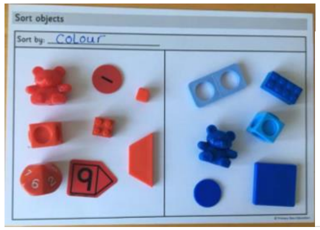
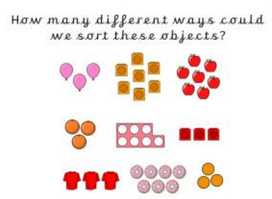
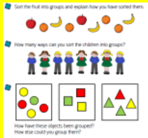
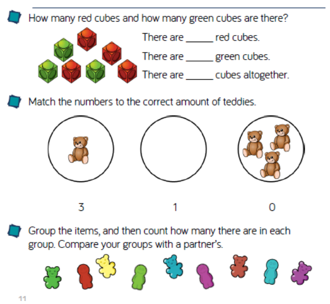
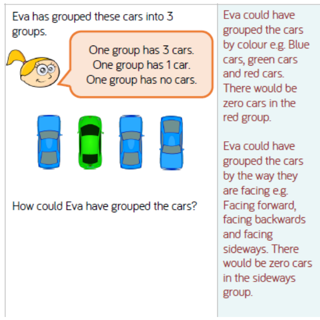
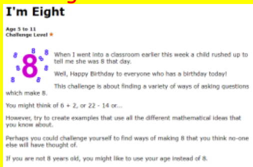
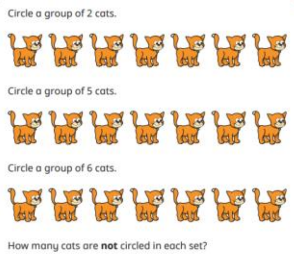
Anston Greenlands Primary School – Medium Term Maths Curriculum

Year 1

Autumn Term – The Boy who grew Dragons (Novel Study)

Objectives	Approximate number of lessons (70 total)	Investigations/variation	Context/real life
Number: Place value within 10			
▪ To sort objects	1	Children need to sort groups by characteristics before they count. Children should be encouraged to sort objects into groups in a variety of ways, for example, sorting a group of children into girls and boys or sorting counters by colour. Children should be encouraged to line sorted objects up to link to the early representations of bar models. What is the same about all the objects in the set? • What is different about the sets? • Can you find an object that belongs to this set? • Can you find an object that does not belong to this set? Why does it not belong? • Can you think of a different way to sort the objects? .  Ask children for various ways they think objects can be sorted. Discuss the different ways. For example: Colour, type, size, etc	

		Investigation – What is my rule? - Nrich 	
▪ To count objects	2	Once objects are sorted, children begin to count from 1 to 10 to work out how many there are. It is important that they count one object at a time and that they understand the last number they count is the total amount. Children should be encouraged to place the objects in a line to improve accuracy when counting. They should also be exposed to what zero looks like. How many objects are there? • If I move them around, are there still the same number of objects? Count and check. • Does it matter which object you count first? • Can you count how many claps I do? • Should you start counting at 1 or zero? • How do you know you have counted all the objects? • How do you know you have not counted any objects more than once?  Line up the objects. Is it easier to count now? Why? What does one _____ represent? What number will we say first when we are counting? Why? How many are there in total? When would we count 0? What does zero look like? Can you show me a group of zero? 	

<table>
<tr><td></td><td></td><td>Investigation

I'm Eight
Age 5 to 11
Challenge Level
When I went into a classroom earlier this week a child rushed up to tell me she was 8 that day.
Well, Happy Birthday to everyone who has a birthday today!
This challenge is about finding a variety of ways of asking questions which make 8.
You might think of 6 + 2, or 22 - 14 or...
However, try to create examples that use all the different mathematical ideas that you know about.
Perhaps you could challenge yourself to find ways of making 8 that you think no-one else will have thought of.
If you are not 8 years old, you might like to use your age instead of 8.</td><td></td></tr>
<tr><td>▪ Count object from a larger group</td><td>2</td><td>
</td><td></td></tr>
<tr><td></td><td></td><td>Investigation
Marbles in a jar</td><td></td></tr>
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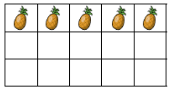
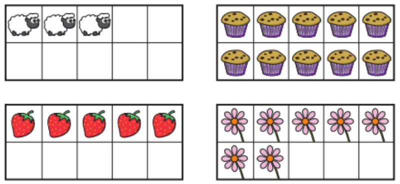
<table>
<tr>
<td>▪ To represent objects</td>
<td>2</td>
<td>Children learn that one object can be represented by another. For example, one elephant can be represented by one cube or counter.
Children can also pictorially represent an object to aid understanding. The use of zero is important so children understand what zero means.
Although the use of numerals is modelled here, you could also introduce the written word too.
How can the five frame help you to count the objects?
Can you write the number 3 in words?
How many ways can you draw 3?
Do we always have to use counters to show an amount?
What can we use to represent the _____?
What does each _____ represent?
How many different ways can we represent _____?
Using counters, show how many pineapples there are, then write the numerals for each.

