

# Oakham Primary School

## Maths Policy and Curriculum



**Approved by Governors on:**

**08/05/24**

**Signature of Chair of Governors:**

A handwritten signature in black ink, appearing to read "A Mills".

**Lead Personnel:**

**A Mills**

**Date to be reviewed:**

**08/05/26**

## Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (*National Curriculum 2014*)

### **The aims of the 2014 National Curriculum are for our pupils to:**

- Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The National Curriculum sets out year-by-year programmes of study for key stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Framework 2021 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning.

This has specific requirements for teaching and learning which shapes activities, experiences and Early Learning Goals which Reception staff work towards at the end of the academic year that they turn five.

### **The EYFS Framework in relation to mathematics aims for our pupils to:**

- Develop and improve their counting principles
- Understand and use numbers
- Calculate simple addition and subtraction problems
- Describe shapes, spaces, measures and patterns

## **Our vision for Mathematics**

- To promote a positive attitude towards mathematics in all pupils
- To ensure all pupils are engaged in and are enjoying exploring Mathematics
- To enable all pupils to find links between mathematics and other areas of the curriculum, including Science
- To ensure all pupils progress in mathematics and are challenged appropriately through an in depth understanding
- To use a wide range of concrete, pictorial and abstract representations to develop all pupils' relational understanding of mathematics
- To ensure all pupils are confident using mathematical vocabulary when reasoning about mathematics
- To promote a growth mind set in all pupils, particularly when Problem Solving

### **Intent**

We strive to make maths fun, purposeful and interesting for all children. We aim to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. Children are encouraged to see the mathematics that surround them every day and enjoy developing vital life skills in this subject.

Through White Rose Maths, we aim for every child to develop a sound understanding of maths, equipping them with the skills of calculation, reasoning and problem solving that they need in life beyond school. They will be given access to a variety of mathematical opportunities, which will enable them to make the connections in learning, develop and use new vocabulary and discuss their learning.

By working across different representations of learning and using resources, we aim for our children to be confident mathematicians who are independent, inquisitive and not afraid to take risks.

The national curriculum for mathematics aims to ensure that all pupils:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

### **Implementation**

Our curriculum incorporates the coverage of the statutory outcomes outlined in the Early Years Foundation Stage and KS1 Mathematics Programme of Study – National Curriculum

2014. Our planning is based on the White Rose Maths Schemes of Learning to guarantee consistency, coherence and progression throughout the EYFS and KS1.

In addition staff refer to other materials to support short-term planning. These are used across EYFS and KS1 allowing children to be exposed to a variety of different types of learning and problems to solve. Teachers implement our schools' agreed Calculation Policy of Concrete, Pictorial and Abstract (CPA).

The teaching and learning of mathematics at Oakham Primary School should include aspects of the following Mastery approach strategies in every lesson and/or over a series of lessons:

'Concrete, pictorial, abstract (CPA) is a highly effective approach to teaching that develops a deep and sustainable understanding of maths.' (Maths - no problem!)

To learn mathematics effectively, some things have to be learned before others and this order of small step learning is factored into our planning (e.g. place value needs to be understood before working with addition). We have an emphasis on number skills first, carefully ordered, throughout the curriculum.

Children take part in explicit daily mathematics lessons with a specific focus; all areas of the mathematics curriculum are continually revisited through planned short or longer in-depth teaching sequences to enable children to develop a depth of understanding. We regularly give our children opportunities to use and apply their mathematical learning in everyday situations, aiming to embed mathematical skills across the curriculum.

We follow EYFS curriculum guidance for Mathematics. However, we are committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. Pupils initially explore numbers to 20 and the development of models and images for numbers as a solid foundation for further progress, using 'First4Math's resources in Nursery and then 'White Rose' in Reception.

The Maths lead has a clear overview of the maths teaching taking place and is responsible for structuring the mathematics curriculum and ensuring its planning, delivery, content and assessment is of the highest quality. Class teachers are responsible for planning and delivering maths each day in consultation with the maths leaders.

School leaders and the Maths lead regular complete learning walks, lesson visits, maths evidence sessions and Pupil Voice sessions as part of our on-going school improvement cycle.

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and responses in their teaching.

Summative assessment data is available from White Rose end of unit tests and Maths National Curriculum expectations at the end of each. The school's progress tracking system

is updated termly. National Curriculum tests are used at the end of KS1 and 2; teachers use past and sample papers to inform their assessments as they prepare pupils for these assessments.

Home learning opportunities further develop skills and understanding of mathematics through additional activities. The school has invested in 'Mathletics' and 'Times Tables RockStars' websites which are accessible learning platforms that can be used to set differentiated homework for pupils.

### **Impact**

Our high-quality maths curriculum will develop children who are confident, keen and unafraid mathematicians who are equipped with a wealth of knowledge that can be applied efficiently and accurately.

This will have been underpinned by the C-P-A process so children understand rather than just do, which ultimately will allow children to identify when answers do not make mathematical sense.

Children will be able to apply these calculation skills and understanding of other areas to become confident and resilient problem-solvers with the ability to reason and articulate their ideas mathematically.

### **Breadth of study**

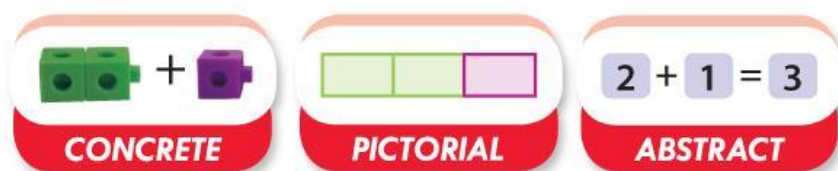
Careful planning and preparation ensures that throughout the school children engage in:

- Practical activities and games using a variety of resources
- Problem solving to challenge thinking
- Individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning
- open and closed tasks
- A range of methods of calculating e.g. mental, pencil & paper and using a calculator
- Working with computers as a mathematical tool
- Taking opportunities to use and apply mathematics across all subject areas.

### **Our approach**

The teaching and learning of mathematics at Oakham Primary School should include aspects of the following Mastery approach strategies in every lesson and/or over a series of lessons:

'Concrete, pictorial, abstract (CPA) is a highly effective approach to teaching that develops a deep and sustainable understanding of maths.' (Maths - no problem!)



## Concrete

Concrete is the “doing” stage, using concrete objects to model problems. Instead of the traditional method of mathematics teaching, where a teacher demonstrates how to solve a problem, the CPA approach brings concepts to life by allowing pupils to experience and handle physical objects themselves. Every new abstract concept is learned first with a “concrete” or physical experience.

For example, if a problem is about adding up four baskets of fruit, the pupils might first handle actual fruit before progressing to handling counters or cubes which are used to represent the fruit.

