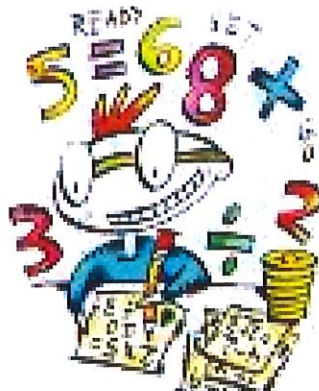All Saints C.E (VC) Primary School & Nursery, Ranton

Expectations in Mathematics

Year Three

Number and Place Value

What does my child need to be able to do?
Count from 0 in multiples of 4, 8, 50 and 100.
Find 10 or 100 more or less than a given number.

What does this mean?
Pupils need to understand how to add in jumps of different multiples, rather than counting on in ones until they have added the required amount.

What does this look like in context?
What is the number 100 less than 756?
How many hundreds, tens and ones are there in the following numbers:
428   205   130

Number and Place Value

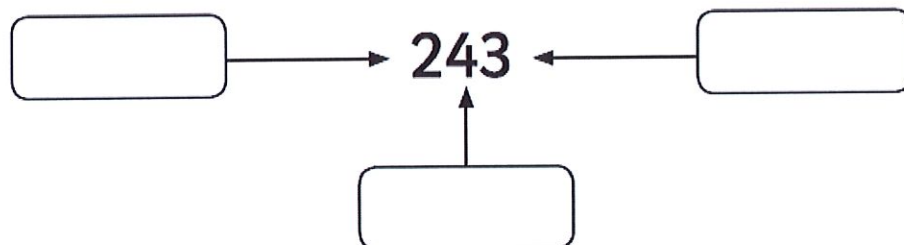**What does my child need to be able to do?**
Recognise the place value of each digit in a three-digit number (hundreds, tens and ones).

What does this mean?
Children need to know how much a digit is worth based on its place value position in the number.

What does this look like in context?

What is the value of each digit in this number?

243

Number and Place Value

What does my child need to be able to do?
Compare and order numbers up to 1000.
Read and write numbers up to 1000 in numerals and in words.

What does this mean?
Children need to be able to write the numbers in words and order numbers in ascending or descending order.

What does this look like in context?

Compare and order numbers up to 1,000.

Write these amounts in order of size, starting from the smallest.

909   921   309   244   315   34

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

a) Write the number four hundred and five in digits:

b) Write the number 527 in words:

Number and Place Value

What does my child need to be able to do?

Identify, represent and estimate numbers using different representations.
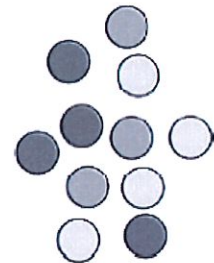
What does this mean?

Children need to be able to represent numbers using objects, such as place value counters or base 10 (dienes) or pictures.

What does this look like in context?

b) Represent the number 523 by drawing the correct number of counters in each column.

Hundreds	Tens	Ones

Number and Place Value

What does my child need to be able to do?

Solve number problems and practical problems involving the preceding ideas.

What does this mean?

Children have to apply their understanding of place value to solve problems, which can include word problems.

What does this look like in context?

What's the answer?

6 children were given a maths problem where the answer was 198. Ariana put down 155 as her answer; George put down 183; Jemma put down 208; Hamid put down 217; Harry put down 164 and Mustafa put down 198. Who was closest to the answer and who was furthest away?

Addition and Subtraction

What does my child need to be able to do?
Add and subtract numbers mentally, including a 3 digit number and 1s, 10s, 100s.

What does this mean?

Pupils need to be able to add and subtract without using formal calculation methods.

What does this look like in context?

1	687 + 100 =

2	238 - 100 =

Addition and Subtraction

What does my child need to be able to do?
Add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction.

What does this mean?
Children must know how to use formal written (column) methods to solve addition and subtraction calculations.

What does this look like in context?

				H	T	U
				3	1	9
			+	2	9	4
Add the units then add the tens then add the hundreds:				6	1	3
Add a 10 to the 10s column or 100 to the 100s column if you need to.				1	1	

				H	T	U
					1	
Move a 'ten' across into the units column if you need to				6	2	¹1
			-	1	1	7
Subtract the units, then the tens, then the hundreds.				5	0	4

Addition and Subtraction

What does my child need to be able to do?
Estimate the answer to a calculation and use inverse operations to check answers.

