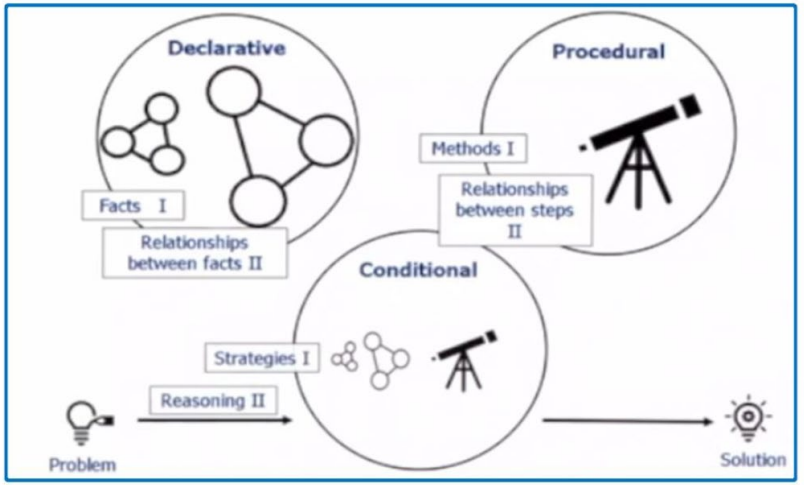
Leedstown School Mathematics Curriculum Document

Maths at Leedstown

At Leedstown, Mathematics is a fundamental part of each day. We believe that Maths teaches us how to make sense of the world around us. We aim to provide children with the skills in order to develop the ability to calculate, to communicate, to reason and to solve problems; this enables them to explore, understand, and appreciate relationships and patterns in both number and shape in their everyday life. We wish to promote enjoyment and enthusiasm for learning through practical activity, cross-curricular learning, exploration, and discussion.

We deliver the teaching and learning for maths by following the **small steps** adapted from **White Rose**. We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps. All children will be taught the content from their year group only. We aim for children to become true masters of content, applying and being creative with new knowledge in multiple ways.

The categories of knowledge



At Leedstown, we ensure that all children access an ambitious and aspiring curriculum whilst there is equity in our offer for all pupils to secure their factual (declarative) knowledge – introduced as **"I know that"** and refers to facts and formulae, and the relationship between facts.

Teachers model how to make links between the relationships of steps in the methods they use (procedural knowledge) - introduced with **"I know how"** - and the principles underpinning them.

Teachers will also model the strategies that can be used to apply prior learning to reason and solve problems (conditional knowledge) - this can be introduced with **"I know when"**. This extends to combinations of declarative and procedural knowledge which then become strategies for particular types of problems.

As a school, we have adopted the Chris Moyse **'I Do, We Do, You Do'** approach which is complemented by the Education Endowment Fund's (EEF) Metacognition Seven Step Model. Pupils' learning is scaffolded with a gradual release from teacher instruction to independent learning as a lesson progresses.

Maths at Leedstown - Lesson Plan Procedure

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Starter

10 mins

- Start the lesson with a declarative activity to help activate prior learning.
- Retrieval practise. 5 questions to support declarative and procedural knowledge and to 'bridge' into new content.

Main Input

I do, we do

15 mins

- Share LO and focus for the lesson – introduce any new mathematical vocabulary.
- Teacher to model questions, linking it back to prior learning where necessary. Ensure concrete resources are being used to support.
- Complete 2-3 tasks together, either on boards or straight into books.

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You do - independent

15 mins

- Children to work independently/in pairs/group to complete a learning task that helps them to practise their declarative and procedural knowledge.
- Children to be given opportunity to apply conditional knowledge throughout unit.
- Teacher and TA to support groups and individuals where necessary based on AfL

Plenary and assessment

10 mins

- Bring the class back together again, drawing out key learning and addressing misconceptions.
- ACP – use of this to determine who has understood the learning and who may need further support.

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How will this look in a Mathematics lesson?

Starter

10 mins

- **Declarative activity** – **KS1** - number bond/fact activities. This could be number fans, missing numbers, counting sticks. **KS2** - Times table practise for all year groups. This should be accessible for all children and to get them thinking mathematically. Short and snappy.
- **Retrieval practise**. 5 warm up questions. Here the declarative and the procedural link. Recap prior learning needed to support today's new content. This is also an opportunity to assess upcoming new content.

Main Input

I do, we do

15 mins

- Share LO and focus – ensure this follows the long-term curriculum map and identify if it's declarative, procedural or conditional knowledge being taught.
- Always try to find some ways in which the maths you are teaching relates to the real world
- I do – introduce new concept being taught. Model this using the same media that the children use. Use concrete resources to support. Teacher model their thinking out loud.
  We do – as a class work through 1 or 2 problems together, the children could use whiteboards or straight into their books. Supporting adults to circulate and assess and support children. Ensure concrete resources are available.
  All children, including those supported by a TA, to be in the classroom and supported by adults so they are not missing the modelling by the teacher.
- Strategies – be specific at the strategies they will be using. What will they do if they get stuck? What declarative knowledge do they already have?

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You do - independent

15 mins

- Children should be working towards the same composite/outcome.
- Learning should be adapted according to need; this could include scaffolding the task or deepening the learning.
- Varied fluency ensure that tasks are not repetitive.
  Ensure tasks are scaffolded appropriately to make exercises accessible for children still not confident with concepts. As children become increasingly confident, remove or 'fade' these scaffolds and encourage them to tackle exercises using 'pen and paper' working and their own mental strategies.
  Aiming for Concrete > Pictorial > Abstract
- All children must have the opportunity to apply their conditional knowledge throughout a unit.
- During this time the class teacher may become the resource for adapting for lowest 20% and TA may helicopter the room checking in and live marking.

Plenary and assessment

10 mins

- Link back to today's LO and focus for the lesson.
- Use of a specific question or True / False Q / Odd one out / Prove it to determine who has understood the learning and who may need further support. Use of White boards, visualizer, number fans etc.
- Follow up the ACP (Targeted support from TA 1-1/group as appropriate or a whole class starter for the next lesson)

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KIRFS (Key Instant Recall Facts) Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS (Reception)	I can say the numbers from 0 to 5 and back from 5 to 0 in order.	I can say the numbers from 0 to 10 and back from 10 to 0 in order.	I can read and write numbers to 5 in numerals.	I can partition numbers to 5 into two groups.	I can count, read and write numbers to 10 in numerals.	I can partition numbers to 10 into two groups.
Year 1	I know number bonds for each number to 6.	I know number bonds to 10 (+ and -).	I know one more or one less than numbers to 20.	I know doubles of numbers to 10.	I know halves of numbers to 10.	I can count in 2s.
Year 2	I can count, read and write numbers to 100 in numerals.	I know number bonds for each number to 20.	I know doubles and halves of numbers to 20.	I know the multiplication and division facts for the 10 times table.	I know multiplication and division facts for the 5 times table.	I know the multiplication and division facts for the 2 times table.
Year 3	I can count in multiples of 4, 8, 50 and 100.	I can find 10 or 100 more or less than a given number.	I know number bonds to 100.	I know the multiplication and division facts for the 4 times table.	I know multiplication and division facts for the 8 times table.	I know multiplication and division facts for the 3 times table.
Year 4	I know multiplication and division facts for the 6 and 9 times tables.	I know multiplication and division facts for the 7 and 11 times tables	I know multiplication and division facts for the 12 times tables.	I know the multiplication and division facts for all times tables up to 12 × 12.	I can multiply and divide single-digit numbers by 10 and 100.	I can recall decimal equivalents of fractions.
Year 5	I can round numbers to 1 million to the nearest 10, 100 and 1,000.	I can recall square numbers up to 122 and their square roots.	I know the first 5 cube numbers.	I can identify prime numbers up to 50.	I can identify multiples and factors up to 12x12.	I can read and write decimal numbers as fractions.
Year 6	I can count in powers of 10, forwards and backwards with numbers to 10 million.	I can identify common factors of a pair of numbers.	I can find fractions of amounts.	I know common fraction, decimal and percentage equivalences.	I can divide and multiply by 10, 100 and 1,000.	I can find simple percentages of amounts (1%, 5%, 10% etc).

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Reception / Y1 Maths Long Term Plan

Autumn	**Reception**	Match and sort, Comparing amounts, Numbers to 5, One more and less					Numbers to 5, One more and less						Observation check numbers to 5		Circles and triangles, Shapes with 4 sides		Observation Check one more and less		Consolidation					
	Year 1	Place value to 10					Addition and subtraction within 10						Place value assess and conditional		Shape		A & S assess and conditional							
Spring	**Reception**	Shape observation check	Numbers to 10.		Combining two amounts, Adding more, taking away.			Numbers to 10 Observation check	Beyond 10		Combining two amounts, adding more, taking away observation check		Length and height				Beyond 10 observation check		Compare mass and capacity		Consolidation			
	Year 1	Shape assess and conditional	Place value to 20		Addition and subtraction within 20			PV to assess and conditional	Place value to 50		A & S assess and conditional		Length and height				PV to 50 ass and conditional		Mass and volume		Consolidation			
Summer	**Reception**	Measure observation check		Doubling, sharing and grouping.	Even and odd	Doubling, sharing and grouping observation check	Spatial awareness, positional language		Even and odd observation check	Deepening Understanding			Deepening understanding		Deepening understanding observation check		Time	Consolidation						
	Year 1	Measure assess and condiional		Multiplication and division	Fractions	M & D assess and conditional	Positional and direction		Fractions assess	Place value to 100			Money		PV to 100 assess conditional		Time	Consolidation						

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Autumn Term – Year 1		
Block 1- Place value to 10		
Declarative	**Procedural**	**Conditional**
Read and write numbers from 1 to 10 in numerals and words. **ACP: Rapid fire questions** Identify one more or less than a given number.	Identify and represent numbers using objects and pictorial representations including the number line. Use the language of: equal to, more than, less than, most, least	Reason about the location of numbers to 10 within the linear number system, including comparing using < > and =.
Block 2- Addition and Subtraction within 10		
Declarative	**Procedural**	**Conditional**
Represent and use number bonds and related subtraction facts within 10 Develop fluency in addition and subtraction facts within 10.	Add and subtract one-digit and two-digit numbers to 10, including zero. Read, write and interpret mathematical statements involving addition, subtraction and equals signs. Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts.	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations. Solve missing number problems such as 7 = * - 9 Relate additive expressions and equations to real-life contexts.
Block 1 Conditional knowledge		
Block 1 Place Value assessment		
Block 3 Shape		
Declarative	**Procedural**	**Conditional**
(Recognise common 2-D shapes: rectangles including squares, circles and triangles presented in different orientations. Recognise common 3-D shapes: cuboids (including cubes, pyramids and spheres presented in different orientations. Know that the above shapes are not always similar to each other. Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside.	Compose 2-D and 3_d shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. Make whole, half, quarter and three-quarter turns in both directions.	Connect turning clockwise with movement on a clock face.
Block 2- Addition and Subtraction within 10 Conditional knowledge		
Block 2 Addition and subtraction assessment		

