Hampshire County Council
Improvement and Advisory Service

HIAS MOODLE+ RESOURCE

Year 5 Unit Plan 5.4
Fractions and Geometry

Autumn term

HIAS Maths Team
September 2026
Final version

Overview

This document contains…

Year 5 Unit Plans linked to the Hampshire Medium Term Overview

Points to consider when using this resource:

These unit plans provide an example of how medium-term planning could be developed into units of work. These unit plans will need to be adapted to meet the needs of pupils. The unit plan provides an outline of a possible learning journey with suggestions of types of tasks that could be used. They also identify required prior learning, some common misconceptions and an indication of key skills pupils need to secure competency. It is assumed that teachers will make use of appropriate mathematical representations (manipulatives, visuals and symbolic) to support conceptual understanding for pupils alongside procedural fluency.

National Curriculum Links:

Fractions

Pupils should be taught to:

- Compare and order fractions whose denominators are all multiples of the same number
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5
- Add and subtract fractions with the same denominator, and denominators that are multiples of the same number
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- Read and write decimal numbers as fractions [for example, 0.71 = 71/100]
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place
- Read, write, order and compare numbers with up to 3 decimal places
- Solve problems involving numbers up to 3 decimal places

- Recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per 100’, and write percentages as a fraction with denominator 100, and as a decimal fraction
- Solve problems which require knowing percentage and decimal equivalents of 1/2, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25

Geometry (properties of shape and position and direction)

Pupils should be taught to:

- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- Draw given angles, and measure them in degrees (°)
- Identify:
    - angles at a point and 1 whole turn (total 360°)
    - angles at a point on a straight line and half a turn (total 180°)
    - other multiples of 90°
    - use the properties of rectangles to deduce related facts and find missing lengths and angles
    - distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed

<table>
<tr><td colspan="2">This unit develops pupils' understanding of number by connecting fractions, decimals and percentages, helping them see these as different ways of representing the same value. It builds precision in reading, writing, comparing and calculating with decimal numbers to three decimal places, which is essential for later maths. Alongside this, pupils deepen their understanding of shape and space by classifying shapes, recognising properties (such as angles, symmetry and parallel lines), and working with coordinates and movement.</td><td>Notional Time:

20 sessions</td></tr>
<tr><td>Check and Refresh - skills and knowledge that pupils need to know</td><td>Verbal coding- precise mathematical language to model during worked examples</td><td colspan="2">Mastering Key Facts in Key Stage 2 – developing fluency and automaticity</td></tr>
<tr><td>Understand of tenths and hundredths as equal parts of a whole.
Know that 10 tenths = 1 whole and 100 hundredths = 1 whole.
Read and compare decimals to two decimal places.
Confidently divide one- and two-digit numbers by 10 and 100
Understand this as scaling down using place value, not just “moving digits”.
Identify horizontal, vertical, parallel, perpendicular lines.
Recognise lines of symmetry and read simple coordinates.</td><td>When a whole is divided into 10 (or 100 or 1000) equal parts, each part is called _____.
The decimal ___ is equivalent to the fraction ___ because ____.
I know these numbers are in order because I compare the digits in the ___ place first.
___% is equal to ___ out of 100, which can also be written as ___ and as a decimal ___.
I can describe this shape/position by noticing that ____(e.g. properties, angles, symmetry, coordinates).</td><td colspan="2">Recap of Year 4
Recall and use multiplication and division facts for multiplication tables up to 12 x 12.
Year 5
Multiply and divide numbers mentally drawing upon known facts.</td></tr>
<tr><td>Mathematical Concepts- important pieces of information learners should take away from the unit</td><td>Watch out for</td><td colspan="2">DfE Ready -to- progress criteria</td></tr>
<tr><td>Understanding of the number system and equivalence
Pupils learn that tenths, hundredths and thousandths are created by dividing into equal parts, and that fractions, decimals and percentages are all linked representations of the same values.

Confidence with decimal numbers
Pupils develop fluency in reading, writing, ordering and solving problems with numbers up to three decimal places, using place value to reason and explain their thinking.

Secure knowledge of shape and position
Pupils deepen their understanding of geometry by classifying shapes, recognising their properties, and describing position and movement using coordinates and transformations.</td><td>Misunderstanding place value in decimals
Pupils may think: 0.3 is larger than 0.25 because 3 > 25

Confusion between fractions, decimals, and percentages. Treating these as unrelated rather than equivalent representations of the same amount.

Incorrect understanding of division by 10, 100, 1000 and not relating this to secure place value understanding.

