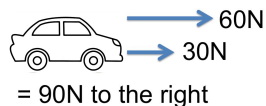


Yr9 Forces in action knowledge organiser

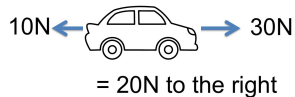
When adding forces direction matters. The **resultant force** is the effect all the forces combined.

Forces that act in the same direction add together.

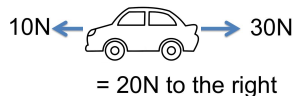


This car will accelerate.

Forces that act in opposite directions minus.

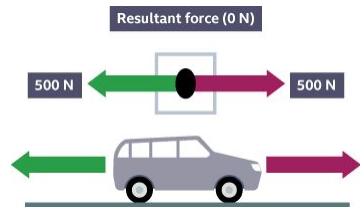


This car will accelerate.



This car will decelerate.

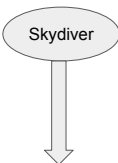
Below the resultant force is 0N.



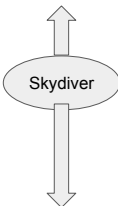
This car will continue at a constant speed.

Terminal velocity

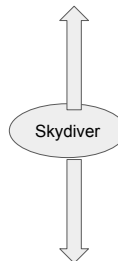
The moment a skydiver jumps, air resistance is almost zero. They accelerate downwards because of gravity.



The faster they fall, the bigger the air resistance. The resultant force is still down, but less. So they accelerate down but less.

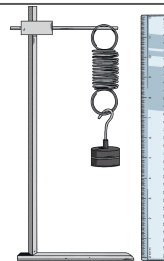


Here the air resistance is now the same size as the gravity. The resultant force is zero. They stop accelerating. The fall at a constant speed. This is called terminal velocity.

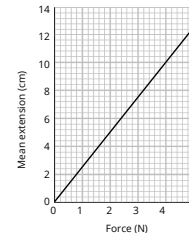


Hooke's law

In this experiment you add weight to a spring, and measure the **extension**.

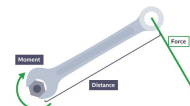


Extension is the difference between the stretched length and the original length.



The results are directly proportional. This means a straight line through the origin

Moments



A moment is the turning effect of a force.

Moment = force x Distance from pivot