**Uniform Motion**

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| **Term** | **Definition** | **Equation** |
| **Scalar** | A physical quantity that has magnitude but no direction |  |
| **Vector** | A physical quantity that has magnitude and direction |  |
| **Uniform motion** | Movement with a constant speed and in a straight line |  |
| **Constant**  | Not changing |  |
| **Distance (**$∆d$**)** | A scalar quantity that describes the length of a path between two points or locations, measured in metres (m) |  |
| **Origin** | A specified location defined as zero displacement |  |
| **Displacement (**$\rightharpoonaccent{∆d}$**)** | The shortest straight line distance of an object’s change in position from an initial displacement (di) to a final displacement (df), in a stated direction (vector quantity), measured in metres (m) | $$\rightharpoonaccent{∆d}=d\_{f}-d\_{i}$$ |
| **Speed (s,** $v$**)** | Distance travelled per unit time (scalar quantity), measured in meters/second (m/s)  | $$s=\frac{∆d}{∆t}$$(assumes constant speed) |
| **Velocity (**$\rightharpoonaccent{v}$**)** | Speed of an object and the direction of motion, measured in m/s | $$\rightharpoonaccent{v}=\frac{\rightharpoonaccent{∆d}}{∆t}$$(assumes constant velocity) |
| **Average speed (savg)** | The measure of the total distance an object has moved divided by the total time taken, measured in m/s | $$s\_{avg}= \frac{d\_{tot}}{t\_{tot}}$$(speed may not be constant) |
| **Average velocity (**$\rightharpoonaccent{v\_{avg}}$**)** | The measure of the total displacement of an object divided by the total time taken, measured in m/s | $$\rightharpoonaccent{v\_{avg}}=\frac{\rightharpoonaccent{d}}{t}$$(velocity may not be constant) |
| **Period (T)** | The time interval between two repeating cycles, measured in s | $$T=\frac{∆t}{\# of cycles}$$ |
| **Frequency (f)** | The number of cycles that occur in a specific time interval, measured in 1/s or Hz (Hertz) | $$f=\frac{1}{T}$$ |