MATHEMATICS AT SACRED HEART

Tolerant:

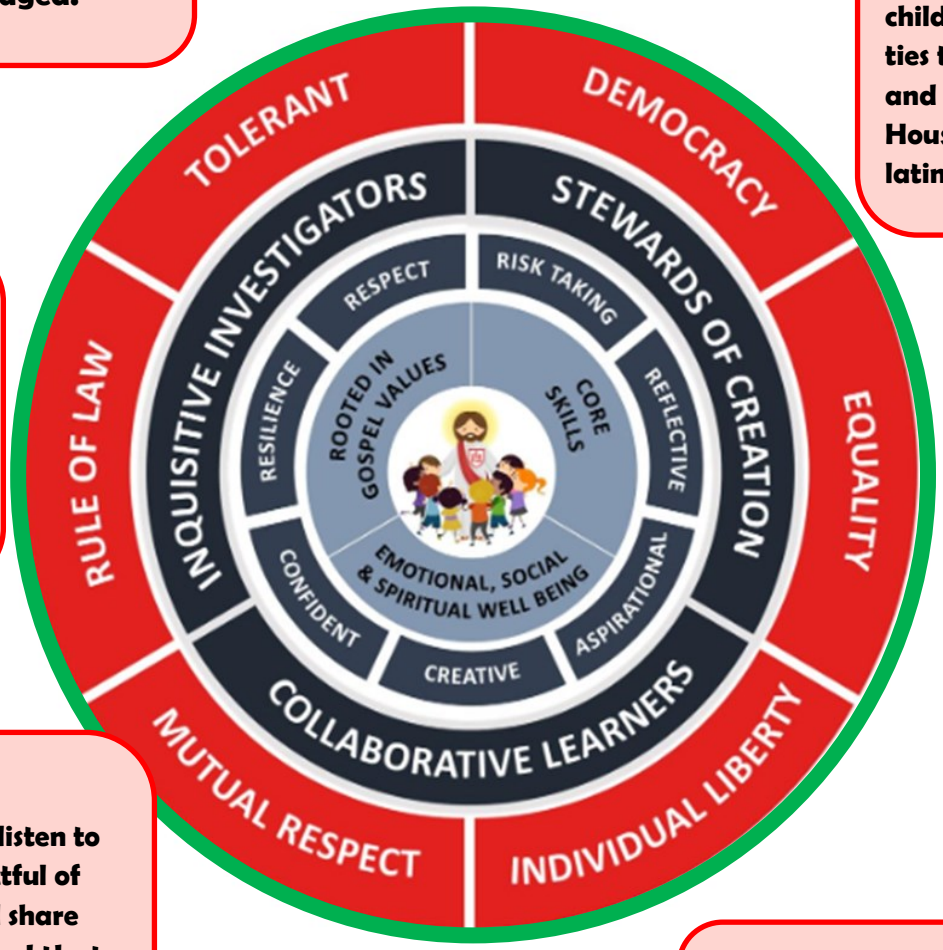
Tolerance and mutual respect is encouraged throughout every maths lesson. Children are taught to be share and listen to different approaches. Individual ideas are encouraged.

Democracy:

Through the whole school Mathematics curriculum children are provided with opportunities and activities to discuss and debate in terms of effectiveness and efficiency. Voting is used across the school (eg House captains, School council) and accuracy of collating and counting is discussed.

Rule of Law:

Children are taught about keeping themselves safe and to follow the class rules. They explore mathematical ideas that are 'non-negotiable' and those can be 'played with.'



Equality:

We develop empathy in individuals and ensure we provide equality of opportunity and freedom from discrimination for all– every member of the class is encouraged to be aspirational. The role of influential mathematicians is discussed with a focus on ensuring the children are aware of a wide representation of gender and cultures.

Mutual Respect:

In all lessons children are encouraged to listen to the discussions of others and to be respectful of their peer's opinions and arguments and share ideas in a safe environment. It is accepted that we are all at different places on our learning journey– the important factor is moving forward.

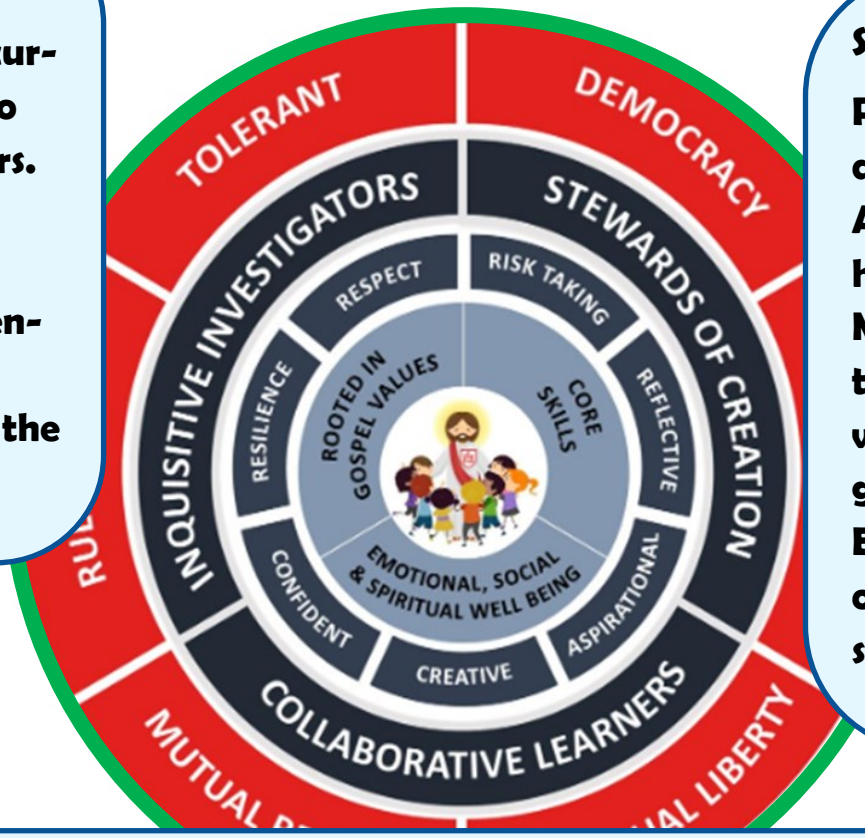
Individual Liberty:

Pupils are able to choose tasks at their own level. Children are allowed to make mistakes and to learn from them. When problem solving, it I encouraged that they take risks and devise ways to present solutions.

MATHEMATICS AT SACRED HEART

Inquisitive Investigators:

Throughout the mathematics curriculum topics, children learn to become inquisitive investigators. All year groups experience a range of problem solving and reasoning tasks. Children are encouraged to try various approaches and share them with the class.



Stewards of creation:

Pupils are encouraged to appreciate and protect nature in mathematics. All years groups are encouraged to have sessions outside. There is a Mathematics orienteering course established in the school grounds which is differentiated for the year groups. Also, the outside area in EYFS has various maths activities ongoing as part of continuous provision.

Collaborative learners:

We provide our pupils with the opportunities to develop their enquiry and investigative skills. This is done by collaboratively working in teams or working 1:1 with their peers. We use the White Rose maths scheme which has 'encourages collaboration' as one of its key aims.

MATHEMATICS AT SACRED HEART

Respect:

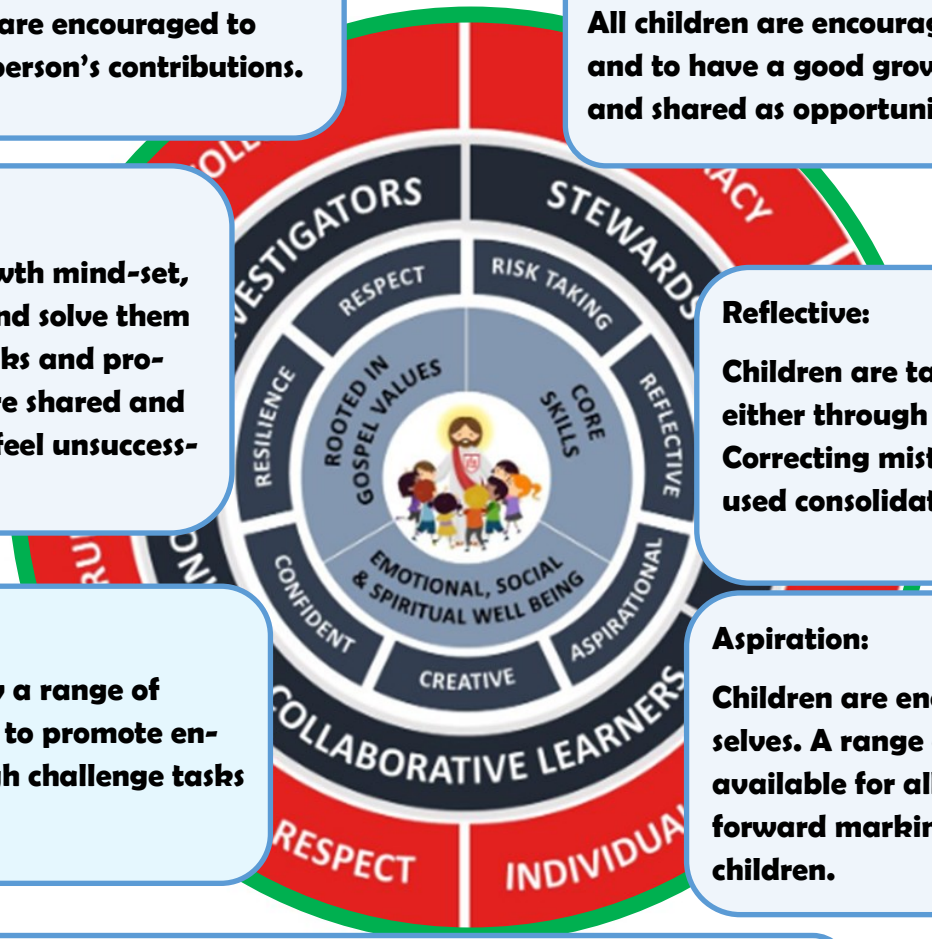
Pupils are encouraged to share ideas and work together. Mistakes are recognised as chances to learn. Opportunities to work together are encouraged to promote appreciation of every person's contributions.