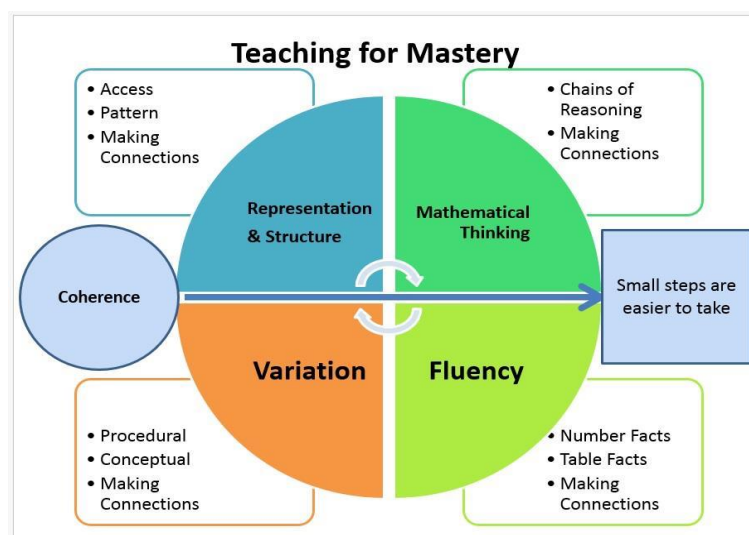
## Pictorial

Pictorial is the “seeing” stage, using representations of the objects to model problems. This stage encourages pupils to make a mental connection between the physical object and abstract levels of understanding by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem.

Building or drawing a model makes it easier for pupils to grasp concepts they traditionally find more difficult, such as fractions, as it helps them visualise the problem and make it more accessible.

## Abstract

Abstract is the “symbolic” stage, where pupils are able to use abstract symbols to model problems (Hauser). Only once a child has demonstrated that they have a solid understanding of the “concrete” and “pictorial” representations of the problem, can the teacher introduce the more “abstract” concept, such as mathematical symbols. Pupils are introduced to the concept at a symbolic level, using only numbers, notation, and mathematical symbols, for example  $+$ ,  $-$ ,  $\times$ ,  $\div$  to indicate addition, subtraction, multiplication, or division.



## **Fluency**

Fluency comes from deep knowledge and practice. This is the first stage of pupils' understanding.

Fluency includes: conceptual understanding, accuracy, rapid recall, retention and practice.

Accuracy – Pupils carefully completing calculations with no or few careless errors.

Pace – Pupils are able to quickly recall the appropriate strategy to solve the calculation and progress through a number of questions at an age-appropriate pace.

Retention – Pupils will be able to retain their knowledge and understanding on a separate occasion to when the concept was first introduced.

The key to fluency is deep knowledge and practice and making connections at the right time for a child.

## **Problem Solving**

Mathematical problem solving is at the heart of the Mastery Approach. Pupils are encouraged to identify, understand and apply relevant mathematical principles and make connections between different ideas. This builds the skills needed to tackle new problems, rather than simply repeating routines without a secure understanding.

Mathematical concepts are explored in a variety of representations and problem-solving contexts to give pupils a richer and deeper learning experience. Pupils combine different concepts to solve complex problems, and apply knowledge to real-life situations. Through problem solving, pupils are required to select their mathematical knowledge and apply this to a new concept.

Problem solving is more than just word problems but the RUCSAC approach can be applied to this style of question:

- 1) Read / look at the problem
- 2) Understand the problem by underlining or discussing: What is the problem about?
- 3) Choose – Choose the operation required, the number facts or the approach.
- 4) Solve – Solve the problem by completing jottings on the page
- 5) Answer – complete the answer to the problem
- 6) Check – have I correctly answered the given problem or is there another step?

## Reasoning

Reasoning in maths is the process of applying logical and critical thinking to a mathematical problem in order to work out the correct strategy to use (and as importantly, not to use) in reaching a solution.

Reasoning is sometimes seen as the glue that bonds pupils' mathematical skills together; it's also seen as bridging the gap between fluency and problem solving, allowing pupils to use their fluency to accurately carry out problem solving. It gives children the freedom to look for different strategies when faced with an unfamiliar context that we are really teaching mathematics in primary school.

Logical reasoning requires metacognition (thinking about thinking). It influences behaviour and attitudes through greater engagement, requesting appropriate help (self-regulation) and seeking conceptual understanding. Reasoning promotes these traits because it requires children to use their mathematical vocabulary.

Ways that children can solve problems and reason with maths are by:

- Identifying mathematical sequences
- Spotting and explaining patterns
- Finding missing values
- Explaining if a statement is true or false
- Spotting, explaining and correcting mistakes
- Agreeing or disagreeing with mathematical statements
- Testing theories
- Identifying if a statement is always, sometimes or never true
- Using given information/clues to draw a conclusion
- Proving most efficient methods
- Finding all possibilities
- Representing calculations pictorially or using diagrams
- Using different methods to get the same answer
- Identifying odd ones out
- Making accurate estimates
- Applying known facts
- Comparing to explain what is the same and what is different
- Explaining why something happens
- Identifying equivalent statements
- Creating your own problem solving and reasoning questions

## **Mathematical Talk**

A mastery classroom should never be a quiet classroom. The way pupils speak and write about mathematics transforms their learning. Mastery approaches use a carefully sequenced, structured approach to introduce and reinforce mathematical vocabulary.

To encourage talk in mathematics, teachers may introduce concepts by including sentence structures (stem sentences). Pupils should be able to say not just what the answer is, but how they know it's right. This is key to building mathematical language and reasoning skills. This gives pupils the confidence to communicate their ideas clearly, before writing them down.

Teachers then maintain a high expectation upon pupils to repeat and use the correct mathematical vocabulary to explain their understanding verbally and in their reflection comments. By also displaying the vocabulary during the lesson, pupils will be able to use this independently.

When questioning and encouraging mathematical talk, teachers should provide regular, purposeful opportunities. For example:

- Show me how to complete the calculation
- Explain how you worked that out
- Teach your friend how to complete the calculation
- How do you know which operation to use?
- Why have you chosen this method?
- How else can you represent this number?
- What have you learnt today?