Spring Term – Year 1
Block 3 shape assessment
Block 1 - Place Value to 20

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Declarative	Procedural	Conditional
Read and write numbers to at least 20 in numerals. Represent and use number bonds and related subtraction facts within 20. Develop fluency in addition and subtraction facts within 10.	Add and subtract one-digit and two-digit numbers to 20, including zero. Read, write and interpret mathematical statements involving addition, subtraction and equals signs. Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts.	Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =.
Block 2 - Addition and Subtraction within 20		
Declarative	**Procedural**	**Conditional**
Represent and use number bonds and related subtraction facts within 20. Develop fluency in addition and subtraction facts within 10.	Add and subtract one-digit and two-digit numbers to 20, including zero. Read, write and interpret mathematical statements involving addition, subtraction and equals signs. Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts.	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations. Solve missing number problems such as 7 = * - 9
Block 1 Place value to 20 assessment		
Block 3 - Place Value to 50		
Declarative	**Procedural**	**Conditional**
Read and write numbers to at least 50 in numerals. Represent and use number bonds and related subtraction facts within 20. Develop fluency in addition and subtraction facts within 10.	Add and subtract one-digit and two-digit numbers to 20, including zero. Read, write and interpret mathematical statements involving addition, subtraction and equals signs. Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts.	
Block 2 addition and subtraction assessment		
Block 4 - Length and Height		
Declarative	**Procedural**	**Conditional**
	Measure and record: lengths/heights, mass/weight, capacity volume, time.	Compare, describe and solve practical problems for: lengths/heights,
Block 5 - Mass and Volume		
Declarative	**Procedural**	**Conditional**
	Measure and record: mass/weight, capacity volume	Compare, describe and solve practical problems for: mass/weight, capacity volume
Block 3 Place value to 50 assessment		

Summer Term – Year 1
Block 4/5 Measure assessment

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Declarative	Procedural	Conditional
Recognise and use language relating to dates, including the days of the week, weeks, months and years.	Measure and record: lengths/heights, mass/weight, capacity volume, time.	Compare, describe and solve practical problems for: lengths/heights, mass/weight, capacity volume, time.
Block 1 - Multiplication and Division		
Declarative	**Procedural**	**Conditional**
	Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	Solve one-step problems involving multiplication and division, using concrete objects, pictorial representations and arrays with support.
Block 2 - Fractions		
Declarative	**Procedural**	**Conditional**
Recognise, find and name a half as one of two equal parts of an object, shape or quantity.	Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	
Block 1 Multiplication and division assessment		
Block 3 - Position and Direction		
Declarative	**Procedural**	**Conditional**
Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside	Make whole, half, quarter and three-quarter turns in both directions.	Connect turning clockwise with movement on a clock face.
Block 2 Fractions assessment		
Block 4 Place value to 100		
Declarative	**Procedural**	**Conditional**
Read and write numbers to at least 100 in numerals. Represent and use number bonds and related subtraction facts within 20. Develop fluency in addition and subtraction facts within 10.	Add and subtract one-digit and two-digit numbers to 20, including zero. Read, write and interpret mathematical statements involving addition, subtraction and equals signs. Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts.	
Block 5 Money		
Declarative	**Procedural**	**Conditional**
Recognise and know the value of different denominations of coins and notes.		
Block 4 Place value to 100 assessment		
Block 6 Time		
Declarative	**Procedural**	**Conditional**

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Recognise and use language relating to dates, including the days of the week, weeks, months and years	Measure and record time. (How many jumps can I do in a minute)	Sequence events in chronological order.

Autumn Term - Year 2

Block 1 - Place value

Declarative	Procedural	Conditional
Read and write numbers to at least 100 in numerals and in words. Identify numbers using different representations, including the number line. Recognise the place value of each digit in a two-digit number Count in steps of 10 from any number, forward and backward	Order and compare numbers from 0 up to 100; use < > and = signs. Represent and estimate numbers using different representations, including the number line. Compose and decompose 2-digit numbers using standard and non-standard partitioning.	Reason about the location of any 2-digit number in the linear number system, including identifying the previous and next multiple of 10. Use place value and number facts to solve problems.

Block 2- Addition and subtraction

Declarative	Procedural	Conditional
Secure fluency in addition and subtraction facts within 10. Secure fluency in addition and subtraction facts that bridge 10, through continued practice. Recall (to 10) and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. Add and subtract across 10. Add and subtract within 100 by applying related 1-digit facts. Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?"	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. Apply their increasing knowledge of mental and written methods Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Block 1 Place Value assessment

Block 3 Shape

Declarative	Procedural	Conditional
Identify and describe the properties of 2-D shapes using precise language, including the number of sides and line symmetry in a vertical line. Identify and describe the properties of 3-D shapes using precise language, including the number of edges, vertices and faces Identify 2-D shapes on the surface of 3-D shapes	Compare and sort common 2-D and 3-D shapes and everyday objects.	Compare 2-d and 3-D shapes by reasoning about similarities and differences in properties. Order and arrange combinations of mathematical objects in patterns and sequences.

Block 2 Addition and subtraction assessment

Spring Term - Year 2

Block 3 shape assessment

Block 1 - Money

Declarative	Procedural	Conditional
Recognise and use symbols for pounds (£) and pence (p).	Combine amounts of money to make a particular value. Find different combinations of coins that equal the same amounts of money	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change

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Block 2 – Multiplication and Division		
Declarative	**Procedural**	**Conditional**
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division). Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
Block 1 Money assessment		
Block 3 - Length and Height		
Declarative	**Procedural**	**Conditional**
	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and =	
Block 4 - Mass, Capacity and Temperature		
Declarative	**Procedural**	**Conditional**
	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels Compare and order lengths, mass, volume/capacity and record the results using >, < and =	
Block 2 multiplication and division assessment		

Summer Term - Year 2		
Block 3/4 Measurement assessment		
Block 1 - Fractions		
Declarative	**Procedural**	**Conditional**
Recognise, find, name and write fractions 1/3 , 1/4 ,2/4 and 3/4 of a length, shape, set of objects or quantity Recognise the equivalence of 2/4 and 1/2. Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	Write simple fractions for example, 1/2 of 6 = 3	
Block 2 - Time		
Declarative	**Procedural**	**Conditional**
Tell and write the time to five minutes, including quarter past/to the hour. Know the number of minutes in an hour and the number of hours in a day.	Draw the hands on a clock face and write the time to five minutes, including quarter past/to the hour. Compare and sequence intervals of time.	

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Block 1 Fractions assessment		
Block 3 - Statistics		
Declarative	**Procedural**	**Conditional**
	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.
Block 2 Time assessment		
Block 4 - Position and Direction		
Declarative	**Procedural**	**Conditional**
Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise).		
Block 3/4 Statistics and Positional and Direction assessment		

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Year 2/3 Maths Long Term Plan

Autumn	**Year 2**	Place Value			Addition and Subtraction				PV and conditional	Shape					A & S assess and conditional	Consolidation			
	Year 3	Place Value			Addition and Subtraction				Place value assess and conditional	Shape					A & S assess and conditional	Multiplication and Divisi			
Spring	**Year 2**	Shape assess and conditional	Money		Multiplication and Division			Money assess and conditional	Length and Height			Multiplication and Division assessment and conditional	Mass, Capacity and Temperature			Consolidation			
	Year 3	Shape assess and conditional	Money		Multiplication and Division			Money assess and conditional	Length and perimeter			Multiplication and division assessment and conditional	Mass and capacity and temperature			Consolidation			
Summer	**Year 2**	Measure assess and conditional	Fractions		Time		Fraction assess	Statistics		Time assess	Position and direction			Statistics/PD assess and conditional		Consolidation and investigation			
	Year 3	Measure assess and conditional	Fractions		Time		Fractions assess and conditional	Statistics		Time assess	Position and Direction			Statistics and P/D assess and conditional		Consolidation and Investigation			

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Autumn Term		
Block 1 - Place Value		
Declarative	**Procedural**	**Conditional**
Read and write numbers to at least 100/1000 in numerals and in words. ***ACP: Quiz on mini whiteboards.*** Identify numbers using different representations. ***ACP: Show numbers on a number line, using Base 10, bead string, part whole model etc.*** ***ACP: How many ways can you represent 7892?*** Recognise the value of each digit in a 2/ three -digit number. ***ACP: Mini whiteboard quiz, focusing on digit values.. What does this 2 represent?*** Count in steps of 10 from any number, forward and backwards. ***ACP: Oral counting using counting stick. TA lead and T asses.*** Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. ***ACP: Oral skip counting and 10/100 more or less than questions.*** Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of10; apply this to work out how many 10s there are in other 3-digit multiples of 10. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Order and compare numbers from 0 up to 100/1000.; use < > and = signs. ***ACP: Mini whiteboard with <, > and =*** ***ACP: Fluent in 5 questions.*** Represent and estimate numbers using different representations, including the number line. ***ACP: Explore the number 7.*** ***ACP: PPT quiz.*** Compose and decompose 2-digit numbers/3-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 37?*** ***ACP: How many ways can you partition 367? When & why might you use a particular decomposition?***	Reason about the location of any 2-digit/3-digit number in the linear number system, including identifying the previous and next multiple of 10 and 100. ***ACP: Display a 1-100 number line. T asks questions about numbers, TA records.*** ***ACP: Oral session using ITP Number Line - Mathsframe*** Use place value and number facts to solve problems. ***ACP: Quick quiz, multiple choice: plan in answers with misconceptions.*** Solve number problems and practical problems involving the declarative and procedural knowledge above. ***ACP: Low stakes quiz.***
Block 2 - Addition and Subtraction		