Risk-taking:

All children are encouraged to 'have a go' at all activities and to have a good growth mind-set. Mistakes are recognised and shared as opportunities to learn.

Resilience:

Through a focus on establishing a growth mind-set, children are able to revisit mistakes and solve them themselves. Pupils mark their own tasks and provide next step feedback. Next steps are shared and language of 'yet' is used when pupils feel unsuccessful.



Reflective:

Children are taught to reflect on the work they have done either through peer assessment or feed forward marking. Correcting mistakes and use of homework challenges is used consolidate areas of development.

Confident:

Children are encouraged to try a range of problems. Games are included to promote enjoyment and low threshold/high challenge tasks are used across the school.

Aspiration:

Children are encouraged to aim high and stretch themselves. A range of challenges including extensions are available for all children. Regular feed-forward marking identifies next steps for all children.

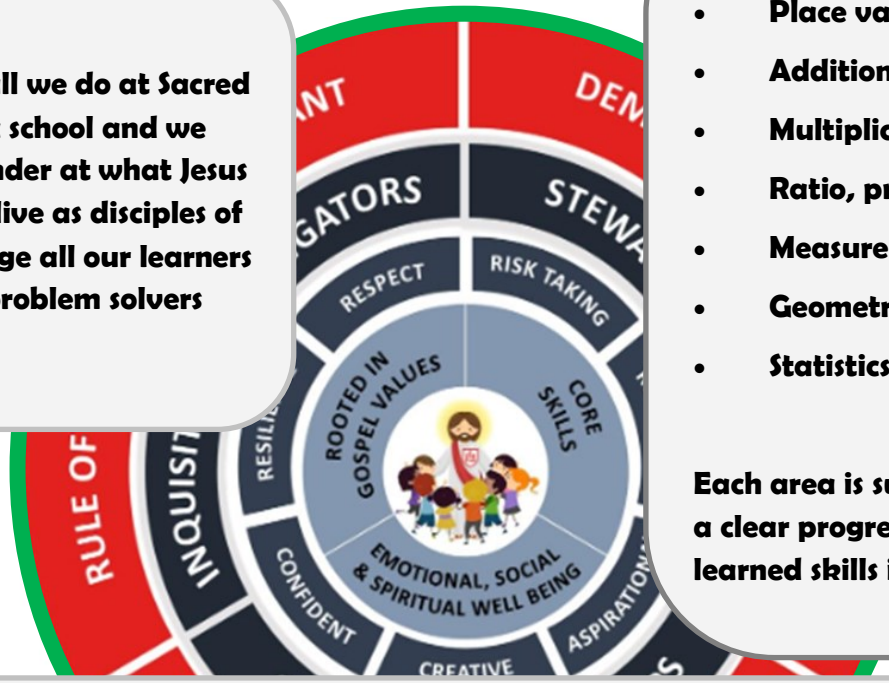
Creative:

Children are encouraged to try different approaches. A range of representations are shared to develop the notion of creative approaches.

MATHEMATICS AT SACRED HEART

Gospel values:

The Gospel Values underpin all we do at Sacred Heart. We are a Christ centric school and we teach skills to discuss and wonder at what Jesus means to us and how we can live as disciples of Christ. Like Jesus, we encourage all our learners to be independent thinkers, problem solvers and resilient.



The key areas of the mathematics curriculum are:

- **Place value**
- **Addition & subtraction**
- **Multiplication & division**
- **Ratio, proportion & algebra**
- **Measurement**
- **Geometry**
- **Statistics**

Each area is sub-divided for each year group to ensure a clear progression. Opportunities to consolidate learned skills is included.

Wellbeing:

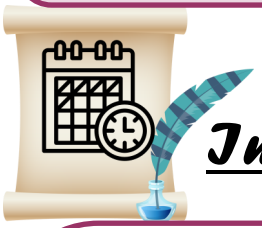
Wellbeing in mathematics is linked to fulfilment of personal targets, feeling positive a belief that you can succeed. Negative attitudes to mathematics are challenged. 'I can't do it' is re-phrased with 'can't do it yet. Low threshold/high challenge tasks are included to ensure all pupils feel able to tackle a task. Support is available through the use of adults, manipulatives and carefully differentiated tasks. Interventions are targeted and time specific so as to enable all pupils to achieve without self-esteem being damaged. The message is clear– everyone should be challenged and everyone needs help sometimes.

SUBJECT INTENT MATHEMATICS

Mathematics is essential to our everyday lives and a necessary foundation for understanding the modern world. We following the White Rose curriculum ensuring pupils make rich connections across mathematical ideas to become fluent in the fundamentals of mathematics, reason mathematically and become competent in solving increasingly sophisticated problems.

Intent— We aim to…

- Develop children's who are fluent with numerical concepts and have a can do attitude.
- Ensure pupils see the links between ideas and concepts.
- Help pupils feel confident to reason and solve problems in a range of ways.
- Provide pupils with the language need to discuss and describe ideas, to question and to explain their own learning.
- Provide pupils with an understanding of how mathematics fits into the real world.



Implementation — How we will achieve our aims…

Mastery approach

Mathematics at Sacred Heart is taught to enable all pupils to acquire a deep, long-term, secure and adaptable understanding of the subject. We aim to enable all pupils to acquire a solid enough understanding of maths so as to move onto material that requires a deeper level of thinking. We structure this around five key ideas:

- Coherence– to enable pupils to understand 'why' something works and how this can be applied to different contexts.
- Representation– to deepen understanding, teachers carefully select representations that support pupils in 'seeing' the mathematics not just 'doing' it.
- Mathematical thinking– pupils are actively encouraged to engage in mathematical thinking, to communicate ideas and use precise language.
- Fluency– Accurate recall of key number facts is supported to free pupils mainds for deeper thinking.
- Variation– variation is used to draw attention to key ares of learning.. Simply put, it requires teachers to carefully choose what to change so as to draw attention to a specific idea or

Outside learning

At Sacred Heart we provide a variety of opportunities for history learning inside and outside the classroom.

Strong teaching

Mathematics teaching focuses on enabling children to think as mathematicians. Maths provides excellent opportunities to enhance the learning of higher attaining pupils through the investigations, reasoning tasks and use of high ceiling activities. All children will have Quality First Teaching. Any children identified as needing support may have work additional to and different from their peers in order to access the curriculum dependent upon their needs. As well as this, our school offers a demanding and varied curriculum, providing children with a range of opportunities in order for them to reach their full potential and consistently achieve highly from their starting points.

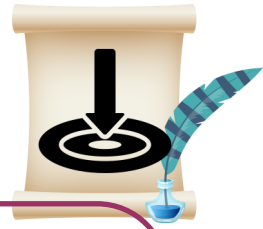
Vocab and Retrieval

The lesson sequence is structured so that prior learning is always considered and opportunities for revision and retrieval of key are built into lessons.

Manipulatives

All pupils have access to a range of manipulatives to be used as and when required. Maths lessons use a CPA (Concrete, Pictorial, Abstract) approach to help deepen understanding, support sense making and develop mathematical thinking an reasoning skills..

Impact — How we will know we have been successful…



Impact

The impact of our mathematics curriculum is that children understand the relevance and importance of what they are learning in relation to real world concepts. Children know that maths is a vital life skill that they will rely on in many areas of their daily life. Children have a positive view of maths due to learning in an environment where maths is promoted as being an exciting and enjoyable subject in which they can investigate and ask questions; they know that it is reasonable to make mistakes because this can strengthen their learning through the journey to finding an answer. Children are confident to 'have a go' and choose the equipment they need to help them to learn along with the strategies they think are best suited to each problem. Our children will have a good understanding of their strengths and targets for development in maths and what they need to do to improve. Our maths books evidence work of a high standard of which children clearly take pride; the components of the teaching sequences will demonstrate good coverage of fluency, reasoning and problem solving. Our feedback and interventions will support children to strive to be the best mathematicians they can be, ensuring a high proportion of children are on track or above.

Substantive knowledge

Substantive knowledge refers to the residual knowledge that children should take away from the unit after it has been taught. In mathematics, children should recall core facts such as timetables and number facts. The should be able to identify key shapes and measure accurately. The ready to progress document outlines to key knowledge required for each year group.

Substantive Concepts

Substantive (first order) concepts are concepts that children will come across repeatedly throughout their education in mathematics. As a child progresses through their the year groups, they will learn a little more about the concept each time they come across it, slowly building a coherent understanding of the concept. It is not expected that by the end of primary school, children will have a full understanding of these substantive concepts but they will be able to draw from their learning to have a deeper understanding. Each substantive concept is covered more than once to ensure that children have plenty of opportunities to develop their understanding. The substantive concepts in mathematics are: place value; addition & subtraction; multiplication & division; ratio, proportion & algebra; geometry; shape and measurement.

Disciplinary knowledge

Disciplinary knowledge includes all the skills that children will need to develop over time in their mathematics lessons. They are skills that enable us to work things out, reason and problem solve. Children will be taught to make links across different mathematical components to build knowledge into their long term memory.

EYFS

MATHEMATICS

NC—MATHEMATICS

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

ELG- NUMBER

Children at the expected level of development will:

- Have a deep understanding of number to 10, including the composition of each number;
- Subitise (recognise quantities without counting) up to 5;
- 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.

ELG-NUMERICAL PATTERNS

Children at the expected level of development will: -

- Verbally count beyond 20, recognising the pattern of the counting system;
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

DEVELOPMENT MATTERS (NON-STATUTORY)

Count objects, actions, sounds.