Pupils may reverse the order of co-ordinates (going up first instead of across).</td><td colspan="2">5F- 2 5F-3 4G-1

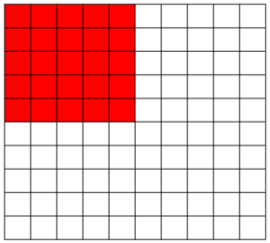
Formative assessment questions - key questions to support pupil reasoning and teacher assessment
What is the same and what is different?
What if I change…?
Can you give me an example of… and another…and another?
Which is harder and which is easier…?
If I know this, then what else do I know?</td></tr>
</table>

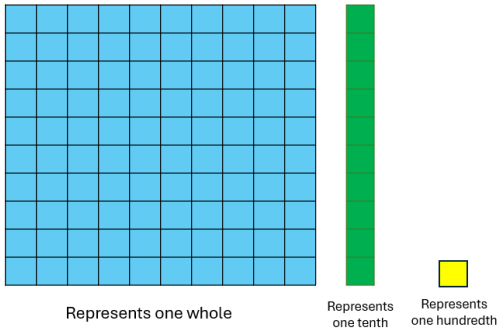
Visual coding: key representations

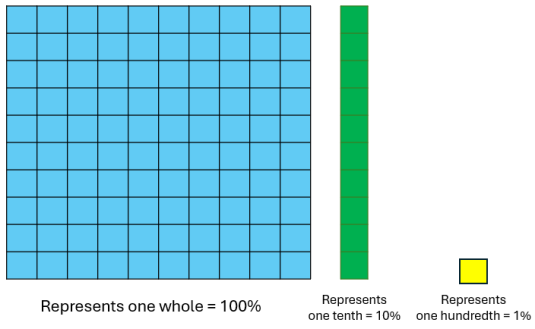
Ones				-ths	
1000s	100s	10s	1s	$\frac{1}{10}$s	$\frac{1}{100}$s
			7		
			0	7	

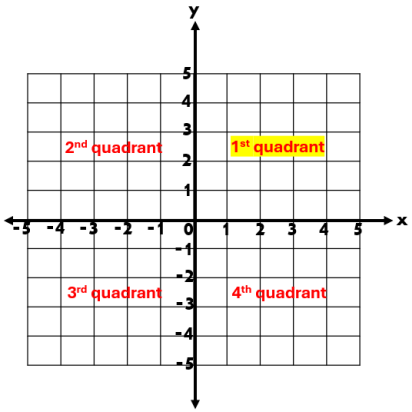
÷ 10

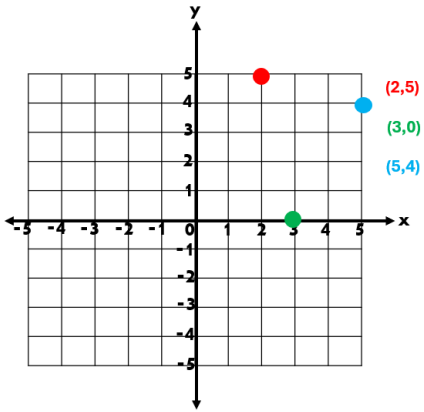
Ones				-ths		
1000s	100s	10s	1s	$\frac{1}{10}$s	$\frac{1}{100}$s	$\frac{1}{1000}$s
			0	1		
			0	0	1	
			0	0	0	1











Learning Journey – Fractions

Autumn unit 5.4 (2 weeks)	Spring unit 5.6 (2 weeks)	Spring unit 5.7 (1 week)	Summer unit 5.16 (2 weeks)
I can count up and down in tenths. I can count up and down in hundredths.			
I can recognise that tenths arise from dividing an objects into 10 equal parts and in dividing one-digit numbers or quantities by 10. I can recognise that hundredths arise when dividing an object by 100 and when dividing tenths by ten. I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. I can read, write, order and compare numbers with up to three decimal places. I can solve problems involving numbers up to three decimal places. I can recognise and write decimal equivalents of any number of tenths and hundredths. I can read and write decimal numbers as fractions. I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. I can recognise the per cent symbol and understand that percent relates to number of parts per hundred and write percentages as a fraction with denominator 100. I can recognise the per cent symbol and understand that percent relates to number of parts per hundred and write percentages as a decimal.	I can round decimals with two decimal places to the nearest whole number and to one decimal place. I can find decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$. I can find decimal equivalents of fractions with a denominator of a multiple of 10 or 25. I can find percentage equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$ I can find percentage equivalents of fractions with a denominator of a multiple of 10 or 25. I can compare and order fractions whose denominators are all multiples of the same number. I can add fractions with the same denominator. I can subtract fractions with the same denominator. I can add fractions with denominators that are multiples of the same number. I can subtract fractions with denominators that are multiples of the same number.	I can recognise and show, using diagrams, mixed numbers. I can recognise and show, using diagrams, improper fractions. I can convert mixed numbers to improper fractions. I can convert improper fractions to mixed numbers. **Spring unit 5.9 (1 week)** I can solve problems involving fractions to calculate quantities. I can multiply proper fractions by whole numbers. I can multiply mixed numbers by whole numbers.	I can compare and order fractions who denominators are all multiples of the same number. I can identify, name and write equivalent fractions of a given fraction. I can recognise mixed numbers and improper fractions and convert from one form to the other. I can add and subtract fractions with the same denominator and denominators that are multiples of the same number. I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. I can solve problems involving numbers up to three decimal places. I can recognise the per cent symbol and understand that percent relates to number of parts per hundred and write percentages as a fraction with denominator 100, and as a decimal. I can solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$ and $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25.

