

Townhill Junior School Maths Overviews

Year 3 Spring term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Unit title	Measurement: Length		Mass	Volume		Money			Time			
Key learning	<ul style="list-style-type: none"> -To use metres and centimetres to measure objects. -To write length in centimetres only by converting metres to centimetres. -To convert kilometres to metres. – To convert length from metres to kilometres and metres. -To compare two lengths. -To solve measurement-related word problems. -To solve other word problems. -To solve word problems further, involving multiplication. -To solve word problems associated with length using division. -To solve more challenging word problems. -To practise various concepts covered in the chapter. 		<ul style="list-style-type: none"> -To measure mass using weighing scales and compare the mass of objects using grams and kilograms. -To use weighing scales to measure mass when the mass is between multiples of 100 g. -To read values on a scale which are 1 kg or more. -To weigh heavier items where the markers in the scales represent 200 g each. -To solve word problems relating to mass with addition and subtraction. -To solve word problems relating to mass using multiplication. -To solve word problems relating to mass using division. 	<ul style="list-style-type: none"> -To measure volume in millilitres. -To measure capacity in millilitres. -To measure volume using millilitres and litres. -To measure volume in millilitres and litres from a 'homemade' bottle with markings. -To measure volume using millilitres and litres in comparison to 1 l. -To measure larger capacity in litres and millilitres. -To solve basic word problems related to volume. -To solve more word problems. -To solve word problems through division. -To solve two-step word problems. 		<ul style="list-style-type: none"> -To consolidate previous learning about denominations of both notes and coins; to use simple addition to count amounts of money. -To name amounts of money including coins above 100p; to regroup and rename 100p as £1 as a key strategy. -To find multiple ways of showing an amount of money. -To add money by adding together the pounds and pence separately. -To add amounts of money together using different methods; to consolidate the addition of pounds and pence separately. -To consolidate 'making a pound' as a strategy for adding amounts of money where the coins equal more than 99p. -To learn the 'make a pound' strategy with number bond diagrams; to consolidate the strategies associated with the addition of money. -To use multiple methods for subtracting amounts of money, including concrete materials and the column method. -To use visual comparison to subtract amounts of money; to consolidate column subtraction where there is no regrouping of pence required. 			<ul style="list-style-type: none"> -To use the terms 'a.m.' and 'p.m.' correctly to identify morning or afternoon/evening. -To learn to tell time to the minute; to understand the relationship between the minute hand and hour hand. -To consolidate and apply a variety of vocabulary used to express the time. -To compare analogue and digital time; to represent time using both analogue and digital methods. -To tell time before the hour using the hour and minute hands. -To learn to tell time using 24-hour notation; to use analogue time and 24-hour notation interchangeably. -To tell the time on an analogue clock using Roman numerals. -To measure time in seconds and milliseconds. -To measure time in seconds using a stopwatch; to consolidate previous learning about seconds. -To consolidate measuring time in seconds; to conduct a time experiment using seconds. -To measure time in hours using an analogue clock. -To consolidate the measurement of time in hours. -To measure time in hours using analogue clocks and timelines; to count backwards in time by the hour. - To measure the passage of time in minutes using an analogue clock and a timeline. -To measure time to the minute when it crosses into the next hour; to use number bonds to calculate the passage of time. -To measure time in minutes, counting backwards to determine the starting point; to use number bonds and timelines to calculate the passage of time. -To determine how many seconds are in a minute; to use multiplication to calculate the number of seconds in a number of minutes. -To convert seconds into minutes using number bonds. 			