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Declarative	Procedural	Conditional
Secure fluency in addition and subtraction facts within 10. ***ACP: Rapid fire questions on mini whiteboards.*** Secure fluency in addition and subtraction facts that bridge 10, through continued practice. ***ACP: Rapid fire questions on mini whiteboards.*** Recall (to 10) and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. ***ACP: Rapid fire questions on mini whiteboards.*** Calculate complements to 100. ***ACP: Quick quiz n whiteboards.*** Understand and use the commutative property of addition and understand the related property for subtraction. ***ACP: Write a brief explanation as to why addition is commutative and subtraction is not.***	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number/ three-digit number and ones; a two-digit number/ three-digit number and tens; two two-digit numbers/ three-digit numbers; adding three one-digit numbers; a three-digit number and hundreds. ***ACP: Low stakes test covering all aspects of the composite. Free choice of resources, assess level of abstraction.*** ***ACP: Quick quiz to include missing numbers.*** Add and subtract across 10. ***ACP: Mini quiz.*** Add and subtract within 100 by applying related 1-digit facts. ***ACP: Mini quiz.*** Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?" ***ACP: Multiple choice quiz.*** Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. ***ACP: Quick quiz to include missing numbers.***	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ***ACP: Low stakes test covering all aspects of the composite. Free choice of resources, assess level of abstraction.*** Apply their increasing knowledge of mental and written methods. ***ACP: Low stakes test covering all aspects of the composite. Orally assess methods used and reason for choice.*** Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ***ACP: Quick quiz, multiple choice: plan in answers with misconceptions. Orally assess use of vocabulary.*** Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. ***ACP: Low stakes test. Include questions which cover the above.***
Block 1 Place value assessment		
Block 3 – Shape		
Declarative	**Procedural**	**Conditional**
Identify, describe and identify right angles in 2-D shapes using precise language, including the number of sides and line symmetry in a vertical line. ***ACP: Show shapes and ask children to name and describe them.*** Identify and describe the properties of 3-D shapes using precise language, including the number of edges,	Compare and sort common 2-D and 3-D shapes and everyday objects. ***ACP: Practical session to assess all aspects of the composite orally*** Draw 2-D shapes and make 3-D shapes using modelling materials. ***ACP: Practical session.***	Order and arrange combinations of mathematical objects in patterns and sequences. ***ACP: Practical activities using Pattern Blocks/Unifix cubes.*** Compare 2D and 3D shapes by reasoning about similarities and differences in properties. ***ACP: Display 2 shapes e.g., a cube and a square, a cube and a cuboid. What is the same and what is different?***

vertices and faces. Recognise 3-D shapes in different orientations and describe them. ***ACP: Display shapes on slides. Quick quiz in response on whiteboards.*** ***ACP: Show shapes and ask children to name and describe them.*** Identify 2-D shapes on the surface of 3-D shapes ***ACP: Show shapes and ask children to name faces.*** Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. ***ACP: Quick quiz – show in different orientations and sizes.***	Identify whether angles are greater than or less than right-angle. ***ACP: Display angles on slides. Quick quiz in response on whiteboards.***	
Block 2 addition and subtraction assessment		
Block 4 - Multiplication and division/Consolidation		
Declarative	**Procedural**	**Conditional**
Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response*.** Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions***		

Spring Term		
Block 3 Shape assessment		
Block 1 Money		
Declarative	**Procedural**	**Conditional**
Recognise and use symbols for pounds (£) and pence (p).	Combine amounts of money to make a particular value. ***ACP: Show coins to make 29p and 42p.***	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

ACP: Mini quiz on whiteboard in response to slide showing amounts.	Find different combinations of coins that equal the same amounts of money. ***ACP: Explode a pound.*** Add and subtract amounts of money to give change, using both £ and p in practical contexts. ***ACP: Low stakes quiz. Possibly a practical session.***	***ACP: Practical activity.***
Block 2 Multiplication and Division		
Declarative	**Procedural**	**Conditional**
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even number.	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. ***ACP: Paper-based quiz involving all 3 signs in different locations*** ***ACP: Quick quiz to cover all element of the composite.***	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. ***ACP: Low stakes quiz.*** ***ACP: Give the children multiplication and division problems. Ask them to solve them using as many of the above ways as possible.*** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division). ***eg. Children represent the same problem as missing factor multiplication problem.*** Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. ***ACP: Write a mini explanation as to why multiplication is commutative and division is not. Give examples to match!***
Block 1 Money assessment		
Block 3 Length, height and perimeter		
Declarative	**Procedural**	**Conditional**
	Choose and use appropriate standard units to estimate and measure, compare, add and subtract length/height in any direction (m/cm/mm) using rulers. ***ACP: Practical observation.*** Compare and order lengths and record the results using >, < and = ***ACP: Practical session and observation of recording.***	

	Measure the perimeter of simple 2-D shapes. ***ACP: Practical session.***	
Block 2 Multiplication and Division assessment		
Block 4 Mass, Capacity and Temperature		
Declarative	**Procedural**	**Conditional**
	Choose and use appropriate standard units to estimate and measure, compare, add and subtract mass (kg/g); volume, temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using scales, thermometers and measuring vessels. ***ACP: Practical observation.*** Compare and order mass, volume/capacity and record the results using >, < and = ***ACP: Practical session and observation of recording.***	
Summer Term		
Block 4 measure assessment		
Block 1 Fractions		
Declarative	**Procedural**	**Conditional**
Recognise, find, name and write fractions 1/3, 1/4 ,2/4 and 3/4 of a length, shape, set of objects or quantity. Recognise fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Low stakes paper-based quiz covering all elements of the composite.*** Recognise the equivalence of 2/4 and 1/2. Recognise and show, using diagrams, equivalent fractions with small denominators. ***ACP: Show an image of a shapes with ½ and 2/4 coloured. Ask what is the same and what is different?*** ***ACP: Quick fire questions. Record on whiteboards.***	Write simple fractions for example, 1/2 of 6 = 3 ***ACP: Mini quiz to solve fractions. Include errors, such as ½ of 4 = 8*** Find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Compare and order unit fractions, and fractions with the same denominators. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	
Block 2 Time		

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Declarative	Procedural	Conditional
Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. ***ACP: Low stakes test*** Know the number of minutes in an hour and the number of hours in a day. Know the number of seconds in a minute and the number of days in each month, year and leap year. ***ACP: Oral responses.*** Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Estimate and read time with increasing accuracy to the nearest minute. ***ACP: Quick fire oral questions.*** Use vocabulary such as o'clock, a.m., p.m., morning, afternoon, noon and midnight. ***ACP: Quick fire oral questions.***	Draw the hands on a clock face and write the time to five minutes, including quarter past/to the hour. ***ACP: Low stakes test.*** Compare and sequence intervals of time. ***ACP: Low stakes test.*** Record and compare time in terms of minutes, seconds and hours. ***ACP: Practical session – mins and secs.*** Compare the duration of events. ***ACP: Quick quiz on whiteboards.***	
Block 1 Fractions assessment		
Block 3 Statistics		
Declarative	**Procedural**	**Conditional**
	Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. ***ACP: Low stakes test.*** Interpret and present data using bar charts, pictograms and tables. ***ACP: Low stakes quiz.***	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ***ACP: Whole class oral responses.*** Ask and answer questions about totalling and comparing categorical data. ***ACP: Whole class oral responses.*** Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?] using information presented in scaled bar charts and pictograms and tables. ***ACP: Low stakes quiz.***

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Block 2 Time assessment		
Block 4 Position and direction		
Declarative	**Procedural**	**Conditional**
Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). ***ACP: Practical session*** Recognise angles as a property of shape or a description of turn. *ACP: Write a definition of an angle.* Identify right-angles, recognise that two right-angles make a half-turn, three make three quarters of a turn and four a whole turn. ***ACP: Quick fire questions on whiteboards.***		Order and arrange combinations of mathematical objects in patterns and sequences. ***ACP: Practical activities using Pattern Blocks/Unifix cubes (Focus on orientation)***
Block 3 Statistics assessment		
Block 5 Consolidation and assessment		
Declarative	**Procedural**	**Conditional**

Year 4/5/6 Maths Long Term Plan

Autumn 4	Number- Place Value	Addition Subtraction	PV assess and conditional	Multiplication and Division	A & S assess and conditional	Geometry - Angles	M & D Assess and conditional	Fractions	- Angles asses s	Consolidation
Autumn 5/6	Number- Place Value	Addition Subtraction	PV assess and conditional	Multiplication Division	A & S assess and conditional	Geometry -Angles	M & D assess and conditinoal	Fractions	Angles asses s	Consolidation

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Spring 4	Fractions assess and conditional	Fractions Decimals		Geometry - Shape	FD assess and condiational	Position + Direction	Shape - assess and condiational	Length, perimeter and area	Statistics	Time	L.P.A. assess	Problem solving
Spring 5/6	Fractions assess and conditional	Fractions Decimals Percentages		Geometry - Shape	FDP assess and condiational	Position + Direction	Shape - assess and condiational	Perimeter, area and volume	Statistics	Ratio	P.A.V. assess and conditional	Problem solving
Summer 4	P&D assess	Money and converting units	CU assess	Y4 - Time	Money assess + cond	Time	Time Assess and conditional	Project work/ consolidation				
Summer 5/6	P&D assess	Converting units	Algebra CU assess and conditional	Y5 - Time Y6 - Revision	SATs	Project work/Consolidation						

Autumn Term

Block 1- Place value

Declarative	Procedural	Conditional
Read and write numbers up to 1,000/ 1 000 000/10 000 000 in numerals and words and determine the value of each digit. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Recognise the place value of each digit in numbers up to 4 digits/ 2 dp/ up to 10 000 000 including decimal fractions	Order and compare numbers up to and beyond 1000/1 000 000 /10 000 000 ***ACP: Quick whiteboard quiz.*** Represent and estimate numbers using different representations ***ACP: Response to slides.***	Reason about the location of any 4 digit number in the linear number system, including identifying the previous and next multiple of 100 and 10/1000 and rounding to the nearest of each Reason about the location of any number with up to 2 decimal places in the linear number system including identifying the previous and next multiple of 1 and 0.1 and round to the nearest of each/ repeat for Year 6 ***ACP: Oral session using*** *ITP Number Line - Mathsframe*

