Year 1

Mastery Overview
Summer

MathsHUBS
White Rose

Year 1

SOL Overview

As well as providing term by term overviews for the new National Curriculum, as a Maths Hub we are aiming to support primary schools by providing more detailed Schemes of Learning, which help teachers plan lessons on a day to day basis.

The following schemes provide exemplification for each of the objectives in our new term by term overviews, which are linked to the new National Curriculum. The schemes are broken down into fluency, reasoning and problem solving, which are the key aims of the curriculum. Each objective has with it examples of key questions, activities and resources that you can use in your classroom. These can be used in tandem with the mastery assessment materials that the NCETM have recently produced.

We hope you find them useful. If you have any comments about this document or have any suggestions please do get in touch.

Thank you for your continued support with all the work we are doing.

The White Rose Maths Hub Team

Assessment

Alongside these curriculum overviews, our aim is also to provide an assessment for each term's plan. Each assessment will be made up of two parts:

Part 1: Fluency based arithmetic practice
Part 2: Reasoning based questions

You can use these assessments to determine gaps in your students' knowledge and use them to plan support and intervention strategies.

The autumn and spring assessments are now available.

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Year 1

Teaching for Mastery

These overviews are designed to support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new National Curriculum.

The overviews:

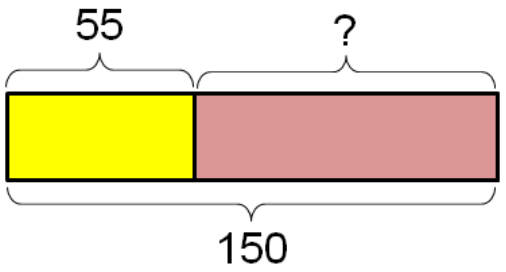
- have number at their heart. A large proportion of time is spent reinforcing number to build competency.
- ensure teachers stay in the required key stage and support the ideal of depth before breadth.
- ensure students have the opportunity to stay together as they work through the schemes as a whole group.
- provide plenty of time to build reasoning and problem solving elements into the curriculum.

Concrete – Pictorial – Abstract

As a hub we believe that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach.

Concrete – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.



An example of a bar modelling diagram used to solve problems.

Abstract – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence.

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Year 1

Frequently Asked Questions

We have bought one of the new Singapore textbooks. Can we use these curriculum plans?

Many schools are starting to make use of a mastery textbook used in Singapore and China, the schemes have been designed to work alongside these textbooks. There are some variations in sequencing, but this should not cause a large number of issues.

If we spend so much time on number work, how can we cover the rest of the curriculum?

Students who have an excellent grasp of number make better mathematicians. Spending longer on mastering key topics will build a student's confidence and help secure understanding. This should mean that less time will need to be spent on other topics.

In addition schools that have been using these schemes already have used other subjects and topic time to teach and consolidate other areas of the mathematics curriculum.

My students have completed the assessment but they have not done well.

This is your call as a school, however our recommendation is that you would spend some time with the whole group focussing on the areas of the curriculum that they do not appear to have grasped. If a couple of students have done well then these could be given rich tasks and deeper problems to build an even deeper understanding.

Can we really move straight to this curriculum plan if our students already have so many gaps in knowledge?

The simple answer is yes. You might have to pick the correct starting point for your groups. This might not be in the relevant year group and you may have to do some consolidation work before.

These schemes work incredibly well if they are introduced from Year 1 and continued into Year 2, then into Year 3 and so on.

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Year 1

Year 1 Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction			Geometry: Shape	Number: Place Value		Number: Addition and Subtraction		
Spring	Time		Place Value		Number: Addition and Subtraction	Measures: Length and Height	Number: Multiplication and Division		Number: Fractions			
Summer	Number: Place Value			Number: Four Operations			Measurement: Money		Measurement: Weight and Volume			

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Term by Term Objectives

Year 1

Year Group	Y1	Term	Summer

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Place Value Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers from 1-100 in numerals and words. Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than, most, least. Given a number, identify one more and one less.			Number: Four Operations Represent and use number bonds and related subtraction facts within 20. Add and subtract one digit and two digit numbers to 20, including 0. Read, write and interpret mathematical statements involving addition (+) subtraction (-) and equals (=) signs. Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems. Count in multiples of twos, fives and tens. Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.			Measurement: Money Recognise and know the value of different denominations of coins and notes. Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.		Measurement: Weight and Volume Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] Measure and begin to record mass/weight, capacity and volume.			