Write the numeral to match each set of objects.

How many whales can you see on the wrapping paper?
Place counters on the whales to help you.
What else can you count?
Which animal is represented the most?
Which animal is represented the least?

Complete the table.
<table>
<tr><th>Picture</th><th>Draw It</th><th>Number</th><th>Write It</th></tr>
<tr><td></td><td></td><td></td><td></td></tr>
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<td></td>
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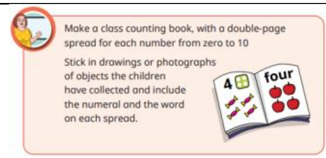
<tr>
<td>▪ Recognise numbers as words</td>
<td>2</td>
<td></td>
<td>

Make a class counting book linked to dragons and diferent types.</td>
</tr>
<tr>
<td>▪ Count on from any number</td>
<td>2</td>
<td>Complete the number tracks.
<table>
<tr><td>2</td><td>3</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
<table>
<tr><td>5</td><td>6</td><td></td><td></td><td></td><td></td></tr>
</table>
<table>
<tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
<td>Use the 100 square outside to choose a number then ask chn to count on.
Use chalks to make own number tracks outside.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Investigation
100 square</td>
<td></td>
</tr>
</table>

<table>
<tr>
<td>One more</td>
<td>1</td>
<td>
Once children are confident placing numbers on a track, the language of one more can be introduced.
Children need to know that one more is the number after and they should use their counting skills or a number track to help them.
The use of a dice and dominoes should be used to reinforce subitising skills.

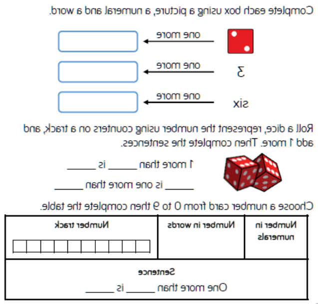
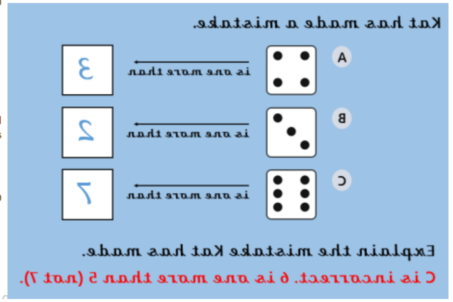
How can counting help us with finding 1 more?

Where can one more than _____ be found on a number track?

What does one more mean?

Will the number get greater or smaller? Why?

How can we show one more?

Do we need to count from 0 every time we find one more?