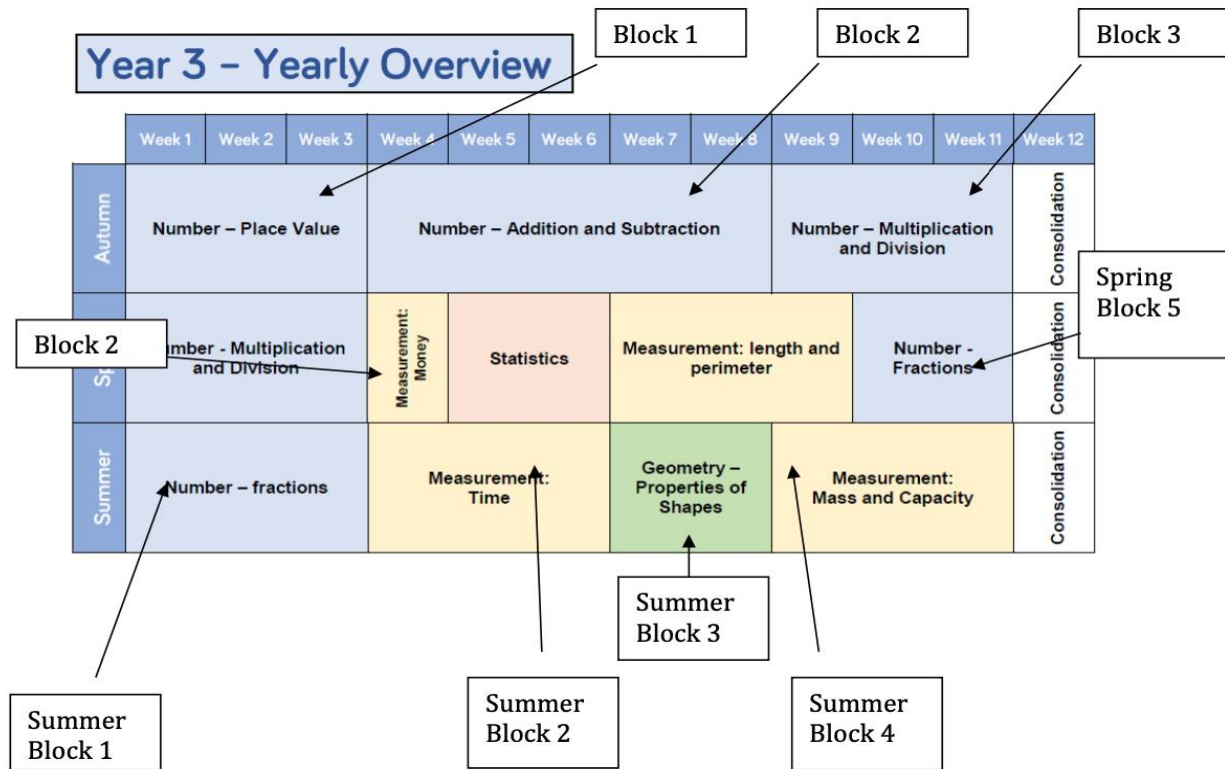
## **Long term planning**

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long-term planning for mathematics taught in the school. At Oakham, teachers in Nursery follow the First 4 Maths scheme of learning, while Reception and Years 1 – 6 follow the White Rose scheme of learning.

These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before

breadth. They support pupils working together as a whole group and provide plenty of time to build reasoning and problem-solving elements into the curriculum.

The White Rose scheme of learning provides a Long-Term Plan and is arranged into blocks:



### Medium term planning

Each term, the Learning Objectives on the White Rose scheme of learning are listed and are time related to ensure coverage and pace:

### Year 3 - Spring Term

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Number - multiplication and division Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Write and calculate mathematical statements			Measurement - money Add and subtract amounts of	Statistics Interpret and present data using bar charts, pictograms and tables.	Measurement - length and perimeter Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).			Number - fractions Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividine			



### Maths Overview 2022/23: Summer 1 - Year 5

Week	1 17/4/23	2 24/4/23	3 1/5/23	4 8/5/23	5 15/5/23	6 22/5/23
Unit	Shape	Shape	Position & Direction	Decimals	Decimals	Decimals
Key Skills Coverage	Understand and use degrees Classify angles Estimate angles Measure angles up to 180 degrees Accurately drawing lines and angles	Calculate angles around a point Calculate angles on a straight line Lengths and angles in shapes Regular and irregular polygons	Read and plot co-ordinates Problem solving with co-ordinates Translation of shapes Translation of shapes with co-	End of block assessment (position & direction) Use known facts to add and subtract decimals within 1 Complements to 1	Add decimals with different numbers of decimal places Subtract decimals with different number of decimal places Efficient strategies for adding and subtracting decimals	Divide by 10, 100 and 1,000 Multiply and divide decimals - missing values End of block assessment (decimals) End of term assessment (arithmetic and

## Short term planning

The above schemes of learning support weekly/daily lesson planning. Lessons are planned using a common planning format and are monitored at intervals by the mathematics subject leader. EYFS planning is based on the medium-term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next.

The planning document outlines:

- The unit being taught that week
- The mental maths focuses that week
- Key vocabulary being used that week
- The learning objective for each day
- Varied fluency activities being taught each day
- Problem solving & reasoning activities being taught each day
- Key questions being discussed each day



### Oakham Primary Maths Planner 2022-23



Week Beginning: 20/3/23		Problem Solving & Reasoning Plenaries:			
Class: 13 (HA)					
Subject: Perimeter & Area					
Key Vocabulary: measure, millimeter, centimeter, meter, kilometer, length, width, area, perimeter squared					
Mental & Oral Starters Focus: Rounding decimals to the nearest whole and tenth					
Day	Learning Objective	Key Questions	Varied Fluency	Problem Solving & Reasoning	Plenary
Monday	To calculate the perimeter of polygons	What is a regular shape? What calculation will give you the perimeter? What operations are you going to use?	Calculating perimeter with all sides given Calculating the perimeter with missing sides Identifying lengths from a given perimeter One-step word problems	Using given clues to spot patterns Explaining mistakes Using and applying given information to solve a problem	Discuss the difference between squares and rectangles using key vocabulary: regular, irregular, polygon
Tuesday	To calculate the area of rectangles	What is area? What is the difference between cm and cm <sup>2</sup> ? Will L x W calculate the perimeter of any shape?	Calculate area by counting squares Calculate the area of rectangles using L x W Draw rectangles from a given area Finding missing lengths	Agreeing/disagreeing with statements Always, sometimes and never true statements Using and applying given information to solve a problem	<b>Finding all possibilities:</b> A rectangle has an area of 18cm <sup>2</sup> , what could the dimensions be? How did you know this?
Wednesday	To calculate the area of compound shapes	What is a compound shape? How can you split a compound shape? Does the area change if you split it differently?	Calculate area by counting squares Calculate the area by splitting rectangles using L x W Finding missing lengths to calculate the perimeter	Using and applying given information to solve a problem Testing theories Proving methods	<b>Making statements correct:</b> Shape A has an area of 60cm <sup>2</sup> and B has an area of 48cm <sup>2</sup> . Add the missing lengths to make this information correct
Thursday	To estimate the area of shapes	What does estimate mean? Can you combine squares to make a whole? Does it matter if your answer is not exact? (Within reason)	Counting squares to estimate the area of irregular polygons Comparing estimated areas Drawing shapes to estimate the area	Agreeing/disagreeing with statements Creating scenarios from given clues	<b>How much more?</b> Each square represents 4cm <sup>2</sup> . How many more cm <sup>2</sup> do you need to add to the second shape to make it approximately the same size?
Friday	White Rose- End of unit assessment – Year 5 – Spring – Perimeter & Area	N/A	N/A	N/A	N/A

