

HIAS MOODLE+ RESOURCE

Year 4 Unit Plan 4.2

Measurement

Autumn Term

HIAS Maths Team
September 2026
Final version

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Overview

This document contains...

Year 4 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.

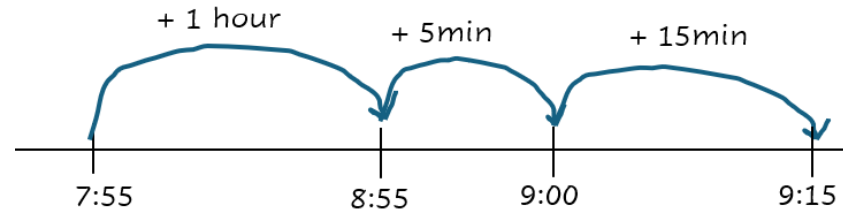
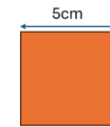
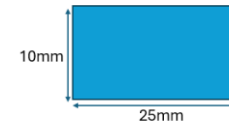
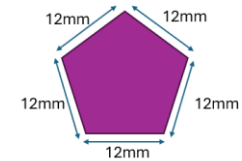
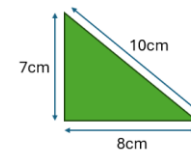
National Curriculum Links:

Measurement

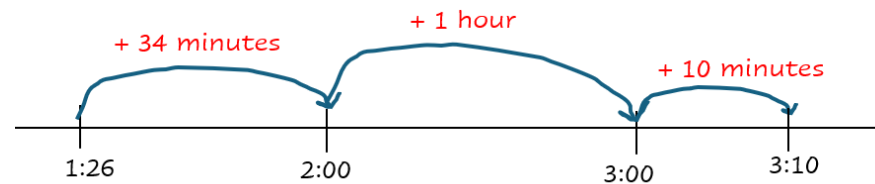
- Convert between different units of measure [for example, kilometre to metre; hour to minute]
- measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- find the area of rectilinear shapes by counting squares
- estimate, compare and calculate different measures, including money in pounds and pence
- read, write and convert time between analogue and digital 12- and 24-hour clocks
- solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

<p>In this unit, pupils build on their understanding of measuring in mixed units to develop fluency in measuring, comparing and calculating with length, mass and capacity. They learn to convert between units using key facts and apply this knowledge to add and subtract measures efficiently, including through regrouping. Pupils also consolidate addition and subtraction of money and develop their understanding of time, including reading to the nearest minute and linking analogue and digital representations, with a continued emphasis on place value, reasoning and precise mathematical language.</p>		<p>Notional Time: 10 sessions</p>
<p>Check and Refresh - <i>skills and knowledge that pupils need to know</i></p>	<p>Verbal coding- <i>precise mathematical language to model during worked examples</i></p>	<p>Mastering Key Facts in Key Stage 2 – developing fluency and automaticity</p>
<p>Secure in measuring and recording lengths, mass and capacity using mixed units (e.g. 3m and 50cm).</p> <p>Recall key facts, such as 100cm = 1m, 1000g = 1 kg, 1000ml = 1l, and 60 minutes = 1 hour.</p> <p>Adding and subtracting 3-digit numbers.</p> <p>Recognise the part-whole structure in money problems, including identifying the total, known parts and unknown parts when finding change,</p>	<p>___m ___cm is equal to ___ cm ___ cm is equal to ___ m ___ cm</p> <p>___ kg ___g is equal to ___ g ___ g is equal to ___ kg ___ g</p> <p>___ l ___ ml is equal to ___ ml ___ ml is equal to ___ l ___ ml</p>	<p>Y2 & 3 Recap: Recall multiples of 2, 3, 4, 5 and 10 up to 12 in any order, including missing numbers and related division facts fluently.</p> <p>Number bonds and deriving number bond up to 1000</p> <p>Number bonds and related number bond up to 10,000</p>
<p>Mathematical Concepts- <i>important pieces of information learners should take away from the unit</i></p>	<p>Watch out for</p>	<p>DfE Ready -to- progress criteria</p>
<p>Converting between units of measure using key facts.</p> <p>Add and subtract measures by converting to a common unit and regrouping.</p> <p>Fluency in calculating with money.</p> <p>Reading and interpreting analogue and digital time, including using and converting between 12-hour and 24-hour format.</p>	<p>Pupils who do not convert to the same units of measure before calculating.</p> <p>Pupils who have a weak understanding of key conversion facts.</p> <p>Pupils who do not use known addition and subtraction strategies when solving measure, money or time problems in context.</p> <p>Pupils who confuse hour and minute hands on analogue clocks.</p>	<p>3NPV-2 4NPV-2</p> <p>3NPV-3 4NPV-3 4NF-3</p> <p>Formative assessment questions - key questions to support pupil reasoning and teacher assessment</p> <ul style="list-style-type: none"> • 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?