</td>
<td></td>
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<tr>
<td>▪ Count backwards within 10</td>
<td>2</td>
<td>
Complete the number tracks.
<table>
<tr><td>6</td><td>5</td><td></td><td>3</td><td></td><td></td><td>0</td></tr>
</table>
<table>
<tr><td>10</td><td></td><td>8</td><td>7</td><td></td><td></td><td></td></tr>
</table>
<table>
<tr><td>10</td><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td></tr>
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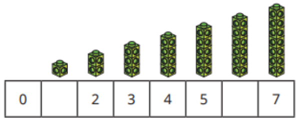
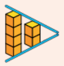
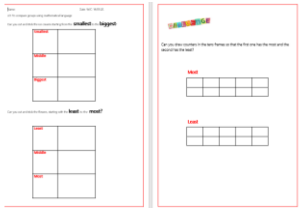
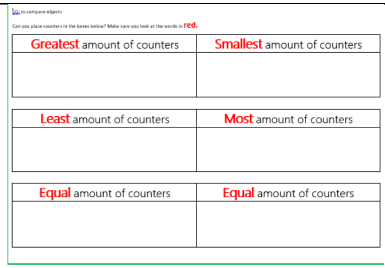
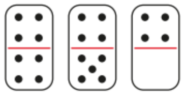
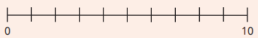
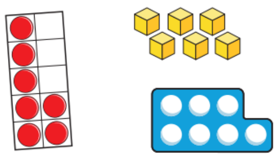
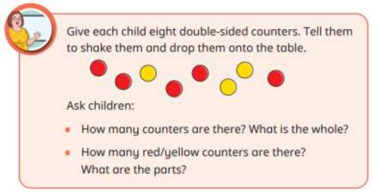
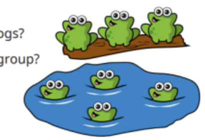
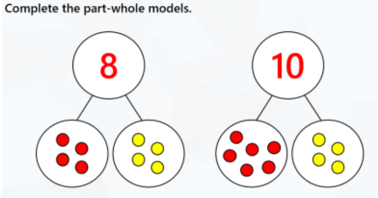
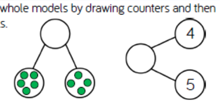
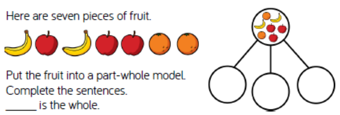
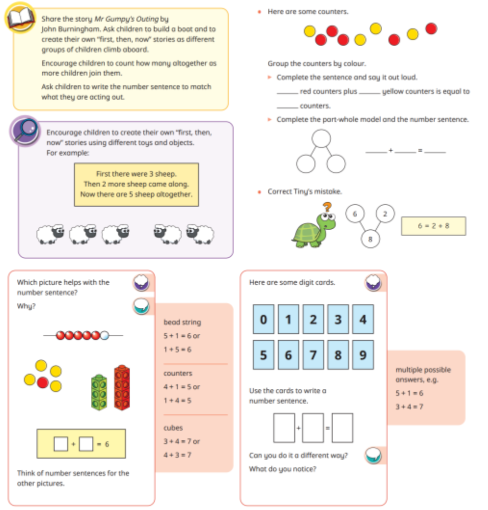
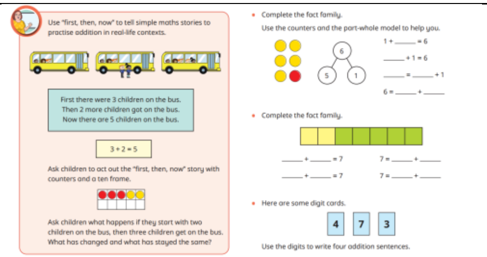
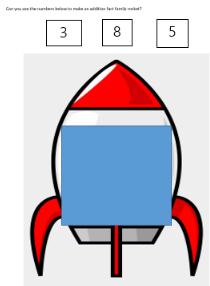
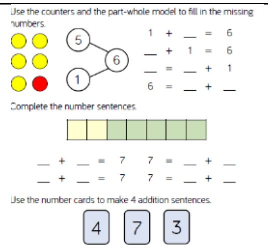
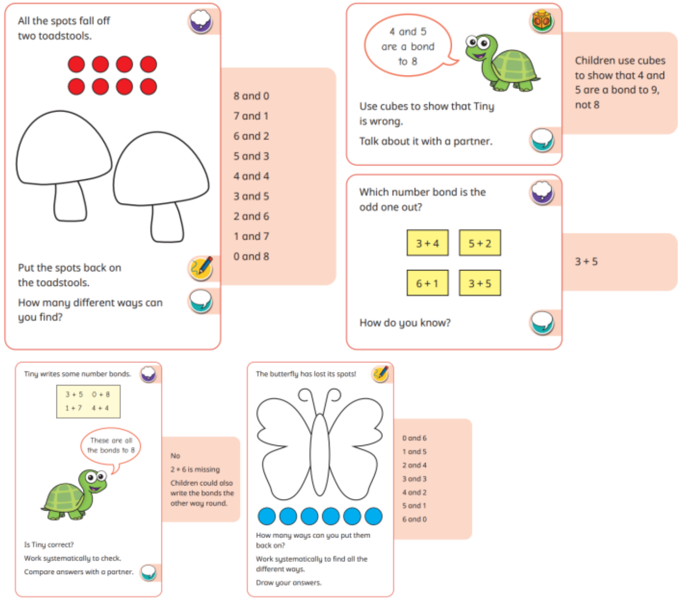
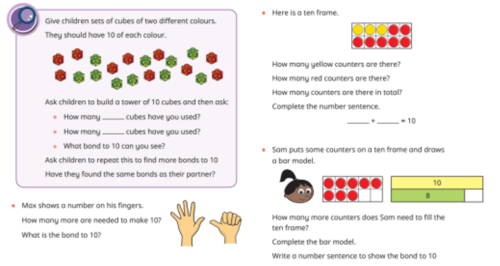
▪ 1 less	2	Complete the number track.  Complete the sentences. ▸ 1 less than 7 is ______ ▸ ______ is 1 less than 7 ▸ 1 less than 2 is ______ ▸ ______ is 1 less than 2	Work outside and put children in pairs to find the objects. • 1 less than 3 leaves  • 1 less than 5 sticks 
Compare groups by matching	1	• Draw a line from each bucket to a spade.  Is there a spade for each bucket?	
Fewer, more, same	1		Set up a teddy bears' picnic, giving each bear some treats. You could use cubes to represent some fruit or give the bears some toy objects. Give daddy bear 4 cubes, mummy bear 7 cubes and baby bear 5 cubes.  Write the words "fewer", "more" and "same" on some big pieces of paper. Complete the sentences together as a class. Mummy bear has ______ cubes than daddy bear. Baby bear has ______ cubes than mummy bear. Daddy bear has ______ cubes than baby bear. Then give children some cubes and ask them a variety of questions, such as, "Can you show me fewer cubes than mummy bear has?" Discuss the different answers together. set up a dragon picnic
▪ Less than, greater than, equal to	2	Use straws and cubes to introduce children to the less than, greater than and equal to symbols. Stick what you make together on your working wall, so that children have a visual reminder.  2 is less than 4 $2 < 4$  4 is greater than 2 $4 > 2$  4 is equal to 4 $4 = 4$ Ask children to use cubes to show that: • $1 < 5$ • $7 > 3$ • $9 = 9$ Children use the language 'equal to', 'more', 'less', 'greater than', 'fewer' and 'less than' to compare groups of objects. Children do not need to know the difference between the	