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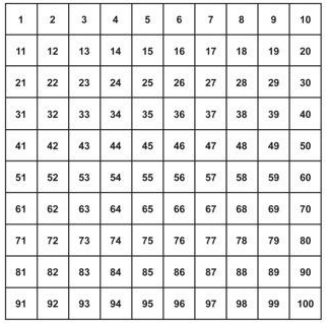
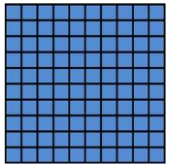
Term by Term Objectives

Year 1

	National Curriculum Statement	All Students		
		Fluency	**Reasoning**	**Problem Solving**
Place value	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	• Here is a hundred square.  Count forwards from 42….. Count backwards from 80…… Count forwards from 30, when you get to 50, count back to 40. • Here is a 100 base ten block.  What number would come next? Use base 10 to help count forward over 100. When you reach 120, count back to 80.	• I am going to count on from the number 58, will I say 56? Can you explain why? • I am going to count backwards from 30, how many steps will it take me to reach 10? • Sarah is counting from 70 backwards to 65. She says the numbers 70, 69, 68, 67, 65. Can you explain the mistake she has made?	• Can you work out what number I started counting from using the clues? Is there more than one option? I say 10 2 digit numbers and finish on the number 34. I count backwards 13 numbers and finish on 90. I count backwards from a 2 digit number and say 7 numbers which have 7 digits altogether. • Sam starts counting at the number 50. He says 6 odd numbers and 5 even numbers. What number could he finish on?

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Term by Term Objectives

Year 1

Place value

Count, read and write numbers from 1-100 in numerals and words.

- Count the balls.
  How many are there?
  Can you write this number in numerals and words?

- Show me 35 cubes. How could you group them?

- Complete

29		31	32	

- Jasmine is writing fifty two.

She writes

502

Is she right?
Tell me why.

- Which number will be in the bold square on the grid?

25	26		
29		31	

Explain how you know.

- Use the digit cards to below to make as many different **one** and **two** digit numbers as you can.

5 3 7

Write all the numbers in words.

- Match the numbers in words to the numerals.

forty three	57
thirty four	61
fifty seven	43
sixty one	16

Fill in any missing boxes.

- Can you find nine numbers in words in the wordsearch?

f i f t y s i x b t t e
g b n p f l a m t y h r
h j i b o t y u w q i s
c f n t r u d f e l r d
s y e w t n n i n e t y
e t t n y g h j t s y a
v u y v s i w a y k n g
e e t w e n t y f e i h
n d h p v n k e i v n b
t c r a e r u r v o e y
y k e b n a n o e p s o
c u e i g h t y o n e p

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Term by Term Objectives

Year 1

Place value

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

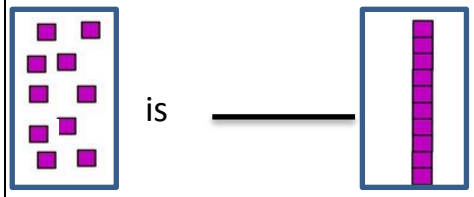
- Write the numbers from least to most.

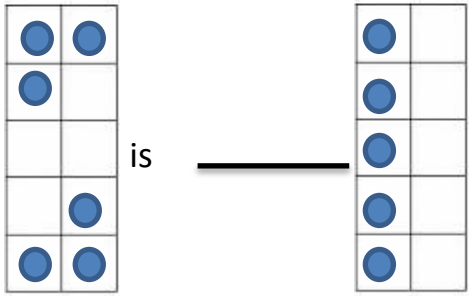
71	5	18	19	40

- Write 35 in the correct place in the number grid.