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ACP: Quick quiz on whiteboards, rapid fire questions of value of digits, what digits represent and position of digits Identify and represent numbers using different representations. ***ACP: How many ways can you represent 4378?*** Count in multiples of 6,7,9,25 and 1000 Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ***ACP: Oral counting as a class.*** Find 10 or 100 or 1000 more or less than a given number. ***ACP: Fluent in 5 questions.*** Know that 10 hundreds are equivalent to 1 thousand, and that 1000 is 10 times the size of 100; apply this identify and work out how many hundreds there are in other 4-digit multiples of 100. Know that 10 tenths are equivalent to 1 and 1 is 10x the size of 0.1. Know that 10 hundredths are equivalent to 1 tenth and that 0.1 is 10x the size of 0.01 Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000). ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** ***ACP: Oral assessment of relationships.*** Count backwards through zero to include negative numbers Count forwards and backwards with positive and negative whole numbers including through zero	Compose and decompose 4- digit numbers / up to 2 decimal places/10 000 000 using standard and non-standard partitioning. ***ACP: How many ways can you partition 3679? When & why might you use a particular decomposition?*** ***ACP: Quick quiz with responses on whitebaords.*** ***ACP: How many ways can you partition 5, 964, 267? When and why might you use a particular decomposition?*** Round any number to the nearest 10, 100 or 1000 / Round any number to 1 000 000 to the nearest 10/ 100/ 1000/ 10 000/ 1000 000 ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Use negative numbers in context and calculate intervals across zero. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve number problems and practical problems involving the decorative and procedural knowledge above with increasingly large positive numbers /that involve all Year 5/Year 6 declarative and procedural knowledge ***ACP: Low stakes quiz.*** Interpret negative numbers in context. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

ACP: Oral counting as a class. Round any whole number to a required degree of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Read Roman numerals to 100 (I to C)/1000 (M) and know that over time, the numeral system changed to include the concept of zero and place value and recognise years written as numerals. ***ACP: Fluent in 5 questions for reading numerals. Compare system with ours.*** ***ACP: Quick quiz with responses on whiteboards.***		
Block 2- Addition and subtraction		
Declarative	**Procedural**	**Conditional**
There is no specific declarative knowledge in Year 5/6 addition curriculum however they will be recalling number facts and fluency for addition and subtraction facts with in 10/ 100 and related facts within larger numbers	Add and subtract whole numbers with up to 4 digits/ more than 4 digits using the formal written methods of columnar addition and subtraction where appropriate. ***ACP: Quick quiz to include exchanging, missing box and find the mistake.*** Add and subtract numbers mentally with increasingly large numbers. Perform mental calculations including with mixed operations and large numbers ***ACP: Quick quiz on whiteboards and oral reasoning.*** Use their knowledge of the order of operations to carry out calculations involving the four operations ***ACP: Quick whiteboard quiz.***	Solve addition and subtraction multi step problems in context deciding which operations and methods to use and why / repeated for Year 6 ***ACP: Low stakes quiz. Include formal/mental methods. Orally assess choice of methods.*** Solve problems involving additions, subtraction, multiplication and division and a combination of these including understanding the meaning of the equals sign ***ACP: Low stakes quiz on whiteboards*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100) (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz with responses on whiteboards.*** Use rounding/estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

		Estimate and use inverse operations to check answers to a calculation. ***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.***
Block 1 Place value assessment		
Block 3- Multiplication and Division		
Declarative	**Procedural**	**Conditional**
Recall multiplication and division facts for multiplication tables up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number. Secure/sustain fluency in multiplication table facts and corresponding division facts, through continued practise ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.*** Recognise and use square and cube numbers and the notation for squared (2) and cubed (3). ***ACP: Fluent in 5 questions.*** Know and use the vocabulary for prime numbers, prime factors and composite (non-prime) numbers ***ACP: Write definitions of the 3 terms.*** Recall prime numbers up to 19 Recognise factor pairs. /Identify common factors, common multiples and prime numbers. ***ACP: Quick fire questions – responses on whiteboards. ACP: Fluent in 5 questions.*** Divide 1000/1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1000/ units of 1 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers. ***ACP: Quick quiz.*** Multiply and divide whole numbers and those involving decimals by 10, 100, 1000 ***ACP: Quick quiz – responses on whiteboards.*** Multiply and divide numbers mentally drawing upon known facts including with mixed operations and large numbers. ***ACP: Quick quiz – responses on whiteboards.*** Multiply numbers up to 4 digits/multi digits by a one or two-digit number using a formal written method, including long multiplication for two- digit numbers ***ACP: Quick quiz to include exchanging, missing box and find the mistake/ assess all elements of the composite.*** Divide numbers up to 4 digits by a one-digit/ two-digit whole number using the formal written method of short / long division and interpret remainders appropriately for the context ***ACP: Quick quiz to assess all elements of the composite.*** Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders.	Interpret remainders appropriately according to the context. ***ACP: Hinge questions.*** Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit. ***ACP: Low stakes quiz.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100). ***ACP: Quick quiz on whiteboards.*** Use rounding/ estimation to check answers to calculations and determine in the context of a problem, levels of accuracy ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Manipulate multiplication and division equations and understand and apply the commutative property of multiplication. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Understand and apply the distributive property of multiplication. ***ACP: Explain how the distributive property of multiplication works to a Y3 child.*** Estimate and use inverse operations to check answers to a calculation.

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. or 1 tenth or 1 hundredth times the size. ***ACP: Quick quiz. ACP: Quick fire questions – responses on whiteboards. Include all vocabulary in composite.*** Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. ***ACP: Quick fire questions, including above vocabulary.***	***ACP: Quick quiz to include algorithm and word problems.*** Use factor pairs and commutativity in mental calculations. ***ACP: Fluent in 5.*** Find factors and multiples of positive whole numbers, including common factors and common multiples, finding all factor pairs of a number, and express a given number as a product of 2 or 3 factors. ***ACP: Low stakes test.*** Use their knowledge of the order of operations to carry out calculations involving the four operations. ***ACP: Quick whiteboard quiz.***	***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.*** Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ***ACP: Low stakes test. Orally assess knowledge of factors, multiples, squares and cubes.*** Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple ratios. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. ***ACP: Low stakes test.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz on whiteboards.***
Block 2 Addition and subtraction assessment		
Block 4 – Geometry: angles		
Declarative	**Procedural**	**Conditional**
Know angles are measured in degrees ***ACP: Write a definition of degrees in the context of shape.*** Identify acute and obtuse angles. ***ACP: Show angles on slides. Children identify orally.*** Identify: angles at a point and one whole turn (total 360°); angles at a point on a straight line and 1/2 a turn (total 180°); other multiples of 90°/ or are vertically opposite ***ACP: Low stakes test.***	Compare and order angles up to two right angles by size. ***ACP: Quick quiz.*** Estimate and compare acute, obtuse and reflex angles. ***ACP: Show angles on slides. Children estimate and compare orally.*** Draw given angles and measure them in degrees (°). ***ACP: Low stakes test.*** Draw 2-D shapes using given dimensions and angles.	Use the properties of rectangles to deduce related facts and find missing lengths and angles. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

	ACP: Low takes quiz including 2 or 3 questions, Assess accuracy.	
Block 3 Multiplication and division assessment		
Block 5 - Fractions		
Declarative	**Procedural**	**Conditional**
Recognise mixed numbers and improper fractions and write mathematical statements > 1 as a mixed number. ***ACP: Quick quiz on whiteboards.*** Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths, and understand they have the same position in the linear number system. ***ACP: Quick quiz on whiteboards.*** Compare and order fractions whose denominators are all multiples of the same number/ ***ACP: Quick quiz on whiteboards.*** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ***ACP: Quick fire whiteboard quiz.***	Find non-unit fractions of quantities. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Show, using diagrams, families of common equivalent fractions. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Compare and order fractions, including fractions > 1. ***ACP: Quick whiteboard quiz.*** Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ***ACP: Quick whiteboard quiz.*** Add and subtract fractions with the same denominator and denominators that are multiples of the same number ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Convert mixed numbers to improper fractions and vice versa. ***ACP: Quick quiz on whiteboards.*** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. ***ACP: Fluent in 5 questions.*** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.	Solve problems that require conversion from mixed numbers and improper fractions Solve simple measure and money problems involving fractions and decimals to two decimal places. ***ACP: Low stakes quiz.*** Reason about the location of mixed numbers in the linear number system. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*

	ACP: Quick multiple-choice quiz – plan in misconception options. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. ***ACP: Low stakes test – free choice of resources.*** Multiply simple pairs of proper fractions, writing the answer in its simplest form. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Divide proper fractions by whole numbers. ***ACP: Quick whiteboard quiz.*** Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. ***ACP: Quick quiz.***	

Spring Term		
Block 5 Fractions assessment		
Block 1 Fractions, decimals, percentages		
Declarative	**Procedural**	**Conceptual**
Recognise, write and recall decimal equivalents to 1/4, 1/2, ¾, 1/5, and 1/10, and for multiples of these unit fractions. ***ACP: Quick fire questions.*** Identify, name and write decimal equivalents of any number of tenths or hundredths and understand they have the same position in the linear number system ***ACP: Quick fire questions.*** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths, and hundredths. Multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places. ***ACP: Record on whiteboards and explain orally. Can children use the correct vocabulary?*** ***ACP: Quick fire whiteboard quiz.*** Compare and order numbers with the same number of decimal places up to two/ three decimal places. ***ACP: Compare 2 numbers on whiteboards using < and >.*** ***ACP: Quick quiz on whiteboards. Oral reasoning.***	Solve simple measure and money problems involving fractions and decimals to two/ three decimal places. ***ACP: Low stakes quiz.*** Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. ***ACP: Low stakes test.*** Solve problems which require answers to be rounded to specified degrees of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***

Identify the value of each digit in numbers given to three decimal places. ***ACP: Quick whiteboard quiz to ascertain awareness of digit values.*** Read and write decimal numbers with up to three decimal places. as fractions. ***ACP: Fluent in 5.*** Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ***ACP: Quick fire whiteboard quiz.***	Round decimals with one/two decimal places to the nearest whole number and to one decimal place. ***ACP: Oral session using ITP Number Line - Mathsframe*** ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. ***ACP: Quick whiteboard quiz. Orally assess understanding of association.*** Use written division methods in cases where the answer has up to two decimal places. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	
Block 2 - Geometry: Shape		
Declarative	**Procedural**	**Conditional**
Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal, and the angles are equal. ***ACP: Write a definition of a regular polygon and give examples.*** Identify and describe simple 3-D shapes, including cubes and other cuboids, from 2-D representations. ***ACP: Show 2D representations on slides. Children identify 3D shapes orally.*** ***ACP: Show shapes on IWB – name and describe on whiteboards/orally.*** Name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.	Compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes. ***ACP: Practical sorting activity, Explain reasoning.*** Identify lines of symmetry in 2-D shapes presented in different orientations. ***ACP: Quick quiz.*** Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry. ***ACP: Quick quiz.*** Build simple 3-D shapes, including making nets. ***ACP: Practical session.***	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ***ACP: Show polygons slides. Orally assess reasoning re sides and angles.***

