting small fins at the edge of the nozzle. As the exhaust was ejected from the nozzle and came into contact with the fins it was deflected slightly to spin the rocket. This stabilised the rocket during flight.

Modern rockets used entirely within the atmosphere may have mobile fins that add manoeuvrability as well as stability to the rocket in flight.



Gimbaled nozzle