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				<ul style="list-style-type: none"> -To use number bonds to subtract amounts of money; to develop number sense through decision making. -To use number bonds as the primary strategy for subtracting amounts of money; to split pounds and pence simultaneously when subtracting amounts of money. -To learn the 'counting on' strategy for calculating change; to consolidate the number bonds strategy for calculating change. -To solve word problems involving money using bar modelling as the key strategy; to learn how to use comparative models where pupils are solving by seeing the smaller amount inside of the larger amount. -To use part-whole bar models to represent word problems; to apply addition and subtraction strategies to solve word problems. 	<ul style="list-style-type: none"> -calculate the number of days in a month; to learn which months have 31, 30 and 28/29 days. -To find the duration of days for different activities.
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Year 3

Key representations:

The image displays various mathematical representations:

- Number Lines:** A number line from 0 to 1000 with major ticks every 100 units and minor ticks every 10 units. Another number line from 0 to 200 with major ticks every 50 units and minor ticks every 10 units.
- Place Value Chart:** A chart with columns for HUNDREDS, TENS, and ONES. Below the chart are several small squares representing units.
- Measurement:** Several measuring jugs of different capacities (5 litres, 4 litres, 3 litres, 2 litres, 1 litre) and two analog clocks.
- Bar Models:** A bar model showing 524 in orange and 145 in green. Another bar model showing 20 divided into five equal parts, each labeled 4.
- Other Representations:** A ten-frame with 10 dots, a grid of 100 dots, and a tree diagram with three circles at the top and three circles at the bottom.

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Year 4 Spring Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Unit title	Calculations: Further multiplication and division			Statistics: graphs	Fractions, decimals and percentages			Measure: Time	Fractions, Decimals and Percentages		
Key learning	<ul style="list-style-type: none"> -To multiply 2-digit numbers. -To multiply 2-digit numbers with renaming. -To multiply multiples of 100. -To multiply 3-digit numbers. -To multiply 3-digit numbers (renaming). -To multiply 3-digit numbers. -To divide 2-digit numbers. -To divide 3-digit numbers. -To divide 2-digit numbers with remainders. -To divide 3-digit numbers. -To divide 3-digit numbers with remainders. -To solve multiplication and division word problems. -To solve multiplication and division word problems (multi-step). 			<ul style="list-style-type: none"> -To draw and read picture graphs and bar graphs. -To draw and read bar graphs. -To draw and read line graphs. -To draw and read a line graph. -To draw and read line graphs (drawing focus). 	<ul style="list-style-type: none"> -To count in hundredths. -To write mixed number fractions. -To show mixed number fractions on a number line. -To find equivalent fractions. -To find equivalent fractions (further practise). -To simplify mixed number fractions. -To simplify improper fractions. -To add fractions. -To add fractions (recording answers as a mixed number). -To add fractions (simplest form). -To subtract fractions. -To subtract fractions (equivalence). -To solve word problems. 			<ul style="list-style-type: none"> -To tell the time on a 24-hour clock. -To convert between minutes and seconds. -To convert between hours and minutes. -To solve time problems. -To convert between units of time. -To solve word problems (duration). 	<ul style="list-style-type: none"> -To record tenths. -To record in tenths. -To record in tenths (in different ways). -To write hundredths. -To write hundredths. -To write hundredths (in different ways). -To record hundredths. -To write decimal numbers. -To compare and order decimal numbers. -To compare and order decimal numbers. -To compare and order decimal numbers. -To create number sequences. -To round decimal numbers. -To round decimal numbers. -To write fractions as decimal numbers. -To divide whole numbers by 10. -To divide whole numbers by 100. 		

Year 4

Key representations:

The image displays various mathematical representations:

- Number Lines:** Several horizontal lines with tick marks and labels (0, 1, 2, 3, 4, 5, 2, 3, 0, 1, 2, 3, 4).
- Place Value Charts:** A large chart with columns for hundreds, tens, and ones, and rows for units, tenths, and hundredths. It includes a smaller chart with a 'Tens' and 'Ones' column.
- Base Ten Blocks:** A set of blocks representing 100, 10, and 1, along with a diagram showing a '1' block being split into ten '0.1' blocks.
- Number Grid:** A grid showing numbers from 10 to 90 in increments of 10, and a decimal grid from 0.1 to 0.9.
- Dot Grids:** Three vertical columns of colored dots (red, yellow, green) representing different quantities.
- Diagram:** A tree diagram with one top node and three bottom nodes.

