



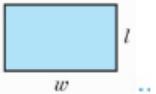
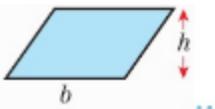
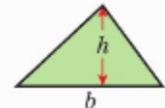
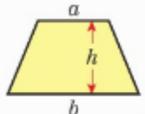
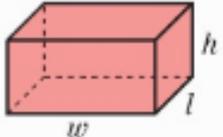
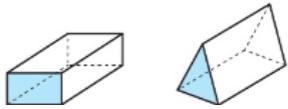
MATHEMATICS - YEAR 9 FOUNDATION TERM 3

A AVERAGES AND RANGE

| | | |
|---|-------------------|--|
| 1 | Mean | The sum of the values divided by the number of values |
| 2 | Mean from a Table | Multiply each category by its frequency, sum these values, then divide this by the sum of the frequencies |
| 3 | Comparing | Use one type of average (mean, median or mode) and the range |
| 4 | Median | Put the data in order, then find the middle value. Where n is the number of values $(n+1) \div 2$ will be the position of the median |
| 5 | Outlier | An extreme value that doesn't fit the overall pattern |
| 6 | Modal Class | (Mode) Is the class with the highest frequency |
| 7 | Estimating Mean | When a frequency table contains grouped data, you can take midpoints of each class as estimates for the data values, then using these follow the mean from a table process |
| 8 | Survey | A sample is taken to represent the population. Care must be taken to avoid biased results |
| 9 | Random Sample | Every member of the population has an equal chance of inclusion |

B PERIMETER, AREA AND VOLUME 1

| | | |
|---|-----------|---|
| 1 | Perimeter | The total length around the outside of a 2D shape |
| 2 | Area | The size of the space inside a 2D shape |

| | | |
|----|-------------------------|--|
| 3 | Area Units | Squared units e.g. cm^2 , mm^2 , m^2 |
| 4 | Area of a Rectangle | = length x width = $l \times w$  |
| 5 | Area of a Parallelogram | = base x vertical height = $b \times h$  |
| 6 | Area of a Triangle | = $\frac{1}{2}$ x base x vertical height = $\frac{1}{2} \times b \times h$  |
| 7 | Area of a Trapezium | = $\frac{1}{2} \times (a + b) \times h$  |
| 8 | Compound Shape | Split the shape into parts, find the area of each part and then add together. If the shape has a "hole" Find the area of the whole shape then subtract the area of the "hole" |
| 9 | Surface Area | The area of the 2D faces of a 3D shape |
| 10 | Volume | The size of the space within a 3D shape |
| 11 | Volume of a Cuboid | = length x width x height = $l \times w \times h$  |
| 12 | Prism | A 3D shape with a constant cross-section  |
| 13 | Volume of a Prism | Area of cross-section x length |
| 14 | Capacity | The volume of liquid that fits within a 3D shape |
| 15 | Converting Units | <p>$1 \text{ cm}^3 = 1 \text{ ml}$, $1000 \text{ cm}^3 = 1 \text{ litre}$</p> <p>Areas: $100 \text{ mm}^2 = 1 \text{ cm}^2$ $10000 \text{ cm}^2 = 1 \text{ m}^2$ $100000 \text{ m}^2 = 1 \text{ hectare}$</p> <p>Volumes: $1000 \text{ mm}^3 = 1 \text{ cm}^3$ $1000000 \text{ cm}^3 = 1 \text{ m}^3$</p> |