

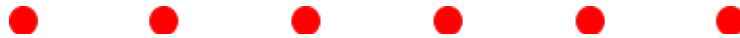
Describing Motion with Diagrams

Lesson Notes

The motion of object will often be described with two types of diagrams: **dot diagrams** and **vector diagrams**.

Dot Diagrams Display the position of an object by a dot. A dot is shown for equal time intervals – for instance, every 1 second.

Dot diagram for **constant speed** motion:



Dot diagram for **speeding up** motion (moving to the right):



Dot diagram for **slowing down** motion (moving to the right):



Vector Diagrams Display information about a vector quantity like velocity or acceleration by including a *vector arrow* with a strategically drawn length.

If the velocity is increasing, then the velocity vector arrow grows in size over the course of time. If the acceleration is constant, then the acceleration vector stays the same size over the course of time.

Velocity Vector Diagrams for ...

Moving to the right at a **Constant Speed**:



Moving to the right and **Speeding Up**:



Moving to the right and **Slowing Down**:



NOTE: The velocity direction is the same as the direction the object is moving. So the velocity vector is drawn to the right if the object moves to the right.