**SEND**

Daily mathematics lessons are accessed by pupils with special educational needs and disabilities in Oakham's Structured Learning Environment (The Den). In The Den, children's PLP's incorporate suitable objectives from the National Curriculum for Mathematics or development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the mathematics lesson. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the SENCO, Inclusion Manager and/or the class teacher. Within the daily mathematics lesson teachers have a responsibility to not only provide differentiated activities to support children with SEND but also activities that provide sufficient challenge for children who are high achievers. It is the teachers' responsibility to ensure that all children are challenged at a level appropriate to their ability.

### **Equal Opportunities**

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. This policy is in line with the school's 'Equality Statement'. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons to help children and planned support from Teaching Assistants and other adults.

### **Lesson structure**

Pupils in Nursery and Reception are taught in mixed ability groups (classes) and follow an integrated mathematics curriculum. In Year 1, pupils will be taught in mixed ability groups as a transition strategy, but may be 'set' later in the year following a discussion with the Mathematics Leads and SLT. In Years 2 – 6 the pupils are 'set' into ability groups based on Teacher and Summative Assessments. Mathematics is taught for at least one hour per day (or five hours per week). However, when required, teachers may choose to include additional mathematics lessons in their weekly timetable.

*'The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.'* (National Curriculum)

In all lessons, learning objectives and success criteria are clearly displayed and discussed. The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics.

Lessons involve elements of:

- Instruction – giving information and structuring it well
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays
- Explaining and illustrating – giving accurate and well-paced explanations
- Questioning and discussing
- Consolidating
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points
- Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

All mathematics lessons at Oakham follow the following structure:

#### Starter Activity

Each week there is a mental maths focus, where the first 5 minutes of each lesson is dedicated to promote fluency of arithmetic and embed mental maths methods that have been previously covered. Teachers follow the Mental Maths Progression Map to ensure coverage for each individual year group

#### Main Input

The teacher will introduce the concept for the lessons and model the learning. Children will take part in whiteboard work, questioning and discussions to prepare them for the lesson activity. These activities will be based on varied fluency and work towards achieving the learning objective.

#### Plenary

Used as an opportunity to reflect on the learning and address any misconceptions that arose during the lesson, to consolidate any key learning points during the lesson to further embed the children's knowledge, to introduce/discuss next steps in their learning, or to further engage in the mastery of the subject by completing problem solving & reasoning challenges.

#### Pupils' record of learning

A record of the children's learning is kept in their own individual square-paged Maths exercise book, where they are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient. Children are encouraged to use mental strategies and their own jottings before resorting to more formal written methods. Children's own jottings and use of diagrams to support their work are encouraged throughout all year groups.

There is expected to be evidence of learning in the exercise books for each lesson, even where practical lessons have taken place, there should be photographic evidence of the lessons and a short write up of the activity, its purpose and its success.

### **Marking/Feedback**

The marking and feedback for each Maths lessons follows Oakham's marking policy.

At the beginning of a lesson, children will either draw a red or green stick figure at the top of their book. Those with a green stick figure are the children that will be completing their learning independently, whereas those with a red stick figure are those that have been identified as needing extra support and will be supported at points throughout the lesson by an adult.

During the lesson, live marking can take place, where the teacher or teaching assistant will move around groups of children to mark the work they have already completed. This can then be used as an opportunity address any misconceptions, discuss any struggles the children may be having with their learning and for the teacher to provide instant support, so the children can address and correct mistakes and continue to progress with their learning.

At the end of the lesson, the children's learning will be given a colour based on Oakham's marking policy, which grades their success against the learning objective. If there are any children that have been identified as not achieving the learning objective, their initials, reasons for not achieving the learning objective and what steps are going to be put in place to support them, are written in a 'Marking Feedback Folder'. These children can then be supported (red stick figure) in the next lesson, or the teacher may use this as an opportunity to adapt the learning.

### **Assessment**

#### **Formative**

Throughout the course of any lesson, teachers use a variety of formative assessment techniques:

- Questioning

- Written work
- Whiteboard work
- Marking & Feedback
- Plenaries
- Consolidation activities

### Summative

There are a number of summative assessments that take place at different points across the year:

- White Rose End of Block Assessments
- White Rose Arithmetic and Problem Solving & Reasoning End of Term Assessments
- Time Tables Assessment (Year 4)
- SATs (Year 2 & 6)

All assessment data is inputted onto secure Excel documents where it is tracked, and teachers will use this data to see progress that has been made and identify gaps in learning for any given individual pupil. They can then use this to inform their planning and adapt their teaching.

Furthermore, the assessments are also so teachers can track the progress of the pupils, not only across a unit of maths, but across a term and across the year. This helps build up a picture of the overall progress made of each individual pupil and can then be used to inform end of year judgements.

This data will also aid discussions between staff when moderating Maths across the year group and will also inform the teacher's judgement when assessing the pupils each term, using Oakham's whole school 1-7 progress tracker, which indicates whether a child is working towards, working at or working at greater depth within Maths, against the year group's expectations

### Interventions

A teacher's judgement and data gained from summative assessment are used to identify children that are working towards year groups targets. As well as extra support and differentiated activities put in place in the classroom, these children may also be put on an intervention programme.

The children will complete the intervention with a trained member of staff for half a term. All activities completed by the children in their interventions are logged on the school's intervention record for teachers to refer to.

Entry data for each child at the beginning of the intervention is inputted onto an intervention map and once the programme is complete and assessed again, exit data is produced to assess progress. If appropriate progress is made, the child may come off the intervention and if not, the child may remain on the intervention or other methods may be explored to support the child's learning.

- KS1 Maths Intervention – Rapid Maths
- LKS2 Maths Intervention – Power of 1 & 2
- UKS Maths Interventions – Power of 1 & 2

### **Resources**

Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally in the resources room for pupils to access during lessons

As well the pupils, staff have access to physical and online resources to aid their teaching:

- Mathletics
- Times Tables Rock Stars
- White Rose
- Classroom Secrets
- Twinkl
- Hamilton Trust
- Test Base
- First 4 Maths
- Primary Stars
- Target Your Maths
- Abacus
- Number Blocks (BBC)

### **Role of the maths lead**

- To lead in the development of maths throughout the school.
- To monitor the planning, teaching and learning of mathematics throughout the school.
- To help raise standards in maths.
- To provide teachers with support in the teaching of mathematics.
- To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan
- To monitor and maintain high quality resources.

