

HIAS MOODLE+ RESOURCE

Year 4 Unit Plan 4.5

Autumn Term

HIAS Maths Team
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Overview

In this document

Year 4 Unit Plans linked to 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 key prior learning, some common misconceptions and an indication of number fluency pupils need to develop towards automaticity. It is assumed that pupils will have access to appropriate concrete resources to support conceptual understanding and that teachers will use a CPA (concrete, pictorial and abstract) approach to teaching.

Year 4 Unit 4.5 – Number and Place Value, Measurement (Length) and Time

This unit is about practical measuring and weighing, reading scales accurately using understanding of the number line model (decimals and fractions). Opportunities to identify familiar objects which weigh 1 kilogramme and 1 metre and 1 kilometre lengths / distances should be taken to support reasonableness of solutions. Key facts for the units of measure should be emphasised to support calculation including mental strategies related to known facts. Pupils need to make links between key facts in all units. Opportunities through problem solving and reasoning to compare quantities will support conceptual understanding of subtraction model as ‘finding the difference between’.

Session	Unit Objectives	Types of task
2	- Measure and compare lengths (mm/cm/m/ km) - Convert between units (km to m, m to cm, cm to mm (x) and vice versa (÷)) - Measure and compare mass (g/kg) - Know that there are 1000g = 1 kg and derive associated facts: 500g = $\frac{1}{2}$ kg ; 250 g = $\frac{1}{4}$ kg ; 750 g = $\frac{3}{4}$ kg; 100g = $\frac{1}{10}$ kg; 10g = $\frac{1}{100}$ kg - Count up and down in hundredths; recognising that hundredths arise from dividing an object by 100 and dividing tenths by 10. (bar-model and number-line)	Use bar models showing $\frac{1}{2}$ and $\frac{1}{4}$, $\frac{3}{4}$ and $\frac{1}{5}$s and $\frac{1}{10}$; $\frac{1}{10}$ and $\frac{1}{100}$ to model proportions of the ‘whole unit’ related to key facts. Eg $\frac{1}{2}$ and $\frac{1}{4}$ of 1cm, 1m, 1km to identify key facts and derive associated facts Repeat for mass to discuss related facts. Count in PV and decimal steps ($\frac{1}{10}$, $\frac{1}{100}$) Use place value counters, dienes and number lines to model Use a context eg a metre stick to link with recording on a number line when solving problems
4	- Recognise the place value of each digit in a 4-digit number (1000s,100s, 10s and ones) - Find 1000 more or less than a given number	Practical tasks involving appropriate measuring equipment for length and mass to solve problems. Make links between a ‘scale’ and a number line and place value models. Compare lengths and mass as part of problem solving using number lines as one way of recording solutions. Identify familiar objects which weigh 1 kg or lengths which are 1m/ 1km long to support reasonableness of solutions etc
4	Order and compare numbers beyond 1000 (represent on number lines)	Reasoning tasks involving place value addition and subtraction in the context of measurements. Eg a sack holds 3kg of potatoes and 200g ($\frac{3}{4}$ of a kg) are sold- how much is left? Eg a sack of rice weighs 1450g/ 1kg 450g and 1000 g is added /used - how heavy is the sack now? Give solutions using different units and alongside bar model drawings. The opportunity to consider whether and how to change/ convert the units before adding and subtracting important rather than overly complicated calculations.
5	- 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	Tasks as indicated by the NC statement... Identify key facts using bar models to show $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of 1 hour, 1 day, 1 minute

Check and refresh	Watch out for...	Building fluency
- Units of measurement for length, mass Reading a scale with - all numbers there; - in divisions of 1s, 2s, 5s and 10s, - with marks indicating half way between whole units Reading a scale where not all numbers on the scale are given and estimate points in between - Reading the time to the nearest minute	- Confusing the relationship between units of measurement not realising that the smaller the unit the greater the number of units needed to measure - Measuring from the end of the ruler rather than from the beginning of the scale	- Place value complements to 100, 1000 and 10,000 in the context of measurement Eg 10,000-1000= 9000; 10,000-250=9750 etc - Knowing $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of 1000 and relating this to context of measurement - Knowing key facts for time: minute, hour, day, months, year and $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ of an hour, day.

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