What does this mean?
Pupils must understand how to estimate the answer to calculations to solve problems. They are also required to check answers using the inverse function (opposite), for instance if the calculation is addition, then they would have to check the answer using subtraction.

What does this look like in context?

Making an estimate
Which of these number sentences have the answer that is between 50 and 60

174 - 119
333 – 276
932 - 871

Addition and Subtraction

What does my child need to be able to do?
Solve problems, including missing number problems, using number facts, place value, and more complex addition/subtraction.

What does this mean?
Children need to able to solve problems where facts are missing from the calculation. This can involve using place value knowledge, where information about the missing digits involved is given.

What does this look like in context?
_ + _ + _ = 201
Each missing digit is either a 9 or a 1. Write in the missing digits. Can you find different ways of doing this?

Multiplication and Division

What does my child need to be able to do?
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.

What does this mean?
Children must solve multiplication and division calculations using their knowledge of times tables.

What does this look like in context?

$12 \times 4 =$

$64 \div 8 =$

Multiplication and Division

What does my child need to be able to do?
Write and calculate statements for x and ÷ using the tables they know, including 2-digit numbers multiplied by 1-digit numbers, using mental and formal written methods.

What does this mean?
Children begin to establish when it is necessary to use a mental method or a formal written method, for example if working out 16 x 4, they are likely to calculate 10 x 4 and then 6 x 4 mentally. If working out 236 x 4 then they are more likely to use a formal written method (grid method or short multiplication).

What does this look like in context?

How close can you get?

☐ X ☐ = ☐

Using the digits 2, 3 and 4 in the calculation above. How close can you get to 100?

Multiplication and Division

What does my child need to be able to do?

Solve problems and missing number problems, involving x and ÷, including integer scaling problems and correspondence problems in which n objects are connected to m objects.
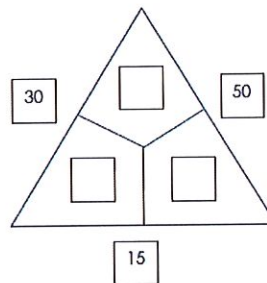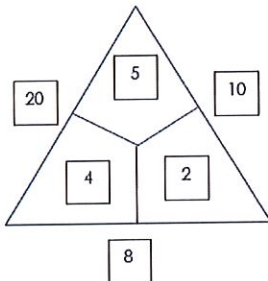
What does this mean?

Children need to know how to use their knowledge of times tables and division facts to solve missing number problems. They are also required to use information from one problem or example given to them, to help solve another.

What does this look like in context?

Multiple triangles

Look at the example on the left hand side below. Complete the problem on the right hand side, putting the correct numbers in the empty squares.

Fractions

What does my child need to be able to do?

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.

What does this mean?

Children need to understand that fractions are part of a whole, this may include one-digit numbers such as 1 or two and three-digit numbers, such as 60 or 100.

What does this look like in context?

a) Complete the missing boxes in this sequence:

$\frac{9}{10}$				$\frac{5}{10}$	$\frac{4}{10}$	

Fractions
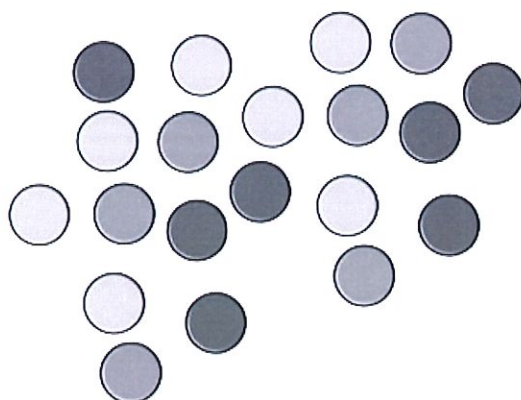
What does my child need to be able to do?
Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

What does this mean?
Children need to be able to divide a set of objects to find a fraction. This could be dividing 30 by 6 to find the value of 1/6.

What does this look like in context?