(any orientation and number of parts)

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Year 5 Spring Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	
Unit title	Fractions, decimals & percentages							Geometry				
Key learning	<p>-To divide whole numbers to create fractions; to create mixed numbers and improper fractions when dividing whole numbers.</p> <p>-To write improper fractions and mixed numbers using a number line and pictorial methods.</p> <p>-To find equivalent fractions using pictorial methods.</p> <p>-To compare and order fractions using the pictorial method.</p> <p>-To compare and order improper fractions using the pictorial method.</p> <p>- To compare mixed numbers using pictorial representations; to find common denominators where one fraction is already the common denominator for all fractions in the question.</p> <p>-To make number pairs (number bonds) with fractions with different denominators.</p> <p>- To add unlike fractions by finding a common denominator using pictorial methods.</p> <p>-To add unlike fractions by finding a common denominator using pictorial methods.</p> <p>-To add together unlike fractions where the sum is greater than 1, creating mixed numbers or improper fractions.</p> <p>-To add unlike fractions which create improper fractions and mixed numbers that give rise to simplification.</p> <p>-To subtract fractions with different denominators; to subtract fractions from whole numbers.</p> <p>-To subtract fractions where the denominators are not the same; to use bar models as a key strategy for subtracting fractions.</p> <p>-To subtract fractions and mixed numbers from mixed numbers with different denominators.</p> <p>- To multiply fractions by whole numbers creating other fractions, mixed numbers or improper fractions.</p> <p>-To multiply fractions by whole numbers where the product is an improper fraction or mixed number.</p> <p>-To multiply mixed numbers by whole numbers, creating larger mixed numbers.</p> <p>-To multiply mixed numbers by whole numbers in multi-step word problems.</p> <p>Decimals</p>							<p>-To know the names and qualities of acute, right, obtuse and reflex angles.</p> <p>-To measure angles using a protractor.</p> <p>- To draw, measure and add angles using a protractor.</p> <p>- To measure angles using a protractor; to identify two angles which add up to 180 degrees on a straight line.</p> <p>- To investigate angles that, when combined, make 360 degrees.</p> <p>- To draw angles using a protractor.</p> <p>- To draw lines and angles with a high level of accuracy.</p> <p>- To describe the sides and angles of both rectangles and squares.</p> <p>- To investigate the angles of various quadrilaterals, including squares and rectangles.</p> <p>- To solve problems involving angles in rectangles.</p> <p>- To solve problems involving angles.</p> <p>- To use our understanding of angles to solve problems.</p> <p>- To investigate regular polygons.</p> <p>Geometry- position and direction</p> <p>- To name and plot points.</p>				

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Year 6 Spring Term	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Unit title	Word problems	Percentages	Ratio		Algebra		Area and perimeter	Position & direction. Geometry			Graphs and averages
Key learning	<ul style="list-style-type: none"> -To use bar models to solve word problems involving the four operations. -To use the bar model heuristic to solve word problems involving the four operations. -To use the bar model heuristic to solve complex word problems involving time. -To solve complex word problems using pictorial representation and the four operations. -To create and solve word problems that apply the bar model heuristic 	<ul style="list-style-type: none"> -To find the percentage of a whole number using division and multiplication; to use bar modelling as a pictorial approach to calculating percentage. -To find the percentage of a quantity; to use bar model diagrams to support the division and multiplication of numbers towards the percentage. -To find the percentage change in an amount over 	<ul style="list-style-type: none"> -To use ratios and fractions to compare objects; to find the relationship between ratios, percentages and fractions. -To determine the ratio of a quantity using concrete materials; to simplify ratios using concrete materials in addition to division. -To compare more than two quantities using the term 'ratio'; to use bar models to express ratios where there is more than one quantity. -To compare quantity using both fractions and ratios; to use 		<ul style="list-style-type: none"> -To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express a rule using a letter or symbol. -To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express the relationship between consecutive numbers in terms of a symbol or letter. -To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express the relationship between consecutive 		<ul style="list-style-type: none"> -To find the area and perimeter of rectangles; to calculate perimeter using the known area and vice versa. -To find and calculate the area of a parallelogram; to use concrete materials and prior understanding of area to construct a formula for the area. -To use prior knowledge of area to determine and solve the area of a triangle; to use and apply the formula for the area 	<ul style="list-style-type: none"> -To investigate opposite angles; to use prior knowledge of angles to solve problems involving angles. -To solve problems involving angles using the bar model heuristic; to solve problems involving angles without protractors. -To determine and show the sum of the angles inside a triangle. -To investigate and determine angles in quadrilaterals. -To use the knowledge of angles inside a triangle and a quadrilateral to solve problems 	<ul style="list-style-type: none"> -To calculate the average (mean) of sets of values. -To calculate the mean. -To calculate the mean. -To solve problems involving the mean; to use the mean and the number of values to calculate the total; to use given information to find unknown values. =To show information on graphs; to transfer information from a table to a pie chart. -To read and interpret pie charts. Lesson 7 – Reading Pie Charts To read and interpret pie charts; to use percentages in pie charts. -To read and interpret pie charts; to use knowledge of angles to interpret pie charts. -To read line graphs; to interpret the information in line graphs that show distance and time. 		