ACP: Quick quiz – label circle and complete formula (d = 2r).	Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. ***ACP: Low stakes quiz. Orally assess reasoning.*** Illustrate parts of circles, including radius, diameter, and circumference. ***ACP: Low stakes quiz. Assess accuracy.***	
Block1 - FDP Assesement		
Block 3 - Position and direction		
Declarative	**Procedural**	**Conditional**
Describe positions on a 2-D grid as coordinates in the first quadrant. ***ACP: Quick fire questions. Show positions on slides.*** Describe positions on the full coordinate grid (all four quadrants). ***ACP: PPT displaying co-ordinate grid. Record on whiteboards***	Describe movements between positions as translations of a given unit to the left/right and up/down. ***ACP: Quick quiz.*** Plot specified points and draw sides to complete a given polygon. ***ACP: Low stakes quiz.*** Draw polygons specified by coordinates in the first quadrant and translate within the first quadrant. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. Draw and translate simple shapes on the coordinate plane and reflect them in the axes. ***ACP: Low stakes quiz (2 or 3 questions). Assess accuracy.***	
Block 2 – Geometry: Shape assessment		
Block 3 Length, perimeter, area and volume		
Declarative	**Procedural**	**Conditional**
Recognise that shapes with the same areas can have different perimeters and vice versa. ***ACP: Low stakes quiz. Orally assess reasoning.*** Recognise when it is possible to use formulae for area and volume of shapes.	Measure and calculate the perimeter of rectilinear figures (including squares) / composite rectilinear shapes in centimetres and metres. ***ACP: Low stakes test.*** **ACP: Measure - practical session. Calculate - quick quiz**	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **ACP: Low stakes test to include all aspects of the composite.**

ACP: Quick quiz. Multiple choice of methods.	Find the perimeter of regular and irregular polygons. ***ACP*: *Quick quiz.*** Find the area of rectilinear shapes by counting squares. ***ACP: Quick quiz.*** Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.** Calculate the area of parallelograms and triangles. ***ACP: Low stakes quiz. Orally assess reasoning.*** Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. ***ACP: Low stakes quiz. Orally assess reasoning*.**	
Block 4 Statistics		
Declarative	**Procedural**	**Conditional**
	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ***ACP: Provide a set of data for children to present and interpret.*** Complete, read and interpret information in tables, including timetables. ***ACP: Provide a partially completed (time)table for children to complete, read and interpret.*** Interpret and construct pie charts and line graphs. ***ACP: Low stakes quiz. Pay attention to accuracy.*** Calculate and interpret the mean as an average. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs/ a line graph. ***ACP Low stakes quiz.*** Solve problems from pie charts and line graphs which have been constructed. ***ACP: Quick multiple-choice quiz – plan in misconception options.***

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Block 5 Time and Ratio		
Declarative	**Procedural**	**Conditional**
Read and write time in analogue and digital 12- and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Convert time between analogue and digital 12- and 24-hour clocks. ***ACP: Quick quiz on whiteboards.*** Convert from hours to minutes; minutes to seconds; years to months; weeks to days. ***ACP: Quick quiz on whiteboards.*** Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP: Quick quiz on whiteboards.*** Calculate percentages of quantities. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Calculate scale factors of similar shapes. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems involving converting units of time. ***ACP: Quick quiz on whiteboards.*** Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving similar shapes where the scale factor is known or can be found. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Block 3 - Length, perimeter, area and volume assessment		
Summer Term		
Block 1 Money and Converting Units		
Declarative	**Procedural**	**Conditional**
Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**	Estimate, compare and calculate different measures, including money in pounds and pence. ***ACP: Low stakes quiz.***	Solve problems involving converting between units of time. Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) including using common decimals and fractions. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.** Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. ***ACP: Low stakes quiz to include all aspects of the composite.*** Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.	Convert between different units of measure (for example, kilometre to metre; hour to minutes/ miles and kilometres). ***ACP*: *Quick quiz on whiteboards.***	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ***ACP: Low stakes quiz to include all aspects of the composite.***
Block 2 - Algebra		
Declarative	**Procedural**	**Conditional**
	Use simple formulae. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Generate and describe linear number sequences. ***ACP: Quick whiteboard quiz. Orally assess reasoning to check for any misconceptions.*** Express missing number problems algebraically. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Find pairs of numbers that satisfy an equation with two unknowns. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.***	

	Enumerate possibilities of combinations of two variables. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.***	
Block 1 –Money and converting units assessment		
Block 3 – Time		
Declarative	**Procedural**	**Conditional**
Read and write time in analogue and digital 12- and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Convert time between analogue and digital 12- and 24-hour clocks. ***ACP: Quick quiz on whiteboards.*** Convert from hours to minutes; minutes to seconds; years to months; weeks to days. ***ACP: Quick quiz on whiteboards.*** Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP: Quick quiz on whiteboards.***	Solve problems involving converting units of time. ***ACP: Quick quiz on whiteboards.***
Block 3 – Time assessment		

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Early Years Foundation Stage

<table>
<tr><th>Year Group</th><th colspan="2">Autumn Term</th><th colspan="2">Spring Term</th><th colspan="2">Summer Term</th></tr>
<tr><td rowspan="5">Reception</td><td colspan="5">Mastering Number: Subitising
Subitise (recognise quantities without counting)
Identify smaller numbers within a number (conceptual subitising)</td><td rowspan="5">In this half-term, the children will consolidate their understanding of concepts previously taught through working in a variety of contexts and with different numbers.</td></tr>
<tr><td colspan="5">Mastering Number: Cardinality, ordinality and counting
Say number words in sequence.
Count objects in irregular arrangements.
Count objects from a larger group.
Link the number symbol (numeral) with its cardinal number value.
Match numeral to quantity.
Recognise amounts that amounts that have been rearranged remain the same, if nothing has been added or taken away (conservation).</td></tr>
<tr><td colspan="5">Mastering Number: Composition
Partition a number in a range of ways and identify that the pairs of numbers make the same total.
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
Understand that group that has been partitioned can be recombined to make the same total.
Understand that a number can be partitioned into more than two groups.
Understand how many things are hidden from a known quantity.</td></tr>
<tr><td colspan="5">Mastering Number: Comparison
Compare collections and talk about which group has more or less things.
Check that groups are equal by matching on a one-to-one basis.
Say which number is larger by counting or matching one-to-one.
Compare numbers that are far apart, near to and next to each other.
Say when a number does not match a quantity.
Recognise that if they add one they will get the next number and if they subtract one they will get the previous number.</td></tr>
<tr><td><u>Getting to Know You</u>
Key times of the day, class routines.
Exploring the continuous</td><td><u>It's Me 1,2,3</u>
Representing 1,2,3
Comparing 1,2,3
Composition of 1,2,3</td><td><u>Alive in 5</u>
Introducing zero
Comparing numbers to 5.
Composition of 4 & 5.</td><td><u>Building 9 & 10</u>
9 & 10
Comparing numbers to 10</td><td><u>To 20 and Beyond</u>
Building numbers beyond 10
Counting patterns beyond 10</td><td><u>Find My Pattern</u>
Doubling
Sharing & Grouping
Even and Odd</td></tr>
</table>

		provision inside and out.					
		Where do things belong? Positional language.	Circles & triangles Positional language	Compare Mass (2) Compare Capacity (2)	Bonds to 10	Spatial Reasoning (1) Match, Rotate, Manipulate	Spatial Reasoning (3) Visualise and Build
		Just Like Me Match & sort. Exploring pattern.	**Light & Dark** Representing numbers to 5	**Growing 6,7,8** 6, 7 & 8 Making pairs		**First, Then, Now** Adding More Taking Away	**On the Move** Deepening Understanding Patterns and Relationships
			One more one less		3D-shape Pattern (2)	Spatial Reasoning (2) Compose and Decompose	Spatial Reasoning (4) Mapping
		Compare amounts. Compare size, mass and capacity.	Shapes with 4 sides	Combining 2 groups.			
			Time	Length & Height			
				Time			
Pattern, Shape & Space and Measure will be covered through White Rose blocks, taught in addition to Mastering Number.	Pattern	Copy an AB pattern. Continue an AB pattern. Create their own AB pattern. Spot an error in an AB pattern. Identify the unit of repeat in a pattern.		Continue an ABC pattern. Continue an ABB pattern. Continue an ABBC pattern. Continue a pattern which ends mid-unit of repeat. Create their own ABB and ABBC patterns. Spot an error in an ABB pattern.		Use symbols to represent a pattern. Recreate a pattern in a different medium. Create a pattern which works in a circle. Create a cyclical pattern which works with a fixed number of spaces.	
	Shape and Space	Move themselves and objects around, so they see things from different perspectives. Visualise how things will appear when turned around and imagining how they might fit together. Make constructions, patterns and pictures, and select shapes which will fit when rotated or flipped in insert boards, shape sorters and jigsaws. Notice the results of rotating and reflecting images, and in visualising them. Use language of position and direction.		Explore shapes, the attributes of particular shapes and select shapes to fulfil a particular need. Discuss items built in terms of how towers are built and why certain shapes are chosen to make a tower, and the space that has been created within an enclosure. Represent spatial relationships in small world play. Construct and create things that represent objects in their environment.		Notice shape properties of objects that they want to represent and think about the appropriateness of the shapes they choose. Describe properties of shapes. Develop an awareness of the properties of shape.	
	Measures	Recognise attributes of measure and use vocabulary to describe them. Use time to sequence events.		Compare continuous quantities. Show an awareness of comparison in estimating and predicting.		Use units to compare things. Experience specific time spans in order to start to develop an overall sense of time.	

			Compare indirectly. Recognise the relationship between the size and number of units.	
ACP: Continuous throughout. Through direct teaching, small group work and continuous provision, our EYFS team regularly observe and assess children's learning to inform their next steps planning (e.g. observation, assessment, planning cycle).				