22	23	24	25	26
27	28			

- Use **more than, less than** or **equal to** to fill the gaps below.





- Look at the numbers below.

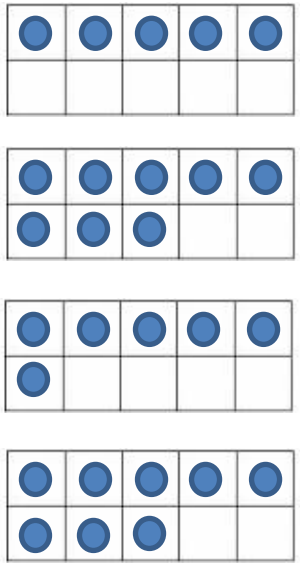
56	65

What is the same about these numbers?
What's different?

- **Always, sometimes, never**

A number with 9 ones is bigger than a number with 6 ones.

- Can you move 3 counters so all the ten frames are equal?



- Use the number cards to make the following numbers:

- Use 2 of the number cards to make a number more than 60.
- Use 2 of the number cards to make a number less than 40.
- What is the smallest 2 digit number you can make?
- What is the largest 2 digit number you can make?
- How do you know this is the largest number?

- There are 3 buckets of balls, red balls, green balls and blue balls.

  The red balls are equal to the blue balls. There are 2 more green balls than blue balls.
  There are 20 balls altogether.

  How many of each colour are there?
  Use cubes to help you solve the problem.

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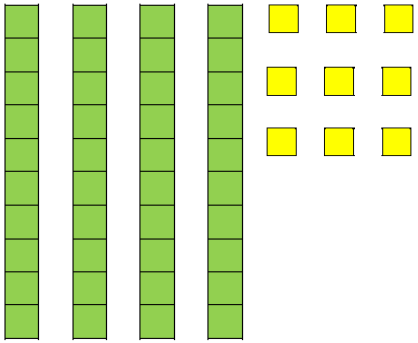
Term by Term Objectives

Year 1

Place value

Given a number, identify one more and one less.

- Here is a number.
  Make one more and one less than the number, write your answer in digits and words.



- Fill in the boxes.

45 → is 1 less than → ☐

39 → is 1 less than → ☐

50 → is 1 more than → ☐

- Sam thinks of a number. One more than his number is 8. What is his number?
  Claire thinks of a number. One less than her number is 6. What is her number?

- Fill in the boxes:

☐ → is 1 less than → ☐

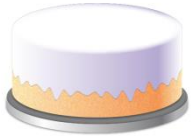
☐ → is 1 more than → ☐

- Tamsin and her little sister Beth have the same birthday as each other. Tamsin is going to be 7. Beth is going to be one year younger.

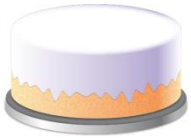
Tamsin says ' I need one less candle for my birthday cake than you.'

Is she correct?

Draw the amount of candles Tamsin and Beth should have on the cakes below.



Tamsin

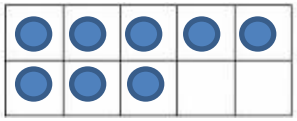


Beth

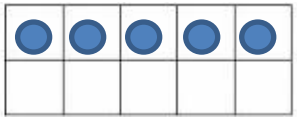
- Harry is 52. He is 1 year older than Kate who is 1 year younger than Sally. How old is Sally?

- Here are Dan, Millie and Saqib's ten frames.

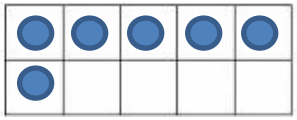
  Can you move two of the counters so Millie has 1 more than Dan and Saqib has 1 less than Millie?



Dan



Millie



Saqib

Complete the sentences to describe the new ten frames.

Millie has _____ Saqib.
Dan has _____ Saqib.
Millie has _____.

