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| **What will we be learning?****Motion**Motion Detector Silhouette Icon Clipart Image Stock Vector (Royalty Free)  1316297879 | Shutterstock | **Why this? Why now?**Previous Learning Forces, Energy, Stopping DistancesFuture Learning Newtons Laws of Motion and Momentum, Work, energy and power, Electric and Gravitational Fields.Enquiry ProcessesIdentify Variables, Collect Data, Present Data, Analyse Patterns, Manipulate Equations, Draw Conclusions, Justify opinions and conclusions.  | **Key Words:**Average speedInstantaneous speedVelocityScalarVectorDisplacementAccelerationStopping distanceThinking distanceBraking distance |
| **What will we learn?*** Demonstrate knowledge, understanding and application of average speed, instantaneous speed, displacement, velocity, acceleration.
* How to use distance-time graphs to determine speed, displacement-time graphs to determine velocity and velocity-time graphs to determine acceleration.
* How to derive and apply the equations of motion for constant acceleration in a straight line and for objects falling in a uniform gravitational field.
* The effect of reaction time on the total stopping distance of a vehicle.
* How to determine g experimentally and the acceleration due to free-fall.

**Misconceptions in this topic*** Distance and displacement are the same thing.
* An object requires a force to act upon it in order to move in a particular direction.
* A force continues to act for some time after it has been removed.
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| **What opportunities are there for wider study?**Careers - Engineer, Architect, Construction, Civil Engineering, Aviation, Automotive Engineer, Car mechanic, Production Engineer, Radio and Television Engineer, Sound and Acoustic Engineer, Defence Specialist.STE(A)M – For details of courses and opportunities look at:<https://highcliffe.sharepoint.com/sites/LearnSTEM> |
| **How will I be assessed?**End of Topic Assessment, AS Paper Assessment |