

Knowledge I need to know by the end of this topic:

- A force is a push, pull or twist. We can't see forces but we can observe their effects.
- A force can change an object's shape, speed or direction of travel.
- When a force is applied to a spring, the length of the spring increases.
- A Newton balance is used to measure the size of a force. The size of a force is measured in Newtons (N).
- All forces can be identified as contact forces or non-contact forces.
- Examples of non-contact forces include electrostatic force and magnetic force.
- Examples of contact forces include tension and friction.
- Weight is the force of gravity acting on an object. Since it is a force, it is measured in Newtons (N).
- Mass is how much matter makes up an object. It is measured in kilograms (kg).
- Friction can be increased by making surfaces rougher, and decreased by making surfaces smoother.
- If two forces acting on an object are equal in size, but act in opposite directions, we say they are balanced. Balanced forces have the same effect as if there were no forces acting on the object.
- I can identify the common road signs from the Highway Code.
- In the Highway Code, warning signs are triangles and signs giving orders are circles.
- Reaction time is the time taken for a person to react to a situation.
- The distance a car travels during the driver's reaction time is the THINKING distance.
- The distance a car travels while the brakes are applied is the BRAKING distance.
- To find the total stopping distance of a car we add together the thinking distance and the braking distance.
- Average speed is calculated using distance travelled and total journey time.
- Instantaneous speed is calculated using length of card and time to pass a point.
- Displacement is the change in position of an object. It is measured in a straight line from the start point to the end point.