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	<p>and working backwards as the main strategies.</p> <ul style="list-style-type: none"> -To create and solve complex word problems using the four operations 	<p>time; to calculate the percentage change where the number gives rise to a decimal.</p> <ul style="list-style-type: none"> -To use percentage, bar models and fractions to compare amounts. 	<p>bar model diagrams to represent ratios.</p> <ul style="list-style-type: none"> -To compare quantities using bar models and common factors; to use multiplication and division to simplify ratios. -To compare numbers using ratios; to make decisions about simplifying ratios using division. -To solve word problems using a variety of heuristics including guess-and-check and bar models; to apply knowledge of ratios to word problems. -To solve word problems using the bar model heuristic; to employ division and multiplication as primary 	<p>numbers in terms of a symbol or letter.</p> <ul style="list-style-type: none"> -To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express unknown numbers in terms of a letter or symbol, including using a number before a letter for multiplication. -To use a table to identify a pattern; to write algebraic expressions using each of the four operations. -To use examples to identify rules; to write algebraic expressions using each of the four operations; to evaluate algebraic expressions including the use of inverse operations. -To recognise patterns; to write algebraic expressions with two steps; to evaluate algebraic 	<p>of a rectangle to solve problems involving triangles.</p> <ul style="list-style-type: none"> -To calculate the area of a triangle using a formula; to calculate the area of a triangle in multiple ways - To use multiple methods to solve the area of a triangle. -To find the area of a parallelogram using an understanding of triangles; to use concrete materials to find the area of a parallelogram. 	<p>involving angles in other shapes</p> <ul style="list-style-type: none"> -To represent negative numbers on both vertical and horizontal number lines. -To describe the positions of objects on a coordinate grid; to use x and y axes to determine the position of objects on a grid. -To describe the position of points using coordinates on a grid. -To draw polygons on a coordinate grid; to recognise polygons on a coordinate grid. -To describe the translation of shapes on a coordinate grid. 	<ul style="list-style-type: none"> -To read and interpret line graphs; to answer questions about the information in line graphs.
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			<p>strategies when solving word problems visually.</p> <p>-To apply the guess-and-check and advanced bar model heuristic to ratio word problems.</p>	<p>expressions with two steps.</p> <p>-To recognise patterns; to write and evaluate algebraic expressions with two steps; to write and use formulae.</p> <p>-To use formulae to solve problems; to replace a letter/variable with a number then solve the equation; to use inverse operations to solve equations.</p> <p>-To solve equations; to use equations to find unknown values.</p>		
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Year 6

Key representations:

The key representations include:

- A large number grid showing values from 100,000 to 900,000.
- A 10x10 grid.
- A bar model with segments labeled with letters: P, P, Y, Y, Y, B, B, B, B.
- A number line from 0 to 1,000,000.
- A pie chart with segments labeled 31%, 9%, 10%, 28%, and 17%.
- A 3D cube.
- A fraction bar model with segments labeled 1/10, 1/10, 1/10, 1/10, 1/10, 1/10, 1/10, 1/10, 1/10, 1/10.
- A line graph showing data points over time from 09:00 to 19:00.
- A place value chart with columns labeled H, T, O, Tth, Hth, Thth.

(any orientation and number of parts)