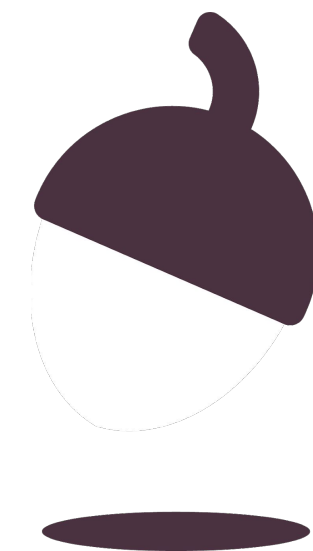


Newton's Laws

Mr Saville



OAK
NATIONAL
ACADEMY

Independent Practice

1. A car with a mass of 2,000 kg accelerates at 3 m/s^2 . How much force is required to make this happen?
2. A skateboard with a mass of 1.5 kg accelerates at 2 m/s^2 . How much force is required to make this happen?
3. A truck with a mass of 16,000 kg accelerates at 1.25 m/s^2 . How much force is required to make this happen?
4. A 2 g paper airplane accelerates at 1.2 m/s^2 . How much force is required to make this happen?
5. A man with a weight of 780 N accelerates at 3 m/s^2 . Calculate the force required.



Independent Practice

1. A horse has a mass of 2,000 kg. If this horse requires 3,000 N of force to move, how much acceleration does this produce?
2. A remote control car accelerates at 1.75 m/s^2 . If the engine of the remote control car produces a force of 50 N, what is the mass of the car?
3. A man has a mass of 60 kg and uses 2000N of force to move. Calculate his acceleration.
4. A motor bike engine exerts 1500N of thrust against 600N of friction. Calculate the resultant force. If the bike has a mass of 300kg, calculate the acceleration of the bike.
5. A woman jumps into the air with a force of 700 N. If her weight (force acting downward) is 600 N, calculate the resultant force. If her mass is 60 kg, calculate her acceleration.

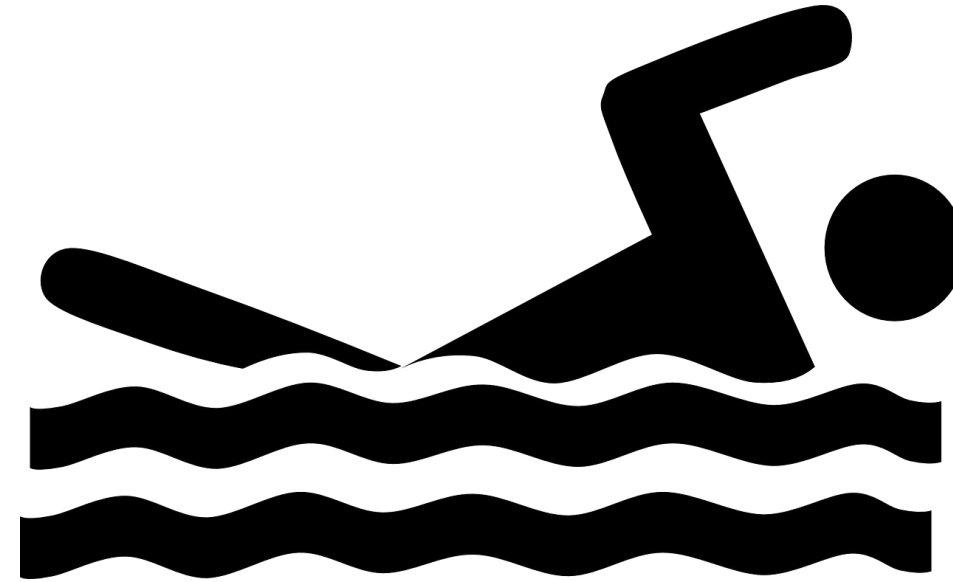


Independent Practice

Describe Newton's third law (the action and reaction) in the 3 examples



Bouncing on a trampoline



Swimming



An owl flying

Image credits: Pixabay



HT ONLY- Inertial Mass

Mass is usually thought of as the **amount of matter (stuff)** in an object...

At GCSE, there is another definition:

Inertial mass is a measure of how difficult it is to change the v_____ of an object: it is defined as the ratio of f_____ over ac_____.