		groups, just that one group is greater or less than another or that the groups are equal to each other. Compare using language – interactive whole class input	
Compare numbers	2	Write the missing phrase. less than greater than equal to 1 is ____________ 5 7 is ____________ 8 6 is ____________ three 4 is ____________ 0 10 is ____________ ten 1 is ____________ zero   	
Order objects and numbers	1	Each domino shows a number. Put the dominoes in order. Start with the smallest number. Complete the sentences. The greatest number is ______ ______ is the smallest number. 	
The Number line	2	Get children to play these games with dice to practise using a number line.  **Game 1:** Children roll two dice. They circle each number on a number line and then complete a number sentence to match. ______ > ______ **Game 2:** Children roll three dice. They circle each number on a number line and then write the numbers in order, starting with the greatest. **Game 3:** Children roll a dice and then place a counter on the number line to show their number. Ask children these questions: • How many jumps from zero is your number? • How many jumps do you need to get to 10? • Is your number closer to zero or 10? Tiny draws an arrow to a number on the number line.  Which picture does **not** match Tiny's number?   Talk about it with a partner.	

Number: addition and subtraction (within 10)			
▪ To introduce parts and whole	1	  • Here are some frogs. ▸ Can you see two groups of frogs? ▸ How many frogs are in each group? ▸ Complete the sentences. _____ is a part. _____ is a part. The whole is _____ 	Make hoops into dragon houses by decorating them
Part whole model	1	Children should be exposed to various orientations and use the language 'part' and 'whole'. *What is a whole? What is a part?* *How many parts can you see?* *What is the value of the missing part?* *What is the value of the whole?* *How does this help with addition?* *Can the parts be swapped around? Why?* *Can the whole and a part be swapped around? Why?* **Complete the part-whole models.**  How many different ways can you sort the fruit?  Complete the part-whole models by drawing counters and then writing the numerals.  Here are seven pieces of fruit.  Put the fruit into a part-whole model. Complete the sentences. _____ is the whole. _____ is a part, _____ is a part and _____ is a part. Draw the part-whole model that represents the stem sentences: • A part is 4 • A part is 3 • The whole is 7	Use laminated dragons for objects

		Maths Investigation – Part part whole	
Write number sentences	1		
Fact families – addition facts	2	 Which number(s) represent a part? Which number represents the whole? Is the equals sign always at the end of a number sentence? What's the same/different about the four addition sentences? If two of the numbers in the part-whole model are the same, can we still write four addition sentences? Prove it. Can we make another addition calculation using the same 3 numbers? Can the parts change place? Can the whole change place? Why? 	

