Year 3/4

Mastery Overview
Term by Term

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Year 3/4

Mixed Year Overview

Since our Year 1 to Year 6 Schemes of Learning and overviews have been released we have had lots of requests for something similar for mixed year groups. This document provides the yearly overview that schools have been requesting. We really hope you find it useful and use it alongside your own planning.

We had a lot of people interested in working with us on this project and this document is a summary of their work so far. We would like to take this opportunity to thank everyone who has contributed their thoughts to this final document.

These overviews will be accompanied by more detailed schemes linking to fluency, reasoning and problem solving. Termly assessments will be available to evaluate where the children are with their learning.

If you have any feedback on any of the work that we are doing, please do not hesitate to get in touch. It is with your help and ideas that the Maths Hubs can make a difference.

The White Rose Maths Hub Team

Guidance

The White Rose Maths Hub has produced these long term plans to support mixed year groups. These overviews are designed to support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new National Curriculum.

The overviews:

- have number at their heart. A large proportion of time is spent reinforcing number to build competency.
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- provide plenty of time to build reasoning and problem solving elements into the curriculum

This document fits in with the White Rose Maths Hub Year 1 – 6 Mastery documents. If you have not seen these documents before you can register to access them for free by completing the form on this link http://www.trinitytsa.co.uk/maths-hub/free-learning-schemes-resources/

Once registered you will be provided with a Dropbox link to access these documents; please be aware some school IT systems block the use of Dropbox so you may need to access this at home.

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Mixed age planning

Using the document

The overviews provide guidance on the length of time that should be dedicated to each mathematical concept and the order in which we feel they should be delivered. Within the overviews there is a breakdown of objectives for each concept. This clearly highlights the age related expectations for each year group and shows where objectives can be taught together.

There are certain points where objectives are clearly separate. In these cases, classes may need to be taught discretely or incorporated through other subjects (see guidance below).

Certain objectives are repeated throughout the year to encourage revisiting key concepts and applying them in different contexts.

Lesson Plans

As a hub, we have collated a variety of lesson plans that show how mixed year classes are taught in different ways. These highlight how mixed year classes use additional support, organise groups and structure their teaching time. All these lesson structures have their own strengths and as a teacher it is important to find a structure that works for your class.

Progression documents

We are aware that some teachers will teach mixed year groups that may be arranged differently to our plans (eg YR/1). We are therefore working to create some progression documents that help teachers to see how objectives link together from Year 1 to Year 6.

Linking of objectives

Within the overviews, the objectives are either in normal font or in bold. The objectives that are in normal font are the lower year group out of the two covered (Year 1, Year 3, Year 5). The objectives in **bold** are the higher year group out of the two covered (**Year 2, Year 4, Year 6**), Where objectives link they are placed together. If objectives do not link they are separate and therefore require discrete teaching within year groups.

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Mixed age planning

Teaching through topics

Most mathematical concepts lend themselves perfectly to subjects outside of maths lessons. It is important that teachers ensure these links are in place so children deepen their understanding and apply maths across the curriculum.

Here are some examples:

- Statistics- using graphs in Science, collecting data in Computing, comparing statistics over time in History, drawing graphs to collect weather data in Geography.
- Roman Numerals- taught through the topic of Romans within History
- Geometry (shape and symmetry)- using shapes within tessellations when looking at Islamic art (R.E), using shapes within art (Kandinsky), symmetry within art
- Measurement- reading scales (science, design technology),
- Co-ordinates- using co-ordinates with maps in Geography.
- Written methods of the four operations- finding the time difference between years in History, adding or finding the difference of populations in Geography, calculating and changing recipes in food technology.
- Direction- Programming in ICT

Objectives split across topics

Within different year groups, topics have been broken down and split across different topics so children can apply key skills in different ways.

Money is one of the topics that is split between other topics. It is used within addition and subtraction and also fractions. In Year 1 and 2 it is important that the coins are taught discretely however the rest of the objectives can be tied in with other number topics.

Other measurement topics are also covered when using the four operations so the children can apply their skills.

In Year 5 and 6, **ratio** has been split across a variety of topics including shape and fractions. It is important that these objectives are covered within these other topics as ratio has been removed as a discrete topic.

Times tables

Times tables have been placed within multiplication and division however it is important these are covered over the year to help children learn them.

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Everyone Can Succeed

As a Maths Hub we believe that all students can succeed in mathematics. We don't believe that there are individuals who can do maths and those that can't. A positive teacher mindset and strong subject knowledge are key to student success in mathematics.

Acknowledgements

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More Information

If you would like more information on 'Teaching for Mastery' you can contact the White Rose Maths Hub at mathshub@trinityacademyhalifax.org

We are offering courses on:

- Bar Modelling
- Teaching for Mastery
- Year group subject specialism intensive courses – become a maths expert.