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Term by Term Objectives

Year 1

Four Operations

Represent and use number bonds and related subtraction facts within 20.

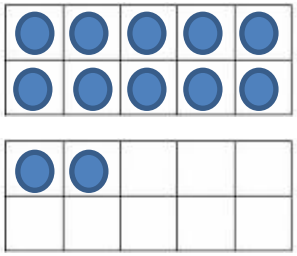
- Fill in the boxes:

12 + ☐ = 20 20 - ☐ = 3

15 + ☐ = 20 20 - ☐ = 9

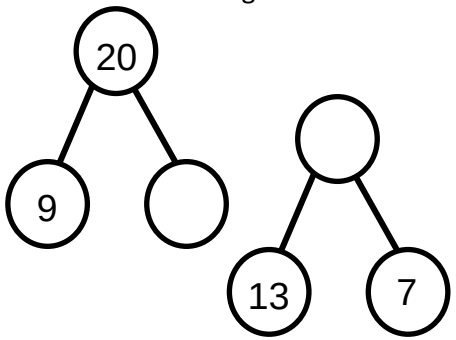
☐ + 14 = 20 20 – 0 = ☐

- Look at the ten frames below. Can you write four number sentences to describe them?



Place three more counters on the ten frames.
Can you write four new number sentences?

- Fill in the missing numbers.



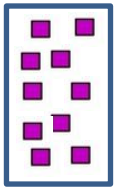
- Ted says
'If I know 13 + 7 = 20, I can work out 20 – 7 really easily.'

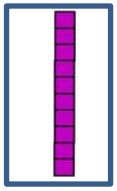
Is Ted right?
Find the answer and explain how you know.

- Georgia is using base 10 to add to 20.
She starts with this.

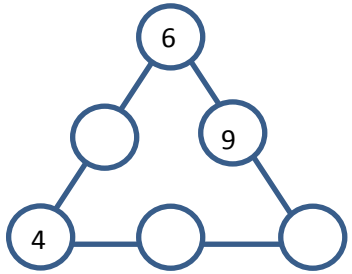
Sophie and Max show her what they think she should add to her base 10 to make 20.

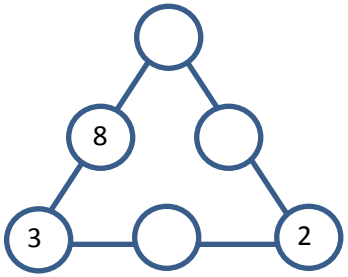
Who is correct?
Explain how you know.


Sophie


Max

- Fill in the ◯ so the sum of the numbers on each line is 20





- Here is a magic square. Each row and column adds up to 20.
Fill in the missing numbers.

12		5
	7	
		4

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Term by Term Objectives

Year 1

Four operations

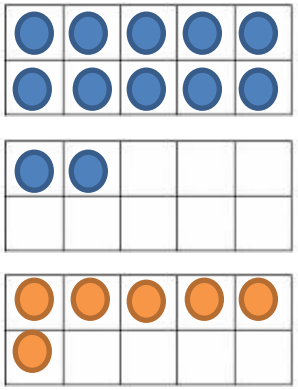
Add and subtract one digit and two digit numbers to 20, including 0.

- Use Base 10 to complete the number sentences.

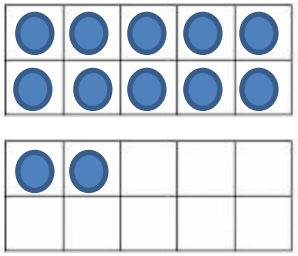
  5 + 12 =
  12 – 5 =
  7 + __ = 19
  13 - __ = 8

- Use the ten frames to complete the number sentences.

12 + 6 =



12 – 6 =



- Fill in the missing numbers.

□ + 5 = 12 + 6

7 + 11 = 20 - □

6 + 5 = □ + 11

- **Always, sometimes, never.**

Two one digit odd numbers add up to make an even number.