- To keep up to date with new developments in the area of mathematics

### **Classroom environment**

Each classroom is expected to have appropriate resources and displays visible for children to access to aid their learning. These include:

- Learning objective and success criteria displayed for each lesson
- Teacher modelling on the learning walls
- RUCSAC on display
- Mathematical symbols on display
- Place value on display
- Weekly targets on display
- Examples of children's learning on display
- Examples of mathematical methods on display
- Key mathematical vocabulary on display

### **Home Learning**

#### **Times Tables Rock Stars**

Each child has their own log-in for Times Tables Rock Stars, which they can access in school and at home. Children are baselined on Times Tables Rock Stars at the beginning of each year and given a 'Rock Star Status'. Children can then access the website as and when they can at home, in order to improve their status, which is monitored by the class teacher, who can set targeted times tables for children to focus on. Teachers are also expected to set half-termly challenges (Battle of the Bands) which is to be monitored as rewards (certificates) given to celebrate those that do well.

#### **Mathletics**

Each child has their own log-in for Mathletics, which they can access in school and at home. Teachers set home learning weekly on Mathletics, which is based on the previous week's learning in maths, in order to consolidate. Teachers can monitor each child's activity and scores for each activity on Mathletics, which can be used as another tool to monitor progress and identify gaps in learning, which can be addressed in lessons.

As well as the online resources, teachers can set extra Maths home learning at their discretion.

## **Personal Development**

Learning mathematics supplies children's thoughts with a multitude of incredibly beneficial effects. It helps them think more clearly, helps analytical thinking, quickens their thoughts, encourages practicality, and may be applied in everyday life. The skills that children can learn and enhance through maths can be transferrable to other areas of learning. They can help children's problem-solving, logical thinking, mental fluency, perseverance, ability to cope with failure, and even their use of language.

**Nursery Overview – First 4 Maths**

<b>Mathematics</b>						
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
<p><b>Cardinality &amp; Counting</b> Accurate and consistent verbal counting to 5</p> <p><b>Measures</b> Understand and use specific attributes to compare height (taller and shorter rather than big and small)</p> <p><b>Spatial Reasoning</b> Understand and use simple language of position that doesn't vary by viewpoint (in, on, under, next to)</p> <p><b>Shape</b> Explore rotating and flipping objects to make a match (posting boxes, inset puzzles, jigsaws)</p> <p><b>Sorting &amp; Sequencing</b> Sort by a single property - colour</p>	<p><b>Cardinality &amp; Counting</b> 1:1 correspondence and cardinality to 3</p> <p><b>Measures</b> Understand and use specific attributes to compare length (long, short)</p> <p><b>Spatial Reasoning</b> Understand and use language of position that can vary by viewpoint (in front, behind)</p> <p><b>Shape</b> Explore construction with 3D shapes - combining shapes in two dimensions</p> <p><b>Sorting &amp; Sequencing</b> Sort by 2 properties - colour and size</p>	<p><b>Cardinality &amp; Counting</b> 1:1 correspondence and cardinality to 5</p> <p><b>Measures</b> Understand and use specific attributes for width and thickness (wide, narrow, thick, thin)</p> <p><b>Spatial Reasoning</b> Understand and use everyday language of direction (up, down, through, over, under)</p> <p><b>Shape</b> Explore pattern and picture making with 2D pattern blocks</p> <p><b>Sorting &amp; Sequencing</b> Sort using different combinations of properties (size attributes linked to measure, colour and shape)</p>	<p><b>Cardinality &amp; Counting</b> Begin to recognise numerals and match to sets</p> <p><b>Measures</b> Understand and use specific attributes for weight/mass (heavy light, heavier, lighter)</p> <p><b>Spatial Reasoning</b> Understand and use language of movement (forwards, backwards, sideways, turn)</p> <p><b>Shape</b> Begin to notice properties of 3D shape and find shapes that are the same</p> <p><b>Sorting &amp; Sequencing</b> Simple AB sequences varying colour or size (continue and copy patterns)</p>	<p><b>Cardinality &amp; Counting</b> Conservation of number to 5 with order irrelevance</p> <p><b>Comparison</b> Compare sets of objects - which has more, fewer - just by looking</p> <p><b>Measures</b> Time - sequence of events (first, next, after, before, morning, afternoon, evening, yesterday, tomorrow)</p> <p><b>Spatial Reasoning</b> Discuss routes and the order and location of things seen extending vocab (in between, above, below, around, beside, across, along)</p> <p><b>Shape</b> Explore more complex construction with 3D shapes - combining shapes to make arches and enclosures</p> <p><b>Sorting &amp; Sequencing</b> Simple AB sequences of sounds, actions and objects (make own patterns)</p>	<p><b>Cardinality &amp; Counting</b> Accurate and consistent verbal counting to 10</p> <p><b>Composition</b> Separate a group of three or four objects in different ways</p> <p><b>Comparison</b> Making equal sets</p> <p><b>Measures</b> Understand and use specific attributes for capacity (full, empty, part full)</p> <p><b>Spatial Reasoning</b> Compare capacities Understand and use language of distance (far away, near, how far?)</p> <p><b>Shape</b> Begin to notice properties of 2D shapes and find shapes that are the same including on the faces of 3D shapes</p>	