Learning Journey – Geometry			
Autumn unit 5.4 (2 weeks)	**Spring unit 5.7 (1 week)**	**Summer unit 5.13 (1 week)**	**Summer unit 5.16 (1 week)**
I can compare and classify geometric shapes. I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations. I can identify horizontal and vertical lines, and pairs of perpendicular and parallel lines. I can identify lines of symmetry in 2-D shapes presented in different orientations. I can estimate and compare acute, obtuse and reflex angles. I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	I can draw given angles in degrees. I can measure angles in degrees. I can identify angles at a point and one whole turn (360°) I can identify angles at a point on a straight line and half a turn (180°) I can identify other multiples of 90°.	I can complete a simple symmetric figure with respect to a specific line of symmetry. I can use the properties of rectangles to deduce related facts and find missing lengths. I can use the properties of rectangles to deduce related facts and find missing angles.	I can draw given angles and measure them in degrees. I can identify angles at a point and one whole turn (360°) I can identify angles at a point on a straight line and half a turn (180°) I can identify other multiples of 90°. I can use the properties of rectangles to deduce related facts and find missing lengths and angles. I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
I can describe positions on a 2-D grid as coordinates in the first quadrant. I can describe movements between positions as translations of a given unit to the left/right and up/down. I can plot specified points and draw sides to complete a given polygon.		I can identify, describe and represent the position of a shape following a reflection.	I can identify, describe and represent the position of a shape following a translation.

<table>
<tr><th colspan="2">Proposed lesson sequence to support development of mathematical concepts</th></tr>
<tr><th colspan="2">Developing fluency and automaticity – ongoing daily practice</th></tr>
<tr><td>Mastering Key Facts in Key Stage 2</td><td>Autumn Ongoing Mental Fluency Practice
Recap Y4 - Recall of all multiples up to 12 in any order, including missing numbers and related division facts up to 12x fluently.
Y5 - Multiply and divide numbers mentally drawing upon known facts</td></tr>
<tr><td>Counting Fluency</td><td>I can count up and down in tenths.
I can count up and down in hundredths.</td></tr>
<tr><td>I can…</td><td>Mathematical Concepts, Key Skills and Suggested Tasks</td></tr>
<tr><th colspan="2">10 sessions – Fractions, Decimals and Percentages</th></tr>
<tr><td>I can recognise that tenths arise from dividing an objects into 10 equal parts and in dividing one-digit numbers or quantities by 10.</td><td>This step builds on prior learning in Y4 within Unit 4.4 and deepens pupils' understanding that tenths come from sharing a whole into 10 equal parts. Pupils use their knowledge that each part is one tenth (0.1) and can recognise this using objects, drawings or models. Pupils also understand that dividing a one-digit number or quantity by 10 creates tenths, and can explain what the decimal represents, not just calculate it.

A key model / image to be used here to secure pupils' understanding is the place value chart. A place value chart helps pupils see powers of 10 because each column represents a value that is 10 times bigger or 10 times smaller than the one next to it.

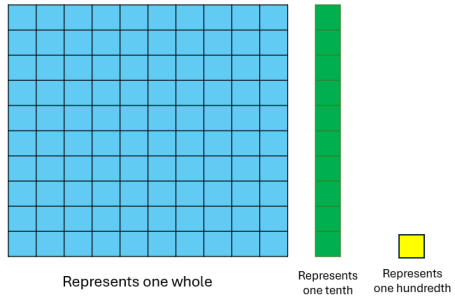
For example, moving from ones to tenths divides by 10 ($10^0 \rightarrow 10^{-1}$).

<table>
<tr><th colspan="4">Ones</th><th colspan="2">-ths</th></tr>
<tr><th>1000s</th><th>100s</th><th>10s</th><th>1s</th><th>$\frac{1}{10}$s</th><th>$\frac{1}{100}$s</th></tr>
<tr><td></td><td></td><td></td><td>7 •</td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td>0 •</td><td>7</td><td></td></tr>
</table>
÷ 10

Design tasks that provide pupils to divide all one-digit numbers by 10 and to explain their reasoning using knowledge of place value.</td></tr>
</table>

<table>
<tr>
<td>I recognise that hundredths arise when dividing an object by 100 and when dividing tenths by ten.</td>
<td>In this step, pupils revisit prior Y4 learning that when a whole is divided into 100 equal parts, each part is a hundredth, which can be written as 1/100 or 0.01 and shown on a place value chart. This helps them understand that as we split a whole into more equal parts, the pieces get smaller and more precise. They then build on this by seeing that hundredths do not only come from a whole, but can also be created by dividing tenths into 10 equal parts. This deepens their understanding of place value, showing that moving from tenths to hundredths is another step of dividing by 10 within the number system.

