# Year 4 Mastery Overview Term by Term



### **Overview**

One of the most frequent request we get as a Maths Hub is for a suggested long term curriculum plan for mathematics in primary. We have listened to what teachers need and the following mastery overviews have been developed by primary practioners in conjunction with the White Rose Maths Hub to provide a curriculum plan that will support 'Teaching for Mastery'.

There is a termly plan for each year group from Year 1 to Year 6; each term is split into twelve weeks. You will see from the overviews that a significant amount of time is devoted to developing key number concepts each year. This is to build their fluency as number sense will affect their success in other areas of mathematics. Students who are successful with number are much more confident mathematicians.

We hope you find them useful. If you have any comments about this document or have any ideas please do get in touch.

The White Rose Maths Hub Team

### Assessment

Alongside these curriculum overviews, our aim is also to provide a free assessment for each term's plan. Each assessment will be made up of two parts:

**Part 1:** Fluency based arithmetic practice **Part 2:** Reasoning based questions

You can use these assessments to determine gaps in your students' knowledge and use them to plan support and intervention strategies.

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ork out the perimeter of the rectangle

The assessments have been designed with new KS2 SATS in mind. All of the assessments will be ready by 30 November 2015.

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Year 4

### **Teaching for Mastery**

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;

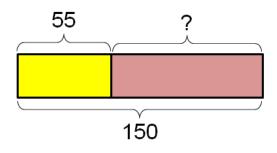
- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole group
- provide plenty of time to build reasoning and problem solving elements into the curriculum.

### **Concrete – Pictorial – Abstract**

As a hub we believe that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach.

**Concrete** – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

**Pictorial** – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.



An example of a bar modelling diagram used to solve problems.

**Abstract** – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.



# Year 4

### **Frequently Asked Questions**

#### We have bought one of the new Singapore textbooks. Can we use these curriculum plans?

Many schools are starting to make use of a mastery textbook used in Singapore and China, the schemes have been designed to work alongside these textbooks. There are some variations in sequencing, but this should not cause a large number of issues

#### If we spend so much time on number work, how can we cover the rest of the curriculum?

Students who have an excellent grasp of number make better mathematicians. Spending longer on mastering key topics will build a student's confidence and help secure understanding. This should mean that less time will need to be spent on other topics.

In addition schools that have been using these schemes already have used other subjects and topic time to teach and consolidate other areas of the mathematics curriculum.

# My students have completed the assessment but they have not done well.

This is your call as a school, however our recommendation is that you would spend some time with the whole group focussing on the areas of the curriculum that they don't appear to have grasped. If a couple of students have done well then these could be given rich tasks and deeper problems to build an even deeper understanding.

#### Can we really move straight to this curriculum plan if our students already have so many gaps in knowledge?

The simple answer is yes. You might have to pick the correct starting point for your groups. This might not be in the relevant year group and you may have to do some consolidation work before.

These schemes work incredibly well if they are introduced from Year 1 and continued into Year 2, then into Year 3 and so on.





### **Detailed Schemes**

To complement these yearly overviews we are working on termly schemes of learning that provide:

- More details on how to teach particular aspects of the curriculum
- Fluency, reasoning and problem solving ideas for each topic.

These will gradually become available over this term. Please keep checking back for updates.

In addition to this the NCETM have developed a fantastic series of problems, tasks and activities that can be used to support 'Teaching for Mastery'. They have been written by experts in mathematics.

It will also give you a detailed idea of what it means to take a mastery approach across your school. Information can be found on the link below.

https://www.ncetm.org.uk/resources/46689

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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.

### **More Information**

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

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.



# Year 4

## Year 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 | Number - Place Value                 |   |        |         | er – Additi<br>Subtractio            | Addition and<br>raction Division |          |                                       |        | n and Measur<br>Ard |         |                    |  |  |
| Spring |                                      | Frac  | tions  |         | Time                                 |                                  | Decimals |                                       |        |                     |         | surement-<br>Money |  |  |
| Summer | Measures-<br>Perimeter and<br>Length | Herimeter and<br>Geometry-<br>Shape and<br>Shape and Shape and<br>Shape and Shape and<br>Shape and Shape and<br>Shape and Shape and Shape and<br>Shape and Shape and Sh |        | Positio | etry –<br>on and Statistics<br>ction |                                  |          | Measurement-<br>Area and<br>perimeter |        |                     |         |                    |  |  |



## **Term by Term Objectives**

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| Year Gr  | roup  | Y4 1  | <b>Ferm</b>  | 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        |
| Find 1000 mo<br>number.<br>Count backw<br>negative num<br>Recognise th<br>a four digit n<br>hundreds, te<br>Order and co<br>1000.<br>Identify, repr<br>using differen<br>Round any nu<br>or 1000.<br>Solve numbe<br>involve all of<br>increasingly I<br>Read Roman<br>know that ov | tiples of 6, 7, 9.<br>ore or less than<br>vards through zen<br>bers.<br>e place value of<br>umber (thousan<br>ns and ones)<br>ompare numbers<br>resent and estim<br>nt representatio<br>umber to the ne<br>the above and v<br>large positive nu<br>numerals to 100<br>ver time, the num | a given<br>ro to include<br>each digit in<br>ids,<br>s beyond<br>hate numbers<br>ons.<br>earest 10, 100<br>problems that<br>with<br>unbers.<br>0 (I to C) and<br>meral system | Add and subt<br>digits using th<br>columnar add<br>appropriate.<br>Estimate and<br>check answer<br>Solve addition<br>problems in c | lition and subtra-<br>rract numbers wi<br>he formal writter<br>dition and subtra<br>use inverse ope<br>rs to a calculation<br>n and subtractio<br>contexts, decidin<br>nd methods to us | th up to 4<br>n methods of<br>action where<br>rations to<br>n.<br>n two step<br>g which | Recall and u<br>multiplication<br>Use place val<br>and divide m<br>1; dividing b<br>Recognise and<br>mental calcu<br>Multiply two<br>digit number<br>including usi<br>digit number<br>and harder of | on tables up to<br>alue, known ar<br>nentally, includ<br>y 1; multiplyin<br>nd use factor p<br>ulations.<br>o digit and thre<br>r using formal<br>ems involving r<br>ing the distribu<br>rs by one digit | on and division<br>on and division<br>of 12 x 12.<br>Ind derived facts<br>ding: multiplyin<br>og together three<br>bairs and comm<br>written layout.<br>multiplying and<br>utive law to mu<br>c, integer scaling<br>ce problems suc | s to multiply<br>og by 0 and<br>ee numbers.<br>nutativity in<br>rs by a one<br>adding,<br>iltiply two<br>g problems | Measurement<br>Find the area of<br>shapes by cou | of rectilinear |



