

Years 3 to 6 mixed-age objective planner

Key

- *Italic text signifies objectives which do not appear in the single-age version of this unit but have been added to create a coherent mixed-age unit*
- Smaller font indicates objectives which do appear in the single-age version of this unit, but which are addressed elsewhere within the mixed-age units
- **Bold font indicates ‘End-of-year’ objectives.**

Block D: Calculating, measuring and understanding shape
Unit 1 – 10 days

Year 3	Year 4	Year 5	Year 6
<p>Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations</p>	<p>Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate</p>	<p>Solve one-step and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate calculation strategies, including calculator use</p>	<p>Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use</p>
<p>Add or subtract mentally combinations of one-digit and two-digit numbers</p>	<p>Add or subtract mentally pairs of two-digit whole numbers (e.g. 47 + 58, 91 – 35)</p>	<p><i>Use knowledge of rounding, place value, number facts and inverse operations to estimate and check calculations</i></p>	<p><i>Use efficient written methods to add and subtract whole numbers and decimals with up to two places</i></p>
<p><small>Find unit fractions of numbers and quantities (e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{6}$ of 12</small></p>			<p>Use approximations, inverse operations and tests of divisibility to estimate and check results</p>
			<p>Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit</p>

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<p>litres)</p>	<p><i>Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p</i></p>	<p>Use a calculator to solve problems, including those involving decimals or fractions (e.g. to find $\frac{3}{4}$ of 150 g); interpret the display correctly in the context of measurement</p> <p>Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000</p>	<p>integer, and to multiply two-digit and three-digit integers by a two-digit integer.</p> <p>Calculate mentally with integers and decimals: $U.t \pm U.t$, $TU \times U$, $TU \div U$, $U.t \times U$, $U.t \div U$</p> <p>Use a calculator to solve problems involving multi-step calculations</p>
<p>Read and record the vocabulary of position, direction and movement, using the four compass directions to describe movement about a grid</p>	<p>Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares</p>	<p>Read and plot coordinates in the first quadrant; recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw shapes with perpendicular or parallel sides</p>	<p>Select and use standard metric units of measure and convert between units using decimals to two places (e.g. change 2.75 litres to 2750ml, or vice versa)</p> <p>Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales, for</p>
<p>Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure and record measurements</p> <p>Read, to the nearest division and half-division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy</p>	<p>Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements (e.g. 1.3m or 0.6kg)</p> <p>Interpret intervals and divisions on partially numbered scales and record readings accurately,</p>	<p>Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy (e.g. the nearest centimetre); convert larger to smaller units using decimals to one place (e.g. change 2.6kg to 2600g)</p> <p>Interpret a reading that lies between two unnumbered divisions on a scale</p> <p>Draw and measure lines to the</p>	

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Read the time on a 12-hour digital clock and to the nearest 5 minutes on an analogue clock; calculate time intervals and find start or end times for a given time interval	where appropriate to the nearest tenth of a unit <i>Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares</i> Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables	nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate the rectangle's area Read timetables and time using 24-hour clock notation; use a calendar to calculate time intervals	example when using different instruments Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares Solve problems by measuring, estimating and calculating; measure and calculate using imperial units still in everyday use; know their approximate metric values (Year 6 into 7)
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Block D: Calculating, measuring and understanding shape

Unit 2 – 10 days

Year 3	Year 4	Year 5	Year 6
<p><i>Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations</i></p>	<p>Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate</p>	<p>Solve one-step and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate calculation strategies, including calculator use</p>	<p>Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use</p>
	<p>Derive and recall multiplication facts up to 10×10, the corresponding division facts and multiples of numbers to 10 up to the tenth multiple</p>	<p>Use knowledge of rounding, place value, number facts and inverse operations to estimate and check calculations</p>	<p>Use approximations, inverse operations and tests of divisibility to estimate and check results</p>
	<p>Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line</p>		
<p>Add or subtract mentally combinations of one-digit and two-digit numbers</p>	<p>Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p</p>	<p>Use efficient written methods to add and subtract whole numbers and decimals with up to two places</p>	<p>Calculate mentally with integers and decimals: $U.t \pm U.t$, $TU \times U$, $TU \div U$, $U.t \times U$, $U.t \div U$</p>
<p>Develop and use written methods to record, support or explain addition and subtraction of two-</p>	<p>Develop and use written methods to record, support</p>	<p>Refine and use efficient written methods to multiply and divide</p>	<p>Use efficient written methods to add and subtract</p>