			
		Maths Investigation – Fact Families	
Number bonds within 10	1		Scales falling off dragons
Systematic number bonds within 10	1	Children combine their knowledge of the part-whole model and addition facts to explore number bonds within 10 Starting with the whole, children break numbers into parts and explore how many different ways a number can be partitioned. E.g. $5 = 3 + 2$ $5 = 4 + 1$ https://www.topmarks.co.uk/PlayPop.aspx?f=WaystoMake	

<table>
<tr>
<td>Number bonds to 10</td>
<td>1</td>
<td>
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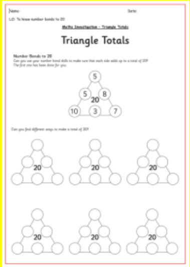
<td>Maths investigation – Number Bonds

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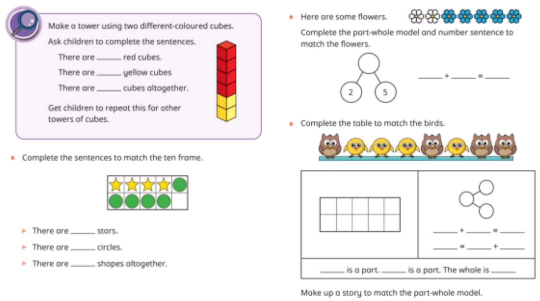
<tr>
<td>Addition – add together</td>
<td>1</td>
<td>In this small step, children begin to formalise the idea of addition as bringing two or more parts together to create a whole. This is a more formal way of looking at the learning they have covered earlier in this block. At this stage, the focus should be on bringing two parts together, rather than adding more, which will be covered explicitly in the next step.

When representing their additions, encourage children to use correct mathematical language to explain, for example “3 cubes plus 5 cubes is equal to 8 cubes.” The use of “is equal to” rather than “makes” will support children in later learning.

Ten frames, counters and Rekenreks are useful manipulatives to support this learning, and part-whole models can be used to represent additions.


Children will use a part-whole model to understand the concept of addition. They should be accurately using the ‘+’</td>
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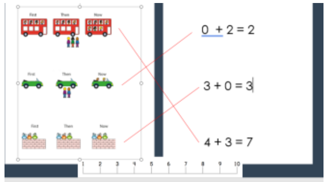
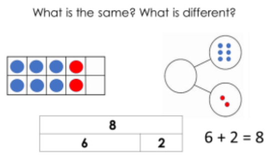
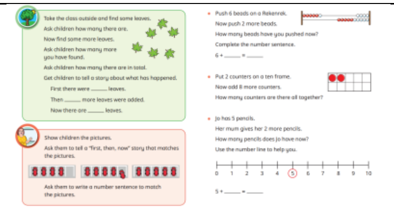
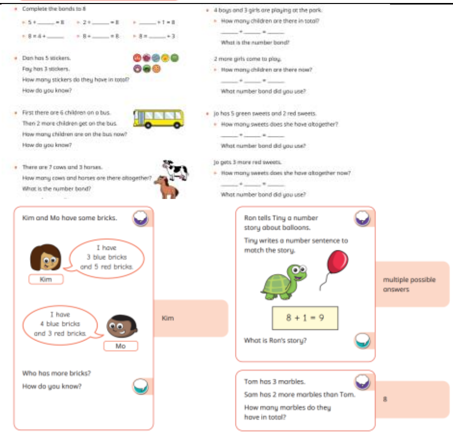
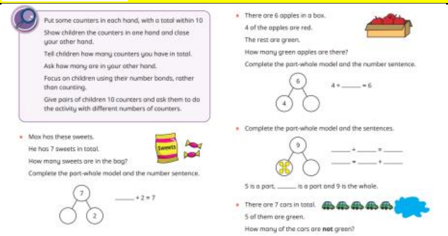
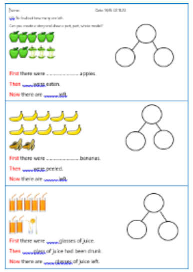
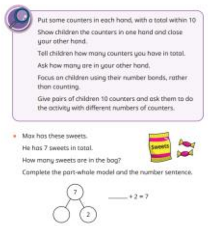
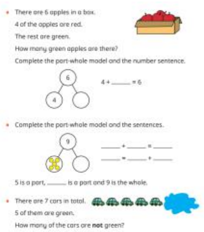
		and '=' symbols. Children should also become familiar with language related to addition such as 'total' and 'altogether'.  Go through PPT to slide 6 , asking the following questions: Q. There are 2 red cars and 6 blue cars. Q. How can we show that in a ten frame? Q. How many cars altogether? Q. What does each counter represent? How could we show that there are 2 red and 6 blue? How many altogether? Q. How can we show that in the part whole model? Q. How many red cars? How many blue cars? Q. What is the same about both of these representations? (Both show 6+2) Q. What is different? (One is a ten frame and one is part whole model) Show bar model. Q. How can we show the number story in a bar model? **Can you write the number sentence on your WB's and also draw the PPW model?** https://www.topmarks.co.uk/maths-games/mental-maths-train - plenary	