**Reception Overview – White Rose**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn term</b>	<p><b>Getting to know you</b> (Take this time to play and get to know the children!)</p> <p>Contains overviews and frequently asked questions</p> <p><a href="#">VIEW</a></p>	<p><b>Just like me!</b></p> <p>Match and sort</p> <p>Compare amounts</p> <p>Compare size, mass &amp; capacity</p> <p>Exploring pattern</p> <p><a href="#">VIEW</a></p>	<p><b>It's me 1, 2, 3!</b></p> <p>Representing 1, 2 &amp; 3</p> <p>Comparing 1, 2 &amp; 3</p> <p>Composition of 1, 2 &amp; 3</p> <p>Circles and triangles</p> <p>Positional language</p> <p><a href="#">VIEW</a></p>	<p><b>Light &amp; dark</b></p> <p>Representing numbers to 5</p> <p>One more or less</p> <p>Shapes with 4 sides</p> <p>Time</p> <p><a href="#">VIEW</a></p>	<p><b>Alive in 5!</b></p> <p>Introducing zero</p> <p>Comparing numbers to 5</p> <p>Composition of 4 &amp; 5</p> <p>Compare mass (2)</p> <p>Compare capacity (2)</p> <p><a href="#">VIEW</a></p>	<p><b>Growing 6, 7, 8</b></p> <p>6, 7 &amp; 8</p> <p>Combining two amounts</p> <p>Making pairs</p> <p>Length &amp; height</p> <p>Time (2)</p> <p><a href="#">VIEW</a></p>	<p><b>Building 9 &amp; 10</b></p> <p>Counting to 9 &amp; 10</p> <p>Comparing numbers to 10</p> <p>Bonds to 10</p> <p>3-D shapes</p> <p>Spatial awareness</p> <p>Patterns</p> <p><a href="#">VIEW</a></p>	<p><b>Consolidation</b></p>	<p><b>Summer term</b></p> <p><b>To 20 and beyond</b></p> <p>Build numbers beyond 10</p> <p>Count patterns beyond 10</p> <p>Spatial reasoning 1</p> <p>Match, rotate, manipulate</p> <p><a href="#">VIEW</a></p>	<p><b>First, then, now</b></p> <p>Adding more</p> <p>Taking away</p> <p>Spatial reasoning 2</p> <p>Compose and decompose</p> <p><a href="#">VIEW</a></p>	<p><b>Find my pattern</b></p> <p>Doubling</p> <p>Sharing &amp; grouping</p> <p>Even &amp; odd</p> <p>Spatial reasoning 3</p> <p>Visualise and build</p> <p><a href="#">VIEW</a></p>	<p><b>On the move</b></p> <p>Deepening understanding</p> <p>Patterns &amp; relationships</p> <p>Spatial mapping (4)</p> <p>Mapping</p> <p><a href="#">VIEW</a></p>

# Y1 Overview – White Rose

	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 term	Number <b>Place value</b> (within 10) VIEW					Number <b>Addition and subtraction</b> (within 10) VIEW					Geometry <b>Shape</b> VIEW									
Spring term	Number <b>Place value</b> (within 20) VIEW					Number <b>Addition and subtraction</b> (within 20) VIEW					Measurement <b>Length and height</b> VIEW		Measurement <b>Mass and volume</b> VIEW							
Summer term	Number <b>Multiplication and division</b> VIEW					Number <b>Fractions</b> VIEW					Geometry <b>Position and direction</b> VIEW		Number <b>Place value</b> (within 100) VIEW		Measurement <b>Money</b> VIEW		Measurement <b>Time</b> VIEW		Consolidation	

**Y2 Overview – White Rose**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn term</b>	Number <b>Place value</b> VIEW				Number <b>Addition and subtraction</b> VIEW				Geometry <b>Shape</b> VIEW			
<b>Spring term</b>	Measurement <b>Money</b> VIEW			Number <b>Multiplication and division</b> VIEW				Measurement <b>Length and height</b> VIEW		Measurement <b>Mass, capacity and temperature</b> VIEW		
<b>Summer term</b>	Number <b>Fractions</b> VIEW			Measurement <b>Time</b> VIEW			Statistics VIEW		Geometry <b>Position and direction</b> VIEW		Consolidation	

**Y3 Overview – White Rose**

	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 term	Number <b>Place value</b> VIEW		Number <b>Addition and subtraction</b> VIEW		Number <b>Multiplication and division A</b> VIEW		Number <b>Fractions A</b> VIEW		Number <b>Multiplication and division A</b> VIEW		Number <b>Multiplication and division A</b> VIEW	
Spring term	Number <b>Multiplication and division B</b> VIEW		Measurement <b>Length and perimeter</b> VIEW		Measurement <b>Mass and capacity</b> VIEW		Measurement <b>Statistics</b> VIEW		Measurement <b>Mass and capacity</b> VIEW		Measurement <b>Mass and capacity</b> VIEW	
Summer term	Number <b>Fractions B</b> VIEW		Measurement <b>Money</b> VIEW		Measurement <b>Time</b> VIEW		Geometry <b>Shape</b> VIEW		Geometry <b>Shape</b> VIEW		Statistics <b>Statistics</b> VIEW	
	Consolidation											

**Y4 Overview – White Rose**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn term</b>	Number <b>Place value</b> VIEW				Number <b>Addition and subtraction</b> VIEW			Measurement <b>Area</b> VIEW	Number <b>Multiplication and division A</b> VIEW			Consolidation
<b>Spring term</b>	Number <b>Multiplication and division B</b> VIEW			Measurement <b>Length and perimeter</b> VIEW		Number <b>Fractions</b> VIEW			Number <b>Decimals A</b> VIEW			
<b>Summer term</b>	Number <b>Decimals B</b> VIEW		Measurement <b>Money</b> VIEW		Measurement <b>Time</b> VIEW		Consolidation	Geometry <b>Shape</b> VIEW		Statistics VIEW	Geometry <b>Position and direction</b> VIEW	

**Y5 Overview – White Rose**

	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 term	Number <b>Place value</b> VIEW			Number <b>Addition and subtraction</b> VIEW		Number <b>Multiplication and division A</b> VIEW		Number <b>Fractions A</b> VIEW				
Spring term	Number <b>Multiplication and division B</b> VIEW			Number <b>Fractions B</b> VIEW		Number <b>Decimals and percentages</b> VIEW		Measurement <b>Perimeter and area</b> VIEW		Measurement <b>Statistics</b> VIEW		
Summer term	Geometry <b>Shape</b> VIEW			Geometry <b>Position and direction</b> VIEW		Number <b>Decimals</b> VIEW		Number <b>Negative numbers</b> VIEW		Measurement <b>Converting units</b> VIEW		Measurement <b>Volume</b> VIEW

**Y6 Overview – White Rose**

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn term</b>	Number Place value VIEW	Number Addition, subtraction, multiplication and division VIEW	Number Fractions A VIEW	Number Fractions B VIEW	Measurement Converting units VIEW							
<b>Spring term</b>	Number Ratio VIEW	Number Algebra VIEW	Number Decimals VIEW	Number Fractions decimals and percentages VIEW	Measurement Area, perimeter and volume VIEW	Statistics VIEW						
<b>Summer term</b>	Geometry Shape VIEW			Geometry Position and direction VIEW	Themed projects, consolidation and problem solving VIEW							