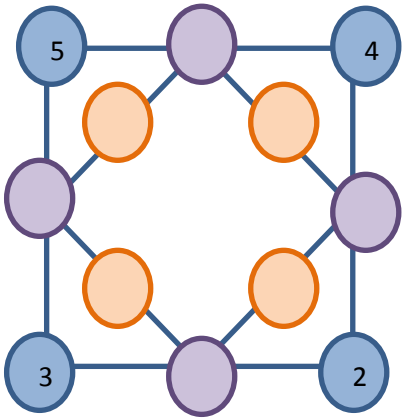
Eg 3 + 5 = 8

- Sam says
  'When you add 0 to a number, the number doesn't change.'

  Do you agree?

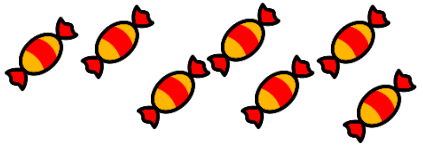
  Use Base 10, a ten frame or a number line to help you explain.

- Here is a number puzzle.
  The numbers in the blue circles add together to make the number in the purple circle between them.
  The numbers in the purple circles add together to make the number in the orange circle between them.



Can you fill in the purple and orange circles?

- Sita and Kim have 15 sweets between them.
  Here are Kim's sweets.



How many sweets does Sita have?

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Term by Term Objectives

Year 1

Four operations

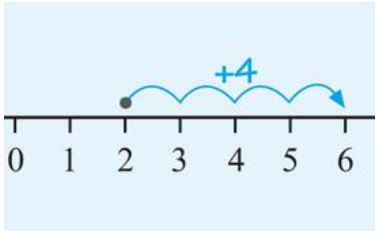
Read, write and interpret mathematical statements involving addition (+) subtraction (-) and equals (=) signs.

- Fill the boxes using + , - or =

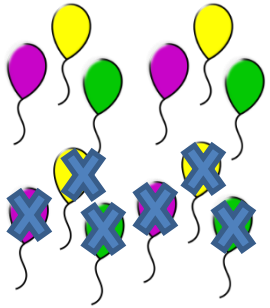
6 ☐ 3 ☐ 9

6 ☐ 3 ☐ 3

- Look at the diagram and write a number sentence to describe it.



- Hannah has 12 balloons. Six of them pop. How many balloons does Hannah have left?



Write your answer as a full number sentence.

- Use < , > or = to fill the box.

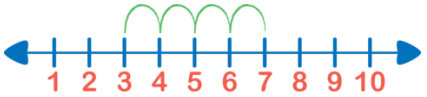
15 + 2 ☐ 15 – 2

19 – 5 ☐ 11 + 3

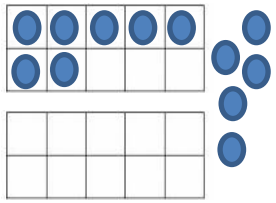
17 – 4 ☐ 17 – 3

2 + 16 ☐ 12 + 6

- How many number sentences could you write to describe the number line below?



- Jasmine is using a ten frame to find the answer to a question. What could the question be?



- Here are some number cards.

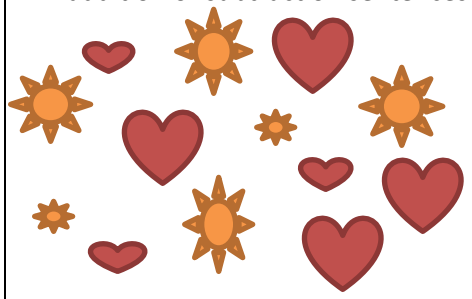
3	4	5	6	7	8	9

Use six of the number cards to fill the boxes below.
You can only use each card once.

☐ + ☐ = ☐ + ☐ = ☐ + ☐

Can you fill the boxes in more than one way?