Check for understanding questions:
• What is one hundredth?
• Can you explain what happens when a whole is divided into 100 equal parts?
• Which is correct and why? 1 hundredth = 0.1 or 1 hundredth = 0.01
• Explain this statement: “If I divide one tenth into 10 equal parts, I get hundredths.” What does this mean?
• If I have 0.1 and divide it by 10, what will I get? How do you know?
• How is finding one hundredth from a whole the same as finding one hundredth from a tenth? What is the key idea that links both methods?

 
</td>
</tr>
<tr>
<td>I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.</td>
<td>In this step pupils learn that thousandths are even smaller parts, created when a whole is divided into 1,000 equal parts, and can be written as fractions (e.g. 1/1000) or decimals (e.g. 0.001). They connect this to their earlier understanding by seeing that thousandths come from dividing hundredths by 10, just as hundredths come from tenths. Using a place value chart, pupils understand that each move to the right (tenths → hundredths → thousandths) makes the value 10 times smaller. This helps them see clear links between fractions, decimals, and place value, building a connected understanding of the number system.

Suggested tasks:
• Provide pupils with a 10 x 10 grid (100 square) and a 10 × 10 × 10 model or layered grid idea
• Ask pupils to:
  ○ Shade 1 square = 1 hundredth
  ○ Then divide that square into 10 smaller parts to show thousandths
• “How many thousandths are in one hundredth?”
• “What does 0.001 look like?”
True or False?
• 0.1 = 100 thousandths
• 0.01 = 10 thousandths
• 0.234 has 2 hundredths
• 5 thousandths = 0.5
• Pupils must explain their answers and prove their thinking use a place value chart.

<table>
<tr><th colspan="4">Ones</th><th colspan="3">-ths</th></tr>
<tr><th>1000s</th><th>100s</th><th>10s</th><th>1s</th><th>$\frac{1}{10}$s</th><th>$\frac{1}{100}$s</th><th>$\frac{1}{1000}$s</th></tr>
<tr><td></td><td></td><td></td><td>0 •</td><td>1</td><td></td><td></td></tr>
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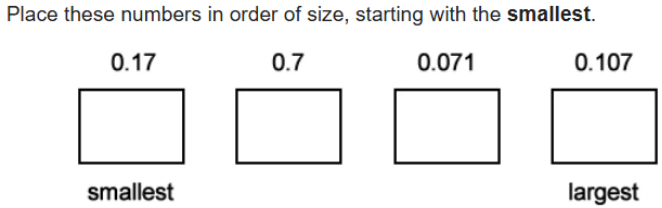
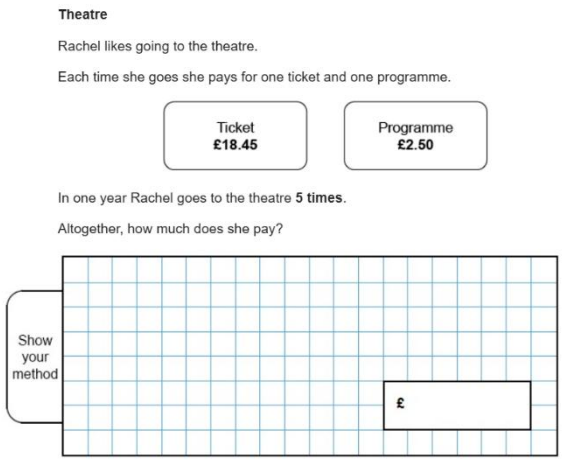
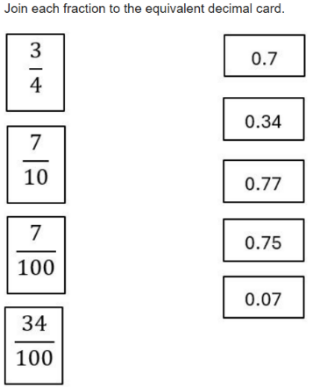
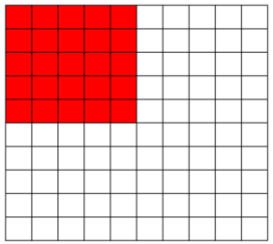
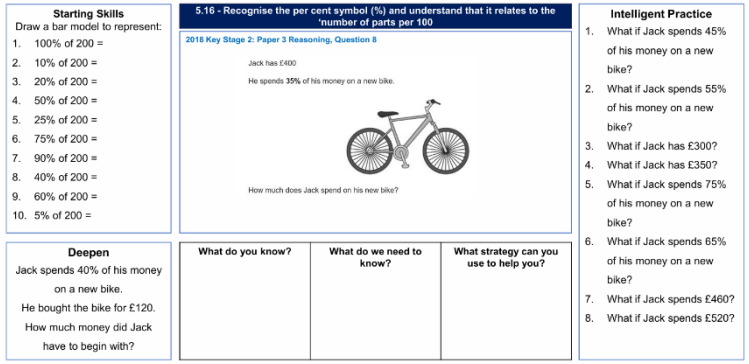
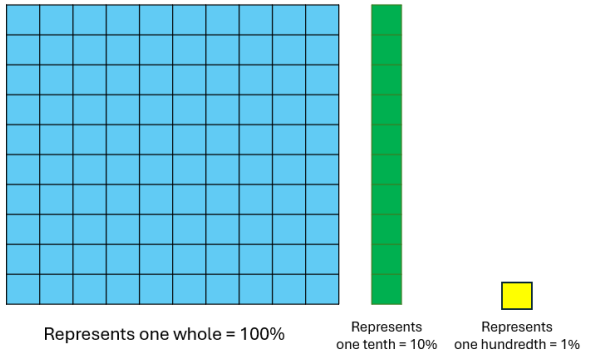
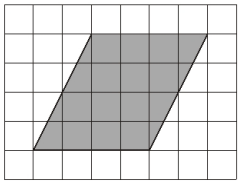
<tr><td></td><td></td><td></td><td>0 •</td><td>0</td><td>0</td><td>1</td></tr>
</table></td>
</tr>
</table>