There are 20 counters on the table. Calculate:

$\frac{1}{2}$ of 20 = [   ]

$\frac{1}{4}$ of 20 = [   ]

$\frac{1}{5}$ of 20 = [   ]
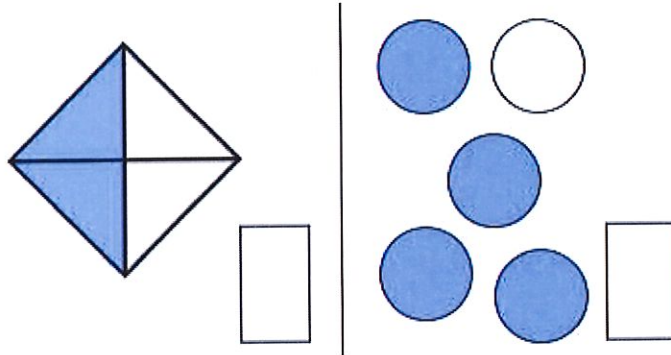
$\frac{1}{10}$ of 20 = [   ]

Fractions

What does my child need to be able to do?

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

What does this mean?

Children need to be able to identify equivalent fractions, which have different denominators, understanding that a unit fraction has a denominator of 1 and a non-unit fraction has a denominator of greater than 1.

What does this look like in context?
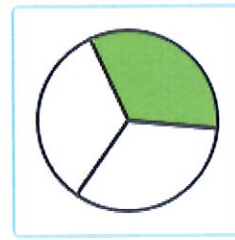
Fractions

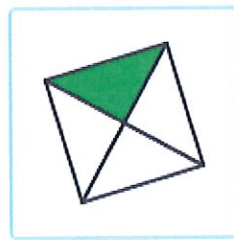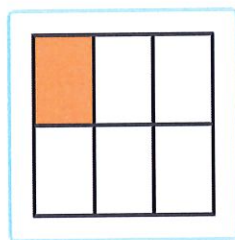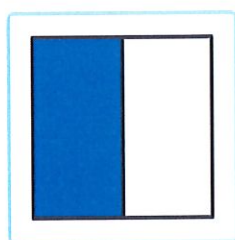### What does my child need to be able to do?
Recognise and show, using diagrams, equivalent fractions with small denominators.

What does this mean?
Children need to be able to recognise the fraction of an object or shape and compare it to similar fractions. This may involve shading a fraction of a shape themselves or identifying the shapes or objects that have an equal amount shaded.

What does this look like in context?

Which shape shows the fraction $\frac{1}{4}$?

Fractions

What does my child need to be able to do?
Add and sub fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7).

What does this mean?
Children need to be able to add fractions with the same denominator, understanding that the denominator will remain the same and that they only need to add or subtract the numerator.

What does this look like in context?

What do you notice?
Continue the pattern

1/10 + 9/10 = 1
2/10 + 8/10 = 1
3/10 + 7/10 = 1

Fractions

What does my child need to be able to do?

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

What does this mean?

Pupils need to be able to identify fractions and put them in order from smallest to largest or largest to smallest. This may include ordering fractions with different denominators. Pupils have to understand how to find the common denominator to identify which fraction is smaller/larger.

What does this look like in context?

Ordering
Put these fractions in the correct order, starting with the smallest.

     4/8   3/4   1/4

Measurement

What does my child need to be able to do?
Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).

What does this mean?
Pupils need to be able to add and subtract different units of measurement, using mental or formal methods. Pupils also need to understand how to find the difference between different units of measurement, this may include converting units of measurement to put them in ascending or descending order.

What does this look like in context?

Ordering
Put these measurements in order starting with the largest.

Half a litre
Quarter of a litre
300 ml

Measurement

What does my child need to be able to do?
Measure the perimeter of simple 2D shapes.

What does this mean?
Pupils need to understand that the perimeter of a shape is the distance around the outside of the shape, they also need to know how to find the perimeter of a given shape. They can calculate the perimeter of shape by adding the lengths of every side together, or by measuring the length using standard units of measurement.

What does this look like in context?
The side of a square is equivalent to a whole number (in cm). Which of the following measurements could represents its perimeter?

Measurement

What does my child need to be able to do?