Addition – add more	1		
Addition problems	1		
		Maths Investigation – Addition – Two Dice 	
Find a part	1	 Children should apply their understanding of number bonds to solve missing number problems. Building from counting on,	

		children should start from the given part and count on to the whole, to find the missing part. Children should also be exposed to problems with one part and the whole being the same so they understand the role of zero. Practically in pairs to begin with, then on to individual work on sheet.  Eva spends 10p on a chocolate bar and something else. What else could she have bought?	
Subtraction – find a part	2	Now that children have looked at addition in detail, in this small step they begin to think about subtraction by finding a part. The focus of this small step is on the knowledge and use of number bonds to identify missing parts, rather than formal subtraction and the subtraction symbol. 	

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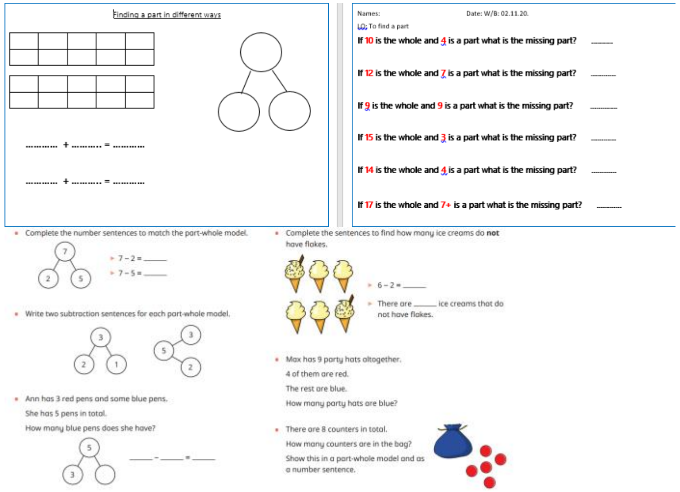
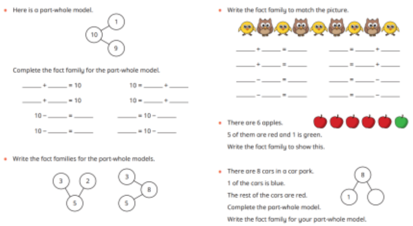
<tr><td></td><td></td><td>In this small step, children are formally introduced to the subtraction symbol for the first time.

</td><td></td></tr>
<tr><td>Fact families – the eight parts</td><td>2</td><td>Now that children have been exposed to both addition and subtraction, in this small step they build on their knowledge of addition fact families to find all eight facts within a fact family. An example of such a fact family is:
3 + 5 = 8   8 = 3 + 5
5 + 3 = 8   8 = 5 + 3
8 − 5 = 3   3 = 8 − 5
8 − 3 = 5   5 = 8 − 3
Initially, the focus is on identifying the facts from a completed part-whole model or number sentence. Once children are secure in this, they can start to use questions in similar structures to those they have seen previously, to complete a calculation and find its related fact family.

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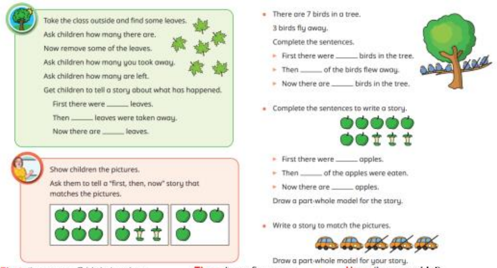
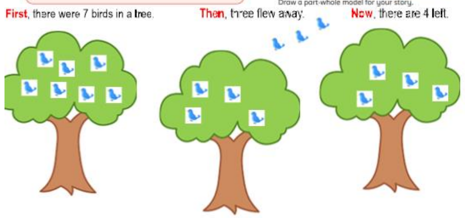
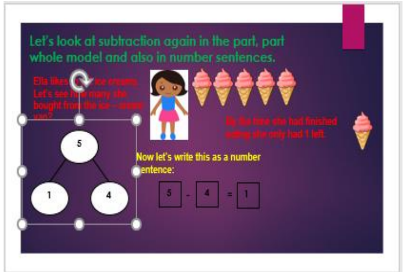
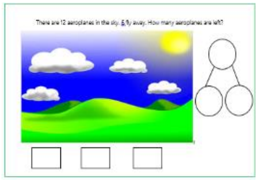
<table>
<tr>
<td>Subtraction – (take away/How many left?)</td>
<td>2</td>
<td>In this small step, children are introduced to the structure of subtraction that is “taking away”. This is the first time within this block that they will have seen such questions. In the same way as they were introduced to partitioning, this is done within this step without the use of the subtraction symbol. Use of the subtraction symbol follows formally in the next small step.








