

HIAS MOODLE+ RESOURCE

Year 5 Unit Plan 5.2

Autumn Term

HIAS Maths Team
June 2019
Final version

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Overview

In this document

Year 5 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 5 Unit 5.2 Plan – Multiplication and division (15), Measurement (area and arrays)

This unit is about multiplication and division in the context of measurement (area and arrays). Making these links will help children to see the many connections between these topics. This will build on the previous unit (5.1) and the work on perimeter. Developing children's ability to relate multiplication and division facts to visual representations (including arrays, number lines and the bar model) is vital to developing mastery and a strong foundation for year 6 and their secondary education. It might be appropriate to spend around 8 lessons focused on the multiplication and division objectives and the remaining 7 on applying this knowledge to work on area.

Session	Unit Objectives	Types of task
1-15	- Represent multiplication and division facts as grid arrays, link to rectangular areas, identifying factors as whole number side lengths of rectangles. Calculate and compare the area of rectangles, including squares, and including using standard units (cm² and m²) and estimate the area of irregular shapes. Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers. Know and use the vocabulary of prime numbers. - Use place value knowledge to multiply and divide whole numbers and those involving decimals by 10 and 100. - Use knowledge of multiples to estimate division calculations e.g. $1075 \div 25 \approx 40$ (since $4 \times 25 = 100$). - Understand division as grouping, moving on from sharing, to make efficient use of multiplication facts when dividing. - Represent division calculations (not the solution) as number-lines and bar-models to support conceptual understanding before solving.	Pictorial representations: Linking problem solving and reasoning to visualising multiplication and division with resources like number lines and arrays continues to be very important in upper key stage 2. Tasks should help children to see the many links between multiplication and division and not separate them unhelpfully. Key facts focus: Ensure children knowledge of multiplication and division facts remains fresh and accurate. Factors, multiples and primes Ensure children become familiar with this vocabulary and can use it correctly to reason mathematically. Help children to investigate the patterns of different multiples on 100 squares. Developing flexible and reliable calculation methods: There should be frequent opportunities to discuss and make sensible choices about the selection of mental, mental with jottings or formal written methods. Children should be encouraged to think flexibly to solve calculations eg to solve 19×17 find 20×17 and subtract 17. Solving problems A 6cm X 3cm rectangle has a perimeter of 18cm and an area of 18cm². Although the units of measure are different numerically, they are the same. Is this true for all rectangles? Prove it! A farmer has 24 lengths of fencing to make a rectangular enclosure on a field for her sheep. How can they be arranged to give the sheep the most grass to eat? Elsie plants cauliflowers in rows of 14. She plants 17 rows. How many cauliflowers has she planted?

Check and refresh	Watch out for...	Building fluency
Multiplication and related division facts for all times tables to 12x12.	Children recording their written methods – exchanging and recording this correctly. Unreasonable estimates or failing to estimate first when calculating. Pupils lacking flexibility in their calculation methods eg selects a written method for 13 x 6. Children not being able to explain their calculation methods and represent them as bar models and on number lines.	Check and revise as necessary the year 4 expectations for multiplication and division number facts (see the Hampshire maths team's Number Facts Documents).

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