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

What does this mean?

Using mental or formal written methods, children must understand that there are 100 pence in every pound to solve money problems in practical contexts. This might be in the context of adding up the cost of purchasing items from a shop.

What does this look like in context?

I bought a book which cost between £9 and £10 and I paid with a ten pound note. My change was between 50p and £1 and was all in silver coins. What price could I have paid?
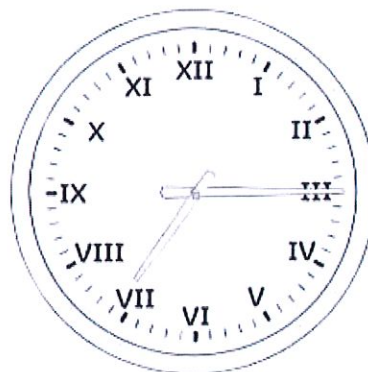
Measurement

What does my child need to be able to do?

Tell/write the time from an analogue clock, including Roman numerals from I to XII, and 12 hour/24 hour clocks.

What does this mean?

Children need to able to read the time on an analogue clock, where the numbers have been replaced by Roman numerals. They are also required to be able to read time on a digital clock, using the 24-hour clock.

What does this look like in context?

Measurement

What does my child need to be able to do?
Estimate and read time with increasing accuracy, to the nearest minute; record/compare time in seconds, minutes, hours. Use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight.

What does this mean?
Children need to able to identify the time on an analogue in intervals of 1 minute and be able to compare different times. This can involves adding and subtracting time in context to find the difference.

What does this look like in context?

Clock A   Clock B

What time is on Clock A ?   _____

What time is on Clock B ?   _____

How much time has elapsed
between Clock A and B ?   _____

Measurement

What does my child need to be able to do?
Know the number of seconds in a minute and the number of days in each month, year and leap year.

What does this mean?
Children are required to know time related facts such as; 60 seconds in 1 minute, 60 minutes in 1 hour, 24 hours in one day, 7 days in a week, 52 weeks in one year.

What does this look like in context?

Time and time again
How many hours are there in 2 days?
It is now half past eight.
Helen has to be home by 11 o'clock and she is watching a film at her friend's house which lasts 2 hours. It takes 10 minutes to walk home.
Has she enough time to watch all the film?

Geometry

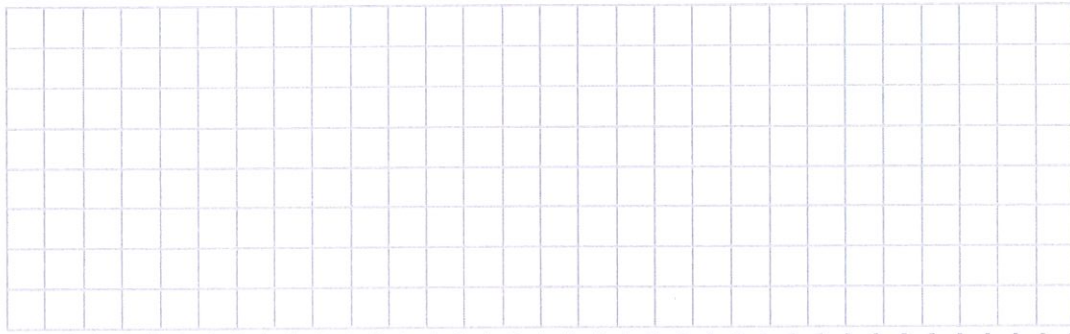## What does my child need to be able to do?
Draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them.

What does this mean?
Children need to able to identify and draw two dimensional shapes and use this knowledge to build models of three dimensional shapes. They need to able to describe the properties of a 3-D shape, such as how many vertices, sides, etc. that it has.

What does this look like in context?

Draw a square and a triangle on this grid. Use a ruler.

Geometry

What does my child need to be able to do?
Recognise that angles are a property of shape or a description of a turn.

What does this mean?
Children need to understand that angles are degrees of turn, or an amount of turn. This understanding needs to be applied to recognising the different angles that can be found within a shape.

What does this look like in context?

3. Mark the right angles on these shapes. One has been done for you:

a) Mark the right angles on these shapes. One has been done for you:

b) How many right angles are there in $\frac{3}{4}$ of a complete turn?