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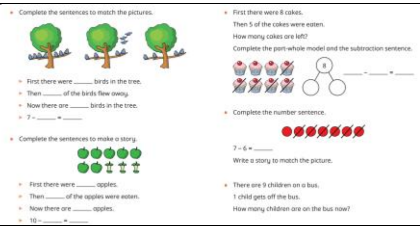
<td></td>
</tr>
<tr>
<td>Take away – how many left?</td>
<td>1</td>
<td>

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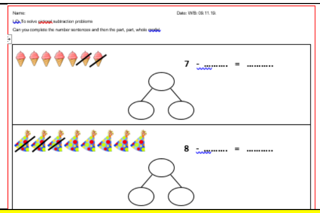
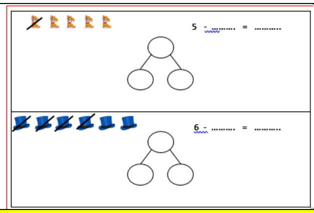
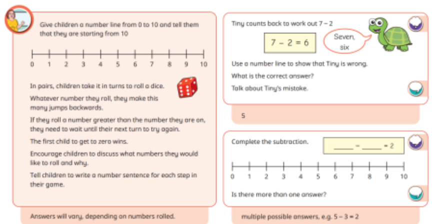
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td>Maths Investigation

Break it Up!
Age 5 to 11
Challenge Level ★
You have a stick of seven interlocking cubes (or a tower of seven Lego blocks). You cannot change the order of the cubes.
https://nrich.maths.org/2284</td><td></td></tr>
<tr><td>Subtraction on a number line</td><td>1</td><td>In this small step, children look at subtraction on a number line for the first time.

Key learning
• Mo uses a number line to work out how many birds are left.
▸ Why is 7 circled?
▸ Why are there 3 jumps?
▸ What number do the jumps end on? What does this mean?
• Jo has 8 sweets.
She gives 5 sweets to Ron.
How many sweets does Jo have left?
Use the number line to work it out.
• Complete the number lines and the subtractions.
9 − 3 = ____
6 − 4 = ____
• Use the number line to complete the subtractions.
▸ 7 − 3 = ____ ▸ 6 − 6 = ____ ▸ 10 − 6 = ____
▸ 5 − 0 = ____ ▸ 9 − 4 = ____ ▸ 4 − 4 = ____
Which subtractions have the same answer?