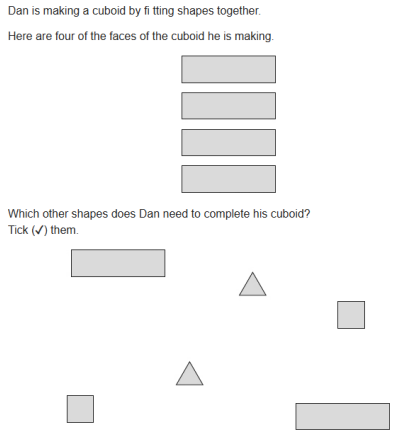
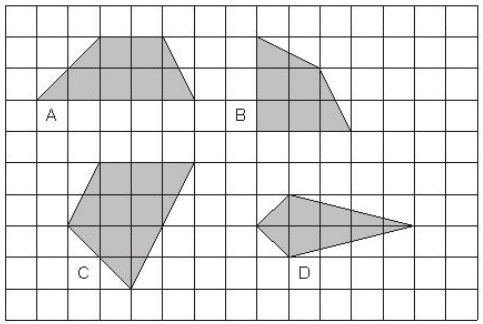
I can read, write, order and compare numbers with up to three decimal places.	In this step pupils learn to read and write numbers with up to three decimal places, understanding the value of each digit in tenths, hundredths, and thousandths. They use this place value knowledge to order numbers from smallest to largest by comparing digits from left to right. When comparing, pupils identify the first place where the digits differ to decide which number is greater. This builds a secure understanding of decimals so pupils can interpret and use them confidently in a range of contexts. Design tasks that encourage pupils to read, write, order and compare numbers with up to three decimal places, using a number line and place value chart. Provide opportunities for pupils to explain their reasoning using mathematical vocabulary. 
I can solve problems involving numbers up to three decimal places.	In this step pupils learn to apply their understanding of place value to numbers with up to three decimal places (tenths, hundredths, and thousandths) in real problems. They use skills such as adding, subtracting, comparing, and interpreting decimals in contexts like money, measures, and data. The focus is on choosing appropriate strategies and making sense of what the numbers represent, not just carrying out calculations. This helps pupils connect their knowledge of decimals to practical situations and explain their thinking clearly. Provide a range of problems, both routine and non-routine, in different contexts that give pupils the opportunity to apply their knowledge of numbers with up to three decimal places. 

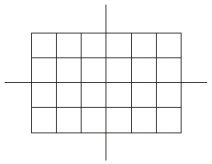
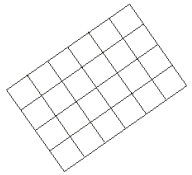
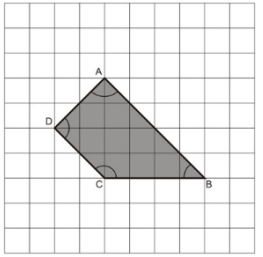
I can recognise and write decimal equivalents of any number of tenths and hundredths.	Pupils learn that tenths and hundredths can be written as both fractions and decimals that represent the same value. They use place value to understand that digits after the decimal point show how many tenths or hundredths there are. This helps them confidently convert between forms and connect fractions, decimals, and later percentages Design tasks that require pupils to find decimal equivalents of any number of tenths and hundredths and vice versa. Encourage pupils to prove their thinking using a place value chart to secure their reasoning. 
I can read and write decimal numbers as fractions.	In this step pupils learn that decimals and fractions can represent the same value and can be converted between the two forms. They use place value to understand how tenths, hundredths, and thousandths relate directly to fractions. This builds fluency and strengthens their understanding of the links between decimals and fractions, preparing them for percentages and more complex work. **Suggested tasks:** • Matching activity: provide cards with: • Decimals: 0.3, 0.45, 0.07 • Fractions: 3/10, 45/100, 7/100 • Ask pupils to match each decimal to its equivalent fraction and explain how they know.
I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.	In this step pupils understand that different fractions can represent the same value, and they can recognise, name, and write these when shown visually. Equivalent fractions are fractions that are equal in value, even if they look different (e.g. 1/2 = 2/4 = 50/100). Encourage pupils to use visual models (e.g. bar models, fraction strips, grids) to see how the same whole can be split in different ways. Through exploring this, pupils learn to connect fractions with tenths and hundredths, linking to decimals and percentages in the next step. For example: • A shaded shape shows 1/2 • The same shape divided differently might show 2/4 or 5/10 or 50/100 • Pupils should recognise that these are all equivalent because they show the same proportion of the whole • Pupils are learning that fractions can be written in different ways but still show the same value, and they use visual models to prove it, especially with tenths and hundredths

