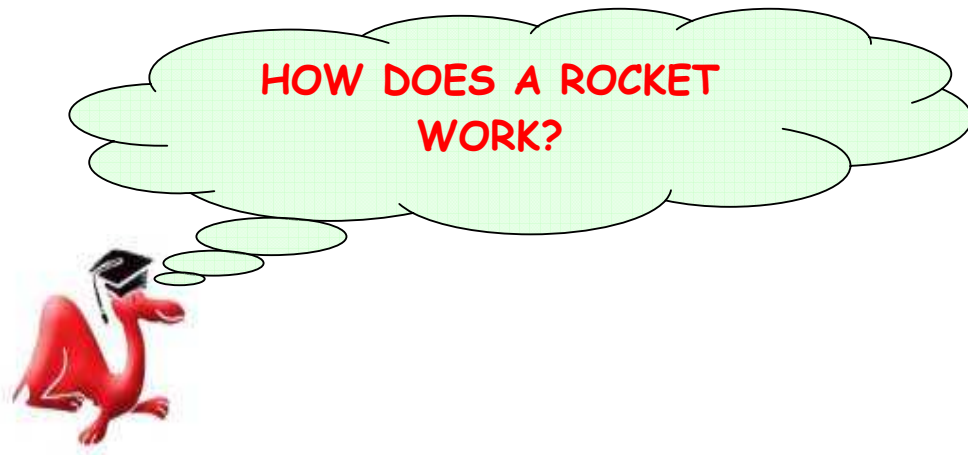




One of the most amazing achievements of man is space exploration. It is a complicated science with many problems to overcome. One of the biggest problems is to get the spaceship off the ground. Using a rocket engine does this.



While being a very sophisticated machine, it works on a fairly simple principle. Nevertheless, people find it difficult to comprehend. A rocket engine works on Newton's principle that for every action there is an equal and opposite reaction.

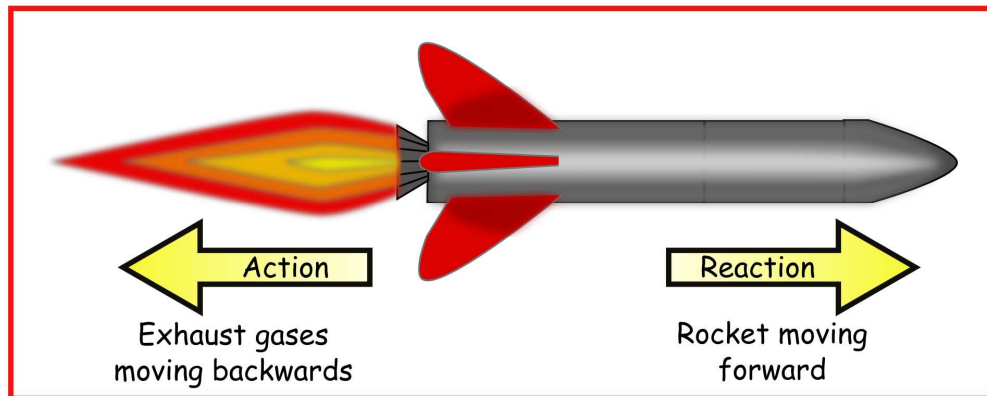
Whenever you push against something, that object exerts the same force on you and pushes you back in the opposite direction.

Imagine that you are floating in a pool and push against another person in the pool. That person will start moving away from you because of the

force exerted on him by you (the action). At the same time you will start moving backwards (the reaction).

The same thing happens in a rocket engine. Rockets burn fuel, which create hot gases under very high pressure. The high pressure causes the hot gases to be ejected at a very high speed from the rear of the rocket.

The force of the hot gases blasting out of the rocket in one direction (towards the back) makes the rocket move in the opposite direction (forward).



There is a general misconception that a rocket pushes against the ground to achieve lift-off and then pushes against the gases in the atmosphere to move forward. This is NOT TRUE.

The fact is that rockets don't need anything to push against to move forward in space. As a matter of fact, the rocket performs best in space where there is no atmosphere to oppose the backward movement of the exhaust gases and making the force smaller.

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