Give children a number line from 0 to 10 and tell them that they are starting from 10
In pairs, children take it in turns to roll a dice.
Whatever number they roll, they make this many jumps backwards.
If they roll a number greater than the number they are on, they need to wait until their next turn to try again.
The first child to get to zero wins.
Encourage children to discuss what numbers they would like to roll and why.
Tell children to write a number sentence for each step in their game.
Answers will vary, depending on numbers rolled.
Tiny counts back to work out 7 − 2
7 − 2 = 6
Seven, six
Use a number line to show that Tiny is wrong.
What is the correct answer?
Talk about Tiny's mistake.
5
Complete the subtraction. ____ − ____ = 2
Is there more than one answer?
multiple possible answers, e.g. 5 − 3 = 2</td><td></td></tr>
<tr><td>Add or subtract 1 or 2</td><td>2</td><td>In this small step, children focus on adding 1 or 2 in a variety of different contexts. They combine all the methods and approaches they have seen so far in this block.</td><td></td></tr>
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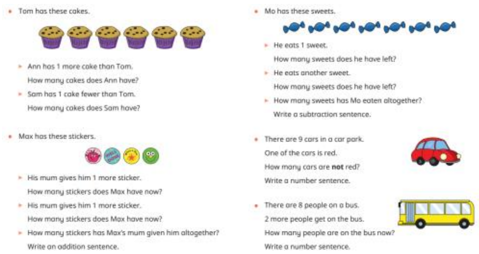
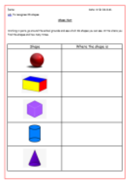
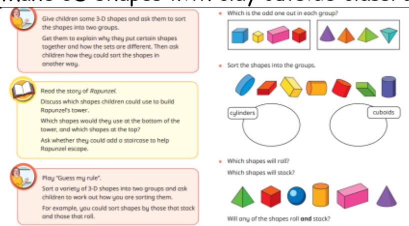
		 Tom has these cakes. Ann has 1 more cake than Tom. How many cakes does Ann have? Sam has 1 cake fewer than Tom. How many cakes does Sam have? Max has these stickers. His mum gives him 1 more sticker. How many stickers does Max have now? His mum gives him 1 more sticker. How many stickers does Max have now? How many stickers has Max's mum given him altogether? Write an addition sentence. Mo has these sweets. He eats 1 sweet. How many sweets does he have left? He eats another sweet. How many sweets does he have left? How many sweets has Mo eaten altogether? Write a subtraction sentence. There are 9 cars in a car park. One of the cars is red. How many cars are **not** red? Write a number sentence. There are 8 people on a bus. 2 more people get on the bus. How many people are on the bus now? Write a number sentence.	
Geometry - shape			
• To recognise and name 3D shapes	1	Children explore 3D shapes. Use the plastic shapes and a feely bag. Show each 3D shape and discuss it's properties cuboids, cubes, pyramids, spheres, cylinders and cones. Children to sit in a circle on the carpet. Have a selection of 3D objects in the centre (building blocks, cereal boxes, balls, etc) and 6 hoops Have labels ready (cube, cuboid, pyramid, cone, cylinder, sphere) 3D Hunt Outside  Make 3D shapes with clay outside classroom after hunt	In pairs – Build a dragons' house using the 3D shapes. Discuss which shapes would be best for the different parts of the house. Ch to then draw their house on sheet and label the shapes used.
• Sort 3 d shapes	1	 Give children some 3-D shapes and ask them to sort the shapes into two groups. Get them to explain why they put certain shapes together and how the sets are different. Then ask children how they could sort the shapes in another way. Read the story of *Rapunzel*. Discuss which shapes children could use to build Rapunzel's tower. Which shapes would they use at the bottom of the tower, and which shapes at the top? Ask whether they could add a staircase to help Rapunzel escape. Play "Guess my rule". Sort a variety of 3-D shapes into two groups and ask children to work out how you are sorting them. For example, you could sort shapes by those that stack and those that roll. Which is the odd one out in each group? Sort the shapes into the groups. cylinders cuboids Which shapes will roll? Which shapes will stack? Will any of the shapes roll **and** stack?	

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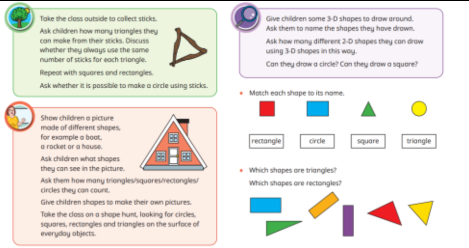
<tr><td>• Recognise and name 2 D shapes</td><td>1</td><td>
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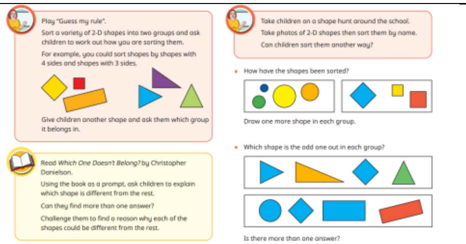
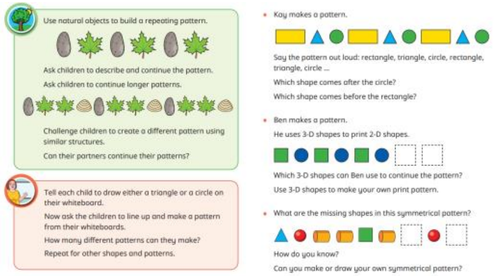
<tr><td>• Sort 2 D shapes</td><td>1</td><td>
</td><td></td><td></td></tr>
<tr><td>• Patterns within 2D shapes</td><td>1</td><td>In this small step, children create patterns with 2-D and 3-D shapes. They should experience both repeating patterns (ABAB) and symmetrical patterns (ABBCBBA), but do not need to know the names of these types of patterns.

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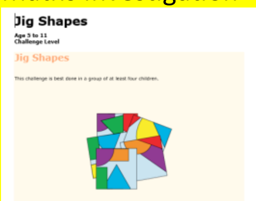
<tr><td>•</td><td></td><td>Maths Investigation – Shape

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