Visual coding: key representations



50p (amount paid)	
35p (cost of the pear)	? (change)



Learning Journey – Measurement

Autumn unit 4.2 (2 weeks)	Autumn unit 4.5 (2 weeks)	Spring unit 4.8 (1 week)	Summer unit 4.13 (1 week)
<p>I can add and subtract amounts of money to give change.</p> <p>I can measure and compare lengths.</p> <p>I can add and subtract lengths.</p> <p>I can measure and compare mass.</p> <p>I can add and subtract mass.</p> <p>I can measure and compare volume and capacity.</p> <p>I can add and subtract volume and capacity.</p> <p>I can tell and write the time to the nearest minute on an analogue clock.</p> <p>I can use vocabulary a.m and p.m.</p> <p>I can read the time on a digital clock.</p>	<p>I can convert between different units of measure (length).</p> <p>I can convert between different units of measure (mass).</p> <p>I can convert between different units of measure (volume and capacity).</p> <p>I can read and write the time on an analogue and a digital clock (12-hour).</p> <p>I can read and write the time on an analogue and a digital clock (24- hour).</p> <p>I can convert time between analogue and digital 12- and 24- hour clocks.</p> <p>I can solve problems involving converting from hours to minutes.</p> <p>I can solve problems involving converting minutes to seconds.</p> <p>I can solve problems involving converting years to months.</p> <p>I can solve problems involving converting weeks to days.</p>	<p>I can measure the perimeter of simple 2-D shapes.</p> <p>I can measure the perimeter of a rectilinear figure in centimetres and metres.</p> <p>I can calculate the perimeter of a rectilinear figure in centimetres and metres.</p> <p>I can find the area of rectilinear shapes by counting squares.</p>	<p><i>Repeats in addition and subtraction learning journey</i></p> <p>I can add and subtract amounts to money to give change.</p> <p>I can add and subtract lengths.</p> <p>I can add and subtract mass.</p> <p>I can add and subtract volume.</p>
			<p style="text-align: center;">Summer unit 4.16 (1 week)</p> <p>I can convert between different units of measure.</p> <p>I can estimate, compare and calculate different measures including money in pounds and pence.</p> <p>I can calculate the perimeter of a rectilinear figure in centimetres and metres.</p> <p>I can find the area of rectilinear shapes by counting squares.</p> <p>I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p>

Proposed lesson sequence to support development of mathematical concepts

Developing fluency and automaticity – ongoing daily practice

Mastering Key Facts in Key Stage 2

Autumn 1 Ongoing Mental Fluency Practice

- Y2 & 3 Recap: Recall multiples of 2, 3, 4, 5 and 10 up to 12 in any order, including missing numbers and related division facts fluently.
- Number bonds and deriving number bonds up to 1000
- Number bonds and related number bond up to 10,000
- I can read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value.

I can...

Mathematical Concepts, Key Skills and Suggested Tasks

10 sessions - Measurement

I can add and subtract amounts of money to give change.

In this step, pupils should consolidate and apply skills taught in Year 3 to demonstrate secure understanding. This includes:

- Solve simple addition problems, using both pounds and pence
- Solve simple subtraction problems, using both pounds and pence
- Add and subtract money to give change, using both pounds and pence

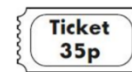
Pupils are familiar with seeing money expressed as £__ and __p rather than formally as decimals. Understanding and using decimal notation will be developed later in the year, particularly through the fractions unit and subsequent work on measurement.

