



## Gravitational force

Earth's gravity pulls objects towards its center. Earth's gravitational force is strong because Earth has a large mass. Gravity keeps objects on the surface of the Earth and pulls all unsupported objects to the ground.



The force of gravity is weaker on the Moon than on the Earth because the Moon has less mass. Gravity on the Moon is about one-sixth of that on Earth.



The Sun has a strong gravitational force because its mass is so large. This force keeps the planets in our solar system travelling in a curved path, called an orbit, around the Sun.



## Science – Forces Year 5 & 6

### Forces in action

A force is a push or a pull that makes something move, change speed or change shape. Forces act in pairs that oppose each other. A force can be either a contact force or a non-contact force.

Friction on the bike chain and road surface make it harder to pedal



Air resistance stops the skydiver hitting the ground at high speed.



Water resistance makes it harder to move through water.



## Key Vocabulary

|            |                                                                                                                                          |
|------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Mass       | Mass is the amount of matter that an object or substance contains. It can never be zero and is the same wherever it is, even in space. . |
| Weight     | A measure of gravitational force exerted on an object. It is different on the Moon than on Earth                                         |
| Newtons    | The scale used to measure weight. 1 Newton = approximately 1 apple                                                                       |
| Gravity    | A pulling force between objects that have mass                                                                                           |
| Friction   | A force that acts between two surfaces or objects that are moving, or trying to move, across each other                                  |
| Buoyancy   | An upward force that a liquid applies to objects                                                                                         |
| Up thrust  | A force that pushes objects up,                                                                                                          |
| Streamline | Shaping an object so that there is less resistance (air or water) when it is moving                                                      |