## M3.5 – Calculate rate of change from a graph showing a linear relationship

## Teacher answers

### Quiz

The rate of photosynthesis in a piece of pondweed was measured by the number of bubbles of oxygen released over time.

The results were plotted as a line graph:

Find the gradient (the rate of photosynthesis).

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| First you need to draw a triangle between two points – here we’ve chosen (1,20) and (4,80).To work out the gradient, we use the formula gradient = the change in y divided by the change in x$$Gradient=\frac{'change in y'}{'change in x'} $$So the change in y is 80 – 20 = 60Change in y: 80 – 20 = 60And the change in x is 4 – 1 = 3Change in x: 4 – 1 = 3So the gradient of rate of photosynthesis can be calculated as rate = gradient = 60 divided by three = 20 bubbles per minute$$Rate= Gradient=\frac{60}{3}=20 bubbles min^{-1}$$ |

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