

Speed vs velocity

Teacher notes

Why use this resource

With the understanding developed in [Discussing distance](#), and the same distance and displacement graphs, this resource asks students to consider how they would sketch the speed-time or velocity-time graphs. Many students may be confident with this process, but this should help you probe students' understanding of the differences between speed and velocity as well as the link between speed (or velocity) and the gradient function.

The second part of the question asks students to sketch a displacement graph from a velocity graph. This offers a way to discuss what the area beneath a graph represents. As no initial conditions are given, it could also be used to discuss why we need a constant of integration.

The final section of the resource, [Thinking about journeys](#), asks students to contemplate graphing journeys in both one and two dimensions, both to see which are possible and to appreciate why it gets much more complex in two dimensions.

Possible approach

Mini-white boards could be useful so students can easily develop their graphs as they work through the problem. All the tasks, but especially the Thinking about journeys section, would benefit from students discussing their ideas so it may be useful for students work in small groups, or to offer an opportunity for them to feedback their work to others.