## **Term by Term Objectives**

| Year Gr   | oup   | Y4   | 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  |
| common equ<br>Count up and<br>hundredths a<br>hundred and<br>Solve probler<br>to calculate q<br>quantities, in<br>answer is a w<br>Add and subt | ivalent fracti<br>down in hur<br>rise when di<br>dividing tent<br>ns involving<br>uantities, an<br>cluding non-<br>hole numbe | ndredths; reco<br>viding an obje<br>ths by ten.<br>increasingly h<br>id fractions to<br>unit fractions<br>r.<br>s with the san | ognise that<br>act by one<br>arder fractions<br>divide | TimeConvertbetweendifferentunits ofmeasureeg hour tominute.Read, write& converttimebetweenanalogueand digital12 and 14hour clocks.Solveproblemsinvolvingconvertingfrom hoursto minutes;minutes toseconds;years tomonths;weeks todays | of tenths or h<br>Recognise an<br>Find the effect<br>10 or 100, ide<br>answer as on<br>Round decim<br>whole number<br>Compare nur | d write decimal<br>ct of dividing a c<br>entifying the val<br>es, tenths and h<br>als with one dec | equivalents to<br>one or two digit<br>ue of the digits<br>undredths<br>cimal place to t<br>ame number c | ¼, ½, ¾<br>t number by<br>s in the<br>the nearest | Measurement<br>Solve simple r<br>money proble<br>involving fract<br>decimals to tv<br>places.<br>Estimate, com<br>calculate diffe<br>measures, inc<br>money in pou<br>pence. | neasure and<br>ms<br>tions and<br>vo decimal<br>pare and<br>trent<br>luding<br>nds and | Time at the<br>beginning or<br>end of the<br>term for<br>consolidation,<br>gap filling,<br>seasonal<br>activities,<br>assessments,<br>etc. |





## **Term by Term Objectives**

| Year Group |  |
|------------|--|
|------------|--|

Y4 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        |
|--------------|---------------|---------------------|-----------------|----------------------------|-----------------|---------------------------|--------|------------------------------|---------------|--------------------------|----------------|
| Measures:    | Geometry:     | Geometry: Shape and |                 |                            |                 | <u>Statistics</u>         |        | Measurement: Area and        |               | Time at the beginning or |                |
| Perimeter    | <u>Angles</u> | <u>symmetry</u>     |                 | <u>Direction</u>           |                 | Interpret and present     |        | <u>Perimeter</u>             |               | end of the term for      |                |
| and Length   | Identify      | Compare and         | classify        | Describe positions on a 2D |                 | discrete and continuous   |        | Measure and calculate the    |               | consolidation,           |                |
| Convert      | acute and     | geometric sha       | apes,           | grid as coordinates in the |                 | data using appropriate    |        | perimeter of a rectilinear   |               | gap filling, seasonal    |                |
| between      | obtuse        | including qua       |                 | first quadrant.            |                 | graphical methods,        |        | figure (including squares)   |               | activities, ass          | essments, etc. |
| different    | angles and    | and triangles,      |                 |                            |                 | including bar charts and  |        | in centimetres and metres    |               |                          |                |
| units of     | compare       | their properti      | es and sizes.   | Describe movements         |                 | time graphs.              |        |                              |               |                          |                |
| measure eg   | and order     |                     |                 | between posi               |                 |                           |        |                              | een different |                          |                |
| kilometre to | angles up to  | Identify lines      |                 |                            | of a given unit | Solve comparison, sum and |        | units of measure [for        |               |                          |                |
| metre.       | two right     | in 2D shapes        | •               | to the left/ right and up/ |                 | difference problems using |        | example, kilometre to        |               |                          |                |
|              | angles by     | different orie      | ntations.       | down.                      |                 | information presented in  |        | metre]                       |               |                          |                |
| Measure      | size.         |                     |                 |                            |                 | bar charts, pictograms,   |        |                              |               |                          |                |
| and          |               | Complete an         | •               | Plot specified points and  |                 | tables and other graphs.  |        | Find the area of rectilinear |               |                          |                |
| calculate    |               | symmetric fig       |                 | draw sides to complete a   |                 |                           |        | shapes by counting           |               |                          |                |
| the          |               | respect to a s      | pecific line of | given polygon.             |                 |                           |        | squares.                     |               |                          |                |
| perimeter    |               | symmetry.           |                 |                            |                 |                           |        |                              |               |                          |                |
| ofa          |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
| rectilinear  |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
| figure       |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
| (including   |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
| squares) in  |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
| cm and m     |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
|              |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
|              |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
|              |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
|              |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |
|              |               |                     |                 |                            |                 |                           |        |                              |               |                          |                |