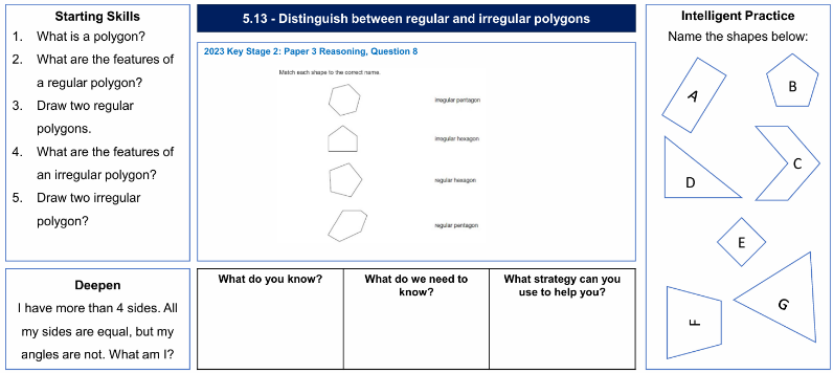
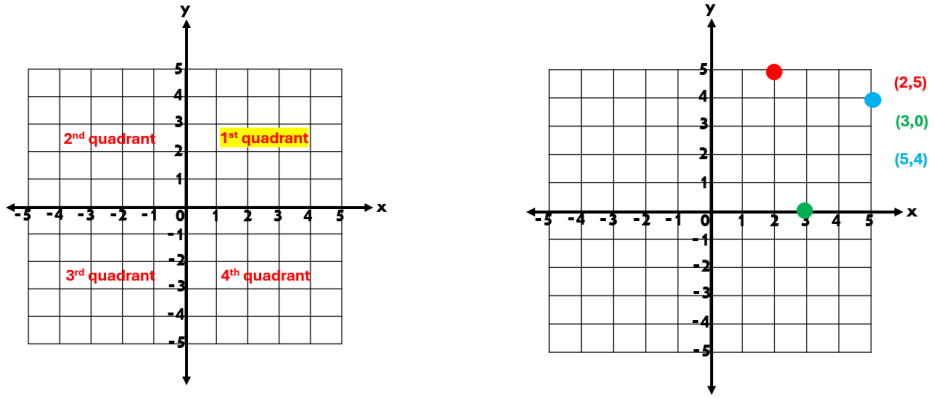
	Checking for understanding questions:
	
	• A shape shows 1/2 shaded. Another shows 5/10 shaded. Are these fractions the same or different? How do you know?
	• Complete and explain: 3/10 = ___ / 100. How did you work this out?
	• True or false? Justify your answer.
	  ○ 4/5 = 8/10
	  ○ 4/5 = 40/100
	• A grid shows 25 squares shaded out of 100.
	• What fraction is this?
	• Can you write this as a simpler equivalent fraction?
	
	 