Our monthly newsletter also contains the latest initiatives we are involved with. We are looking to improve maths across our area and on a wider scale by working with the other Maths Hubs across the country.

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Term by Term Objectives

Y3/4

Year 3 and 4 overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Place Value				Addition and Subtraction						Multiplication and Division	
Spring	Multiplication and Division					Fractions and Decimals						
Summer	Length and Perimeter		Time			Shape			Volume and Capacity (Y3) Co-ordinates (Y4)		Statistics	

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Term by Term Objectives

Y3/4

Year	3 and 4	Term	Autumn

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Place Value Read and write numbers up to 1000 in numerals and in words. Identify, represent and estimate numbers using different representations. Find 10 or 100 more or less than a given number. **Find 1000 more or less than a given number.** Recognise the place value of each digit in a 3 digit number. **Recognise the place value of each digit in a 4 digit number.** Order and compare numbers to 1000. **Order and compare numbers beyond 1000.** Count from 0 in multiples of 50 and 100 **Count in multiples of 6, 7, 9. 25 and 1000** Solve number problems and practical problems involving these ideas. **Solve number and practical problems that involve all of the above and with increasingly large positive numbers.** **Count backwards through zero to include negative numbers.** **Round any number to the nearest 10, 100 or 1000** **Round decimals with one decimal place to the nearest whole number.** **Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.**				Number: Addition and Subtraction Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction **Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.** Estimate the answer to a calculation and use inverse operations to check answers. **Estimate and use inverse operations to check answers to a calculation.** Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. **Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why.** Add and subtract amounts of money to give change using both £ and p in practical contexts. **Estimate, compare and calculate different measures, including money in pounds and pence** Measure, compare, add and subtract: lengths (mm, cm, m); mass (kg/g); volume/capacity (l/ml). **Solve simple measure and money problems involving fractions and decimals to two decimal places.**				Multiplication and Division Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. **Recall and use multiplication and division facts for multiplication tables up to 12 x 12.** Write and calculate mathematical statements for multiplication and division using the multiplication tables they know. **Recognise and use factor pairs and commutativity in mental calculations.** **Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.**	

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Term by Term Objectives

Y3/4

Year	3 and 4	Term	Spring

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12

<u>Number: Multiplication and Division</u>

Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects.

Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.

Multiply two digit and three digit numbers by a one digit number using formal written layout.

Find the area of rectilinear shapes by counting squares (link to multiplication)

<u>Fractions and Decimals</u>

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.

Compare and order unit fractions, and fractions with the same denominators.

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

Count up and down in tenths.

Count up and down in hundredths.

Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10

Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

Find the effect of multiplying and dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths.

Recognise and show, using diagrams, equivalent fractions with small denominators.

Recognise and show, using diagrams, families of common equivalent fractions.

Add and subtract fractions with the same denominator within one whole.

Add and subtract fractions with the same denominator.

Solve problems that involve all of the above.

Recognise and write decimal equivalents of any number of tenths or hundredths.

Recognise and write decimal equivalents to ¼, ½, ¾

Round decimals with one decimal place to the nearest whole number.

Compare numbers with the same number of decimal places up to two decimal places.

Solve simple measure and money problems involving fractions and decimals to two decimal places

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Term by Term Objectives

Y3/4

Year	3 and 4	Term	Summer

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<u>Measures - Length</u> Measure, compare, add and subtract: lengths (m/cm/mm). Measure the perimeter of simple 2D shapes. **Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres** Continue to measure using the appropriate tools and units, progressing to using a wider range of measures, including comparing and using mixed and simple equivalents of mixed units. **Convert between different units of measure eg kilometre to metre.**		<u>Time</u> Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. **Read, write & convert time between analogue and digital 12 and 14 hour clocks.** Estimate and read time with increasing accuracy to the nearest minute. Record and compare time in terms of seconds, minutes and hours. **Convert between different units of measure eg hour to minute.** Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events (for example to calculate the time taken by particular events or tasks). **Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days**		<u>Geometry</u> Recognise angles as a property of shape or a description of a turn. Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. **Identify acute and obtuse angles and compare and order angles up to two right angles by size.** Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. **Identify lines of symmetry in 2D shapes presented in different orientations.** **Complete an simple symmetric figure with respect to a specific line of symmetry.** Draw 2-D shapes **Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.** Make 3-D shapes using modelling materials. Recognise 3-D shapes in different orientations and describe them			<u>Measures: volume and capacity (Y3)</u> Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml). **<u>Co-ordinates (Y4)</u>** **Describe positions on a 2D grid as coordinates in the first quadrant.** **Describe movements between positions as translations of a given unit to the left/ right and up/ down.** **Plot specified points and draw sides to complete a given polygon.**		<u>Statistics</u> Interpret and present data using bar charts, pictograms and tables. **Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.** Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables. **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.**	

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