

How do you react?

You can test the speed of someone's reactions by dropping a ruler and seeing how far along they manage to catch it.

For an object falling from rest, we can draw a table showing the velocity at regular intervals:

Time (seconds)	0	1	2	3	4
Velocity (metres per second)	0	9.8	19.6	29.4	39.2

You could represent this graphically - what would the graph look like?

We can work out the distance travelled at each point in time, by multiplying the average velocity by the time taken. Complete the table below:

Time (seconds)	0	1	2	3	4
Distance travelled (metres)					

You could represent this graphically - what would the graph look like?

If two people caught the ruler at 15cm and 30cm do you think the first person's reactions are twice as fast as the second person's?

How can you use your graph, or derive a formula, to support your answer to this question?

The average person's reaction time is about 0.2 seconds. Where would you expect them to catch a ruler, according to your formula or graph?

Try the experiment for yourself and see if your reaction times are quicker or slower than average.