## Mental Maths Progression Map

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Counting</b>	<p>Say numbers in order from 0 – 10</p> <p>Recognise and say numbers to 20 and order</p> <p>Count on and back in 1s from 0 to 20</p>	<p>Count on and back in 1s &amp; 10s to 100</p>	<p>Count on and back in 1s, 2s, 5s and 10s to 100</p> <p>Count on and back in 3s to 36</p>	<p>Count on and back in 3s, 4s, 5s, 10s and 50s</p>	<p>Count on and back 4s, 5s, 25s, 50s, 100s and 1,000s</p> <p>Count backwards through zero to include negative numbers</p>	<p>Count on and backwards in steps of 10, 100, 1000 for any given number up to 1 million</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero</p>	<p>Count on and backwards in steps of 10, 100, 1000 for any given number up to 1 million</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero</p>
<b>Place Value</b>		<p>Identify missing numbers in sequences up to 100</p> <p>Partition and recombine numbers up to 100</p> <p>Compare and order</p>	<p>Identify missing numbers on a track, line or grid up to 100</p> <p>Partition and recombine numbers to 100</p> <p>Compare and order more</p>	<p>Identifying the place value of digits in 3 and 4-digit numbers</p> <p>Partition and recombine numbers to 1,000</p> <p>Placing 3 and 4-digit</p>	<p>Identifying the place value of digits in 4 and 5-digit numbers</p> <p>Partition and recombine numbers to 10,000</p> <p>Placing 4 and 5-digit</p>	<p>Identifying the place value of digits in 5 and 6-digit numbers</p> <p>Partition and recombine numbers to 1,000,000</p> <p>Placing 5 and 6-digit numbers on a number line</p>	<p>Identifying the place value of digits in and 7-digit numbers</p> <p>Partition and recombine numbers to 10,000,000</p> <p>Identifying the place value of</p>

		numbers up to 100	than two numbers up to 100 using < and >	<p>numbers on a number line</p> <p>Ordering &amp; comparing 3 and 4-digit numbers</p> <p>Rounding to the nearest 10 and 100</p>	<p>numbers on a number line</p> <p>Placing decimal numbers with 1 decimal place on a number line</p> <p>Ordering &amp; comparing 4 and 5-digit numbers</p> <p>Rounding to the nearest 10, 100 and 1,000</p> <p>Rounding decimals to the nearest whole number</p>	<p>Placing decimal numbers with up to 2 decimal places on a number line</p> <p>Ordering &amp; comparing 5 and 6-digit numbers</p> <p>Rounding to the nearest 10, 100, 1,000, 10,000 &amp; 100,000</p> <p>Rounding decimals to the nearest whole number and tenth</p>	<p>digits in 6 and 7-digit numbers</p> <p>Partition and recombine numbers to 10,000,000</p> <p>Placing 6 and 7-digit numbers on a number line</p> <p>Placing decimal numbers with up to 2 decimal places on a number line</p> <p>Ordering &amp; comparing 6 and 7-digit numbers</p> <p>Rounding to the nearest 10, 100, 1,000, 10,000, 100,000 &amp; 1,000,000</p> <p>Rounding decimals to the</p>
--	--	-------------------	--	---	--	--	--

							nearest whole number and tenth
<b>Addition &amp; Subtraction</b>		Number bonds to 7, 8, 9 & 10	Numbers bonds to 7, 8, 9 & 10	Number pairs to any number up to 100	Number bonds to the next multiple of 10 within 4-digit numbers	Number bonds to the next multiple of 10 within 5-digit numbers	Number bonds to the next multiple of 10 within 6-digit numbers
		Number bonds to 20	Number bonds to multiples of 10 up to 100	Number bonds to the next multiple of 10 within 3-digit numbers	Number bonds to the next multiple of 100 within 4-digit numbers	Number bonds to the next multiple of 100 within 5-digit numbers	Number bonds to the next multiple of 100 within 6-digit numbers
		Finding 1 more and 1 less than a number	Number bonds to 100 (multiples of 10)	Finding 1, 10 & 100 more/less	Number bonds to 1,000	Number bonds to the next 100 and 1,000 within 5-digit numbers	Number bonds to the next 100 and 1,000 within 6-digit numbers
		Adding and subtracting 1-digit numbers	Finding 10 more and less of a number	Add & subtract any pairs of 2-digit numbers totalling less than 100	Number bonds to the next whole number (1 and 2 decimal places)	Number bonds to the next whole number (1 and 2 decimal places)	Number bonds to the next whole number (1 and 2 decimal places)
		Adding and subtracting 1-digit numbers to/from 2-digit numbers	Adding and subtracting 1-digit numbers	Add & subtract sets of 3 numbers below 100	Number bonds to the next whole number (1 decimal place)	Finding 1, 10, 100, 1,000, 10,000 and 100,000 more/less	Finding 1, 10, 100, 1,000, 10,000, 100,000 & 1,000,000 more/less
		Adding and subtracting 1-digit numbers to/from	Adding and subtracting 1-digit numbers to/from 2-		Add & subtract any	Add and subtract 1s, 10s, 100s,	

		<p>multiples of 10</p>	<p>digit numbers (including bridging 10s)</p> <p>Adding and subtracting 2-digit numbers (including bridging 10s)</p>	<p>Add and subtract 1s, 10s and 100s from any 3-digit number</p> <p>Add and subtract multiples of 1, 10 and 100 from any 3-digit number</p>	<p>pairs of 2-digit numbers totalling more than 100</p> <p>Finding 1, 10, 100 &amp; 1,000 more/less</p> <p>Add and subtract 1s, 10s, 100s and 1000s from any 4-digit number</p> <p>Add and subtract multiples of 1, 10, 100 and 1,000 from any 4-digit number</p>	<p>1,000s, 0.1s and 0.01s</p> <p>Add and subtract multiples of 1, 10, 100 and 1,000 from any 5-digit number</p> <p>Applying different mental strategies (e.g. rounding &amp; adjusting, complements to 1,000, counting on/back etc.)</p>	<p>Add and subtract 1s, 10s, 100s, 1,000s, 10,000s, 0.1s and 0.01s</p> <p>Add and subtract multiples of 1, 10, 100 and 1,000 from any 6-digit number</p> <p>Applying different mental strategies (e.g. rounding &amp; adjusting, complements to 1,000, counting on/back etc.)</p>
<p><b>Multiplication &amp; Division</b></p>		<p>Identifying multiples of 2, 5 &amp; 10</p> <p>Counting in 2s, 5s &amp; 10s</p>	<p>2, 3, 5 &amp; 10 times tables</p> <p>Division facts for the 2, 3, 5 &amp; 10 times tables</p>	<p>2, 3, 4, 5, 6, 8 &amp; 10 times tables</p> <p>Division facts for the 2, 3, 4,</p>	<p>2, 3, 4, 5, 6, 7, 8, 9, 10 &amp; 12 times tables</p> <p>Division facts for the 2, 3, 4, 5, 6, 7, 8, 9,</p>	<p>2, 3, 4, 5, 6, 7, 8, 9, 10, 11 &amp; 12 times tables</p> <p>Division facts for the 2, 3, 4, 5, 6, 7,</p>	<p>2, 3, 4, 5, 6, 7, 8, 9, 10, 11 &amp; 12 times tables</p> <p>Division facts for the 2, 3, 4, 5, 6, 7,</p>

				<p>5, 6, 8 &amp; 10 times tables</p> <p>Identifying multiples of 2, 3, 4, 5, 6, 8 &amp; 10</p>	<p>10 &amp; 12 times tables</p> <p>Multiply by 10, 100 and 1,000</p> <p>Divide by 10, 100 and 1,000</p>	<p>8, 9, 10, 11 &amp; 12 times tables</p> <p>Multiply by 10, 100 and 1,000, including decimals</p> <p>Divide by 10, 100 and 1,000, including decimals</p> <p>Applying different mental strategies (e.g. known facts, multiples etc.)</p> <p>Recognising common multiples and factors</p> <p>Recognising square, cube and prime numbers</p> <p>Division with remainders</p>	<p>8, 9, 10, 11 &amp; 12 times tables</p> <p>Multiply by 10, 100 and 1,000, including decimals</p> <p>Divide by 10, 100 and 1,000, including decimals</p> <p>Multiply and divide by powers of 10</p> <p>Applying different mental strategies (e.g. known facts, multiples etc.)</p> <p>Recognising common multiples and factors</p> <p>Recognising square, cube and prime numbers</p> <p>Division with remainders</p>
--	--	--	--	--	---	--	---

							Multiplying decimal (1dp) by whole numbers
<b>Doubling &amp; Halving</b>		Doubling numbers up to 10  Halving even numbers up to 20	Doubling numbers up to 50  Halving even numbers up to 100	Double and halve numbers to 100	Double and halve numbers to 1,000	Double and halve any given number  Scaling up and down – multiplying and dividing by 4 by doubling/halving by 2 twice.	Double and halve any given number  Scaling up and down – multiplying and dividing by 4 by doubling/halving by 2 twice.
<b>Fractions</b>		Finding $\frac{1}{2}$ of numbers to 20  Finding $\frac{1}{4}$ of numbers to 20	Finding $\frac{1}{2}$ of numbers  Finding $\frac{1}{4}$ & $\frac{3}{4}$ of numbers  Finding $\frac{1}{3}$ and $\frac{2}{3}$ of numbers	Finding equivalent fractions of $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{3}$ and $\frac{3}{4}$  Finding $\frac{1}{2}$ , $\frac{1}{4}$ , $\frac{1}{3}$ and $\frac{3}{4}$ of amounts	Finding equivalent fractions of $\frac{1}{2}$ s, $\frac{1}{4}$ s, $\frac{1}{3}$ s and $\frac{1}{5}$ s  Finding $\frac{1}{2}$ s, $\frac{1}{4}$ s, $\frac{1}{3}$ s and $\frac{1}{5}$ s of amounts  Fractions in their simplest form	Finding equivalent fractions of $\frac{1}{2}$ s, $\frac{1}{4}$ s, $\frac{1}{3}$ s and $\frac{1}{5}$ s (including whole numbers and decimals)  Finding unit and non-unit fractions of amounts  Fractions in their simplest form	Finding equivalent fractions of $\frac{1}{2}$ s, $\frac{1}{4}$ s, $\frac{1}{3}$ s and $\frac{1}{5}$ s (including whole numbers and decimals)  Finding unit and non-unit fractions of amounts  Fractions in their simplest form

						<p>Converting improper fractions to mixed numbers</p> <p>Matching equivalent fractions and decimals</p> <p>Percentages of amounts – multiples of 10</p>	<p>Converting improper fractions to mixed numbers</p> <p>Matching equivalent fractions and decimals</p> <p>Percentages of amounts – multiples of 1, 5 &amp; 10</p>
<b>Measure</b>		<p>Identifying the value of coins to £1</p> <p>Finding the total of coins up to £1</p> <p>Adding amounts of money by counting on in 1ps, 2ps, 5ps and 10ps</p>	<p>Identifying the value of coins to £2</p> <p>Identify the values of notes to £20</p> <p>Finding the total (pounds &amp; pence)</p> <p>Counting up to find change from £1</p>	<p>Adding and subtracting 1ps, 10ps and £1s</p> <p>Converting units of weight – g and kg</p> <p>Converting units of capacity – ml and l</p> <p>Converting units of</p>	<p>Adding and subtracting 1ps, 10ps, £1s and £10s</p> <p>Converting units of weight – g and kg</p> <p>Converting units of capacity – ml and l</p> <p>Converting units of</p>	<p>Adding and subtracting to the next/previous multiple of £1</p> <p>Reading scales of weight, capacity, length (up to 4-digits) and temperature</p> <p>Converting analogue to digital time</p> <p>Identifying the time to the hour</p>	<p>Adding and subtracting to the next/previous multiple of £1</p> <p>Reading scales of weight, capacity, length (up to 5-digits) and temperature</p> <p>Converting analogue to digital time</p> <p>Identifying the time to the hour</p>

	Counting up to find change from 20p	Finding an amount using coins up to £1	length – cm and m	length – mm, cm and m	Identifying the time to the half hour	Identifying the time to the half hour
	Using number facts to subtract money	Identifying the time to the hour	Converting analogue to digital time	Converting analogue to digital time	Identifying the time to quarter past and quarter to	Identifying the time to quarter past and quarter to
	Identifying the time to the hour	Identifying the time to the half hour	Identifying the time to the hour	Identifying the time to the hour	Identifying the time to the nearest 5 minutes	Identifying the time to the nearest 5 minutes
	Identifying the time to the half hour	Identifying the time to quarter past and quarter to	Identifying the time to the half hour	Identifying the time to the half hour	Identifying the time to the nearest 1 minute	Identifying the time to the nearest 1 minute
	Identifying the time – 1 hour more or less	To order times	Identifying the time to quarter past and quarter to	Identifying the time to quarter past and quarter to	Calculating elapsed time	Calculating elapsed time
			Identifying the time to the nearest 5 minutes	Identifying the time to the nearest 5 minutes	Calculating time intervals	Calculating time intervals
				Identifying the time to the nearest 1 minute	Read timetables	Read timetables

### **Problem Solving & Reasoning Plenaries**

*A range of PS & R questions and activities should be used in plenaries, every week of every unit of maths. These are highlighted in yellow on the 'Weekly Maths Planning Template' and should include:*

- Identifying mathematical sequences
- Spotting and explaining patterns
- Finding missing values
- Explaining if a statement is true or false
- Spotting, explaining and correcting mistakes
- Agreeing or disagreeing with mathematical statements
- Testing theories
- Identifying if a statement is always, sometimes or never true
- Using given information/clues to draw a conclusion
- Proving most efficient methods
- Finding all possibilities
- Representing calculations pictorially or using diagrams
- Using different methods to get the same answer
- Identifying odd ones out
- Making accurate estimates
- Applying known facts
- Comparing to explain what is the same and what is different
- Explaining why something happens
- Identifying equivalent statements
- Creating your own problem solving and reasoning questions