- Look at the picture and write addition or subtraction sentences.



a) By size
b) By shape

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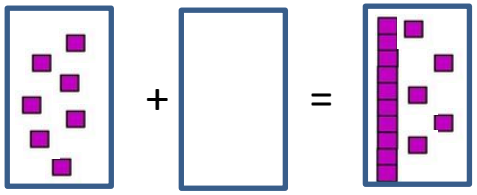
Term by Term Objectives

Year 1

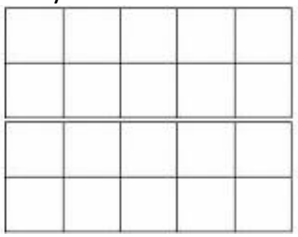
Four operations

Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.

- Use Base 10 to help you find the missing number.



- David has 6 cubes. George has 3 more cubes than David.
  How many cubes do they have altogether?
  Use the ten frames to help you find your answer.



- 6  are in a tree.

  Another 5  arrive.

  How many  are in the tree now?

- Do you need to use addition or subtraction to solve the one step problems?
  Explain how you know and solve each one.

  12 sweets are in a bag. Gina eats 5 of them. How many are left?

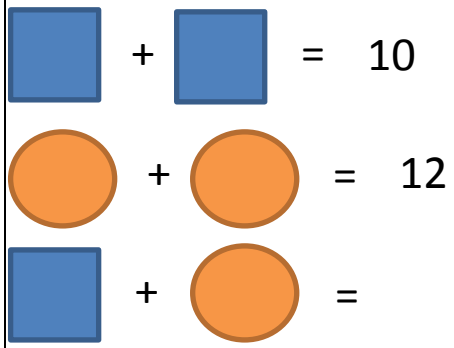
  There are 5 people on a bus. 4 more people get on. How many are there now?

  There are 8 people sitting at one table and 5 people sitting at another. How many people are there altogether?

  Sally has 15 grapes. She eats 7 of them. How many grapes does she have left?

- Jenny is solving a word problem. She has written the number sentence 13 + 5 = 18
  What could the word problem be?

- Find the total.



- Here are some number cards.

Hassan and Sally use the cards to make numbers between 10 and 20.

Hassan makes the biggest number possible.
Sally makes the smallest number possible.

What is the difference between their numbers?

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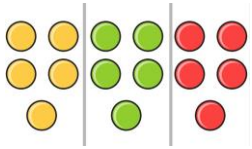
Term by Term Objectives

Year 1

Four operations

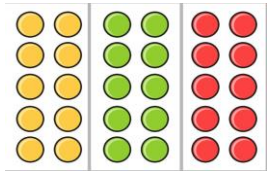
Count in multiples of twos, fives and tens.

- Draw the next three pictures for each pattern and write the numbers under each picture.



5 10 15

2 4 6



10 20 30

- Convince me that the number 10 can be in more than one sequence of multiples.
- Hassan is counting in 5's.

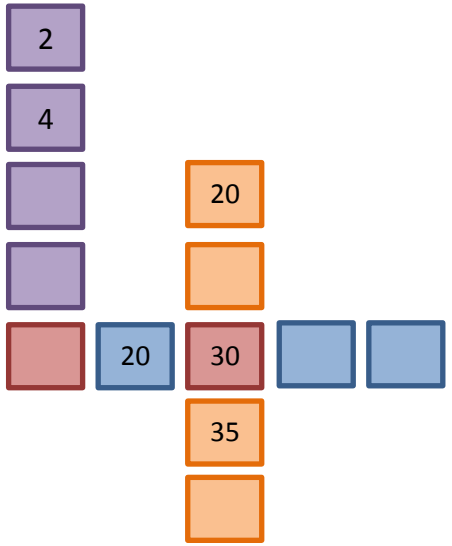
  He says
  ' I will never say a number that ends in 1'

  Is he correct?
  Explain your answer.
- **Always, sometimes, never**

Multiples of 5 are odd numbers.

Multiples of 2 are even numbers.

- Fill in the missing numbers.



- Fill in the sentences below.
  One has been done for you.

 = 5

 3 fives make 15

 _____

 _____

If the  = 2, what would your sentences be?