YEAR 1

Year 1	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value within 10**	Read and write numbers from 1 to 10 in numerals and words. ***ACP: Quick quiz on mini whiteboards.*** Identify one more or less than a given number. ***ACP: Quick quiz on mini whiteboards.***		
Autumn Block 2 **Number: Addition and subtraction**		Compose numbers to 10 from 2-parts, and partition numbers to 10 into parts. **ACP: How many ways can you make 7?**	
Autumn Block 3 **Geometry: Shape**	Recognise common 2-D shapes: rectangles (including squares, circles and triangles presented in different orientations. ***ACP: PPT quick quiz. Show a variety of shapes and assess understanding orally.*** Recognise common 3D shapes: Including cuboids, cubes, pyramids and spheres presented in different orientations. ***ACP: Quick oral identification quiz.*** Know that the above shapes are not always similar to each other. ***ACP: Assess during above composites.***	Compose 2-D and 3_d shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations. ***ACP: Practical assessment.***	
Spring Block 1 **Place Value within 20**	Read and write numbers from 1 to 20 in numerals and words. ***ACP: Quick quiz on mini whiteboards.*** Identify one more or less than a given number. ***ACP: Quick quiz on mini whiteboards.***	Identify and represent numbers using objects and pictorial representations including the number line. ***ACP: PPT quick quiz. Show a variety of numbers using different representations. Children to identify and represent using a different representation.***	Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =. ***ACP: Assess orally and on mini whiteboards using the symbols.***

		Use the language of: equal to, more than, less than, most, least ***ACP: Oral assessment.***	
Spring Block 2 **Addition and subtraction within 20**	Represent and use number bonds and related subtraction facts within 20. ***ACP: Recall on whiteboards.*** Develop fluency in addition and subtraction facts within 10. ***ACP: Speedy recall on Hit the Button (Topmarks)***	Add and subtract one-digit and two-digit numbers to 20, including zero. ***ACP: Low stakes test with access to resources.*** Read, write and interpret mathematical statements involving addition, subtraction and equals sign. ***ACP: Low stakes test.***	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations. ***ACP: Low stakes test with choice of resources.*** Solve missing number problems such as 7 = * - 9 ***ACP: Mini whiteboards.*** Relate additive expressions and equations to real-life contexts. ***ACP: Low stakes test.***
Spring Block 3 **Place Value within 50**	Identify one more or less than a given number. ***ACP: Quick quiz on mini whiteboards.***	Identify and represent numbers using objects and pictorial representations including the number line. ***ACP: PPT quick quiz. Show a variety of numbers using different representations. Children to identify and represent using a different representation.*** Use the language of: equal to, more than, less than, most, least ***ACP: Oral assessment.***	
Spring Block 4 **Measurement: Length and height**		Measure and record: lengths/heights, mass/weight, capacity volume, time. ***ACP: Practical session.***	Compare, describe and solve practical problems for: lengths/heights. ***ACP: Practical session.***
Spring Block 5 **Measurement: Mass and volume**		Measure and record: mass/weight, capacity volume. ***ACP: Practical session.***	Compare, describe and solve practical problems for: mass/weight, capacity volume. ***ACP: Practical session.***
Summer Block 1 **Number: Multiplication and division**		Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. ***ACP: Low stakes test.***	Solve one-step problems involving multiplication and division, using concrete objects, pictorial representations and arrays with support. ***ACP: Low stakes test.***

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Summer Block 2 **Number: Fractions**	Recognise, find and name a half as one of two equal parts of an object, shape or quantity. ***ACP: Practical assessment.*** Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. ***ACP: Practical assessment.***		
Summer Block 3 **Geometry: Position and direction**	Use the language of position, direction and motion, including: left and right, top, middle and bottom, on top of, in front of, above, between, around, near, close and far, up and down, forwards and backwards, inside and outside. ***ACP: Practical sessions to assess all aspects orally.***	Make whole, half, quarter and three-quarter turns in both directions. ***ACP: Practical sessions to assess all aspects orally.***	Connect turning clockwise with movement on a clock face. ***ACP: Practical sessions to assess all aspects orally.***
Summer Block 4 **Number: Place Value within 100**	Read and write numbers to 100 in numerals. ***ACP: Quick quiz on mini whiteboards.*** Count to and across 100 forwards and backwards. ***ACP: Oral counting as class. TA led; T assess.*** Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers. ***ACP: Oral counting as class. TA led; T assess.*** Recognise odd and even numbers. ***ACP: Oral recognition and reasoning of odd and even numbers 37 is odd because it ends in 7.***	Identify and represent numbers using objects and pictorial representations including the number line. ***ACP: PPT quick quiz. Show a variety of numbers using different representations. Children to identify and represent using a different representation.*** Use the language of: equal to, more than, less than, most, least ***ACP: Oral assessment.***	
Summer Block 5 **Measurement: Money**	Recognise and know the value of different denominations of coins. ***ACP: Practical assessment session.***		

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Summer Block 6 **Measurement: Time**	Tell the time to the hour and half past the hour. ***ACP: Assess throughout the day: What time is it? Also use mini clocks.*** Recognise and use language relating to dates, including the days of the week, weeks, months and years. ***ACP: Oral assessment.***	Measure and record: time. ***ACP: Practical session.***	Sequence events in chronological order. ***ACP: Order 4 images of school day events.*** Compare, describe and solve practical problems for: time. ***ACP: Practical session.***

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YEAR 2

Year 2	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Read and write numbers to at least 100 in numerals and in words. ***ACP: Quiz on mini whiteboards.*** Identify numbers using different representations. ***ACP: Show numbers on a number line, using Base 10, bead string, part whole model etc.*** Recognise the value of each digit in a 2-digit number. ***ACP: Mini whiteboard quiz. What does this 2 represent?*** Count in steps of 10 from any number, forward and backwards. ***ACP: Oral counting using counting stick. TA lead and T asses.***	Order and compare numbers from 0 up to 100; use < > and = signs. ***ACP: Mini whiteboard with <, > and =*** Represent and estimate numbers using different representations, including the number line. ***ACP: Explode the number 7.*** Compose and decompose 2-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 37?***	Reason about the location of any 2-digit number in the linear number system, including identifying the previous and next multiple of 10. ***ACP: Display a 1-100 number line. T asks questions about numbers, TA records.*** Use place value and number facts to solve problems. ***ACP: Quick quiz, multiple choice: plan in answers with misconceptions.***
Autumn Block 2 **Number: Addition and subtraction**	Secure fluency in addition and subtraction facts within 10. ***ACP: Rapid fire questions on mini whiteboards.*** Secure fluency in addition and subtraction facts that bridge 10, through continued practice. ***ACP: Rapid fire questions on mini whiteboards.*** Recall (to 10) and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100. ***ACP: Rapid fire questions on mini whiteboards.***	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers. ***ACP: Low stakes test covering all aspects of the composite. Free choice of resources, assess level of abstraction.*** Add and subtract across 10. ***ACP: Mini quiz.*** Add and subtract within 100 by applying related 1-digit facts. ***ACP: Mini quiz.*** Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?" ***ACP: Multiple choice quiz.***	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ***ACP: Low stakes test covering all aspects of the composite. Free choice of resources, assess level of abstraction.*** Apply their increasing knowledge of mental and written methods. ***ACP: Low stakes test covering all aspects of the composite. Orally assess methods used and reason for choice.*** Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ***ACP: Quick quiz, multiple choice: plan in answers with misconceptions. Orally assess use of vocabulary.***

			Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. ***ACP: Low stakes test. Include questions which cover the above.***
Autumn Block 3 **Geometry: Shape**	Identify and describe the properties of 2-D shapes using precise language, including the number of sides and line symmetry in a vertical line. ***ACP: Show shapes and ask children to name and describe them.*** Identify and describe the properties of 3-D shapes using precise language, including the number of edges, vertices and faces. ***ACP: Show shapes and ask children to name and describe them.*** Identify 2-D shapes on the surface of 3-D shapes ***ACP: Show shapes and ask children to name faces.***	Compare and sort common 2-D and 3-D shapes and everyday objects. ***ACP: Practical session to assess all aspects of the composite orally.***	Order and arrange combinations of mathematical objects in patterns and sequences. ***ACP: Practical activities using Pattern Blocks/Unifix cubes.*** Compare 2D and 3D shapes by reasoning about similarities and differences in properties. ***ACP: Display 2 shapes e.g., a cube and a square, a cube and a cuboid. What is the same and what is different?***
Spring Block 1 **Measurement: Money**	Recognise and use symbols for pounds (£) and pence (p). ***ACP: Mini quiz on whiteboard in response to slide showing amounts.***	Combine amounts of money to make a particular value. ***ACP: Show coins to make 29p and 42p.*** Find different combinations of coins that equal the same amounts of money. ***ACP: Explode a pound.***	Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. ***ACP: Practical activity.***
Spring Block 2 **Number: Multiplication and division**	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even number. ***ACP: TTRS – 2, 5 and 10s. Orally check for odd and even numbers.***	Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs. ***ACP: Paper-based quiz involving all 3 signs in different locations.***	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. ***ACP: Low stakes quiz.*** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division). ***ACP: Quick quiz on whiteboards. Give unknown group problem. Children represent the same problem as missing factor multiplication problem.***

			Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. ***ACP: Present a fact family, Children identify incorrect statements e.g. 3 x 5 = 15, 5 x 3 = 15, 15 ÷3 = 5 & 3 ÷15 = 3.***
Spring Block 3 Measurement: Length and height		Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) using rulers. ***ACP: Practical observation.*** Compare and order lengths and record the results using >, < and = ***ACP: Practical session and observation of recording.***	
Spring Block 4 Measurement: Mass, Capacity & Temperature		Choose and use appropriate standard units to estimate and measure mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using scales, thermometers and measuring vessels. ***ACP: Practical observation.*** Compare and order mass, volume/capacity and record the results using >, < and = ***ACP: Practical session and observation of recording.***	
Summer Block 1 Fractions	Recognise, find, name and write fractions 1/3, 1/4 ,2/4 and 3/4 of a length, shape, set of objects or quantity. ***ACP: Low stakes paper-based quiz covering all elements of the composite.*** Recognise the equivalence of 2/4 and 1/2. ***ACP: Show an image of a shapes with ½ and 2/4 coloured. Ask what is the same and what is different?***	Write simple fractions for example, 1/2 of 6 = 3 ***ACP: Mini quiz to solve fractions. Include errors, such as ½ of 4 = 8***	
Summer Block 2 Measurement: Time	Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times. ***ACP: Low stakes test*** Know the number of minutes in an hour and the number of hours in a day. ***ACP: Oral responses.***	Draw the hands on a clock face and write the time to five minutes, including quarter past/to the hour. ***ACP: Low stakes test.*** Compare and sequence intervals of time. ***ACP: Low stakes test.***	

Summer Block 3 Statitistics		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. ***ACP: Low stakes test.***	Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. ***ACP: Whole class oral responses.*** Ask and answer questions about totalling and comparing categorical data. ***ACP: Whole class oral responses.***
Summer Block 4 Geometry: Position and Direction	Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise). ***ACP: Practical session***		Order and arrange combinations of mathematical objects in patterns and sequences. ***ACP: Practical activities using Pattern Blocks/Unifix cubes (Focus on orientation)***

