Year 2/3

**Mastery Overview
Term by Term**

MathsHUBS
White Rose

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.

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 or Y3/4/5). 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.

© Trinity Academy Halifax 2016
mathshub@trinityacademyhalifax.org

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.

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

The White Rose Maths Hub would like to thank the following people for their contributions, and time in the collation of this document:

Cat Beaumont
Matt Curtis
James Clegg
Becky Gascoigne
Sarah Gent
Sally Smith
Sarah Ward

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
- 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.

MathsHUBS
White Rose

Term by Term Objectives

Year 2 and 3 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	Time			Fractions					Geometry- Shape			
Summer	Measurement Length, weight, temperature and capacity			Statistics			Assessment	Four operations				Year 2 and 3 Consolidation and application

© Trinity Academy Halifax 2016
mathshub@trinityacademyhalifax.org

MathsHUBS
White Rose

Term by Term Objectives

Y2/3

Year	2 and 3		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

Count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward.
Count from 0 in multiples of 50 and 100

Read and write numbers to at least 100 in numerals and words.
Read and write numbers up to 1000 in numerals and in words.

Recognise the place value of each digit in a two digit number (tens, ones)
Recognise the place value of each digit in a 3 digit number.

Identify, represent and estimate numbers to 100 using different representations including the number line.
Identify, represent and estimate numbers using different representations.

Compare and order numbers from 0 up to 100; use <, > and = signs.
Order and compare numbers to 1000.

Find 10 or 100 more or less than a given number.

Use place value and number facts to solve problems.
Solve number problems and practical problems involving these ideas.

Addition and Subtraction

Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two digit number and ones; a two digit number and tens; two two digit numbers; adding three one digit numbers.
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

Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.

Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
Estimate the answer to a calculation and use inverse operations to check answers.

Recognise and use symbols of pounds (£) and pence (p); combine amounts to make a particular value.
Find different combinations of coins that equal the same amounts of money.
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
Add and subtract amounts of money to give change using both £ and p in practical contexts.
Measure, compare, add and subtract: lengths (mm, cm, m); mass (kg/g); volume/capacity (l/ml).

Multiplication and Division

Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign.
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.

Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.

Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
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.

MathsHUBS
White Rose

Term by Term Objectives

Year	2 and 3	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

Time

Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks.

Estimate and read time with increasing accuracy to the nearest minute.

Know the number of minutes in an hour and the number of hours in a day.
Know the number of seconds in a minute and the number of days in each month, year and leap year.

Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight.

Compare and sequence intervals of time.
Record and compare time in terms of seconds, minutes and hours.
Compare durations of events (for example to calculate the time taken by particular events or tasks).

Number – fractions

Recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.
Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.

Write simple fractions for example, $\frac{1}{2}$ of 6 = 3
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.
Recognise and show, using diagrams, equivalent fractions with small denominators.

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

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

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

Solve problems that involve all of the above.

Geometry- Shape

Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.

Compare and sort common 2D shapes and everyday objects.
Draw 2-D shapes

Order and arrange combinations of mathematical objects in patterns and sequences.

Compare and sort common 3D shapes and everyday objects.
Identify 2D shapes on the surface of 3D shapes, [for example, a circle on a cylinder and a triangle on a pyramid.]
Recognise 3-D shapes in different orientations and describe them

Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.
Make 3-D shapes using modelling materials.

Recognise angles as a property of shape or a description of a turn.

Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).
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

MathsHUBS
White Rose

Term by Term Objectives

Year	2 and 3	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

Week 1–3	Week 4–6	Week 7	Week 8–10	Week 11–12
Measurement Compare and order lengths, mass, volume/capacity and record the results using >, < and = **Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)** Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels **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. (non stat)** **Measure the perimeter of simple 2-D shapes.**	Statistics Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. **Interpret and present data using bar charts, pictograms and tables.** Ask answer simple questions by counting the number of objects in each category and sorting the categories by quantity. **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.**	Assessment	Four operations Recap all addition, subtraction, multiplication and division. Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. **Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.** Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. **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.**	Consolidation and Application

MathsHUBS
White Rose