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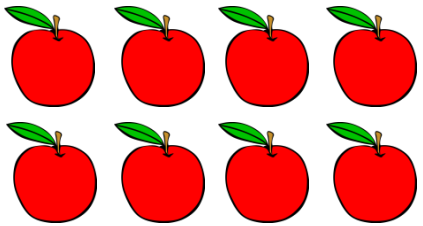
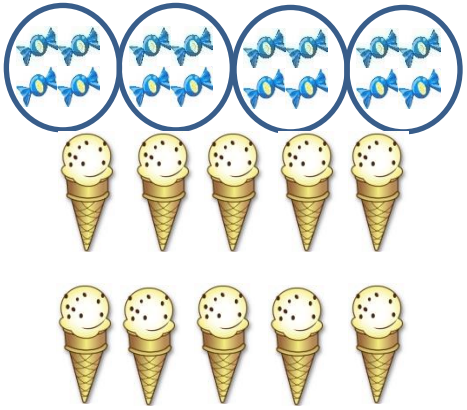
Term by Term Objectives

Year 1

Four operations	Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	• Emily has 8 apples. She shares them with her friend. How many apples do they get each?  • Hamza buys 4 bags of sweets with 5 sweets in each bag. How many sweets does he have altogether?  • Sally goes on holiday and eats 2 ice creams every day. She eats 10 ice creams altogether, how many days was she on holiday for?	• Saira wants to share the toys below with her sister. How many toys will they get each? Can they share them equally? Explain why.  • **Always, sometimes, never** Groups of two objects make an even number. Eg 2 groups of 2 makes 4 Use cubes to prove your answer. 	• Jasmine has 20 biscuits. She wants to divide them into equal groups. How many different ways could Jasmine divide her biscuits?  What is the smallest number of equal groups she can make? What is the largest number of equal groups she can make? • Five friends each have an odd number of grapes. They have more than 20 but less than 30 altogether. How many grapes do they each? Use cubes or pictures to help you solve the problem.

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Term by Term Objectives

Year 1

Money	Recognise and know the value of different denominations of coins and notes.	• Write the value of the coins.  = pence  = pence  = pence • Fill in the blanks. One has been done for you. One  = ___  One  = ___ 	• **True or False?** All coins are round. Explain your answer. • **Find the odd one out.** 20p, 2p, 5p, 30p • **Always, sometimes, never** Money in notes is worth more than money in coins.	• Tom pays exactly 10 pounds for a maths book. a) If he uses one note to pay, the value of the note is ____. b) If he uses two notes to pay, the value of each note is ___. c) If he uses one note and three coins to pay, the values of the note and coins are _____. • Tamsin has 3 coins in a bag. One is silver, one is gold and one is copper. The copper coin is the biggest. The silver coin has the most sides. The gold coin is round.  What coins could Tamsin have? • Emily has two silver coins. How much money might she have?

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Term by Term Objectives

Year 1

Money

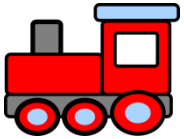
Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.

- Jenny gives 10p to her brother, she has 7p left. How much money did she have to start with?

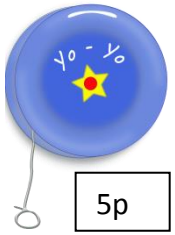
  Fill in your answer in the number sentence below.

  □ – 10p = 7p

- Here are some items.



8p



5p

Sam buys one train and one yoyo.

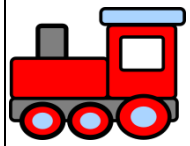
How much does he spend altogether?

- Tom buys one teddy.
  How much change will he get from a ten pence coin?

7p

- Convince me that two 5p coins is worth the same as five 2p coins.

- Ella has 15p.
  Which two items could she buy?



8p

5p

7p

Ella says 'I can buy three toys with 15p.'

Do you agree?

Convince me.

- Maryam buys these two items for 16p.

She pays with this coin.

How much change does she get?
Which coins might she be given?

- George has four coins. He has 12p altogether.
  Which coins does he have?

