| $\sum_{\substack{\circ \\ \text { Ketering }}}^{\sim} \frac{\pi}{5}$ |  |  | Year 7 Mathematics Core Term 5 |  |
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| Lines and Angles |  |  |  |  |
| 1. | Angle | A measure of turn, measured in degrees ${ }^{\circ}$. |  |  |
| Types of Angles |  |  |  |  |
| 2. | Acute | Acute angles are less than $90^{\circ}$. | $b$ <br> Acute |  |
| 3. | Right | Right angles are exactly $90^{\circ}$. | $\frac{\square}{\text { Right }}$ |  |
| 4. | Obtuse | Obtuse angles are greater than $90^{\circ}$ but less than $180^{\circ}$. | $\emptyset_{\text {obtuse }}$ |  |
| 5. | Reflex | Reflex angles are greater than $180^{\circ}$ but less than $360^{\circ}$. | Reflex |  |
| Angle Rules |  |  |  |  |
| 6. | Parallel lines | Straight lines that stay an equal distance apart and if extended will never meet. | $7$ |  |
| 7. | Perpendicular lines | Cross at right angles. |  |  |
| 8. | Angle Notation | Can use one lower-case letters, eg. $\theta$ or $x$. <br> Can use three upper-case letters, eg. $B A C$. |  |  |
| 9. | Straight line | Angles on a straight line add to $180^{\circ}$. |  |  |
| 10. | Around a point | Angles around a point add to $360^{\circ}$. |  |  |



| 23. | Constructing Triangles (Side, Side, Side) | 1. Draw the base of the triangle using a ruler. <br> 2. Open a pair of compasses to the width of one side of the triangle. <br> 3. Place the point on one end of the line and draw an arc. <br> 4. Repeat for the other side of the triangle at the other end of the line. <br> 5. Using a ruler, draw lines connecting the ends of the base of the triangle to the point where the arcs intersect. |
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| Polygo |  |  |
| 24. | Polygon | A 2D shape with only straight edges. |
| 25. | Regular | A shape is regular if all the sides and all the angles are equal. |
| 26. | Triangle | 3-sided polygon. |
| 27. | Quadrilateral | 4-sided polygon. |
| 28. | Pentagon | 5-sided polygon. |
| 29. | Hexagon | 6-sided polygon. |
| 30. | Heptagon/Sept agon | 7-sided polygon. |
| 31. | Octagon | 8-sided polygon. |
| 32. | Nonagon | 9-sided polygon. |
| 33. | Decagon | 10-sided polygon. |
| Sequences and graphs |  |  |
| Sequences |  |  |
| 34. | Linear Sequence | A number pattern with a common difference. |
| 35. | Term | Each value in a sequence is called a term. |
| 36. |  |  |


|  | Term-to-term rule | A rule which allows you to find the next term in a sequence if you know the previous term. |
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| 37. | nth term (position-toterm rule) | A rule which allows you to calculate the term that is in the nth position of the sequence. $n$ refers to the position of a term in a sequence. |
| 38. | Finding the nth term of a linear sequence | 1. Find the difference. <br> 2. Multiply that by $n$. <br> 3. Substitute $n=1$ to find out what number you need to add or subtract to get the first number in the sequence. |
| 39. | Triangular numbers | The sequence which comes from a pattern of dots that form a triangle ( $1,3,6,10,15,21 \ldots$...). |
| 40. | Fibonacci type sequences | A sequence where the next number is found by adding up the previous two terms. |
| 41. | Geometric Sequence | A sequence of numbers where each term is found by multiplying the previous one by a number called the common ratio, $r$. |
| Straight Line Graphs |  |  |
| 42. | Coordinates | Written in pairs. The first term is the $x$-coordinate (movement across). The second term is the $y$-coordinate (movement up or down). |
| 43. | Linear Graph | The general equation of a linear graph is $y=m x+c$, where $m$ is the gradient and $c$ is the $y$-intercept. |
| 44. | Plotting Linear Graphs | Method 1: Table of Values <br> Construct a table of values to calculate coordinates. |
|  |  | Method 2: Gradient-Intercept Method (use when the equation is in the form $y=$ $m x+c$ ) <br> 1. Plot the $y$-intercept. <br> 2. Using the gradient, plot a second point. <br> 3. Draw a line through the two points plotted. |
|  |  | Method 3: Cover-Up Method (use when the equation is in the form $a x+b y=c$ ) <br> 1. Cover the $x$ term and solve the resulting equation. Plot this on the $x$-axis. <br> 2. Cover the $y$ term and solve the resulting equation. Plot this on the $y$-axis. <br> 3. Draw a line through the two points plotted. |


| 45. | Gradient | The gradient of a line is how steep it is. The gradient can be positive (sloping <br> upwards) or negative (sloping downwards), <br> Gradient $=\frac{\text { Change in } y}{\text { Change in } x}=\frac{\text { Rise }}{R u n}$ |
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## Transformations

| 1. | Congruent Shapes | Shapes are congruent if they are identical, i.e. same shape and same size. |
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| 2. | Congruent Triangles | SSS (Side, Side, Side) |
|  |  | RHS (Right angle, Hypotenuse, Side) |
|  |  | SAS (Side, Angle, Side) |
|  |  | ASA (Angle, Side, Angle) |
| 3. | Translation | Translate means to move a shape. The shape does not change size or orientation. |
| 4. | Column Vector | In a column vector, the top number moves left ( - ) or right ( + ) and the bottom number moves up ( + ) or down ( - ). |
| 5. | Rotation | The size does not change, but the shape is turned around a point. |
| 6. | Reflection | The size does not change, but the shape is 'flipped' like in a mirror. |
|  |  | Line $x=$ ? is a vertical line. |
|  |  | Line $y=$ ? is a horizontal line. |
|  |  | Line $y=x$ is a diagonal line. |
| 7. | Enlargement | The shape will get bigger or smaller. Multiply each side by the scale factor. |
| 8. | Scale Factor | The ratio of corresponding sides of two similar shapes. |