Subitise.

Link symbol with its value.

Count beyond 10.

Compare numbers.

Understand one more/less.

Explore composition of 10.

Recall bonds 0-5 and some to 10.

Select, rotate and manipulate shapes.

Compose and decompose shapes

Continue, copy and create patterns.

Compare length, weight and capacity.

LONG TERM PLANS

EYFS- LONG TERM PLAN

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Getting to know you		Match, sort and compare FREE TRIAL VIEW		Talk about measure and patterns VIEW		It's me 1, 2, 3 VIEW		Circles and triangles VIEW	1, 2, 3, 4, 5 VIEW		Shapes with 4 sides VIEW
Spring term	Alive in 5 VIEW		Mass and capacity VIEW	Growing 6, 7, 8 VIEW		Length, height and time VIEW		Building 9 and 10 VIEW			Explore 3-D shapes VIEW	
Summer term	To 20 and beyond VIEW		How many now? VIEW	Manipulate, compose and decompose VIEW		Sharing and grouping VIEW		Visualise, build and map VIEW		Make connections VIEW		Consolidation

YEAR 1- LONG TERM PLAN

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number **Place value** (within 10) FREE TRIAL VIEW					Number **Addition and subtraction** (within 10) VIEW					Geometry **Shape** VIEW	Consolidation
Spring term	Number **Place value** (within 20) VIEW					Number **Addition and subtraction** (within 20) VIEW		Number **Place value** (within 50) VIEW		Measurement **Length and height** VIEW	Measurement **Mass and volume** VIEW	
Summer term	Number **Multiplication and division** VIEW			Number **Fractions** VIEW		Geometry **Position and direction** VIEW		Number **Place value** (within 100) VIEW		Measurement **Money** VIEW	Measurement **Time** VIEW	Consolidation

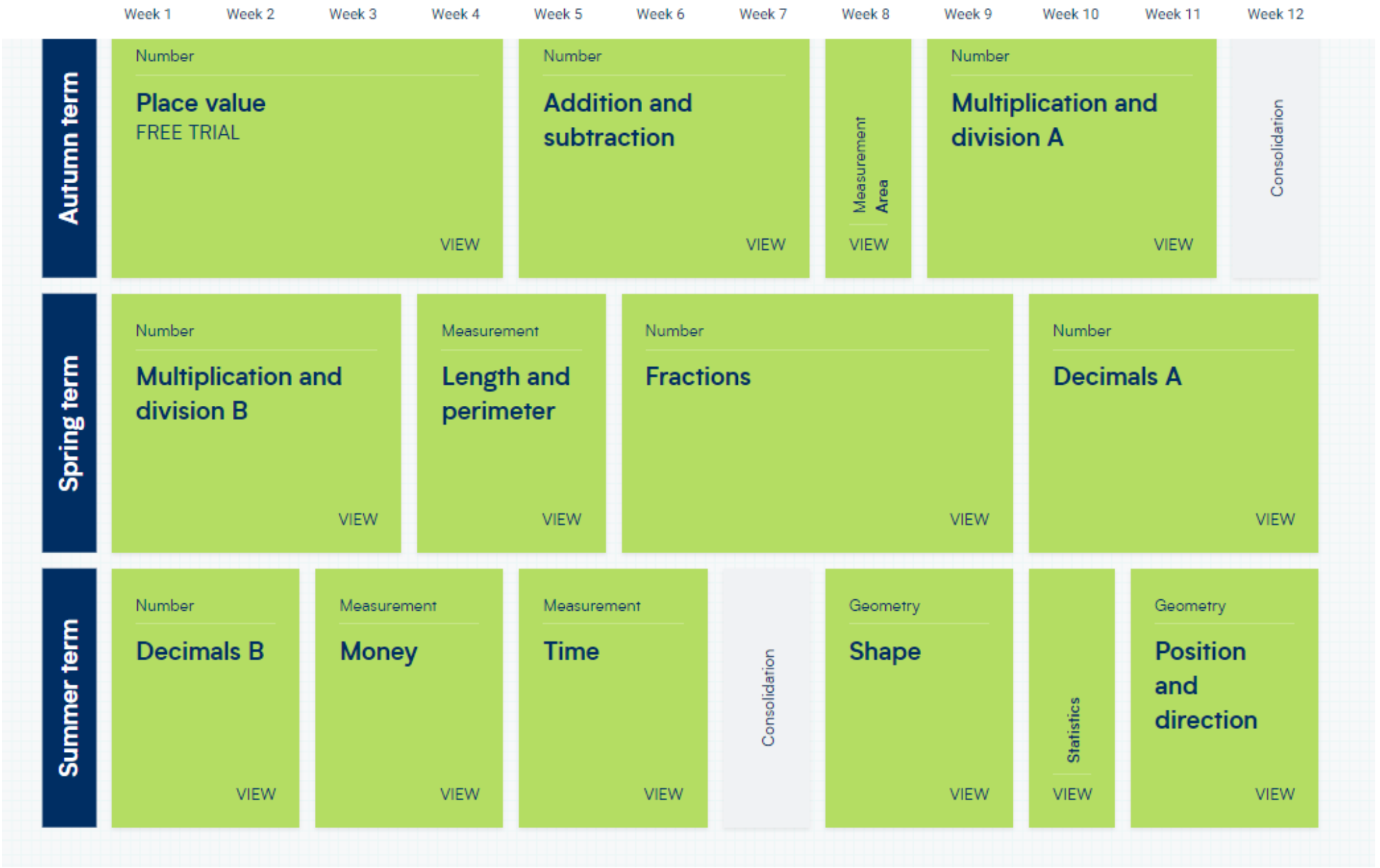
YEAR 2- LONG TERM PLAN

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

YEAR 3- LONG TERM PLAN

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number **Place value** FREE TRIAL VIEW			Number **Addition and subtraction** VIEW					Number **Multiplication and division A** VIEW			
Spring term	Number **Multiplication and division B** VIEW			Measurement **Length and perimeter** VIEW			Number **Fractions A** VIEW		Measurement **Mass and capacity** VIEW			
Summer term	Number **Fractions B** VIEW			Measurement **Money** VIEW			Measurement **Time** VIEW		Geometry **Shape** VIEW		Statistics VIEW	Consolidation