Support pupils through the use of bar models, clearly identifying the *whole* and *parts*: the whole represents the total amount given, one part represents the cost, and the missing part represents the change. Explicit modelling is key. Demonstrate how to identify the whole (amount paid), the known part (cost), and the unknown part (change), making the structure of the problem visible. Pupils should then apply their existing addition and subtraction strategies to calculate efficiently.

Include a mix of routine and non-routine problems to deepen understanding. Tasks should also use numbers within pupils' secure range, enabling them to apply addition and subtraction strategies accurately without being overwhelmed by large values. Where appropriate, encourage pupils to explain, prove, or represent their reasoning in different ways.

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Ben has 90p.
He buys a ticket.
One ticket costs 35p.



How much money does Ben have left?

90p		
35p	change	

Ben has 90p.
He buys 2 tickets.
Each ticket costs 35p.



How much money does Ben have left?

90p		
35p	35p	change

<p>I can measure and compare lengths.</p>	<p>In Year 3, pupils were introduced to measuring using mixed units (e.g. 2 m and 30 cm) and began to measure using millimetres. This developed an understanding that different units can be combined to describe length. At this stage, there is no expectation to use decimals.</p> <p>Sentence stem: The ___ is ___ m and ___ cm long/high. The ___ is ___ cm and ___ mm long/high</p> <p>In Year 4, this understanding is extended to include conversion between metres and centimetres, underpinned by secure knowledge of the key fact: $100 \text{ cm} = 1 \text{ m}$ Dienes can be used to support conceptual understanding by linking measurement to place value. For example, one-unit blocks can represent 1 cm, while a hundred block represents 100 cm (1 m). Pupils can then model quantities such as 5 m and 35 cm using 5 hundred blocks and 35 ones. This makes the grouping structure of 100 explicit - showing clearly that 100 cm is equivalent to 1 m - and reinforces the connection to place value.</p> <p>Pupils should apply these facts to convert. For example:</p> <ul style="list-style-type: none"> • 5 m = 500 cm • 3 m = 300 cm • 5 m 35 cm = 535 cm (500 cm + 35 cm) <p>Suggested tasks:</p> <ul style="list-style-type: none"> • Measure a selection of classroom objects and record lengths in cm, mm or m. Ask pupils to explain why they chose each unit. • Compare and order lengths, justifying your reasoning: 1m and 20cm, 90cm, 135cm, 9m • True or false: “1m and 5 cm is longer than 105cm”
<p>I can add and subtract lengths.</p>	<p>In this step, pupils begin converting lengths into the same unit so they can add and subtract more efficiently. They must be secure in the key fact that 100 cm = 1 m and understand how this supports regrouping when calculating.</p> <ul style="list-style-type: none"> • 3m 40cm + 75cm <ul style="list-style-type: none"> ○ 3m 40cm = 340cm ○ So 340cm + 75 = 415cm ○ 415cm = 4m 15cm <p>Sentence stem: ___ m ___ cm is equal to ___ cm ___ cm is equal to ___ m ___ cm</p> <p>Ensure pupils apply these strategies in both addition and subtraction contexts, including finding the difference between two lengths.</p>