- Using two different coins each time, how many different totals can you make?

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Term by Term Objectives

Year 1

Measurement

Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]

- Which is heavier? Use a balance to help you investigate the items below.

  a) A ruler and a shoe.
  b) A pencil and a book
  c) An apple and a bottle of water
  d) A carrot and a banana

- Draw lines to match the pictures to the correct words.

Empty

Full

Half full

Use the words more or less to complete the sentence.

has _____ than

- **Always, sometimes, never.**

  The tallest glass holds the most water.

- Hassan says, 'A bigger object is always heavier than a smaller object.'

  Do you agree?

  Convince me.

- Use balancing scales as shown below.

Place 4 cubes on one side and 2 cubes on the other, which is heavier?

__ cubes are heavier than __ cubes.

Can you balance the scales? How many more cubes do you need to add on or take away?

- Tilly, Ben and Junaid are describing their glasses of water.

Tilly My glass has more water than Ben's glass.

My glass is half full. **Ben**

Junaid My glass has less water than Tilly's.

Can you fill in how much water could be in each of the children's glasses?

Tilly | Ben | Junaid

Could you label the glasses using the vocabulary full, empty, half full or quarter full?

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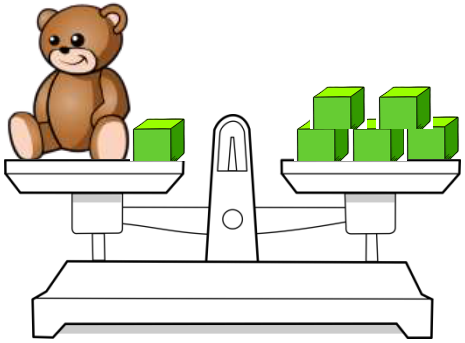
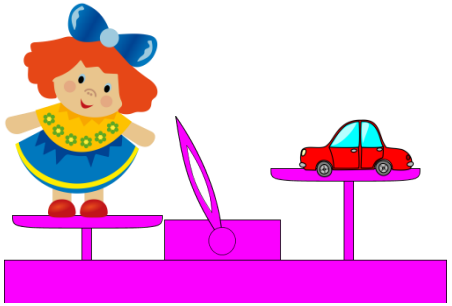
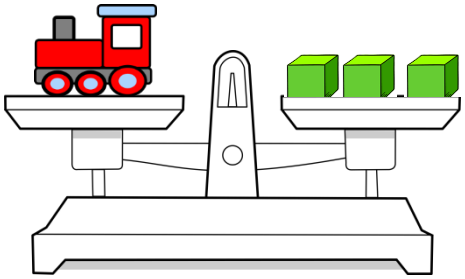
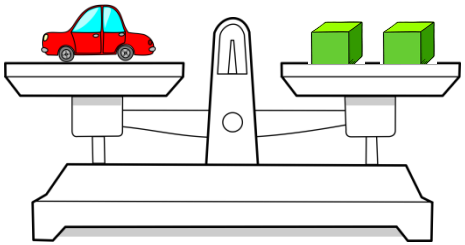
Term by Term Objectives

Year 1

Measurement	Measure and begin to record mass/weight, capacity and volume.	• Choose four objects from around the classroom. Which is heaviest? Which is the lightest? What could you use to find out? Can you find two objects that weigh the same? • Choose five different containers. How could you find out which container holds the most water? Fill up the containers using a cup. How many cups of water do you need to use to fill each container? • Follow the recipe below to make pancakes. 1 large free-range egg 1 cup of self-raising flour 1 cup of milk  Use the same cup for the flour and the milk. How could we make more pancakes? How could we make less?	• Look at the balance scales.  How many cubes does the teddy bear weigh the same as? • Look at the balance scales.  Which is heavier, the doll or the car? If you added another car to the scales, what might happen?	• Look at the balance scales below. Which of the statements is true?   • The train is heavier than the car. • The car is heavier than the train. • The train is lighter than the car. • The car is lighter than the train. • The car and the train weight the same amount.

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