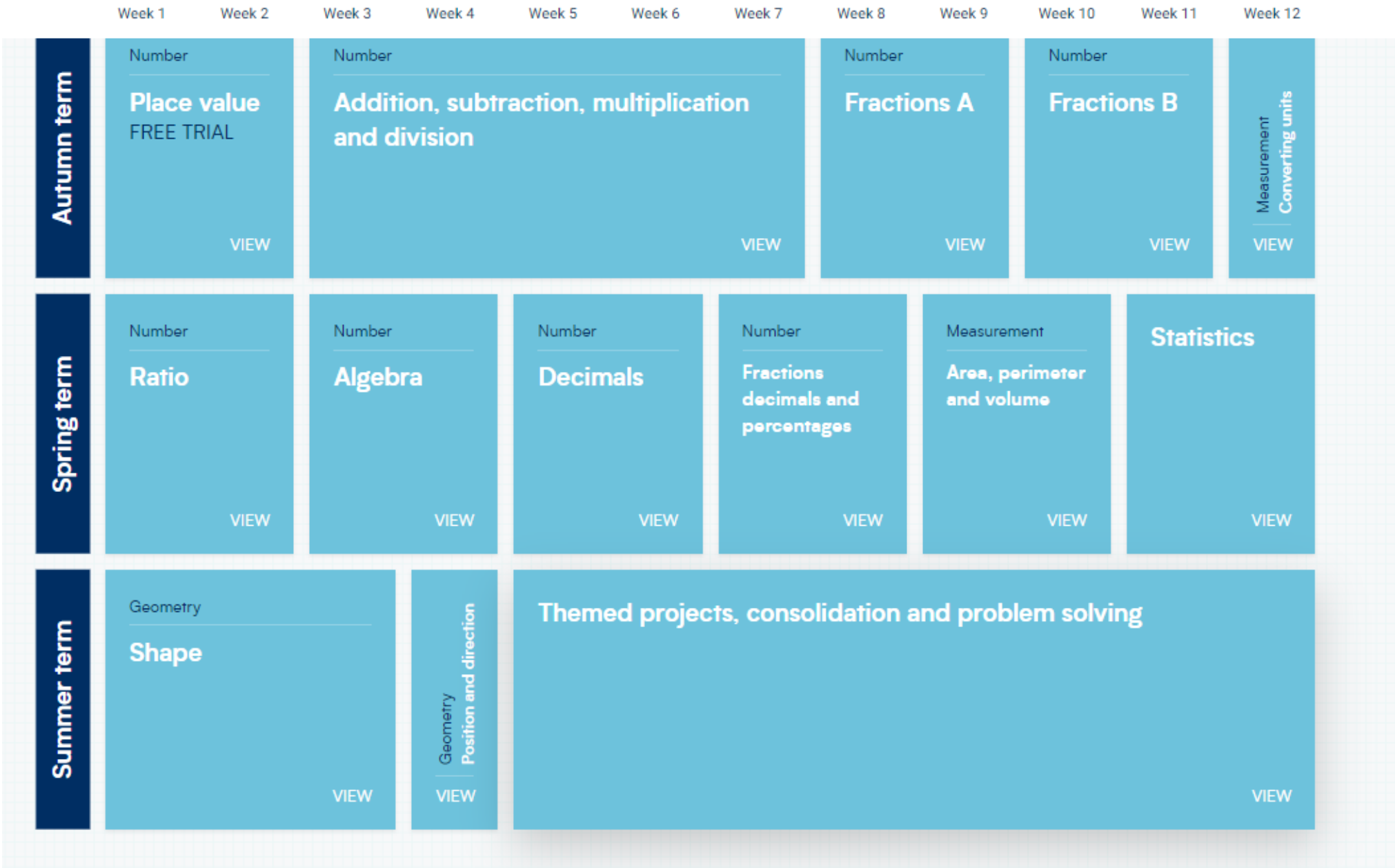
YEAR 4- LONG TERM PLAN



YEAR 5- LONG TERM PLAN

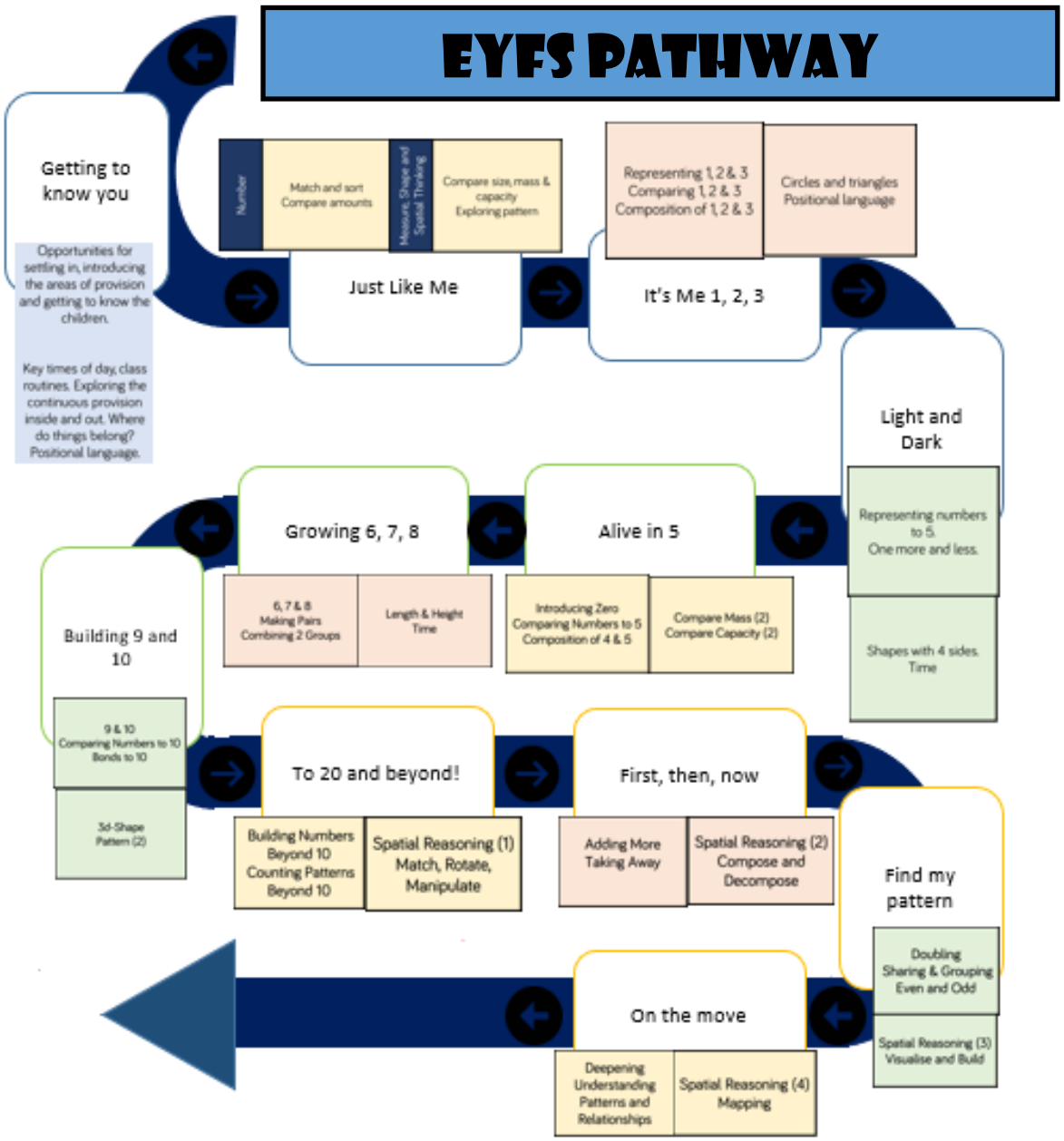
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn term	Number **Place value** FREE TRIAL VIEW			Number **Addition and subtraction** VIEW		Number **Multiplication and division A** VIEW			Number **Fractions A** VIEW			
Spring term	Number **Multiplication and division B** VIEW			Number **Fractions B** VIEW		Number **Decimals and percentages** VIEW			Measurement **Perimeter and area** VIEW		Statistics VIEW	
Summer term	Geometry **Shape** VIEW			Geometry **Position and direction** VIEW		Number **Decimals** VIEW			Number **Negative numbers** VIEW	Measurement **Converting units** VIEW		Measurement **Volume** VIEW

YEAR 6- LONG TERM PLAN



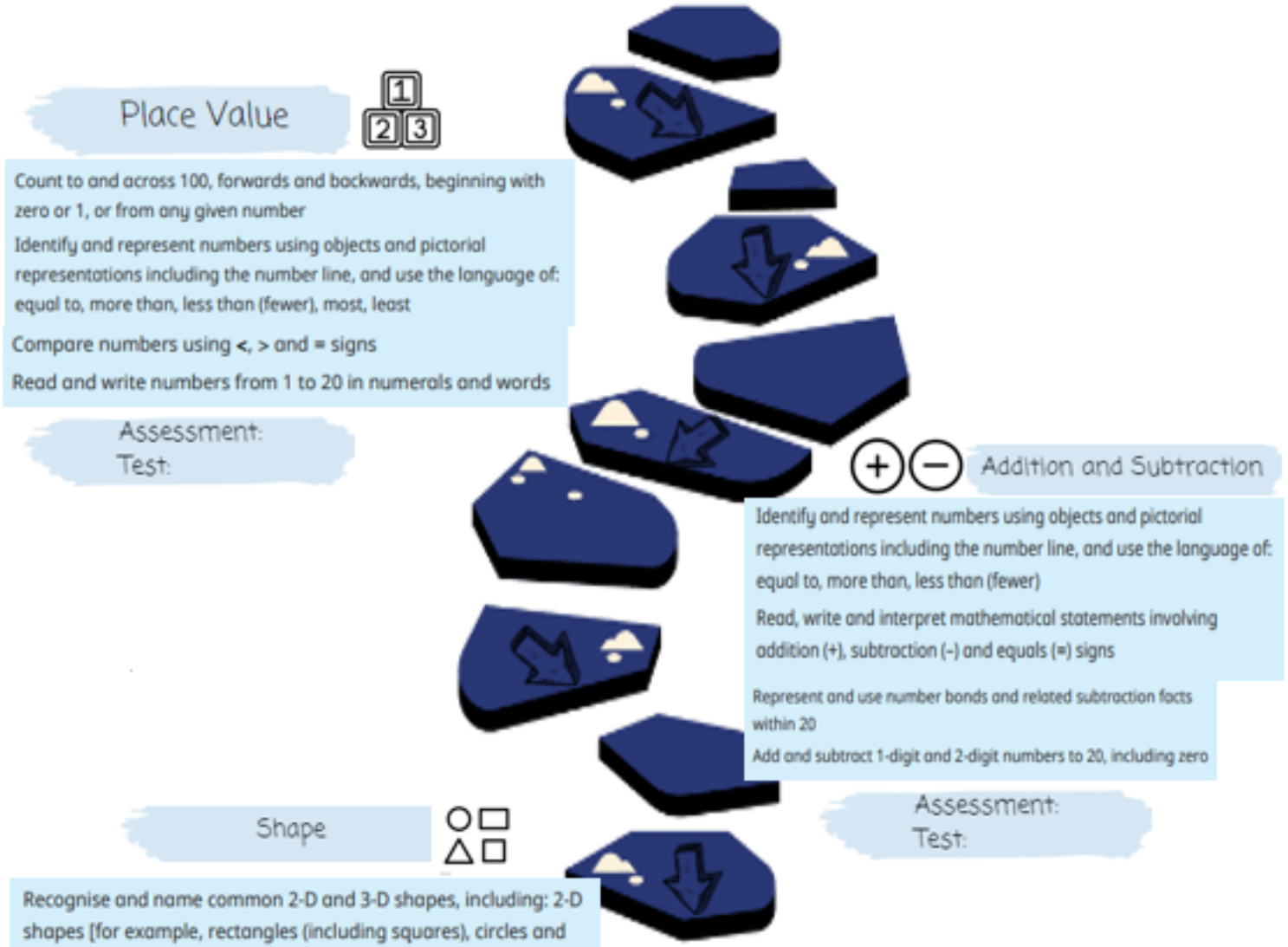
TERMLY PATHWAYS

EYFS PATHWAY



YEAR 1- AUTUMN PATHWAY

Autumn	Number **Place value (within 10)**	Number **Addition and subtraction (within 10)**	Geometry Shape



Place Value

Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Compare numbers using <, > and = signs

Read and write numbers from 1 to 20 in numerals and words

Assessment:
Test:

Addition and Subtraction

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer)

Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

Represent and use number bonds and related subtraction facts within 20

Add and subtract 1-digit and 2-digit numbers to 20, including zero

Assessment:
Test:

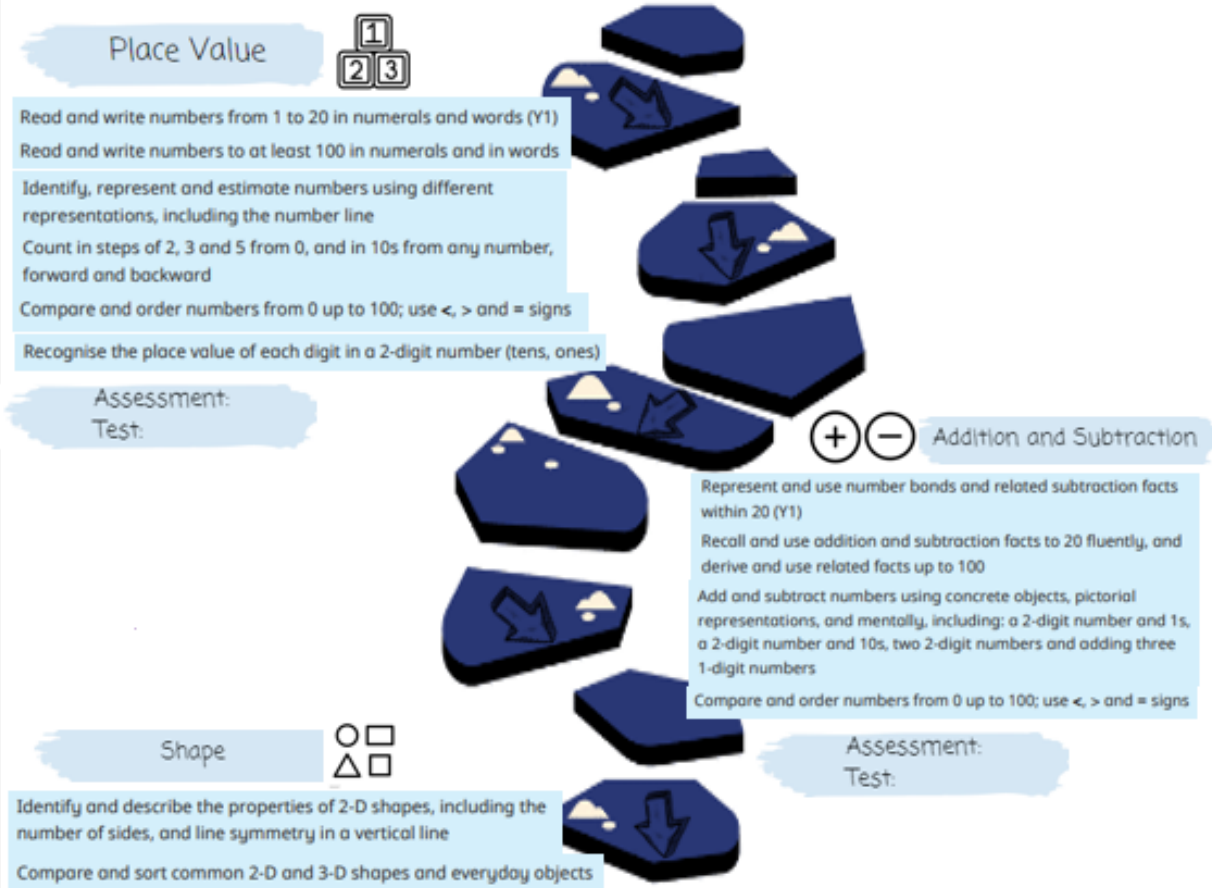
Shape

Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]; 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]

Assessment:
Test:

YEAR 2-
AUTUMN PATHWAY

Number **Place value**	Number **Addition and subtraction**	Geometry **Shape**



Place Value

Read and write numbers from 1 to 20 in numerals and words (Y1)

Read and write numbers to at least 100 in numerals and in words

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

Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward

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

Recognise the place value of each digit in a 2-digit number (tens, ones)

Assessment:
Test:

Addition and Subtraction

Represent and use number bonds and related subtraction facts within 20 (Y1)

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

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a 2-digit number and 1s, a 2-digit number and 10s, two 2-digit numbers and adding three 1-digit numbers

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

Assessment:
Test:

Shape

Identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line

Compare and sort common 2-D and 3-D shapes and everyday objects

Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces

Identify 2-D shapes on the surface of 3-D shapes

Assessment:
Test:

YEAR 3- AUTUMN PATHWAY

Autumn	Number **Place value**	Number **Addition and subtraction**	Number **Multiplication and division A**

Place Value

Identify, represent and estimate numbers using different representations

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

Read and write numbers up to 1,000 in numerals and words

Count from zero in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number

Assessment:
Test:

Addition and Subtraction

Add and subtract numbers mentally, including:

- a 3-digit number and ones
- a 3-digit number and tens
- a 3-digit number and hundreds

Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Estimate the answer to a calculation and use inverse operations to check answers

Assessment:
Test:

Multiplication and Division A

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

Show that multiplication of two numbers can be done in any order (commutative) and division on one number by another cannot (Y2)

Count in steps of 2, 3 and 5 from 0, and in 10s from any number, forward and backward (Y2)

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)

Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Assessment:
Test:

YEAR 4- AUTUMN PATHWAY

Autumn

Number	Number	Measurement	Number
Place value	**Addition and subtraction**	**Area**	**Multiplication and division A**

Place Value

Read and write numbers up to 1,000 in numerals and words (Y3)

Identify, represent and estimate numbers using different representations

Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones) (Y3)

Count in multiples of 6, 7, 9, 25 and 1,000

Recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens and ones)

Find 1,000 more or less than a given number

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

Assessment:
Test:

Addition and Subtraction

Add and subtract numbers with up to four digits using the formal written methods of columnar addition and subtraction where appropriate

Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Estimate and use inverse operations to check answers to a calculation

Assessment:
Test:

Area

Find the area of rectilinear shapes by counting squares

Assessment:
Test:

Multiplication and Division A

Recall multiplication and division facts for multiplication tables up to 12 × 12

Recognise and use factor pairs and commutativity in mental calculations

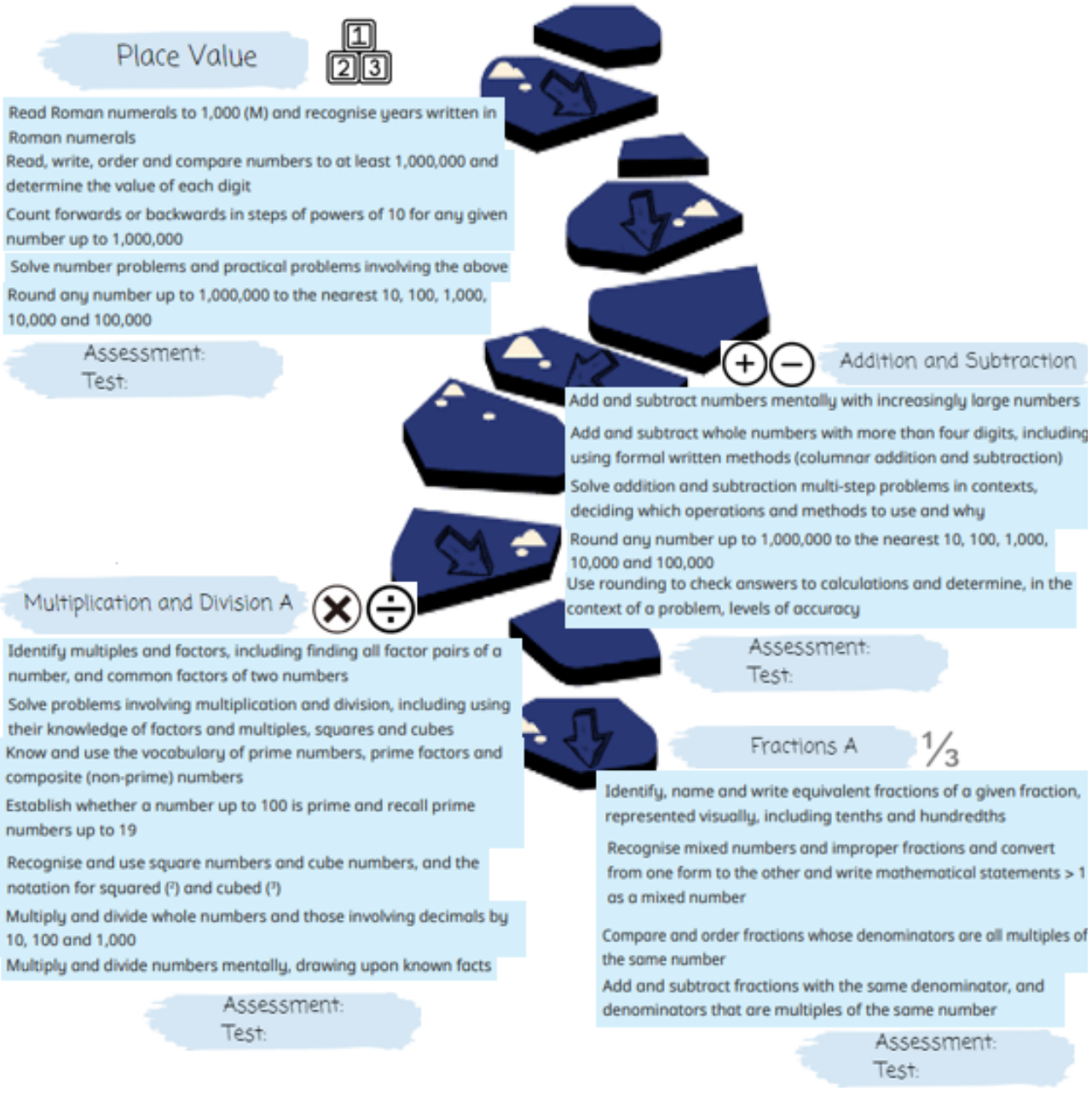
Count in multiples of 6, 7, 9, 25 and 1,000

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplyin together three numbers

Assessment:
Test:

YEAR 5- AUTUMN PATHWAY

Autumn	Number Place value	Number Addition and subtraction	Number Multiplication and division A	Number Fractions A



Place Value

Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit

Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

Solve number problems and practical problems involving the above

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

Assessment:
Test:

Addition and Subtraction

Add and subtract numbers mentally with increasingly large numbers

Add and subtract whole numbers with more than four digits, including using formal written methods (columnar addition and subtraction)

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000

Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Assessment:
Test:

Multiplication and Division A

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers

Establish whether a number up to 100 is prime and recall prime numbers up to 19

Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000

Multiply and divide numbers mentally, drawing upon known facts

Assessment:
Test:

Fractions A

Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

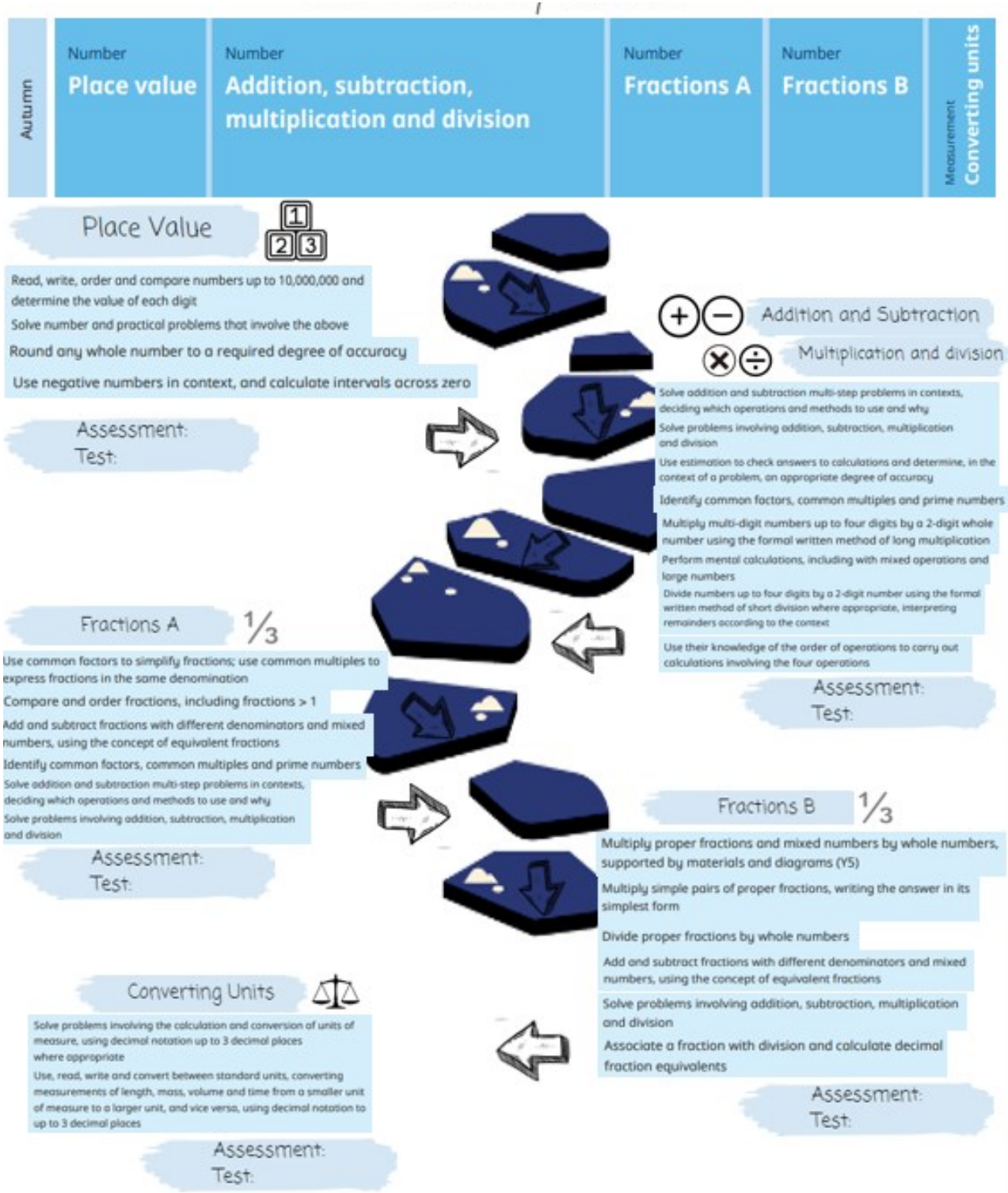
Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number

Compare and order fractions whose denominators are all multiples of the same number

Add and subtract fractions with the same denominator, and denominators that are multiples of the same number

Assessment:
Test:

YEAR 6- AUTUMN PATHWAY



YEAR 1- SPRING PATHWAY

Place value within 20

Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s

Read and write numbers from 1 to 20 in numerals and words

Given a number, identify 1 more and 1 less

Assessment:
Test:

Addition and Subtraction

Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs

Add and subtract 1-digit and 2-digit numbers to 20, including zero

Represent and use number bonds and related subtraction facts within 20

Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? - 9

Assessment:
Test:

Place value within 50

Count to and across 100, forwards and backwards, beginning with zero or 1, or from any given number

Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least

Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s

Given a number, identify 1 more and 1 less

Assessment:
Test:

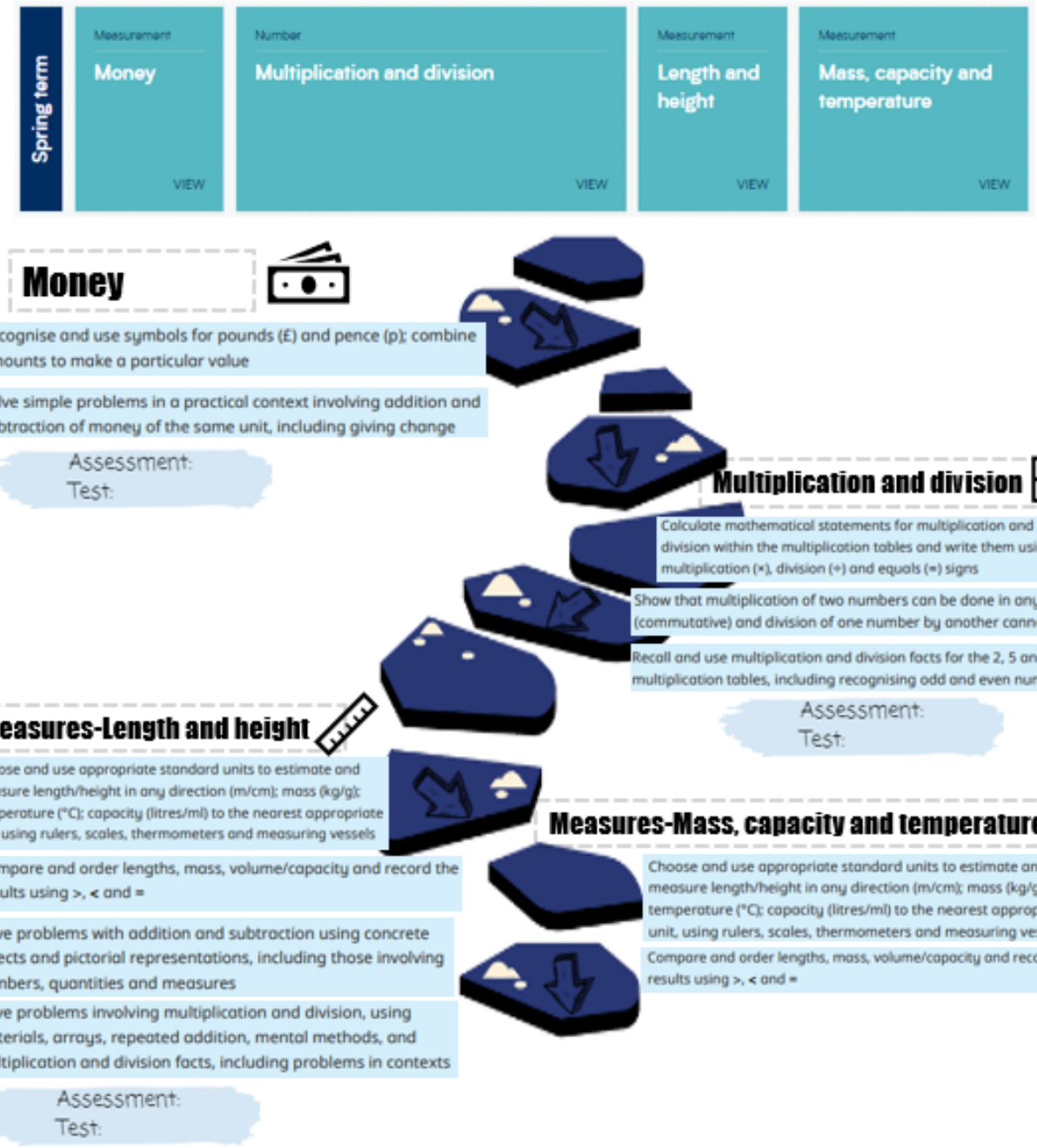
Measures

Compare, describe and solve practical problems for: lengths and height; mass/weight; capacity and volume; time

Measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time

Assessment:
Test:

YEAR 2-
SPRING PATHWAY



YEAR 3- SPRING PATHWAY

Multiplication and division

Recall and use multiplication facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers (Y2)

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods

Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Assessment:
Test:

Measures-Length and Perimeter

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Measure the perimeter of simple 2-D shapes

Assessment:
Test:

Fractions

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

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

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

Recognise and show, using diagrams, equivalent fractions with small denominators

Assessment:
Test:

Measures-Mass and Capacity

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Assessment:
Test:

YEAR 4- SPRING PATHWAY

Multiplication and division

Recognise and use factor pairs and commutativity in mental calculations

Recall multiplication and division facts for multiplication tables up to 12 × 12

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 (Y5)

Solve problems involving multiplying and adding, including using the distributive law to multiply 2-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects

Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers

Assessment: Test:

Measures-Length and Perimeter

Convert between different units of measure [for example, kilometre to metre; hour to minute]

Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres

Assessment: Test:

Fractions

Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators (Y3)