<p>I can measure and compare mass.</p>	<p>In Year 3, pupils were introduced to measuring using mixed units (e.g. 2 kg and 300g). This developed an understanding that different units can be combined to describe mass. At this stage, there is no expectation to use decimals.</p> <p>Sentence stem: The ___ is ___ kg and ___ g.</p> <p>In Year 4, this understanding is extended to include conversion between kilograms and grams, underpinned by secure knowledge of the key facts: $1000\text{g} = 1\text{kg}$.</p> <p>Dienes can be used to support conceptual understanding by linking measurement to place value. For example, the one-unit, ten-unit and hundred-unit blocks representing grams, while a thousand cube represents 1000g (1kg).</p> <p>Pupils can then model quantities such as 2kg and 450g using 2 thousand cubes, 4 hundred blocks and 5 tens/50 ones.</p> <p>Pupils should apply these facts to convert. For example:</p> <ul style="list-style-type: none"> • $2\text{kg} = 2000\text{g}$ • $9\text{kg} = 9000\text{g}$ • $5\text{kg and } 200\text{g} = 5200\text{g} (5000\text{g} + 200\text{g})$ <p>Suggested tasks:</p> <ul style="list-style-type: none"> • Estimate the weight of an object first, then weigh it. Compare estimates and discuss accuracy. • Compare and order masses: 750g, 1kg 200g, 980g, 700kg • True or false: "1kg 50g is the same as 1500g".
<p>I can add and subtract mass.</p>	<p>In this step, pupils begin converting masses into the same unit so they can add and subtract more efficiently. They must be secure in the key fact that $1000\text{g} = 1\text{kg}$ and understand how this supports regrouping when calculating.</p> <ul style="list-style-type: none"> • $3\text{kg } 400\text{g} + 750\text{g} =$ <ul style="list-style-type: none"> ○ $3\text{kg } 400\text{g} = 3400\text{g}$ ○ So $3400\text{g} + 750\text{g} = 4150\text{g}$ ○ $4150\text{g} = 4\text{kg and } 150\text{g}$ <p>Sentence stem: ___ kg ___ g is equal to ___ g ___ g is equal to ___ kg ___ g</p> <p>Ensure pupils apply these strategies in both addition and subtraction contexts, including finding the difference between two masses.</p>

<p>I can measure and compare volume and capacity.</p>	<p>It is important to establish a clear distinction:</p> <ul style="list-style-type: none"> • Volume refers to the amount of space an object or substance takes up. • Capacity refers to how much a container can hold. <p>In Year 3, pupils were introduced to measuring using mixed units (e.g. 3l and 300ml). This developed an understanding that different units can be combined to describe capacity. At this stage, there is no expectation to use decimals.</p> <p>Sentence stem: The ___ is ___ l and ___ ml.</p> <p>In Year 4, this understanding is extended to include conversion between litres and millilitres, underpinned by secure knowledge of the key facts: $1000\text{ml} = 1\text{l}$.</p> <p>As before, dienes can be used to support conceptual understanding by linking measurement to place value. For example, the one-unit, ten-unit and hundred-unit blocks representing litres, while a thousand cube represents 1000ml (1l). Pupils can then model quantities such as 2l and 450ml using 2 thousand cubes, 4 hundred blocks and 5 tens/50 ones.</p> <p>Pupils should apply these facts to convert. For example:</p> <ul style="list-style-type: none"> • $4\text{l} = 4000\text{ml}$ • $6\text{l} = 6000\text{ml}$ • $5\text{l and } 260\text{ml} = 5260\text{ml} (5000\text{ml} + 260\text{ml})$ <p>Suggested tasks:</p> <ul style="list-style-type: none"> • Provide a range of containers. Which holds more? Which holds less? Pupils measure and record amounts. • True or false: “two 500ml bottles are the same as 1l” • Compare and order capacity: 300ml, 3l, 3ml, 1l
<p>I can add and subtract volume and capacity.</p>	<p>In this step, pupils begin converting capacities into the same unit so they can add and subtract more efficiently. They must be secure in the key fact that $1000\text{ ml} = 1\text{ l}$ and understand how this supports regrouping when calculating.</p> <ul style="list-style-type: none"> • $6\text{ l } 750\text{ml} + 500\text{ml} =$ <ul style="list-style-type: none"> ○ $6\text{ l } 750\text{ml} = 6750\text{ml}$ ○ So $6750\text{ml} + 500\text{ml} = 7250\text{ml}$ ○ $7250\text{ml} = 7\text{ l } 250\text{ml}$ <p>Sentence stem: ___ l ___ ml is equal to ___ ml ___ ml is equal to ___ l ___ ml</p> <p>Ensure pupils apply these strategies in both addition and subtraction contexts, including finding the difference.</p>

I can tell and write the time to the nearest minute on an analogue clock.

Use assessment against the following statements to identify how many lessons this step is likely to require. This should also determine whether additional practice is needed.

- Tell and write the time to the hour and draw the hands on a clock face to show these times.
- Tell and write the time to half past and draw the hands on a clock face to show these times.
- Tell and write the time to quarter past/to the hour and draw the hands on a clock face to show these times.
- Tell and write the time to five minutes and draw the hands on a clock face to show these times.

