

# 7 Mathematical requirements

Students will be required to demonstrate the following mathematics skills in GCSE Biology assessments.

Questions will target maths skills at a level of demand appropriate to each subject. In Foundation Tier papers questions assessing maths requirements will not be lower than that expected at Key Stage 3 (as outlined in *Mathematics Programmes of Study: Key Stage 3*, by the DfE, document reference DFE-00179-2013). In Higher Tier papers questions assessing maths requirements will not be lower than that of questions and tasks in assessments for the Foundation Tier in a GCSE qualification in mathematics.

## 1 Arithmetic and numerical computation

- a Recognise and use expressions in decimal form
- b Recognise and use expressions in standard form
- c Use ratios, fractions and percentages
- d Make estimates of the results of simple calculations

## 2 Handling data

- a Use an appropriate number of significant figures
- b Find arithmetic means
- c Construct and interpret frequency tables and diagrams, bar charts and histograms
- d Understand the principles of sampling as applied to scientific data
- e Understand simple probability
- f Understand the terms mean, mode and median
- g Use a scatter diagram to identify a correlation between two variables
- h Make order of magnitude calculations

## 3 Algebra

- a Understand and use the symbols: =, <, <<, >>, >,  $\infty$ , ~
- d Solve simple algebraic equations

## 4 Graphs

- a Translate information between graphical and numeric form
- b Understand that  $y = mx + c$  represents a linear relationship
- c Plot two variables from experimental or other data
- d Determine the slope and intercept of a linear graph

## 5 Geometry and trigonometry

- c Calculate areas of triangles and rectangles, surface areas and volumes of cubes

Mathematical skills references are taken from the DfE subject criteria. Where there is a break in a sequence, the 'missing' references are criteria not applicable to GCSE Biology and have been deliberately omitted from this list.