Recognise and show, using diagrams, families of common equivalent fractions

Add and subtract fractions with the same denominator

Assessment: Test:

Decimals

Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 (Y3)

Recognise and write decimal equivalents of any number of tenths or hundredths

Compare numbers with the same number of decimal places up to 2 decimal places

Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths

Assessment: Test:

Recognise and show, using diagrams, families of common equivalent fractions

YEAR 5-
SPRING PATHWAY

YEAR 6-
SPRING PATHWAY

Spring term	Number	Number	Number	Number	Measurement	Statistics
	Ratio	Algebra	Decimals	Fractions decimals and percentages	Area, perimeter and volume	
	VIEW	VIEW	VIEW	VIEW	VIEW	VIEW

Ratio

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts

Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Solve problems involving similar shapes where the scale factor is known or can be found

Assessment:
Test:

Algebra

Use simple formulae

Generate and describe linear number sequences

Find pairs of numbers that satisfy an equation with two unknowns

Enumerate possibilities of combinations of two variables

Express missing number problems algebraically

Assessment:
Test:

Decimals

Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places

Solve problems which require answers to be rounded to specified degrees of accuracy

Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Multiply 1-digit numbers with up to 2 decimal places by whole numbers

Use written division methods in cases where the answer has up to 2 decimal places

Solve problems involving addition, subtraction, multiplication and division

Assessment:
Test:

F, D, P

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination

Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Compare and order fractions, including fractions >1

Solve problems involving the calculation of percentages and the use of percentages for comparison

Assessment:
Test:

Statistics

Interpret and construct pie charts and line graphs and use these to solve problems

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4)

Calculate and interpret the mean as an average

Assessment:
Test:

Area, Perimeter and Volume

Recognise that shapes with the same areas can have different perimeters and vice versa

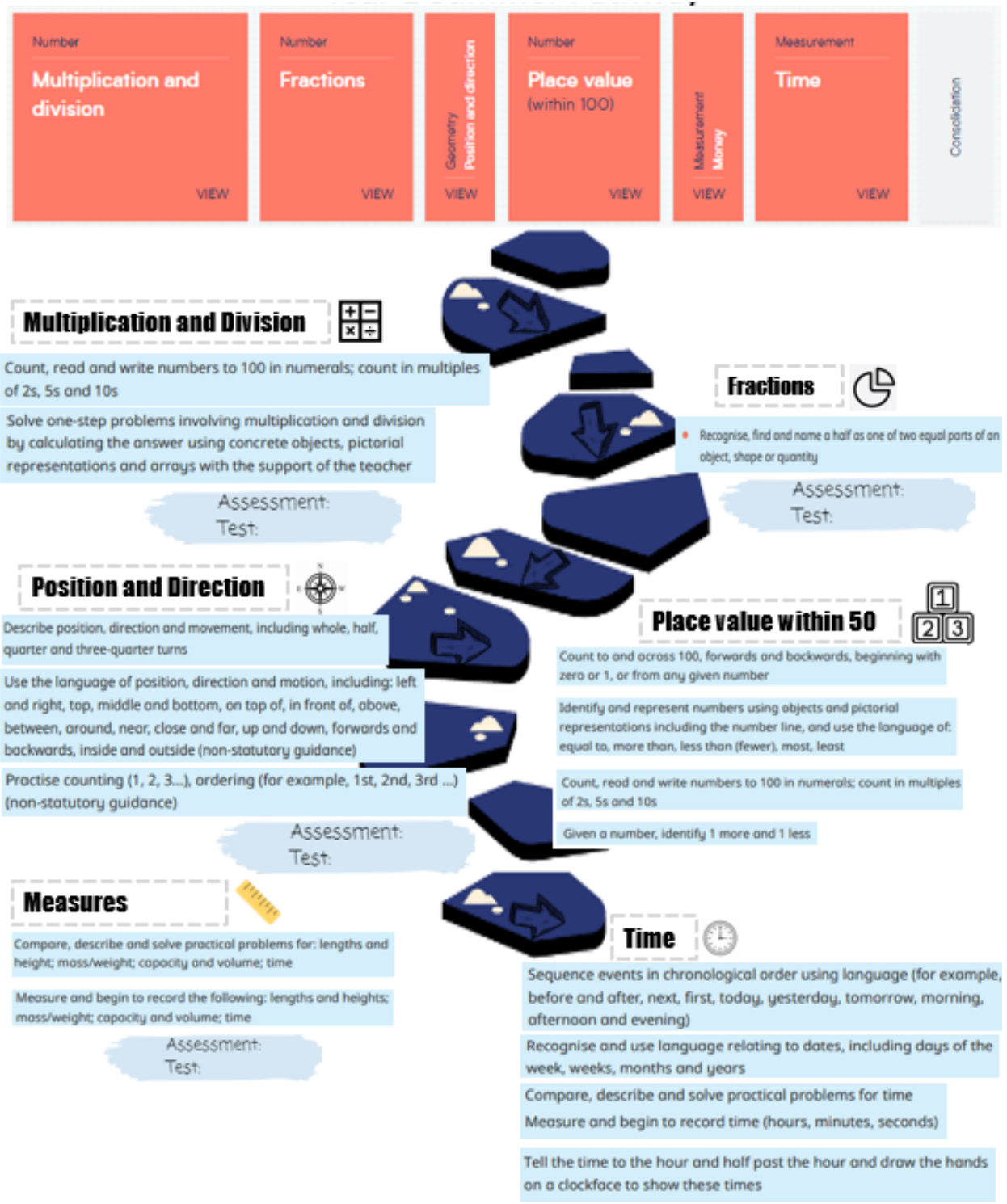
Recognise when it is possible to use formulae for area and volume of shapes

Calculate the area of parallelograms and triangles

Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units

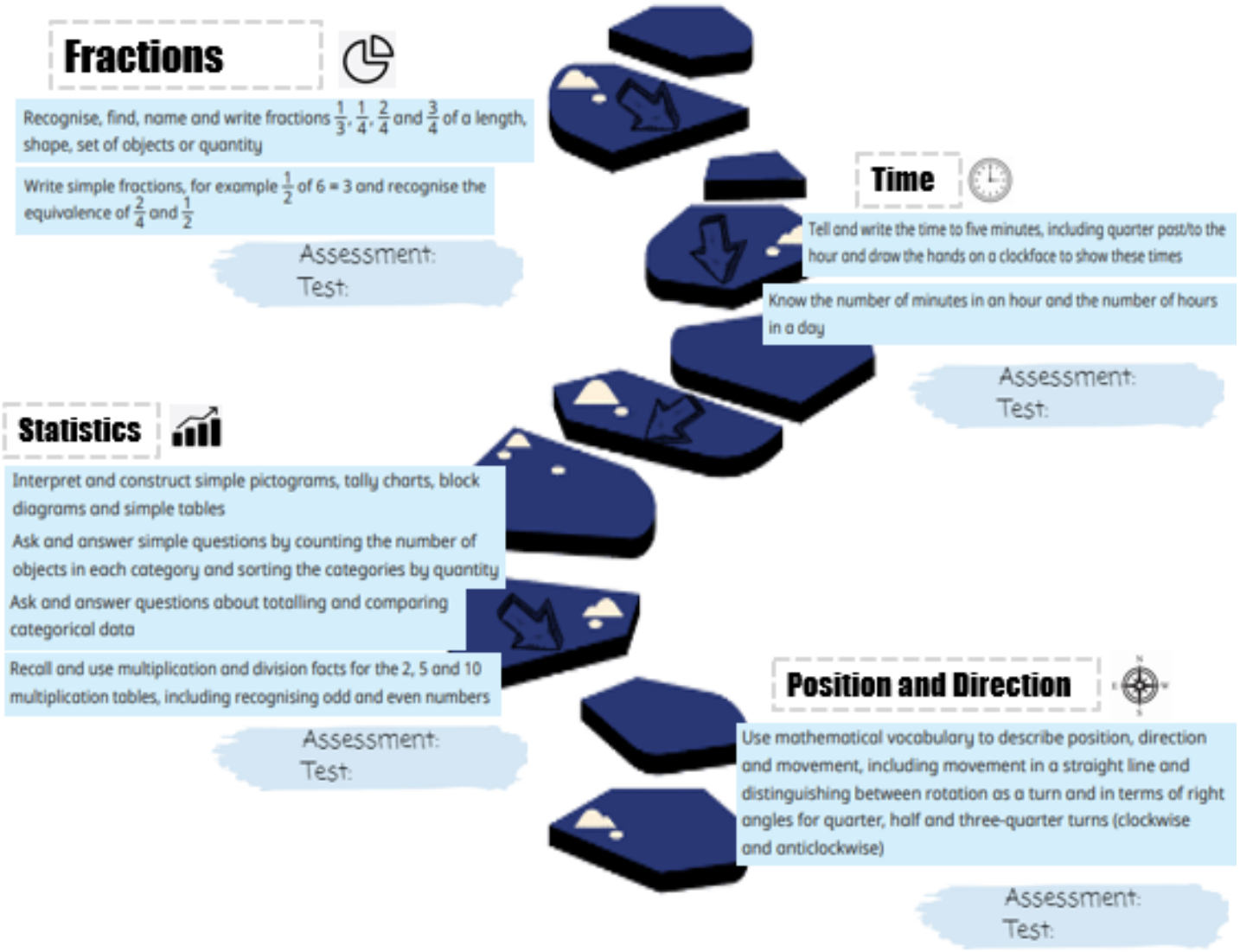
Assessment:
Test:

