

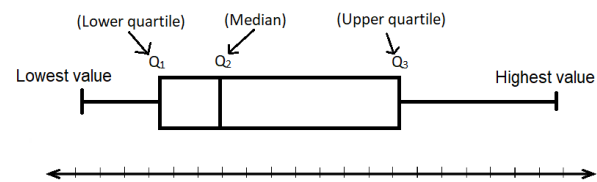
Y11 Final unit Overview

Target grade for tests:

You will learn about:

- Transformations
- Histograms
- Analysing data using cumulative frequency and box plots
- Vectors
- Perpendicular lines
- Equations of circles
- Linear inequalities
- Solving inequalities graphically

$$8 > 5 > 3 > 1 > 2 > 4 > 6 < 4n$$



Lesson Overview

TRANSFORMATIONS

- Reflect a shape on a coordinate grid.
- Describe a reflection (stating "reflection" and the equation of the mirror line)
- Rotate a shape on a coordinate grid.
- Describe a rotation (stating "rotation" and the direction, angle and centre of rotation)
- Translate a shape on a coordinate grid.
- Describe a translation (stating "translation" and the vector)
- Enlarge a shape on a coordinate grid.
- Describe an enlargement (stating "enlargement", the scale factor and the centre of enlargement)
- Know that a fractional scale factor makes the shape smaller.
- Recognise whether a point is an "invariant point".

HISTOGRAMS

- Understand the definition of a histogram
- Construct and use the horizontal axis of a histogram correctly
- Know that frequency density = frequency \div class width
- Construct histograms for grouped data with unequal class intervals
- Use a histogram to find missing values in a frequency table
- Use a partially completed histogram and frequency table to complete both

ANALYSING STATISTICS

- Understand the limitations of sampling
- Know the meaning of the lower quartile and upper quartile
- Find the quartiles for discrete data sets
- Calculate and interpret the interquartile range
- Construct and interpret a box plot for discrete data
- Use box plots to compare distributions
- Understand the meaning of cumulative frequency and complete a cumulative frequency table
- Construct a cumulative frequency curve
- Use a cumulative frequency curve to estimate the quartiles for grouped continuous data sets

Key Words

Refer to <http://studymaths.co.uk/glossary.php> for definitions of the key words

Categorical data, Discrete data
Continuous data, Grouped data
Axis, axes
Population
Sample
Cumulative frequency
Box plot, box-and-whisker diagram
Central tendency
Mean, median, mode
Spread, dispersion, consistency
Range, Interquartile range
Skewness

Notation

Correct use of inequality symbols when labelling groups in a frequency table

Continuous data, Grouped data
Table, Frequency table
Frequency
Frequency density
Histogram
Scale, Graph
Axis, axes

Scale Factor
Similar
Congruent
Invariance
Transformation
Rotation
Reflection
Translation
Enlargement

<p>VECTORS</p> <ul style="list-style-type: none"> Understand the concept of a vector Use diagrammatic representation of vectors Know and use different notations for vectors Add (subtract) vectors Multiply a vector by a scalar Solve simple geometrical problems involving vectors <p>STRAIGHT LINE GRAPHS AND EQUATIONS OF CIRCLES</p> <ul style="list-style-type: none"> Know that parallel lines have the same gradient (m bit the same in $y=mx+c$) Know that perpendicular lines have equations $y=-1/m x + c$ Know the equation of a circle with centre at the origin Identify the equation of a circle from its graph Use the equation of a circle to draw its graph <p>GRAPHING INEQUALITIES</p> <ul style="list-style-type: none"> Understand the use of a graph to represent an inequality in two variables State the (simple) inequality represented by a shaded region on a graph Know when to use a dotted line as a boundary for an inequality on a graph Know when to use a solid line as a boundary for an inequality on a graph Construct and shade a graph to show a linear inequality of the form $y > ax + b$, $y < ax + b$, $y \geq ax + b$ or $y \leq ax + b$ Construct and shade a graph to show a linear inequality in two variables stated implicitly Construct and shade a graph to represent a set of linear inequalities in two variables Find the set of integer coordinates that are solutions to a set of inequalities in two variables Use set notation to represent the solution set to an inequality 				<p>Vector Scalar Constant Magnitude</p> <p>Notation \mathbf{a} (print) and \underline{a} (written) notation for vectors \overline{AB} notation for vectors Column vector notation $\begin{pmatrix} p \\ q \end{pmatrix}$, p = movement right and q = movement up</p> <p>Parallel Perpendicular Centre (of a circle) Radius</p> <p>Notation $y = mx + c$</p> <p>(Linear) inequality Variable Solve Solution set Integer Set notation Region</p> <p>Notation The inequality symbols: $<$ (less than), $>$ (greater than), \leq (less than or equal to), \geq (more than or equal to) When drawing a graph to represent solutions to inequalities in two variables: a dotted line represents a boundary that is not included and a solid line represents a boundary that is included. Set notation; e.g. $\{-2, -1, 0, 1, 2, 3, 4\}$</p>		
Research	Note-making	Group work & discussion	Memorisation	Precision & accuracy	Independence	Reflection