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<p>digit and three-digit numbers</p> <p>Use practical and informal written methods to multiply and divide two-digit numbers (e.g. 13×3, $50 \div 4$); round remainders up or down, depending on the context</p> <p>Find unit fractions of numbers and quantities (e.g. $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{6}$ of 12 litres)</p>	<p>and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders (e.g. $47 \div 58$, $91 \div 35$)</p>	<p>HTU \times U, TU \times TU, U.t \times U and HTU \div U</p> <p>Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000</p> <p>Use a calculator to solve problems, including those involving decimals or fractions (e.g. to find $\frac{3}{4}$ of 150g); interpret the display correctly in the context of measurement</p>	<p>integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer</p> <p>Use a calculator to solve problems involving multi-step calculations</p>
<p>Know the relationships between kilometres and metres, metres and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure and record measurements</p>	<p>Choose and use standard metric units and their abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements (e.g. 1.3m or 0.6kg)</p>	<p>Read, choose, use and record standard metric units to estimate and measure length, weight and capacity to a suitable degree of accuracy (e.g. the nearest centimetre); convert larger to smaller units using decimals to one place (e.g. change 2.6kg to 2600g)</p> <p>Interpret a reading that lies between two unnumbered divisions on a scale</p>	<p>Select and use standard metric units of measure and convert between units using decimals to two places (e.g. change 2.75 litres to 2750ml, or vice versa)</p>
	<p>Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit</p> <p>Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares</p>	<p>Draw and measure lines to the nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate the rectangle's area</p>	

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Use a set-square to draw right angles and to identify right angles in 2-D shapes; compare angles with a right angle; recognise that a straight line is equivalent to two right angles

Read and record the vocabulary of position, direction and movement, using the four compass directions to describe movement about a grid

Draw and complete shapes with reflective symmetry; draw the reflection of a shape in a mirror line along one side

Know that angles are measured in degrees and that one whole turn is 360° ; compare and order angles less than 180°

Recognise horizontal and vertical lines; use the eight compass points to describe direction; describe and identify the position of a square on a grid of squares

Estimate, draw and measure acute and obtuse angles using an angle measurer or protractor to a suitable degree of accuracy; calculate angles in a straight line

Read and plot coordinates in the first quadrant; recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw shapes with perpendicular or parallel sides

Estimate angles, and use a protractor to measure and draw them, on their own and in shapes; calculate angles in a triangle or around a point

Use coordinates in the first quadrant to draw, locate and complete shapes that meet given properties

Visualise and draw on grids of different types where a shape will be after reflection, after translations, or after rotation through 90° or 180° about its centre or one of its vertices

Block D: Calculating, measuring and understanding shape

Unit 3 – 10 days

Year 3	Year 4	Year 5	Year 6
Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations	Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate	Solve one-step and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate calculation strategies, including calculator use	Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use
Use knowledge of number operations and corresponding inverses, including doubling and halving, to estimate and check calculations	Use decimal notation for tenths and hundredths and partition decimals; relate the notation to money and measurement; position one-place and two-place decimals on a number line	Use knowledge of rounding, place value, number facts and inverse operations to estimate and check calculations	Use approximations, inverse operations and tests of divisibility to estimate and check results
Add or subtract mentally combinations of one-digit and two-digit numbers	Add or subtract mentally pairs of two-digit whole numbers (e.g. $47 + 58$, $91 - 35$)	Use efficient written methods to add and subtract whole numbers and decimals with up to two places	Calculate mentally with integers and decimals: $U.t \pm U.t$, $TU \times U$, $TU \div U$, $U.t \times U$, $U.t \div U$