YEAR 1- SUMMER PATHWAY

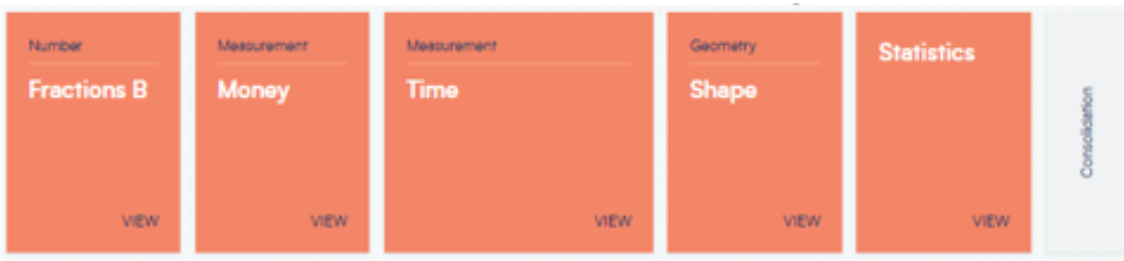


YEAR 2- SUMMER PATHWAY

Number	Measurement	Statistics	Geometry	Consolidation
Fractions	**Time**		**Position and direction**	



YEAR 3- SUMMER PATHWAY



Fractions B

Add and subtract fractions with the same denominator within one whole

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

Assessment:
Test:

Money

Add and subtract amounts of money to give change, using both £ and in practical contexts

Assessment:
Test:

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

Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight

Know the number of seconds in a minute and the number of days in each month, year and leap year

Compare durations of events

Assessment:
Test:

Shape

Recognise angles as a property of shape or a description of a tu

Identify right angles, recognise that two right angles make a half turn, three make three-quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

Measure the perimeter of simple 2-D shapes

Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Assessment:
Test:

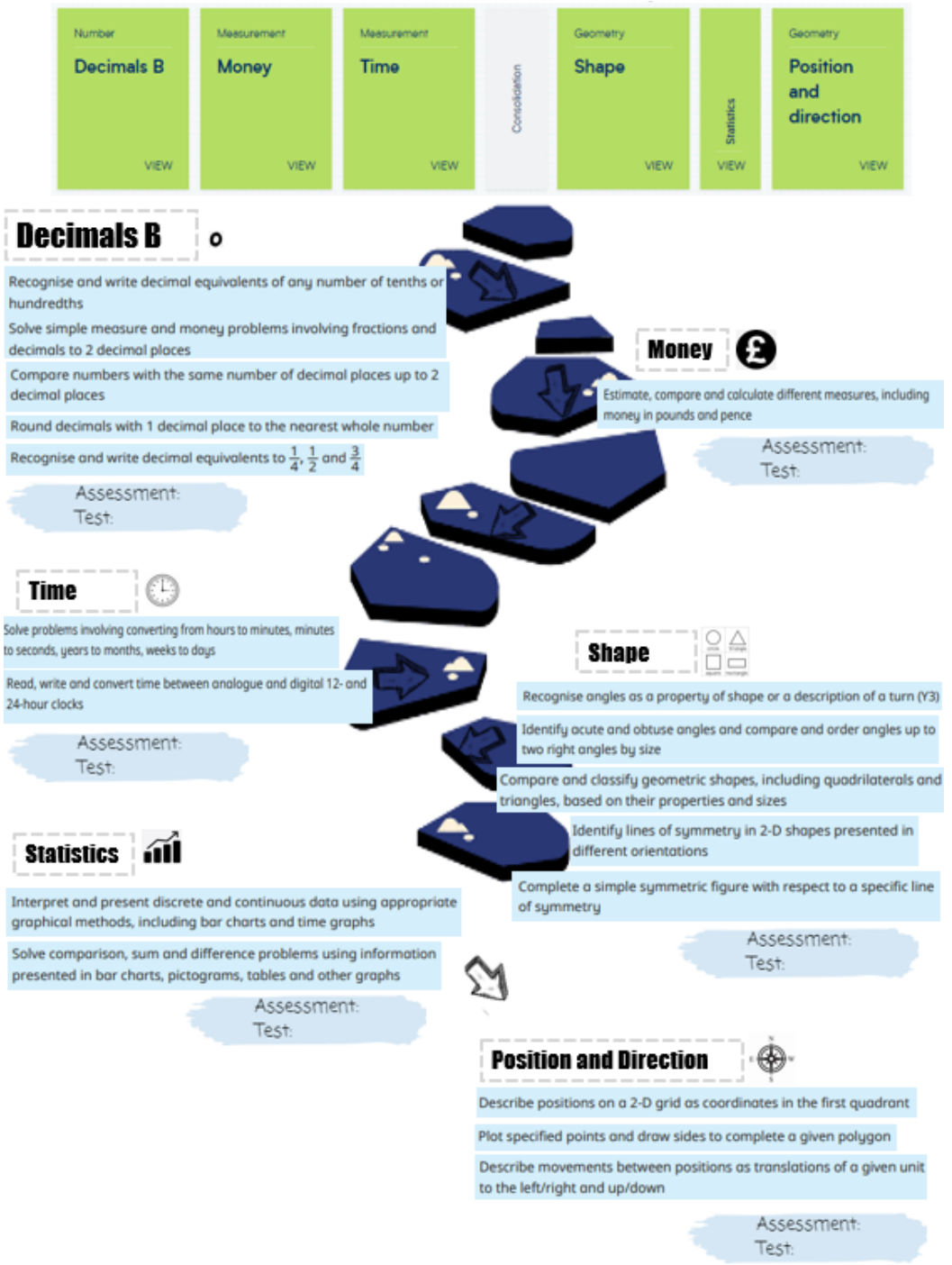
Statistics

Interpret and present data using bar charts, pictograms and tables

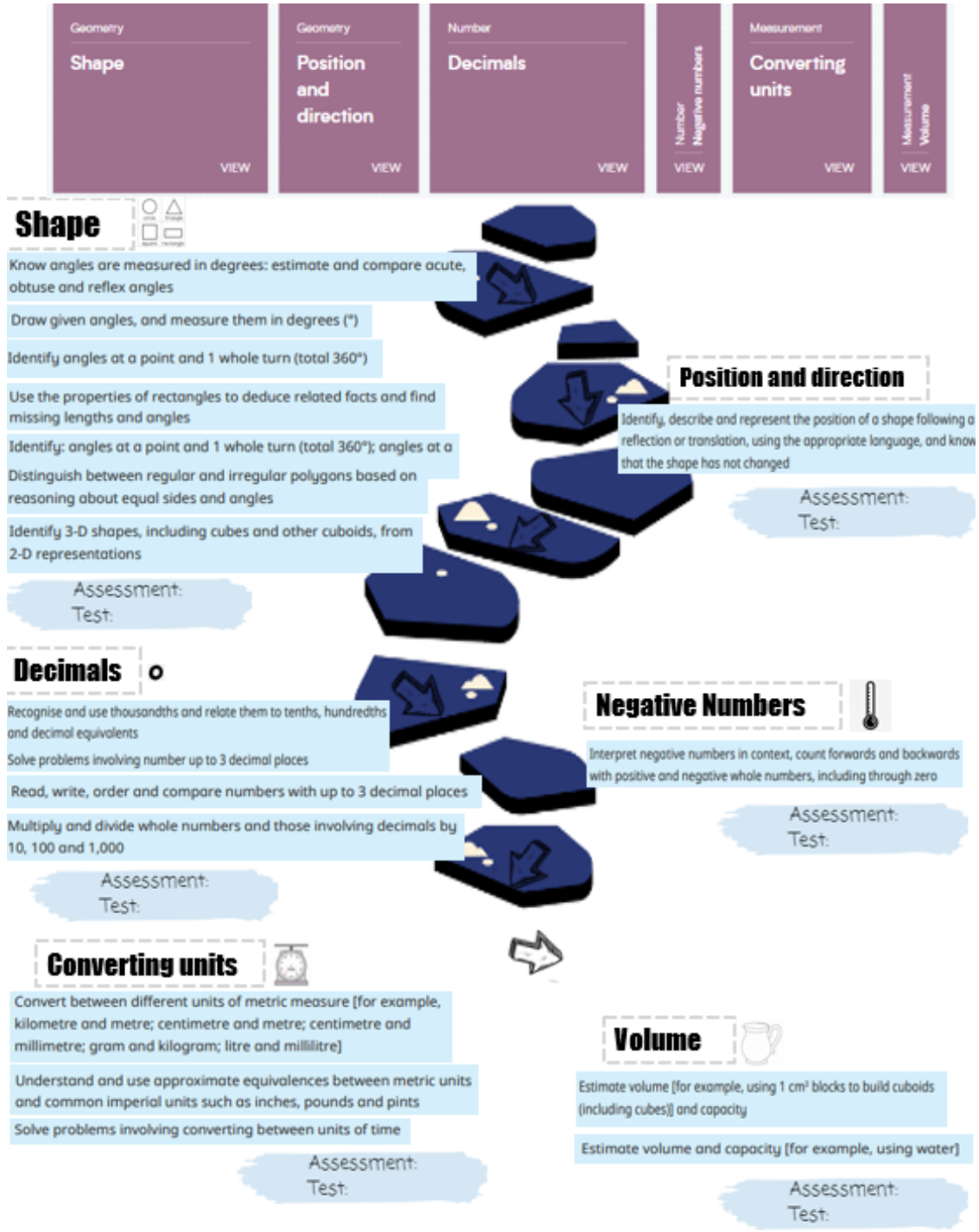
Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables

Assessment:
Test:

YEAR 4- SUMMER PATHWAY



YEAR 5- SUMMER PATHWAY



YEAR 6-
SUMMER PATHWAY

Geometry

Shape

VIEW

Geometry
Position and direction

VIEW

Themed projects, consolidation and problem solving

VIEW

Shape

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Draw given angles, and measure them in degrees (°) (Y5)

Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles (Y5)

Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons

Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

Draw 2-D shapes using given dimensions and angles

Recognise, describe and build simple 3-D shapes, including making nets

Assessment:
Test:

Position and direction

Describe positions on the full coordinate grid (all four quadra

Draw and translate simple shapes on the coordinate plane, a reflect them in the axes

Assessment:
Test: