



Year 2 Rocket Science - Push-pull Power



STUDENT WORKSHEET

With Street Science, you became a junior scientist, and used **Newton's Laws of Motion** to propel a rocket into the sky!

Using Newton's First Law of Motion we learned that pushing and pulling forces are used to start and stop movement.

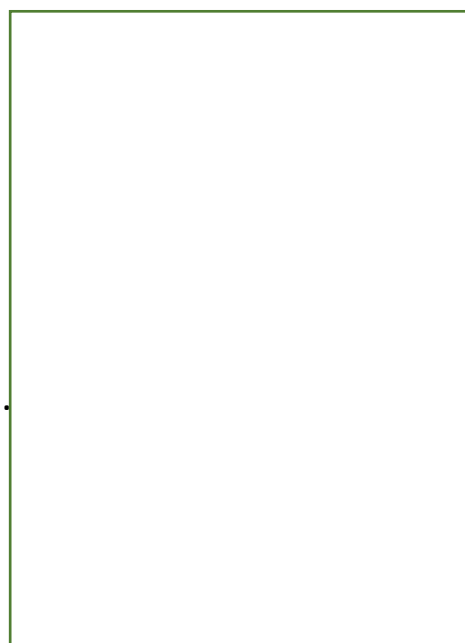
Newton's first law: an object at rest will remain at rest until a force is applied to it, an object in motion will remain in motion until a force is applied to it.

1. Using Newton's law, draw how you would apply a force to each ball below to make it move (be in motion) or stop moving (be at rest). Use arrows to show these forces.

| <i>Force this ball into motion</i> | <i>Force this ball to rest</i> |
|---|--|
|  |  |

2. Rockets fly higher and faster if they are stable and there is less **friction** from air (called 'drag'). These **aerodynamic** properties are most affected by rocket shape and the material it is made from.

Draw your rocket in the box and label the features we considered to make it aerodynamic.





3. Many forces were involved in the launch and fall of your rocket.
Connect the force with the correct explanation:

| | |
|-----------------|--|
| <i>Push</i> | <i>The force pulling rockets (and everything else) towards the Earth</i> |
| <i>Pull</i> | <i>A force moving away from you</i> |
| <i>Gravity</i> | <i>The force of objects rubbing against each other</i> |
| <i>Friction</i> | <i>A force moving towards you</i> |

4. Below, draw and label your rocket flying off the launch table.

INCLUDE AND LABEL THESE:

| <i>OBJECTS</i> | | | <i>FORCES (show direction with arrows)</i> | | |
|----------------|-------------------|--------------|--|-------------|-----------------|
| <i>Rocket</i> | <i>Rocket cap</i> | <i>Table</i> | <i>Gravity (Pull)</i> | <i>Push</i> | <i>Friction</i> |