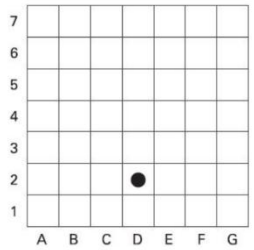
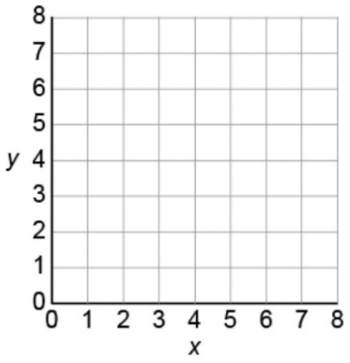
I can recognise the per cent symbol and understand that percent relates to number of parts per hundred and write percentages as a fraction with denominator 100.	In this step pupils learn to recognise the % symbol and understand that it means “per hundred,” linking it directly to their knowledge of hundredths. They see that a percentage describes how many parts out of 100 there are (e.g. 30% means 30 out of 100). Pupils then learn to write percentages as fractions with a denominator of 100, such as 25% = 25/100. This helps them connect percentages, fractions, and decimals, building a stronger understanding of how numbers can represent the same value in different forms. A key model / image here is the 100 square or 100 diennes used to represent one whole = 100%, ‘tens stick’ represents one tenth = 10% and one cube represents one hundredth = 1%. This will secure pupils’ conceptual understanding.  **Starting Skills** Draw a bar model to represent: 1. 100% of 200 = 2. 10% of 200 = 3. 20% of 200 = 4. 50% of 200 = 5. 25% of 200 = 6. 75% of 200 = 7. 90% of 200 = 8. 40% of 200 = 9. 60% of 200 = 10. 5% of 200 = **5.16 - Recognise the per cent symbol (%) and understand that it relates to the 'number of parts per 100** 2018 Key Stage 2: Paper 3 Reasoning, Question 8 Jack has £400 He spends 35% of his money on a new bike. How much does Jack spend on his new bike? **Intelligent Practice** 1. What if Jack spends 45% of his money on a new bike? 2. What if Jack spends 55% of his money on a new bike? 3. What if Jack has £300? 4. What if Jack has £350? 5. What if Jack spends 75% of his money on a new bike? 6. What if Jack spends 65% of his money on a new bike? 7. What if Jack spends £460? 8. What if Jack spends £520? **Deepen** Jack spends 40% of his money on a new bike. He bought the bike for £120. How much money did Jack have to begin with? **What do you know?** | **What do we need to know?** | **What strategy can you use to help you?**  Represents one whole = 100% Represents one tenth = 10% Represents one hundredth = 1% Reasoning and Intelligent Practice 5.16

I can recognise the per cent symbol and understand that percent relates to number of parts per hundred and write percentages as a decimal.	This step builds on the previous step by helping pupils express the same value in a percentage form as a decimal, using their place value understanding (e.g. 25% = 0.25). The key progression is moving from: • understanding percentages conceptually as fractions to: • recognising them as another representation within the decimal system. Design tasks that require pupils to find equivalents of percentages (out of 100) as a decimal and vice versa, so that they can apply their understanding that percent relates to parts per hundred and use their place value knowledge. Complete the table that shows equivalent percentages and decimals. One has been done for you. **percentage** / **decimal** 43% / 0.43 [ ] / 0.76 50% / [ ] [ ] / 0.03 Contains material developed by Standards and Testing Agency national curriculum assessments and licensed under Open Government Licence v3.0' http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/
10 lessons – Geometry	
I can compare and classify geometric shapes.	This step revisits prior learning from Unit 4.4 where pupils learn to look at shapes closely and describe their properties, such as number of sides, angles, and types of faces. They then use this understanding to compare shapes (what is the same and different) and group or classify them based on these properties. This helps them develop mathematical reasoning and use precise vocabulary like *square, rectangle, triangle,* and *quadrilateral*. Design tasks that provide pupils with opportunities to compare and classify a range of geometric shapes. Include examples of reasoning tasks, which develop pupils' mathematical language in explaining their thinking. Look at the shaded shape on the square grid.  For each statement below, tick (✓) to show if it is True or False. True / False The shaded shape is a quadrilateral. [ ] [ ] The shaded shape has four equal sides. [ ] [ ] The shaded shape has four equal angles. [ ] [ ] The shaded shape has two pairs of parallel sides. [ ] [ ] Contains material developed by Standards and Testing Agency 2015 national curriculum assessments and licensed under Open Government Licence v3.0' http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations.	In this step pupils should be able to recognise 3D shapes (like cubes and cuboids) even when they are shown in a flat picture, such as a drawing or diagram. It focuses on helping them understand how a 3D object looks from different viewpoints and how its features (faces, edges, vertices) appear in 2D. Design tasks that provide pupils with opportunities to identify a range of 3-D shapes, including cubes and other cuboids, from 2-D representations. This will help to develop pupils' ability to visualise 3-D shapes and connect diagrams with real objects, rather than just naming shapes.  Contains material developed by Standards and Testing Agency 2022 national curriculum assessments and licensed under Open Government Licence v3.0' http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/
I can identify horizontal and vertical lines, and pairs of perpendicular and parallel lines.	This step revisits prior learning from Unit 4.4 where pupils learn to recognise different types of lines: horizontal (side to side) and vertical (up and down). They also identify relationships between lines, understanding that parallel lines never meet and perpendicular lines meet at a right angle. This helps them describe shapes and patterns more precisely using correct mathematical vocabulary. Here are some shapes on a grid.  Write the letter of the shape that has one pair of **perpendicular** sides. Design tasks that provide pupils with opportunities to identify all of the different types of lines: horizontal, vertical, pairs of perpendicular and parallel lines. Contains material developed by Standards and Testing Agency national curriculum assessments and licensed under Open Government Licence v3.0' http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

