



Academic Achievement: Rating Descriptors

Subject: Mathematics

Year: 9

In general, based on progress shown so far, we expect that **by the end of this academic year** your child will....

<p>1</p> <p>Above the expected standard</p>	<ul style="list-style-type: none">• convert between square mm, cm, m & km and calculate with speed, density and pressure• identify and accurately draw possible nets of a 3D shape and use to determine a surface area• use an average and a range to make a decision about a hypothesis or compare distributions• use alternate, corresponding and co-interior angles to solve angle problems and write a clear solution or proof• create equations that may include brackets and the unknown on both sides to solve problems in context• use Pythagoras' Theorem to calculate the length of a line segment on a Cartesian grid• interpret and understand functions and composite functions and the use of function notation such as $f(x)$ and $gf(x)$• find the gradient and intercept from a graph or equation in order to identify parallel and perpendicular lines• convert a terminating or recurring decimal to a fraction• apply knowledge of angle rules to questions involving bearings, including return bearings
<p>2</p> <p>Meeting the expected standard</p>	<ul style="list-style-type: none">• convert between common metric and imperial units of length, weight and capacity• draw front, side and plan views of a 3D shape• find the modal class, interval containing the median and an estimate of the mean for a grouped frequency distribution• use alternate, corresponding and co-interior angles to solve angle problems• solve equations that may include brackets and the unknown on both sides• identify right angled triangles in a diagram and apply Pythagoras' Theorem to finding missing lengths• substitute into functions where function notation is used such as $f(x)$• plot linear graphs where the equation is given in different forms and plot a quadratic graph• find and use a reciprocal as a multiplicative inverse• apply knowledge of angle rules to questions involving bearings
<p>3</p> <p>Working towards the expected standard</p>	<ul style="list-style-type: none">• convert between mm, cm, m and km• use isometric paper to draw a 2D representation of a 3D shape• calculate averages and range for a discrete frequency distribution• apply known angle rules to find a missing angles in diagrams, including polygons• create and solve an equation to solve a problem that requires 2 steps to solve• draw a diagram with a right-angled triangle to solve a problem using Pythagoras' Theorem• substitute into formulas using more than 1 variable• calculate a table of points in order to plot a linear graph• add, subtract, multiply or divide with fractions• identify a bearing and state using 3 figures
<p>4</p> <p>Below the expected standard</p>	<ul style="list-style-type: none">• state that there are 10mm in a cm, 100cm in a m and 1000m in a km• name common 3D shapes e.g. cube, cuboid, cylinder, prism, sphere, cone, pyramid• Interpret and display data in diagrammatic form using bar chart, pictograms, pie charts or line graphs• apply known angle rules to find a missing angle in a diagram, including polygons• select appropriate inverses to solve a 2-step equation• use Pythagoras' Theorem to find a missing length of a right-angled triangle• substitute into a formula that may be given in words• recognise and draw lines of the form $x=a$, $y=b$, $y=x$, $y=-x$• convert between different forms of fractions and calculate a fraction of a quantity• recall and use the 8 points of a compass.