Geometry

What does my child need to be able to do?

Identify right angles, recognise that 2 right angles make a half-turn, 3 make three quarters of a turn and 4 a complete turn. Identify whether angles are greater than or less than a right angle.

What does this mean?

Understanding that right angles are 90 degrees and that there are 360 degrees in a full turn is necessary to achieve this learning objective. Pupils need to be able to identify that there are 4 right angles or 4 lots of 90 in a full 360 degree turn. Children need to develop confidence in identify whether a right angle is greater or less than a right angle i.e. whether it is an acute or obtuse angle.

What does this look like in context?

Circle the angles that are smaller than a right angle.

Geometry

What does my child need to be able to do?
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
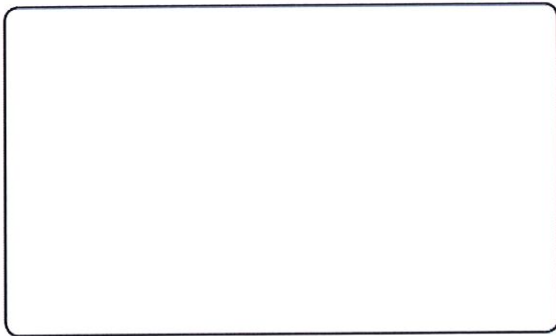
What does this mean?
Your child understands the meaning of the terms horizontal (across), vertical (up), parallel (lines on a plane that are the same distance apart but never meet) and perpendicular (cross each other at right angles).

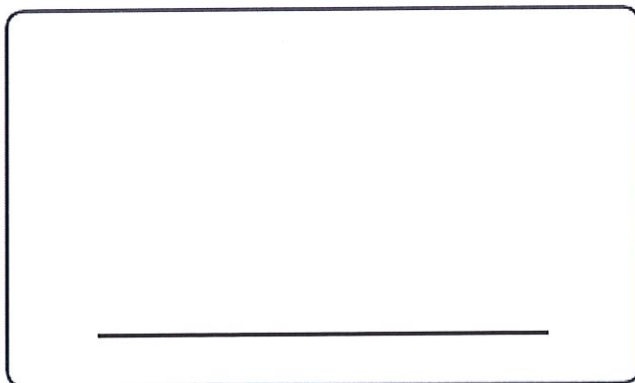## What does this look like in context?

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

   Use a ruler to draw lines as instructed.

   a) Draw a horizontal line.

   c) Draw a line parallel to the one in the box.

Statistics

What does my child need to be able to do?
Interpret and present data using bar charts, pictograms and tables.

What does this mean?
Your child needs to be able to record data in tables, such as a tally chart and then use this data to create a bar chart or pictogram. To achieve this objective, they will also need to be able to interpret a bar chart or pictogram and work out what information it is telling them to answer related questions.

What does this look like in context?

Homework

Children in a class talk about the amount of time they spend doing homework. They decide to keep a record for 3 weeks and then put their information on this chart.

Pupil Name	Number of hours doing homework each week		
	Week 1	Week 2	Week 3
Sian	8	3	8
Ramesa	1	1	1
Richard	7	4	7
Billie	3	2	3

Create a block graph to show the number of hours spent by the four children doing homework during week 1.

Create another block graph to show how much homework Richard did over the 3 weeks.

(You should use squared paper to complete these graphs.)

Give a good reason why Ramesa only did 1 hour homework during weeks 1, 2 and 3.

Statistics

What does my child need to be able to do?
Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts, pictograms and tables.

What does this mean?
Children must be able to interpret information presented in tables and answer questions based on their understanding of the information presented.

What does this look like in context?

Television kids

Children in a class talk about how much television they watch each week. They decide to keep a record for 3 weeks and then put their information on this chart.

Pupil Name	Number of hours watched each week		
	Week 1	Week 2	Week 3
Danny	18	19	21
Libby	1	13	20
Hannah	17	12	18
Tony	30	15	36

Who watched most television over 3 weeks?

Which week was the most popular for watching television?

How many hours television did Hannah watch altogether?

Why might Libby have watched only 1 hour of television in Week 1?