

Signed: Tammie McNamara (Headteacher)

Date: February 2023

Signed: Maria Williams (Chair of Governors)

Date: February 2023

February 2023

Date of next review: February 2023

Our Mission Statement

Loved

We love one another as Jesus taught us - our friends, our families and those who we may never meet.

Valued

We value everyone - everyone is important; pupils, staff, parents, governors and members of the community– no matter their race, religion ability or need. We try to live like Jesus taught us.

Challenged

We challenge each other - not only with our learning but challenge each other to be more merciful to others, have a little more understanding of others' needs and challenge each other to be better people.

Statement of Intent

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them, throughout their life.

Inclusion Statement

The Governors are committed to `inclusion` in education: this involves minimizing barriers to learning and participation. At our school we believe all children should be valued equally within a climate of warmth and support and in which all pupils feel it is okay to take risks and make mistakes as they learn.

Equal Opportunity Statement

The Governors and Staff at Holy Cross believe that all people are entitled to equal opportunities, respect and consideration regardless of race, colour, creed, gender, disability or personal circumstances. Therefore, we are opposed to any form of prejudice or discrimination which denies people this equality. This principle applies to both adults and children in our school.

The New Curriculum

This year, we include FS1 as we have taken on Nursery children and their maths curriculum will be developed alongside the Development Matters Framework and White Rose for EYFS.

FS1 – Nursery

Topic	Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
Number and Number Patterns	Rote counting	Touch counting	Number recognition	Link numerals and amounts	1 more and 1 less	Simple addition
Shape, Space, Measure	2D shapes – shape hunt – what shapes can you find in the Nursery?	Prepositions – Where is Mavis?	Repeating Patterns – can you create a repeating pattern with the farm animals?	3D shapes – what shapes can we use to create models of beanstalks, Gingerbread men...	Compare size – which castle is the tallest/shortest? Which watering can is the heaviest/lightest?	Sequence events – describe the sequence of making the jam sandwich using words such as first and then.

FS2 – Reception

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

In Reception, the guidance has been divided into ten phases and provides a variety of opportunities to develop the understanding of number, shape, measure and spatial thinking.

The five Counting Principles outlined in White Rose Maths for Reception include the following:

1. **The one-one principle:** This involves assigning one number name to each object that is being counted. Children need to ensure that they count each object only once ensuring they have counted every object.
2. **The stable-order principle:** Children understand when counting, the numbers have to be said in a certain order.
3. **The cardinal principle:** children understand that the number name assigned to the final object in a group is the total number of objects in that group.
4. **The abstract principle:** This involves children understanding that anything can be counted including things that cannot be touched including sounds and movements, e.g. jumps.
5. **The order-irrelevance principle:** This involves children understanding that the order we count a group is irrelevant. There will be the same number.

The children in EYFS will also be exposed to new mathematical language such as cardinal, classification, conservation (of number), numeral, ordinal, partition, subitise, number, quantity.

The next few pages outlines the topics taught in KS1 and KS2.

Year 1

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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 (within 10)					Number Addition and subtraction (within 10)					Geometry Shape	Consolidation
Spring	Number Place value (within 20)			Number Addition and subtraction (within 20)			Number Place value (within 50)		Measurement Length and height		Measurement Mass and volume	
Summer	Number Multiplication and division			Number Fractions		Geometry Position and direction	Number Place value (within 100)		Measurement Money	Measurement Time		Consolidation

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Year 2

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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				Number Addition and subtraction					Geometry Shape		
Spring	Measurement Money	Number Multiplication and division					Measurement Length and height		Measurement Mass, capacity and temperature			
Summer	Number Fractions			Measurement Time		Statistics		Geometry Position and direction		Consolidation		

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Year 3

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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		Number Addition and subtraction					Number Multiplication and division A				
Spring	Number Multiplication and division B			Measurement Length and perimeter			Number Fractions A		Measurement Mass and capacity			
Summer	Number Fractions B	Measurement Money		Measurement Time			Geometry Shape		Statistics		Consolidation	

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Year 4

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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			Number Addition and subtraction				Measurement Area	Number Multiplication and division A			Consolidation
Spring	Number Multiplication and division B			Measurement Length and perimeter		Number Fractions			Number Decimals A			
Summer	Number Decimals B	Measurement Money		Measurement Time		Consolidation		Geometry Shape		Statistics	Geometry Position and direction	

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Year 5

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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		Number Addition and subtraction		Number Multiplication and division A			Number Fractions A				
Spring	Number Multiplication and division B			Number Fractions B		Number Decimals and percentages			Measurement Perimeter and area		Statistics	
Summer	Geometry Shape			Geometry Position and direction		Number Decimals			Number Negative numbers	Measurement Converting units		Measurement Volume

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Year 6

Yearly overview

The yearly overview provides suggested timings for each block of learning, which can be adapted to suit different term dates or other requirements.

	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		Number Addition, subtraction, multiplication and division					Number Fractions A		Number Fractions B		Measurement Converting units
Spring	Ratio		Algebra		Number Decimals		Number Fractions, decimals and percentages		Measurement Area, perimeter and volume		Statistics	
Summer	Geometry Shape			Geometry Position and direction		Themed projects, consolidation and problem solving						

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By the time the children are at the end of Year 3 they must be able to use a formal written method for all operations and the differentiated outcomes throughout the years will be the size of the numbers the children are using.

A large proportion of number skills, formerly from Key Stage 3, have been moved into Year 6 and children are now asked to carry out long division, adding, subtracting and multiplying of fractions with common denominators. Topics such as Probability have been removed.

Aims

The aims for teaching mathematics at Holy Cross are that pupils should:

- ✓ Have a sense of the size of a number and where it fits into the number system.
- ✓ Know by heart number facts such as number bonds, multiplication tables and doubles and halves of both whole numbers and decimals (year 6).
- ✓ Use what they know by heart to figure out numbers mentally using the four operations.
- ✓ Calculate accurately and efficiently, both mentally and on paper, drawing on a range of calculation strategies.
- ✓ Make sense of 'real life' maths problems and recognise the operations and steps needed to solve them.
- ✓ Explain their methods and reasoning using correct mathematical vocabulary.
- ✓ Judge whether their answers are reasonable and have strategies for checking them where necessary.
- ✓ Know units for measuring and make sensible estimations of measures.
- ✓ Explain and make predictions from numbers in graphs, diagrams, charts, and tables.
- ✓ Develop spatial awareness and an understanding of the properties of 2D and 3D shapes.
- ✓ Be able to recognise and write simple fractions, solving problems with fractions of shape and number

How do we teach Maths at Holy Cross?

At Holy Cross Primary School, we use White Rose Maths schemes of learning, and a modified version of their resources in order to provide a comprehensive and expertly designed journey through the world of Mathematics. White Rose is based on a small steps approach that keeps all learners together. By using the resources across the school we can ensure consistency of the mathematical elements and comprehensive coverage of the curriculum.

We believe that this approach will facilitate consistent delivery of Mathematics across the school and across the inevitable ability range within year groups. It is also designed to support mathematicians who require more time and visual representation to grasp fundamental concepts and those who require challenging further to achieve Greater Depth.

White Rose Concrete Resources support us to provide:

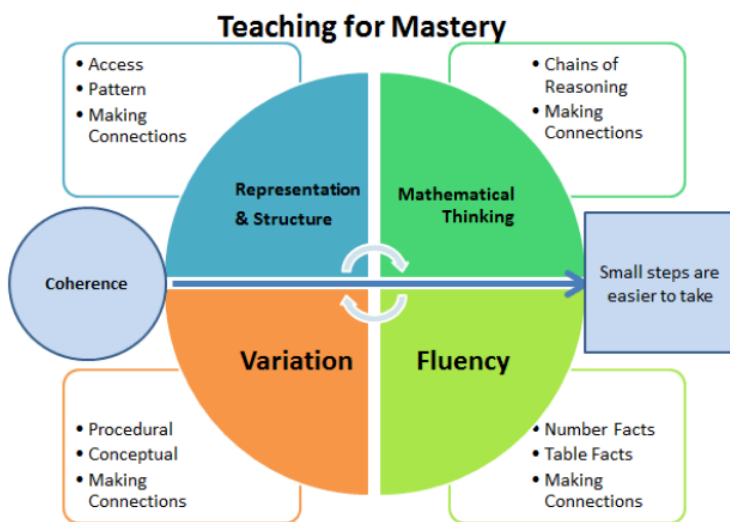
- CPA (Concrete / Pictorial / Abstract) representations.
- Variation (Procedural / Conceptual).
- Logical and effective small steps.
- Vocabulary.
- Manipulative usage.

White Rose resources support:

- All learners through a whole class learning approach.
- EYFS stage learning.
- Visual representation designed to show concepts clearly.
- Re-visiting of concepts.
- Bar models and PW (part-whole) models for problem solving.
- Clear progression of calculation.
- Fluency of calculation and concept with 'Flashback 4' questions

Manipulatives are:

- Used purposefully and appropriately.
- They are available for appropriate lessons – this builds a mental picture of a mathematical concept.
- Manipulative use develops through concepts as the learner moves from EYFS to Y6 White Rose uses the Teaching for Mastery model as illustrated below. This has been developed by the NCETM 'Teaching for mastery'



Pupils with special educational needs and Pupil Passports

Teachers will aim to include and engage all pupils fully in their daily mathematics lessons. Children will benefit from the increased emphasis on oral and mental work and participation in watching and listening to other children demonstrating and explaining their methods. Children will receive differentiated group work and focused group teaching with the teacher and TA most weeks. However, a pupil whose difficulties are severe or complex, may need to be supported with an individualised programme in the main part of the lesson.

Principal Aims for EYFS

From September 2022, Holy Cross launched their Foundation 1 Nursery provision. The scheme of Mathematics for these children will be developed throughout the course of the year. Nursery children will focus on number and number patterns, as well as shape, space and measure.

EYFS follow the White Rose schemes of learning – principally securing the representations of numbers up to 10. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built.

Principal Aims for KS1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Principal Aims for Lower KS2

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Principal Aims for Upper KS2

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and long division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Assessment and recording

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class and to keep records.

These assessments inform the planning and teaching at each level, and, also inform target setting and tracking.

STAR Assessments are also carried out as a diagnostic assessment to assess a child's fluency in maths. Pre- and Post-learning is also assessed at the beginning and end of each topic in KS1 and KS2

Short term assessments

These are informal. They feed into the day-to-day teaching and planning and help target support to individual children. Informal notes may be kept, particularly on children whose performance is out of the ordinary. The notes are logged on our whole-class feedback sheet which will support the teachers' marking, assessing, and planning.

Medium and long-term assessment

Teachers use an assessment tracking grid to help them give feedback to parents through reports and parents' evenings as well as giving specific, clear, detailed feedback about the child's progress to their next teacher or school. These on-going teacher assessments, which are to be supported by the White Rose assessments which are to be done at the beginning and end of each topic and are used to make judgements about the level a child has reached and inform the school's tracking system 3 times a year.

With the new framework in numeracy being introduced the White Rose assessment tasks will ensure that children have understood each topic so that gaps and misconceptions can be addressed in a timely fashion. The assessments will be completed at the beginning (Pre-Learning sheets) at the end (Post-Learning sheets) of each topic so children who already understand the task can be challenged and progress can be shown over each topic.

Data is also logged onto our new assessment system called OTrack. Formative and Summative assessments are logged at the end of each term.

SEND children who are not working at the expected level for maths will be tracked on B Squared.

Monitoring and Review

It is the responsibility of the numeracy subject leader to:

- Monitor the standards of children's work and the quality of teaching in numeracy, through scrutiny of work, observations of lessons and pupil interviews.
- Support colleagues in the teaching of numeracy, being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school.
- Report regularly on the achievements and standards and the quality of the provision in numeracy across the school.
- Review, order and maintain resources required for the teaching of maths.

Presentation

All work should be dated with the short date, with the WALT stuck or written in, and should be well-presented according to the level the children have reached. Pencils and rulers should be used in numeracy books and children should stick to the one number per each box presentation rule. Numbers should be written in a uniformed manner and with no loops.

Layout expected for each piece of maths work completed:

04.11.21

Flashback 4

1. $1+1=2$
2. $2+2=4$
3. $3+3=6$
4. $4+4=8$


WALT: number bonds to 20

Fluency

1. $1+19=20$
2. $2+18=20$
3. $3+17=20$

R & PS/ Reasoning and problem solving

I have 3 pencils in my pot. It fits 20.
How many more can fit in the pot?



There will be 17 more pencils that can fit in the pot, I know this because $20-3 = 17$

Maths Leader will:

- Monitor numeracy in the school e.g. through lesson observations termly.
- Curriculum walks and the scrutiny of tracker, children's work, teachers' planning, and assessments.
- Ensure continuity in assessment throughout the school and lead practical staff meetings to support this.
- Keep up to date with new developments and keep the staff informed.
- Play a key role in formulating, maintaining and reviewing the numeracy policy.
- Lead colleagues and be supportive.
- Disseminate knowledge and materials.
- Audit resources regularly.

The Class teacher will:

- Be responsible for the teaching of Numeracy as set out in the policy.
- Provide planning and reviews for the Head teacher and numeracy leader to have access to.
- Provide samples of numeracy work to the numeracy leader when required.
- Assess children's work in order to detail future planning.
- Feedback will be given to parents at the Termly Learning Meetings in the Advent and Lenten Term.

Key Stage 2 Maths Book Expectations

We follow the White Rose Maths Scheme of learning supplemented by Twinkl, Classroom Secrets, Deepening Understanding, TTRS and any other resources.

Presentation

All work should be dated with a clear and concise WALT (taken straight from White Rose)

Pupils should use one number for one square at all times unless writing fractions – from year 4 onwards both the denominator and the numerator should be written in one square to help prepare for mixed fractions.

The majority of the work should be written straight into books with allowances made for geometry, measurement, fractions and money units.

Rulers should be used to draw straight lines within the book and rubbing out should be kept to a minimum.

Years 5 and 6 will draw a margin in their books for each new page, no smaller than 3 squares but no bigger than 5 squares.

Pre and Post Assessments

All units should start with a pre- assessment which is YELLOW in colour. All units should end with a post- assessment which is GREEN in colour.

Achievement Assessment
16.1.23

Pre-Learning

My Learning Challenge

Recognise addition and subtraction number sentences, add and subtract 1-digit number from a 2-digit number

I have ten buttons.

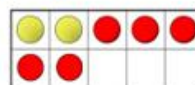


I add 5 more buttons.

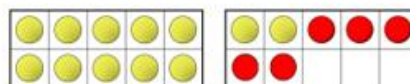


How many buttons are there in total?

Complete the number sentences.



$$2 + 5 = \square$$



$$12 + 5 = \square$$

Pre-unit Assessments should have a selection of questions taken from previous learning units on the same strand and from the unit you are about to teach – end of block assessments are very useful for this. This allows the teachers to assess quickly where each pupil is and where they will start on objectives (fluency, reasoning or problem solving)

Teachers should mark this, or this could be self-marked as a whole class where the child would use a green biro to mark their work, left blank if the pupil leaves the question. The pre-unit assessment should be used to mark the beginning of a topic.

Achievement Assessment
20.1.23

Post-Learning

My Learning Challenge

Counting money and giving change

Count the money.



_____ p



_____ p

Alex and Mo have some coins.



Alex



Mo



Who has the most money?

Match the money to the correct amount.



£5



£20



£15

4 Tick the coins that make 73p



5 Max needs £1 to buy a comic. He has these coins.



How much more does Max need?

Post Assessments should be green in colour.

These should be completed a few days after you have completed the unit, stuck in the books in the same manner as the Pre- Assessments and marked by the teacher, or this could be self-marked as a whole class where the child would use a green biro to mark their work. The questions between the pre and post assessments should be reflective of each other so clear progress can be seen by the pupil.

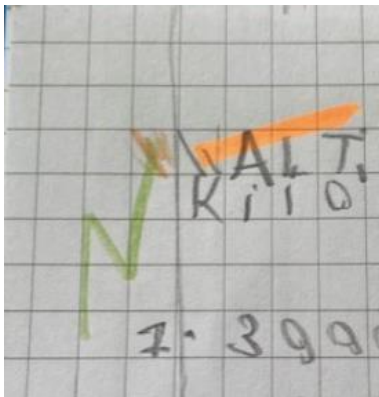
The questions that most frequently incorrect on the post assessments must be noted using the whole class feedback sheet and used to inform the class teachers retrieval practice flash backs.

Flashbacks

Each maths lesson should start with a flashback. This is your retrieval practise, if you don't use a skill you lose the skill.

White Rose maths Flashbacks can be used, however these are not necessarily aimed to your classes needs. If areas of weaknesses have been identified on Post Assessments, these must be included.

Flashbacks and retrieval Practice should be noted by a simple flash in pencil crayon in the books as seen in the picture below. The flash should be no bigger than 3 7mm squares (2 1cm squares).



Flashback 4 Year 5 | Week 11 | Day 1

1) Which programme is the longest? Star Wars

Programme	Start time	Finish time
Doctor Who	10:45	11:30
Star Wars	11:30	12:20
Where's Wally	12:20	13:00

2) Subtract 27 cm from 28 m. Give your answer in m. 253m

3) How many kg are the same as 320 g? 0.32 kg

4) Subtract 100 from 2,041 1,941

White Rose Maths

Self-Assessment

Pupils should still be self-assessing their work in each lesson- green for I understood the work and am feeling confident and orange for not so. Ideally no reds should be used as teacher should have picked this up during the lesson.

Self-assessment should be completed in pencil crayon next to the WALT.

Fluency, Reasoning and Problem Solving.

Each part of the lesson should be clearly defined in the pupils books. Pupils are to write, fluency, reasoning and problem solving as headings as they get to that part of the work.

Pupils who achieved well in pre-assessments should have very little, if any fluency work. Key Stage 2 pupils should be trained to do this. To ease teacher workload, the headings can be written onto printed worksheets, text book pages for the pupils to write down.

Concrete, Pictorial and Abstract.

When learning a new concept, it is expected that the books clearly show the progression from concrete manipulatives, to pictorial representations to the formal abstract methods. Each pupil should have access to place value counters and other manipulative is KS2.

Sentence Stems for reasoning should be on display in each KS2 classroom, either as a working wall or in the pupils books so the pupils are used to using and seeing them. Children in KS1 will be exposed to these and they will be displayed on the wall to encourage those who are ready to solve problems using sentence stems.

Feedback


Feedback should be in line with the whole school marking policy. Any errors should be corrected by the pupil in green pen and in years 5 and 6 a brief explanation of why they think they got the question incorrect. This can be modelled by using a visualiser.

As per policy, the WALT should be highlighted either green or orange.

If for instance pupils all had a common error of not explaining an answer fully or struggled to show working out, this should be noted on the whole class marking sheet and modelled in the next session. Clear correlation should be seen from the marking sheet to the pupils' books.

Friday Challenges

Friday challenges should be completed weekly in four main parts:

THE FRIDAY CHALLENGE


Name: _____
Number: Pentecost 5.1.2

Calculation:

On Saturday a zoo has 50,285 visitors.
On Sunday the zoo has 10,500 more visitors than Saturday.
The zoo keeper says, "We have had over one hundred thousand visitors across the two days."
Do you agree? Explain your answer.

Place Value:

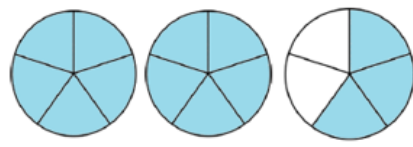
Put the following weights in order starting with the smallest.

A	700,000 kg	B	87,000 kg
C	Ninety-four thousand kg	D	399,458 kg

Fractions, decimals and percentages:

Convert $2\frac{3}{5}$ to an improper fraction. _____

Use the diagram to help you.



Shape, Space, Measure:

Draw another line on each diagram to make the type of angle written below it.

_____	_____
Right angle	Acute angle

Obtuse angle	

These should be reflective of the pupils' needs.