In this step, pupils consolidate their Year 3 learning by developing greater accuracy, fluency and efficiency when telling the time to the nearest minute.

Reinforce the strategy of identifying the nearest multiple of 5 and then counting on or back in single minutes to determine the exact time. For example, when reading 4:23, pupils should recognise 20 minutes past and then count on 3 additional minutes. This supports more efficient and accurate time reading.

Pupils should practise both “past” and “to” the hour language, ensuring they can move flexibly between the two. Continue to use representations such as bar models (with 60 minutes as the whole) to deepen understanding of how many minutes have passed and how many remain to the next hour.

Pupils who are secure should deepen their understanding by explaining and justifying their reasoning, for example when given times such as “19 minutes past 2” or “23 minutes to 10,” describing precisely how they determine the positions of both hands.

This consolidation should focus on building confidence, accuracy and flexibility, ensuring pupils can apply their understanding across a range of representations and problems.



7:53

53 minutes past 7
7 minutes to 8

60 minutes	
53 minutes	7 minutes

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I can use vocabulary a.m and p.m.

In this step, pupils consolidate and extend their Year 3 learning by deepening their understanding of the terms *a.m.* and *p.m.*, used to describe times before and after midday. Reinforce that these terms are not used precisely at 12 noon or 12 midnight, which should be referred to explicitly as *midday* and *midnight*.

Build on pupils' prior knowledge by linking to familiar daily routines, such as waking up, going to school and going to bed, while encouraging them to use *a.m.* and *p.m.* accurately when describing these events. Support pupils in recognising that a full day lasts 24 hours, divided into two 12-hour periods: 12 hours before midday (*a.m.*) and 12 hours after (*p.m.*). Emphasise that times repeat on a 12-hour clock, and that *a.m.* and *p.m.* are needed to distinguish between them.

Extend understanding by encouraging pupils to compare and reason about times, for example: Which is later: 7:00 a.m. or 7:00 p.m.?

Suggested activities:

- Build a timeline of their perfect Saturday, labelling events using 12-hour times with am and pm.
- True or False: “12pm is midnight.”, “3:00pm is earlier than 9:00am”

I can read the time on a digital clock.

In Year 4, pupils build on their prior learning from Year 3, where they were introduced to reading time on a 12-hour and 24-hour digital clock. Pupils may be able to read and record 12-hour digital times with increasing accuracy, though this may still require consolidation to ensure consistency and fluency. Reinforce that time is written using a colon (:) rather than a decimal point, as this distinction becomes increasingly important as pupils encounter decimals in later mathematics.

Begin by revisiting key times that pupils should already be secure with (e.g. o'clock, half past, quarter past/to), ensuring they confidently interpret the relationship between the hour and minute digits. Use this as an opportunity to check for and address any gaps in understanding. Gradually revisit more complex times, including those to the nearest minute, ensuring pupils can read, write and interpret them accurately. Place emphasis on precision and efficiency, encouraging pupils to read times fluently rather than counting in ones unnecessarily.

When writing digital 24-hour times, support pupils by demonstrating how afternoon and evening times can be found by adding 12 to the hour. Highlight patterns (e.g. 13 = 1 pm, 14 = 2 pm, 15 = 3 pm) to build confidence and reduce reliance on memorisation. For example, 3:00 pm in the 12-hour clock is written as 15:00 in the 24-hour clock ($3 + 12 = 15$).

Strengthen connections between analogue, 12-hour digital and 24-hour digital time, supporting pupils to move flexibly between representations and explain how they know.

Suggested tasks:

- Match analogue clocks with both 12-hour and 24-hour digital times
- Read a digital time and represent it on an analogue clock
- Read an analogue clock and record both 12-hour and 24-hour digital times
- Order a set of digital times (including a mix of a.m., p.m. and 24-hour times)

Watch out for:

- Omitting the zero placeholder (e.g. writing 11:09 as 11:9)
- Confusing the hour and minute digits
- Misreading times where the minutes are not multiples of 5
- Insecure links between 12-hour and 24-hour representations

Providing regular opportunities to move between representations and explain their reasoning will support pupils in developing fluency, accuracy and deeper understanding of digital time.

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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