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YEAR 3

Year 3	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Read and write numbers up to 1000 in numerals and in words. ***ACP: Quick quiz on whiteboards.*** Recognise the place value of each digit in a three-digit number. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Identify numbers using different representations. ***ACP: How many ways can you represent 7892?*** Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. ***ACP: Oral skip counting and 10/100 more or less than questions.*** Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of10; apply this to work out how many 10s there are in other 3-digit multiples of 10. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Order and compare numbers up to 1000. ***ACP: Fluent in 5 questions.*** Represent and estimate numbers using different representations. ***ACP: PPT quiz.*** Compose and decompose 3-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 367? When & why might you use a particular decomposition?***	Reason about the location of any 3-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. ***ACP: Oral session using ITP Number Line - Mathsframe*** Solve number problems and practical problems involving the declarative and procedural knowledge above. ***ACP: Low stakes quiz.***
Autumn Block 2 **Number: Addition and subtraction**	Calculate complements to 100. ***ACP: Quick quiz n whiteboards.*** Understand and use the commutative property of addition and understand the related property for subtraction. ***ACP: Write a brief explanation as to why addition is commutative and subtraction is not.***	Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds. ***ACP: Quick quiz to include missing numbers.*** Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. ***ACP: Quick quiz to include missing numbers.***	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ***ACP: Low stakes test.*** Apply their increasing knowledge of mental and written methods Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ***ACP: Low stakes test, including space for children to explain methods.***

			Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. ***ACP: Low stakes test.***
Autumn Block 3 Number: Multiplication and Division A	Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.*** Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***		
Consolidation			
Spring Block 1 Number: Multiplication and Division B		Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. ***ACP: Quick quiz to cover all element of the composite.***	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. ***ACP: Give the children multiplication and division problems. Ask them to solve them using as many of the above ways as possible.*** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division). ***ACP: Quick quiz on whiteboards.*** Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. ***ACP: Write a mini explanation as to why multiplication is commutative and division is not. Give examples to match!***

Spring Block 2 **Measurement: Length and Perimeter**		Measure, compare, add and subtract lengths (m, cm, mm). ***ACP: Practical measuring session. Record +/- calculations.*** Measure the perimeter of simple 2-D shapes. ***ACP: Practical session.***	
Spring Block 3 **Fractions**	Recognise fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Recognise and show, using diagrams, equivalent fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.***	Find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Compare and order unit fractions, and fractions with the same denominators. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	
Spring Block 4 **Mass and capacity**		Measure, compare, add and subtract mass (kg, g), volume/capacity (l, ml). ***ACP: Practical measuring session. Record +/- calculations.***	
Summer Block 1 **Fractions**	Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. ***ACP: Quick fire questions. Record on whiteboards.*** Find unit fractions of quantities using known division facts. (Multiplication tables fluency). ***ACP: Quick fire questions. Record on whiteboards.***	Add and subtract fractions with the same denominator within one whole. ***ACP:*** ***Quick fire questions. Record on whiteboards.***	Solve problems that involve Year 3 declarative and procedural fractions knowledge. ***ACP: Low stakes quiz including all of the above.*** Reason about the location of any fraction within 1 in the linear number system. ***ACP:* Oral session using** ITP Number Line - Mathsframe
Summer Block 2 **Measurement: Money**		Add and subtract amounts of money to give change, using both £ and p in practical contexts. ***ACP: Low stakes quiz. Possibly a practical session.***	

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Summer Block 3 **Measurement: Time**	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Estimate and read time with increasing accuracy to the nearest minute. ***ACP: Quick fire oral questions.*** Use vocabulary such as o'clock, a.m., p.m., morning, afternoon, noon and midnight. ***ACP: Quick fire oral questions.*** Know the number of seconds in a minute and the number of days in each month, year and leap year. ***ACP: Fluent in 5 questions.***	Record and compare time in terms of minutes, seconds and hours. ***ACP: Practical session – mins and secs.*** Compare the duration of events. ***ACP: Quick quiz on whiteboards.***	
Summer Block 4 **Geometry: Shape**	Recognise 3-D shapes in different orientations and describe them. ***ACP: Display shapes on slides. Quick quiz in response on whiteboards.*** Recognise angles as a property of shape or a description of turn. *ACP: Write a definition of an angle.* Identify right-angles, recognise that two right-angles make a half-turn, three make three quarters of a turn and four a whole turn. ***ACP: Quick fire questions on whiteboards.*** identify horizontal and vertical lines and pairs of perpendicular and parallel lines. ***ACP: Quick quiz – show in different orientations and sizes.*** Identify right angles in 2-D shapes in different orientations. ***ACP: Display shapes on slides. Quick quiz in response on whiteboards.***	Draw 2-D shapes and make 3-D shapes using modelling materials. ***ACP: Practical session.*** Identify whether angles are greater than or less than right-angle. ***ACP: Display angles on slides. Quick quiz in response on whiteboards.***	
Summer Block 5 **Statistics**		Interpret and present data using bar charts, pictograms and tables. ***ACP: Low stakes quiz.***	Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?] using information presented in scaled bar charts and pictograms and tables. ***ACP: Low stakes quiz.***

Summer Block 6 Consolidation			

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YEAR 4

Year 4	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Identify and represent numbers using different representations. ***ACP: How many ways can you represent 4378?*** Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Count in multiples of 6, 7, 9, 25 and 1000. ***ACP: Oral counting as a class.*** Count backwards through zero to include negative numbers. ***ACP: Oral counting as a class.*** Find 1000 more or less than a given number. ***ACP: Fluent in 5 questions.*** Know that 10 hundreds are equivalent to 1 thousand, and that 1000 is 10 times the size of 100; apply this identify and work out how many hundreds there are in other 4-digit multiples of 100. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. ***ACP: Fluent in 5 questions. Compare system with ours.***	Order and compare numbers beyond 1000. ***ACP: Fluent in 5 questions.*** Estimate numbers using different representations. ***ACP: Response to slides.*** Compose and decompose 4-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 3679? When & why might you use a particular decomposition?*** Round any number to the nearest 10, 100 or 1000. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Reason about the location of any 4-digit number in the linear number system, including identifying the previous and next multiple of 1000 and 100 and rounding to the nearest of each. ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Solve number and practical problems that involve all of the above and with increasingly large positive numbers. ***ACP: Low stakes quiz.***

Autumn Block 2 **Number: Addition and subtraction**		Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. ***ACP: Quick quiz to include exchanging, missing box and find the mistake.***	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes quiz. Include formal/mental methods.*** Solve problems involving multiplying and adding. ***ACP: Low stakes quiz on whiteboards*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100). ***ACP: Quick quiz on whiteboards.*** Estimate and use inverse operations to check answers to a calculation. ***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.***
Autumn Block 3 **Measurement: Area**	Recall multiplication and division facts for multiplication tables up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.***	Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers. ***ACP: Quick quiz.***	
Autumn Block 4 **Number: Multiplication and division A**		Find the area of rectilinear shapes by counting squares. ***ACP: Quick quiz.***	

Spring Block 1 **Number: Multiplication and division B**	Recognise factor pairs. ***ACP: Fluent in 5 questions.*** Divide 1000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1000 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. ***ACP: Quick quiz.***	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ***ACP: Quick quiz to include exchanging, missing box and find the mistake.*** Use factor pairs and commutativity in mental calculations. ***ACP: Fluent in 5.*** Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders. ***ACP: Quick quiz to include algorithm and word problems.***	Interpret remainders appropriately according to the context. ***ACP: Hinge questions.*** Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit. ***ACP: Low stakes quiz.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100). ***ACP: Quick quiz on whiteboards.*** Manipulate multiplication and division equations and understand and apply the commutative property of multiplication. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Understand and apply the distributive property of multiplication. ***ACP: Explain how the distributive property of multiplication works to a Y3 child.*** Estimate and use inverse operations to check answers to a calculation. ***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.***
Spring Block 2 **Measurement: Length and perimeter**		Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP*: *Quick quiz on whiteboards.*** Measure and calculate the perimeter of rectilinear figures (including squares) in centimetres and metres. ***ACP*: *Low stakes test.*** Find the perimeter of regular and irregular polygons. ***ACP*: *Quick quiz.***	
Spring Block 3 **Number: Fractions**	Recognise families of common equivalent fractions. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Show, using diagrams, families of common equivalent fractions. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Solve simple measure and money problems involving fractions and decimals to two decimal places. ***ACP: Low stakes quiz.***

		Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. ***ACP: Quick quiz.*** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. ***ACP: Fluent in 5 questions.*** Convert mixed numbers to improper fractions and vice versa. ***ACP: Quick quiz on whiteboards.***	Reason about the location of mixed numbers in the linear number system. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*
Spring Block 4 **Number: Decimals A**	Recognise and write decimal equivalents to 1/4, 1/2, 3/4. ***ACP: Quick fire questions.*** Recognise and write decimal equivalents of any number of tenths or hundredths. ***ACP: Quick fire questions.***	Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths, and hundredths.] ***ACP: Record on whiteboards and explain orally. Can children use the correct vocabulary?***	
Summer Block 1 **Number: Decimals B**		Compare numbers with the same number of decimal places up to two decimal places. ***ACP: Compare 2 numbers on whiteboards using < and >.*** Round decimals with one decimal place to the nearest whole number. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*	Solve simple measure and money problems involving fractions and decimals to two decimal places. ***ACP: Low stakes quiz.***
Summer Block 2 **Measurement: Money**		Estimate, compare and calculate different measures, including money in pounds and pence. ***ACP***: *Low stakes quiz.*	
Summer Block 3 **Measurement: Time**	Read and write time in analogue and digital 12- and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Convert time between analogue and digital 12- and 24-hour clocks. ***ACP: Quick quiz on whiteboards.*** Convert from hours to minutes; minutes to seconds; years to months; weeks to days. ***ACP: Quick quiz on whiteboards.*** Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP: Quick quiz on whiteboards.***	Solve problems involving converting units of time. ***ACP: Quick quiz on whiteboards.***

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Consolidation			
Summer Block 4 **Geometry: Shape**	Identify acute and obtuse angles. ***ACP: Show angles on slides. Children identify orally.*** Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal, and the angles are equal. ***ACP: Write a definition of a regular polygon and give examples.***	Compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes. ***ACP: Practical sorting activity, Explain reasoning.*** Compare and order angles up to two right angles by size. ***ACP: Quick quiz.*** Identify lines of symmetry in 2-D shapes presented in different orientations. ***ACP: Quick quiz.*** Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry. ***ACP: Quick quiz.***	
Summer Block 5 **Statistics**		Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ***ACP: Provide a set of data for children to present and interpret.***	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. ***ACP Low stakes quiz.***
Summer Block 6 **Geometry: Position and direction**	Describe positions on a 2-D grid as coordinates in the first quadrant. ***ACP: Quick fire questions. Show positions on slides.***	Describe movements between positions as translations of a given unit to the left/right and up/down. ***ACP: Quick quiz.*** Plot specified points and draw sides to complete a given polygon. ***ACP: Low stakes quiz.*** Draw polygons specified by coordinates in the first quadrant and translate within the first quadrant. ***ACP: Low stakes quiz.***	