I can identify lines of symmetry in 2-D shapes presented in different orientations.	In this step pupils should be able to find and recognise lines of symmetry in 2-D shapes, even when the shapes are rotated or not in a familiar position. It emphasises that symmetry is about the properties of the shape itself, not the way it is presented on the page. This helps pupils mentally "fold" shapes and understand that orientation doesn't change whether a line of symmetry exists or not. A rectangle has **two** lines of symmetry.  Now, draw the two lines of symmetry on this rectangle.  Design tasks that provide pupils with opportunities to identify lines of symmetry in a range of 2-D shapes that are presented in different orientations. Include examples of reasoning tasks, which develop pupils' mathematical language in explaining their thinking.
I can estimate and compare acute, obtuse and reflex angles.	In this step pupils should be able to make sensible estimates of angle sizes and compare them using the correct mathematical language. • An acute angle is less than 90° • An obtuse angle is greater than 90° but less than 180° • A reflex angle is greater than 180° but less than 360° The focus here is on helping pupils recognise and judge these angle types visually and comparatively (e.g. deciding which is bigger or smaller), rather than relying on measuring with a protractor. Design tasks that provide pupils with opportunities to estimate and compare the complete range of angles: acute, obtuse and reflex angles. Include examples of reasoning tasks, which develop pupils' mathematical language in explaining their thinking. Here is a shape on a square grid.  For each sentence, put a tick (✓) if it is true. Put a cross (✗) if it is not true. Angle **A** is an **obtuse** angle. ☐ Angle **B** is an **acute** angle. ☐ Line **DC** is **parallel** to line **AB**. ☐ Line **AB** is **perpendicular** to line **BC**. ☐

I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	In this step pupils should be able to tell the difference between regular and irregular polygons by thinking about their properties, rather than just their appearance. • A regular polygon - has all sides equal in length and all interior angles are equal • An irregular polygon has sides and/or angles that are not all the same Pupils should be able to explain their reasoning, for example by noticing unequal sides or angles to justify why a shape is irregular. The focus is on developing pupils' understanding of shape properties and encouraging them to use mathematical vocabulary to explain their thinking.  Reasoning and Intelligent Practice 5.13
I can describe positions on a 2-D grid as coordinates in the first quadrant.	This step revisits prior learning from Unit 4.4. Pupils retrieve that coordinates are used to describe positions on a grid using two numbers written as (x, y) - coordinates. The first number tells how far to move across, and the second tells how far to move up. In the first quadrant, all numbers are positive, so pupils only work with positions above and to the right of zero. 

I can describe movements between positions as translations of a given unit to the left/right and up/down.	In this step pupils should be able to describe how a shape or object moves from one position to another using clear directions and distances. A translation is a movement where a shape slides to a new position without changing its size, shape, or orientation (it does not turn or flip). Pupils should use language like “3 units to the right” or “2 units up” to explain the movement accurately. Lori places a counter on square **D2**  She moves it 3 squares right and 4 squares up. Write the position of the square she moves it to. Design tasks that provide pupils with opportunities to describe movements between positions as translations of a given unit using a range of directions. The focus is on helping pupils visualise and describe movements clearly, using the grid or coordinates to support their understanding.
I can plot specified points and draw sides to complete a given polygon.	In this step pupils place given points accurately on a grid using coordinates. They then use these plotted points to draw straight lines between them to form a polygon (a closed 2D shape with straight sides). It involves understanding how coordinates work (e.g. x-axis across, y-axis up/down) and joining points in the correct order. Design tasks that provide pupils with opportunities to plot specified points and draw sides to complete a range of given polygons. The focus is on accuracy in plotting and helping pupils see how individual points connect to create a complete shape. Mark the points and join them to make a square. (3,1) (2,4) (5,5) (6,2) Use a ruler. 

HIAS Resources to support:

- Reasoning and Intelligent Practice Tasks: Reasoning and Intelligent Practice Tasks
- Faded Scaffolds and Intelligent Practice: Faded Scaffolds and Intelligent Practice
- Paired Examples: Paired Examples
- Entry and Exit tickets: Entry and Exit Tickets
- Interleaving, Recall and Retrieval: Interleaving, Recall and Retrieval (hants.gov.uk)
- Connect4Maths: Connect4Maths - Primary
- Moderation Documents: Moderation Documents
- KS1 Key Facts: Key Stage 1 Key Facts Document
- Mastering Times Tables: Mastering Times Tables

NCETM Resources to support:

- Exemplification of ready -to -progress criteria (RTPS): Exemplification of ready-to-progress criteria | NCETM
- NCETM Professional Development materials spine 1: Number, Addition and Subtraction | NCETM ;
- The NCETM Mastery Task booklets can be used as a source of tasks to support end of year teacher assessment for both EXS and GDS Teaching for Mastery Booklets Yr1-6

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