

HIAS MOODLE+ RESOURCE

Year 4 Unit Plan 4.4

Autumn Term

HIAS Maths Team
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Final Version

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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 4.4 – Fractions and Geometry

This unit is about fractions, particularly tenths in preparation for the unit on measurement (Unit 4.5) and the concept of equivalence particularly through the use of bar models and number lines. There is a focus on securing key representations for fractions i.e. number lines, bar models, place value charts (tenths, hundredths) and Gattegno chart and using the context of shape to make domain links. The unit also develops understanding of criteria for classifying and comparing quadrilaterals. Pupils accurate use of vocabulary when sharing solutions to problems is a key focus.

Session	Unit Objectives	Types of task
3	Count up and down in tenths (proper and decimal fractions); recognise that tenths arise from dividing and object into ten equal parts. Record using number lines (making explicit links with decimals) and bar models Round decimals with one decimal place to the nearest whole number using different representations, including the number line	Counting in fractional steps recording on a number line: revised $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$ and then look at $\frac{1}{5}$ths and $\frac{1}{10}$ths. Discuss the links between a number line showing $\frac{1}{5}$th and $\frac{1}{10}$ths. Identify examples of equivalence eg $\frac{2}{5} = \frac{4}{10}$ etc Model this using same length bars eg Solve problems needing to count in fractional steps Show solutions using number lines, bar models and fraction notation. eg I eat $\frac{1}{5}$ ($\frac{2}{10}$) of a bar of chocolate on Monday, Tuesday and Wednesday. How much do I eat? after 1 week? Etc $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{3}{5}$; $\frac{2}{10} + \frac{2}{10} + \frac{2}{10} = \frac{6}{10}$ ($\frac{2}{10} \times 3$)
2	Find the effect of dividing a one-or two-digit number by 10 and 100; use place value understanding. Recognise and show, using diagrams, families of common equivalent fractions - Count in halves, quarters and thirds on a number-line. Add and subtract fractions with the same denominator (number-lines and bar-models)	Revise drawing bar models to show families of fractions eg $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ etc. Record addition and subtraction facts; identify equivalent fractions Model tenths (hundredths) with place value chart and Dienes and number line Using dienes 10 stick to represent 1 whole and units to represent $\frac{1}{10}$ of the whole tens stick. Record using bar model and with place value headings to make links. Add and subtract within 1 whole using fractions and decimal notation eg $\frac{1}{10} + \frac{2}{10} = \frac{3}{10}$. $0.1 + 0.2 = 0.3$ Repeat with 100 square as the whole unit and dienes units as $\frac{1}{100}$ of the whole 100 square. Model counting in tenths as decimals on a number line starting from 0 and other numbers. Round to the nearest whole number calculating how many more to make the next whole number- relate this to number bonds of 10.
3		Comparing fractions and identifying equivalent fractions (developing pupil decision about the best representation to show solutions) Use problems like: Would you rather have $\frac{3}{5}$ or $\frac{4}{10}$ of a bar of chocolate?

2		Use jottings of bar models to show families of fraction eg $\frac{1}{5}$ and $\frac{1}{10}$s - Put these fractions in order: $\frac{1}{2}$; $\frac{2}{4}$; $\frac{7}{10}$; $\frac{1}{5}$ Use jottings of bar models alongside to support reasoning. Record solutions on number lines. - Which is more $\frac{1}{2}$ of £4 or $\frac{1}{4}$ of £12? (different 'wholes') Use bar models to record solutions. Solve word problems involving adding and subtracting fractions with the same denominator Record solutions using bar model diagrams and fractions notation in number sentences.
3	Compare and classify geometric shapes, including quadrilaterals based on their properties and sizes Identify acute and obtuse angles Complete a simple symmetric figure with respect to a specific line of symmetry Describe positions on a 2-D grid as co-ordinates in the first quadrant ((x,y) co-ordinates) Find the area of rectilinear shapes by counting squares (relate to tables facts on array grids)	Tasks as indicated by the NC statement... Use sorting diagrams eg Carroll and Venn diagrams to classify a range of quadrilateral shapes looking at number of sides, and equal sides (regular polygons). Define quadrilateral. Find different ways to fold a cut out square or rectangle in half (and quarters). Record different solutions- discuss what is the same and what is different. Make links with fractions of a shape. Complete symmetrical figures using horizontal, vertical and diagonal lines of symmetry. Place the shape on the line of symmetry and away from the line of symmetry. Show the line of symmetry as a dotted line.

Check and refresh	Watch out for...	Building fluency
$\frac{1}{2}$; $\frac{1}{4}$; $\frac{1}{8}$; $\frac{1}{3}$ and $\frac{1}{6}$; (year 3 work) - Able to independently record families of fractions as bar models - Able to use a number line to record counting in fractional steps - Able to identify some equivalent fractions particularly = $\frac{1}{2}$	Accurate of vocabulary for fractions eg equal parts, numerator, denominator; whole; tens /tenths; hundreds/ hundredths etc Accurate use of vocabulary for geometry eg polygon, parallel, sides, line of symmetry, diagonal etc Pupils not checking what is the whole when comparing two fractions.	Know and understand the role of the denominator in a fraction eg $\frac{x}{4}$ is 4 equal parts Know how many equal parts needed to make the 'whole'. Use conceptual understanding of links between denominators to work out equivalent fractions eg $\frac{1}{5}$s and $\frac{1}{10}$s

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