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YEAR 5

Year 5	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Read and write numbers to at least 1 000 000 and determine the value of each digit. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Recognise the place value of each digit in numbers with up to 2 decimal places. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. ***ACP: Oral whole class chanting.*** Count forwards and backwards with positive and negative whole numbers, including through zero. ***ACP: Oral whole class chanting.*** Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. ***ACP: Quick quiz with responses on whitebaords.***	Order and compare numbers to at least 1 000 000. ***ACP: Quick quiz with responses on whitebaords.*** Compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. ***ACP: Quick quiz with responses on whitebaords.*** Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*	Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Solve number problems and practical problems that involve all Year 5 Declarative and Procedural knowledge. ***ACP: Low stakes quiz.*** Interpret negative numbers in context. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

Autumn Block 2 **Number: Addition and subtraction**		Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). ***ACP: Quick quiz to include exchanging, missing box and find the mistake.*** Add and subtract numbers mentally with increasingly large numbers. ***ACP: Quick quiz on whiteboards and oral reasoning.***	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes test; orally assess choice of methods.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz with responses on whiteboards.*** Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of =. ***ACP: Low stakes test.*** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***
Autumn Block 3 **Multiplication and division A**	Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.*** Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). ***ACP: Fluent in 5 questions.*** Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ***ACP: Write definitions of the 3 terms.*** Recall prime numbers up to 19. ***ACP: Quick fire questions – responses on whiteboards.*** Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.		

	ACP*: *Quick fire questions – responses on whiteboards. Include all vocabulary in composite.		
Autumn Block 4 **Fractions A**	Recognise mixed numbers and improper fractions and write mathematical statements > 1 as a mixed number. ***ACP: Quick quiz on whiteboards.*** Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths, and understand they have the same position in the linear number system. ***ACP: Quick quiz on whiteboards.*** Compare and order fractions whose denominators are all multiples of the same number. ***ACP: Quick quiz on whiteboards.***	Add and subtract fractions with the same denominator and denominators that are multiples of the same number. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Convert from mixed numbers and improper fractions. ***ACP: Quick quiz on whiteboards.***	

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Spring Block 1 **Multiplication and division B**	Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. ***ACP: Quick fore questions, including above vocabulary.***	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ***ACP: Quick quiz – responses on whiteboards.*** Multiply and divide numbers mentally drawing upon known facts. ***ACP: Quick quiz – responses on whiteboards.*** Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. ***ACP: Quick quiz to assess all elements of the composite.*** Find factors and multiples of positive whole numbers, including common factors and common multiples, finding all factor pairs of a number, and express a given number as a product of 2 or 3 factors. ***ACP: Low stakes test.***	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ***ACP: Low stakes test. Orally assess knowledge of factors, multiples, squares and cubes.*** Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz on whiteboards.*** Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. ***ACP: Low stakes test.*** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***
Spring Block 2 **Fractions B**		Find non-unit fractions of quantities. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. ***ACP: Low stakes test – free choice of resources.***	

Spring Block 3 **Number: Decimals and percentages**	Read and write decimal numbers as fractions. ***ACP: Fluent in 5.*** Recall decimal fraction equivalents for 1/2, 1/4, 1/5, and 1/10, and for multiples of these unit fractions. ***ACP: Quick fire questions – record on whiteboards*** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Read and write numbers with up to three decimal places. ***ACP: Fluent in 5.*** Recognise the percent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Order and compare numbers with up to three decimal places. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Round decimals with two decimal places to the nearest whole number and to one decimal place. ***ACP: Quick quiz on whiteboards. Oral reasoning.***	
Spring Block 4 **Perimeter and area**	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) including using common decimals and fractions. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. A**CP: Measure - practical session. Calculate - quick quiz** Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **ACP: Low stakes test to include all aspects of the composite.**
Spring Block 5 **Statistics**		Complete, read and interpret information in tables, including timetables. ***ACP: Provide a partially completed (time)table for children to complete, read and interpret.***	Solve comparison, sum and difference problems using information presented in a line graph. ***ACP: Low stakes test to cover all elements of the composite.***

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Summer Block 1 **Shape**	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. ***ACP: Show 2D representations on slides. Children identify 3D shapes orally.*** Know angles are measured in degrees. ***ACP: Write a definition of degrees in the context of shape.*** Identify: angles at a point and one whole turn (total 360°); angles at a point on a straight line and 1/2 a turn (total 180°); other multiples of 90°. ***ACP: Low stakes test.***	Estimate and compare acute, obtuse and reflex angles. ***ACP: Show angles on slides. Children estimate and compare orally.*** Draw given angles, and measure them in degrees (°). ***ACP: Low stakes test.***	Use the properties of rectangles to deduce related facts and find missing lengths and angles. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ***ACP: Show polygons slides. Orally assess reasoning re sides and angles.***
Summer Block 2 **Position and direction**		Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. ***ACP: Low stakes test.***	
Summer Block 3 **Decimals**			Solve problems involving number up to three decimal places. ***ACP: Low stakes test.*** Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. ***ACP: Low stakes test.***
Summer Block 4 **Negative numbers**			Interpret negative numbers in context. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**

YEAR 6

Year 6	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why

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Autumn Block 1 **Place Value**	Read and write numbers up to 10 000 000 and determine the value of each digit. ***ACP: Quick quiz on whiteboards regarding digit values.*** Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions. ***ACP: Quick quiz on whiteboards regarding digit values.*** Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000). ***ACP: Oral assessment of relationships.*** Round any whole number to a required degree of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Order and compare numbers up to 10 0000. ***ACP: Quick whiteboard quiz.*** Compose and decompose numbers with up to 10 million using standard and non-standard partitioning. ***ACP: How many ways can you partition 5, 964, 267? When and why might you use a particular decomposition?*** Use negative numbers in context and calculate intervals across zero. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Reason about the location of any number with up to 2 decimal places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. ***ACP:* Oral session using** ITP Number Line - Mathsframe Solve number problems and practical problems that involve all Year 6 Declarative and Procedural knowledge. ***ACP: Low stakes test.***
Autumn Block 2 **Number: Addition, subtraction, multiplication and division**	Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per question.*** Identify common factors, common multiples and prime numbers. ***ACP: Fluent in 5 questions.***	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. ***ACP: Quick quiz to assess all elements of the composite.*** Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. ***ACP: Quick quiz to assess all elements of the composite.*** Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. ***ACP: Quick quiz to assess all elements of the composite.***	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes quiz to assess all elements of the composite. Oral assessment of choice o methods.*** Solve problems involving addition, subtraction, multiplication, and division. ***ACP: Low stakes quiz to assess all elements of the composite. Oral assessment of choice o methods.*** Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***

		Perform mental calculations, including with mixed operations and large numbers. ***ACP: Quick whiteboard quiz.*** Use their knowledge of the order of operations to carry out calculations involving the four operations. ***ACP: Quick whiteboard quiz.***	
Autumn Block 3 **Fractions A**		Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ***ACP: Quick whiteboard quiz.*** Compare and order fractions, including fractions > 1. ***ACP: Quick whiteboard quiz.*** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	
Autumn Block 4 **Fractions B**		Multiply simple pairs of proper fractions, writing the answer in its simplest form. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Divide proper fractions by whole numbers. ***ACP: Quick whiteboard quiz.***	
Autumn Block 5 **Measurement: Converting units**	Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places. ***ACP: Low stakes quiz to include all aspects of the composite.***	Convert between miles and kilometres. ***ACP: Quick whiteboard quiz.***	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ***ACP: Low stakes quiz to include all aspects of the composite.***

Spring Block 1 **Ratio**		Calculate percentages of quantities. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Calculate scale factors of similar shapes. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving similar shapes where the scale factor is known or can be found. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Spring Block 2 **Algebra**		Use simple formulae. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Generate and describe linear number sequences. ***ACP: Quick whiteboard quiz. Orally assess reasoning to check for any misconceptions.*** Express missing number problems algebraically. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Find pairs of numbers that satisfy an equation with two unknowns. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.*** Enumerate possibilities of combinations of two variables. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.***	

Spring Block 3 **Decimals**	Identify the value of each digit in numbers given to three decimal places. ***ACP: Quick whiteboard quiz to ascertain awareness of digit values.***	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. ***ACP: Quick whiteboard quiz. Orally assess understanding of association.*** Multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places. ***ACP: Quick fire whiteboard quiz.*** Use written division methods in cases where the answer has up to two decimal places. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems which require answers to be rounded to specified degrees of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Spring Block 4 **Fractions, decimals and percentages**	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ***ACP: Quick fire whiteboard quiz.***		
Spring Block 5 **Area, perimeter and volume**	Recognise that shapes with the same areas can have different perimeters and vice versa. ***ACP: Low stakes quiz. Orally assess reasoning.*** Recognise when it is possible to use formulae for area and volume of shapes. ***ACP: Quick quiz. Multiple choice of methods.***	Calculate the area of parallelograms and triangles. ***ACP: Low stakes quiz. Orally assess reasoning.*** Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3]. ***ACP: Low stakes quiz. Orally assess reasoning.***	
Spring Block 6 **Statistics**		Interpret and construct pie charts and line graphs. ***ACP: Low stakes quiz. Pay attention to accuracy.*** Calculate and interpret the mean as an average. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems from pie charts and line graphs which have been constructed. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Summer Block 1 **Properties of Shape**	Recognise and describe simple 3-D shapes. ***ACP: Show shapes on IWB – name and describe on whiteboards/orally.***	Draw 2-D shapes using given dimensions and angles. ***ACP: Low takes quiz including 2 or 3 questions, Assess accuracy.***	

	Name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. ***ACP: Quick quiz – label circle and complete formula (d = 2r).*** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite. ***ACP: Low stakes quiz to include all elements of the composite.***	Build simple 3-D shapes, including making nets. ***ACP: Practical session.*** Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. ***ACP: Low stakes quiz. Orally assess reasoning.*** Illustrate parts of circles, including radius, diameter, and circumference. ***ACP: Low stakes quiz. Assess accuracy.***	
Summer Block 2 **Position and direction**	Describe positions on the full coordinate grid (all four quadrants). ***ACP: PPT displaying co-ordinate grid. Record on whiteboards.***	Draw and translate simple shapes on the coordinate plane and reflect them in the axes. ***ACP: Low stakes quiz (2 or 3 questions). Assess accuracy.***	
Consolidation and problem solving MyMaths Preparation for Key Stage 3			