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<p>Develop and use written methods to record, support or explain addition and subtraction of two-digit and three-digit numbers</p>	<p>Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p</p>	<p>Refine and use efficient written methods to multiply and divide HTU \times U, TU \times TU, U.t \times U and HTU \div U</p>	<p>Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer</p>
<p>Use practical and informal written methods to multiply and divide two-digit numbers (e.g. 13×3, $50 \div 4$); round remainders up or down, depending on the context</p>	<p><i>Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders (e.g. 15×9, $98 \div 6$)</i></p>	<p>Use a calculator to solve problems, including those involving decimals or fractions (e.g. to find $\frac{3}{4}$ of 150g); <i>interpret the display correctly in the context of measurement</i></p>	<p>Use a calculator to solve problems involving multi-step calculations</p>
<p>Understand that division is the inverse of multiplication and vice versa; use this to derive and record related multiplication and division number sentences</p>	<p>Know that angles are measured in degrees and that one whole turn is 360°; compare and order angles less than 180°</p>	<p>Read and plot coordinates in the first quadrant; recognise parallel and perpendicular lines in grids and shapes; use a set-square and ruler to draw shapes with perpendicular or parallel sides</p>	<p><i>Estimate angles, and use a protractor to measure and draw them, on their own and in shapes, calculate angles in a triangle or around a point</i></p>
<p>Use a set-square to draw right angles and to identify right angles in 2-D shapes; compare angles with a right angle; recognise that a straight line is equivalent to two right angles</p>	<p>Complete patterns with up to two lines of symmetry; draw the position of a shape after a reflection or translation</p>	<p>Estimate, draw and measure acute and obtuse angles using an angle measurer or protractor to a suitable degree of accuracy; calculate angles in a straight line</p>	<p>Estimate, draw and measure acute and obtuse angles using an angle measurer or protractor to a suitable degree of accuracy; calculate angles in a straight line</p>
<p><i>Know the relationships between kilometres and metres, metres</i></p>	<p>Choose and use standard metric units and their</p>	<p>Read, choose, use and record standard metric units to estimate</p>	<p>Select and use standard metric units of measure and</p>

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and centimetres, kilograms and grams, litres and millilitres; choose and use appropriate units to estimate, measure and record measurements

Read the time on a 12-hour digital clock and to the nearest 5 minutes on an analogue clock; calculate time intervals and find start or end times for a given time interval

Read, to the nearest division and half-division, scales that are numbered or partially numbered; use the information to measure and draw to a suitable degree of accuracy

abbreviations when estimating, measuring and recording length, weight and capacity; know the meaning of 'kilo', 'centi' and 'milli' and, where appropriate, use decimal notation to record measurements (e.g. 1.3m or 0.6kg)

Read time to the nearest minute; use am, pm and 12-hour clock notation; choose units of time to measure time intervals; calculate time intervals from clocks and timetables

Interpret intervals and divisions on partially numbered scales and record readings accurately, where appropriate to the nearest tenth of a unit

Draw rectangles and measure and calculate their perimeters; find the area of rectilinear shapes drawn on a square grid by counting squares

and measure length, weight and capacity to a suitable degree of accuracy (e.g. the nearest centimetre); convert larger to smaller units using decimals to one place (e.g. change 2.6kg to 2600g)

Read timetables and time using 24-hour clock notation; use a calendar to calculate time intervals

Interpret a reading that lies between two unnumbered divisions on a scale.

Draw and measure lines to the nearest millimetre; measure and calculate the perimeter of regular and irregular polygons; use the formula for the area of a rectangle to calculate the rectangle's area

convert between units using decimals to two places (e.g. change 2.75 litres to 2750ml, or vice versa)

Solve problems by measuring, estimating and calculating; measure and calculate using imperial units still in everyday use; know their approximate metric values (Year 6 into 7)

Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales, for example when using different instruments

Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares