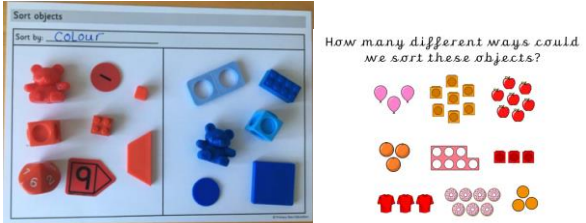


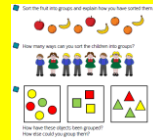
Anston Greenlands Primary School - Medium Term Maths Curriculum

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			
<ul style="list-style-type: none"> To sort objects 	1	<p>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.</p> <p>Children should be encouraged to line sorted objects up to link to the early representations of bar models.</p> <p>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?</p> <p>.</p> <div data-bbox="568 970 1151 1193">  </div> <p>Ask children for various ways they think objects can be sorted. Discuss the different ways. For example: Colour, type, size, etc</p>	

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?

Eva has grouped these cars into 3 groups.

One group has 3 cars.
 One group has 1 car.
 One group has no cars.

How could Eva have grouped the cars?

Eva could have grouped the cars by colour e.g. Blue cars, green cars and red cars. There would be zero cars in the red group.





Eva could have grouped the cars by the way they are facing e.g. Facing forward, facing backwards and facing sideways. There would be zero cars in the sideways group.


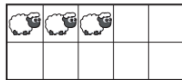


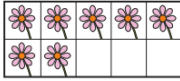






How many red cubes and how many green cubes are there?
 There are _____ red cubes.
 There are _____ green cubes.
 There are _____ cubes altogether.

Match the numbers to the correct amount of teddies.

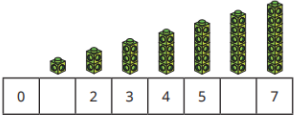




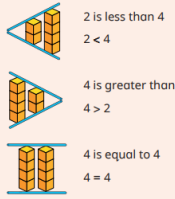
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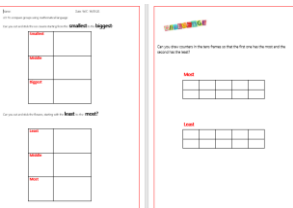
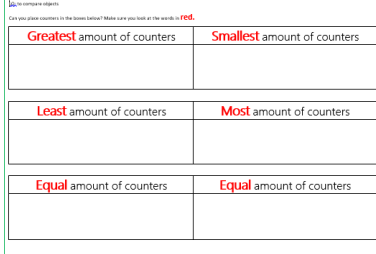
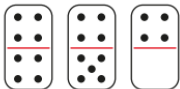
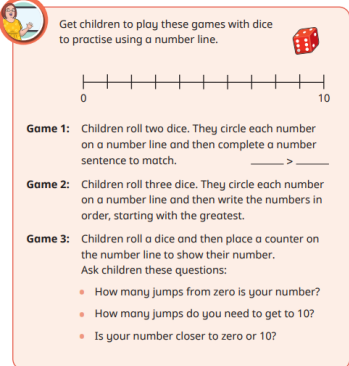
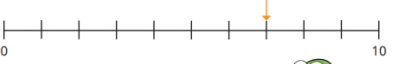
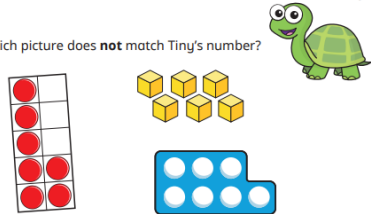

Group the items, and then count how many there are in each group. Compare your groups with a partner's.

		<p>Investigation</p> <p>I'm Eight</p> <p>Age 9 to 11 Challenge level 4</p> <p> 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.</p> <p>You might think of $8 = 2 + 2$, or $22 - 14$ or...</p> <p>However, try to create examples that use all the different mathematical ideas that you know about.</p> <p>Perhaps you could challenge yourself to find ways of making 8 that you think no-one else will have thought of.</p> <p>If you are not 8 years old, you might like to use your age instead of 8.</p>	
<ul style="list-style-type: none"> Count object from a larger group 	2	<p>Circle a group of 2 cats.</p>  <p>Circle a group of 5 cats.</p>  <p>Circle a group of 6 cats.</p>  <p>How many cats are not circled in each set?</p>	
		<p>Investigation</p> <p>Marbles in a jar</p>	

<ul style="list-style-type: none"> To represent objects 	2	<p>Children learn that one object can be represented by another. For example, one elephant can be represented by one cube or counter.</p> <p>Children can also pictorially represent an object to aid understanding. The use of zero is important so children understand what zero means.</p> <p>Although the use of numerals is modelled here, you could also introduce the written word too.</p> <p>How can the five frame help you to count the objects?</p> <p>Can you write the number 3 in words?</p> <p>How many ways can you draw 3?</p> <p>Do we always have to use counters to show an amount?</p> <p>What can we use to represent the ____?</p> <p>What does each ____ represent?</p> <p>How many different ways can we represent ____?</p> <p>Using counters, show how many pineapples there are, then write the numerals for each.</p>  <p>Write the numeral to match each set of objects.</p>     <p>How many whales can you see on the wrapping paper? Place counters on the whales to help you.</p>  <p>What else can you count? Which animal is represented the most? Which animal is represented the least?</p> <p>Complete the table.</p> <table border="1" data-bbox="987 842 1328 906"> <thead> <tr> <th>Picture</th> <th>Draw It</th> <th>Number</th> <th>Write It</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Picture	Draw It	Number	Write It																					
Picture	Draw It	Number	Write It																								
																											
<ul style="list-style-type: none"> Recognise numbers as words 	2		 <p>Make a class counting book, with a double-page spread for each number from zero to 10</p> <p>Stick in drawings or photographs of objects the children have collected and include the numeral and the word on each spread.</p>  <p>Make a class counting book linked to dragons and different types.</p>																								
<ul style="list-style-type: none"> Count on from any number 	2	<p>Complete the number tracks.</p> <table border="1" data-bbox="573 1246 887 1283"> <tr> <td>2</td> <td>3</td> <td>4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <table border="1" data-bbox="573 1294 781 1331"> <tr> <td>5</td> <td>6</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <table border="1" data-bbox="573 1342 851 1378"> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	2	3	4								5	6					3								<p>Use the 100 square outside to choose a number then ask chn to count on.</p> <p>Use chalks to make own number tracks outside.</p>
2	3	4																									
5	6																										
3																											
		<p>Investigation 100 square</p>																									

<p>One more</p>	<p>1</p>	<p>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.</p> <p>How can counting help us with finding 1 more?</p> <p>Where can one more than ____ be found on a number track?</p> <p>What does one more mean?</p> <p>Will the number get greater or smaller? Why?</p> <p>How can we show one more?</p> <p>Do we need to count from 0 every time we find one more?</p> <div data-bbox="573 678 1328 976"> </div>																								
<p>Count backwards within 10</p>	<p>2</p>	<p>Complete the number tracks.</p> <table border="1" data-bbox="584 1094 880 1137"> <tr> <td>6</td> <td>5</td> <td></td> <td>3</td> <td></td> <td>0</td> </tr> </table> <table border="1" data-bbox="584 1155 880 1198"> <tr> <td>10</td> <td></td> <td>8</td> <td>7</td> <td></td> <td></td> </tr> </table> <table border="1" data-bbox="584 1216 1048 1259"> <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> </table>	6	5		3		0	10		8	7			10	9							2			
6	5		3		0																					
10		8	7																							
10	9							2																		


<ul style="list-style-type: none"> 1 less 	2	<p>Complete the number track.</p>  <p>Complete the sentences.</p> <ul style="list-style-type: none"> ▶ 1 less than 7 is _____ ▶ _____ is 1 less than 7 ▶ 1 less than 2 is _____ ▶ _____ is 1 less than 2 	<p>Work outside and put children in pairs to find the objects.</p> <ul style="list-style-type: none"> • 1 less than 3 leaves  • 1 less than 5 sticks 
Compare groups by matching	1	<ul style="list-style-type: none"> • Draw a line from each bucket to a spade.  <p>Is there a spade for each bucket?</p>	
Fewer, more, same	1		<p>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.</p> <p>Give daddy bear 4 cubes, mummy bear 7 cubes and baby bear 5 cubes.</p>  <p>Write the words "fewer", "more" and "same" on some big pieces of paper.</p> <p>Complete the sentences together as a class.</p> <p>Mummy bear has _____ cubes than daddy bear.</p> <p>Baby bear has _____ cubes than mummy bear.</p> <p>Daddy bear has _____ cubes than baby bear.</p> <p>Then give children some cubes and ask them a variety of questions, such as, "Can you show me fewer cubes than mummy bear has?"</p> <p>Discuss the different answers together.</p>
<ul style="list-style-type: none"> Less than, greater than, equal to 	2	<p>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.</p>  <p>2 is less than 4 $2 < 4$</p> <p>4 is greater than 2 $4 > 2$</p> <p>4 is equal to 4 $4 = 4$</p> <p>Ask children to use cubes to show that:</p> <ul style="list-style-type: none"> • $1 < 5$ • $7 > 3$ • $9 = 9$ <p>Children use the language 'equal to', 'more', 'less', 'greater than', 'fewer' and 'less than' to compare groups of objects.</p> <p>Children do not need to know the difference between the</p>	<p>set up a dragon picnic</p>

		<p>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</p>							
<p>Compare numbers</p>	<p>2</p>	<p>Write the missing phrase.</p> <p>less than greater than equal to</p> <p>▶ 1 is _____ 5 ▶ 4 is _____ 0 ▶ 7 is _____ 8 ▶ 10 is _____ ten ▶ 6 is _____ three ▶ 1 is _____ zero</p>   <table border="1" data-bbox="958 319 1332 574"> <tr> <td>Greatest amount of counters</td> <td>Smallest amount of counters</td> </tr> <tr> <td>Least amount of counters</td> <td>Most amount of counters</td> </tr> <tr> <td>Equal amount of counters</td> <td>Equal amount of counters</td> </tr> </table>	Greatest amount of counters	Smallest amount of counters	Least amount of counters	Most amount of counters	Equal amount of counters	Equal amount of counters	
Greatest amount of counters	Smallest amount of counters								
Least amount of counters	Most amount of counters								
Equal amount of counters	Equal amount of counters								
<p>Order objects and numbers</p>	<p>1</p>	<p>Each domino shows a number. Put the dominoes in order. Start with the smallest number. Complete the sentences.</p> <p>The greatest number is _____ _____ is the smallest number.</p> 							
<p>The Number line</p>	<p>2</p>	 <p>Tiny draws an arrow to a number on the number line.</p>  <p>Which picture does not match Tiny's number?</p>  <p>Talk about it with a partner.</p> 							


Number: addition and subtraction (within 10)

▪ To introduce parts and whole


1




Give children five bean bags.
Ask them to throw the bean bags into a hoop, noticing how many land inside the hoop and how many land outside.



Encourage them to record their results.
Is there ever zero inside or outside the hoop?



Give each child eight double-sided counters. Tell them to shake them and drop them onto the table.

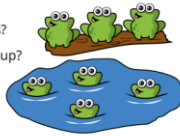


Ask children:

- How many counters are there? What is the whole?
- How many red/yellow counters are there? What are the parts?

• 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

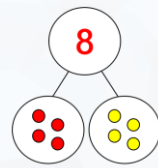
Part whole model

1

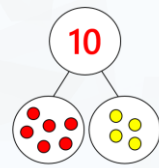
Children should be exposed to various orientations and use the language 'part' and 'whole'.

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.




8





10


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

Share the story *Mr Gumpy's Outing* by John Burningham. Ask children to build a boat and to create their own "first, then, now" stories as different groups of children climb aboard.

Encourage children to count how many altogether as more children join them.

Ask children to write the number sentence to match what they are acting out.

Encourage children to create their own "first, then, now" stories using different toys and objects.

For example:

First there were 3 sheep.
Then 2 more sheep came along.
Now there are 5 sheep altogether.

Which picture helps with the number sentence? Why?

bead string
 $5 + 1 = 6$ or
 $1 + 5 = 6$

counters
 $4 + 1 = 5$ or
 $1 + 4 = 5$

cubes
 $3 + 4 = 7$ or
 $4 + 3 = 7$

Think of number sentences for the other pictures.

Here are some counters.

Group the counters by colour.

Complete the sentence and say it out loud.
_____ red counters plus _____ yellow counters is equal to _____ counters.

Complete the part-whole model and the number sentence.

Correct Tiny's mistake.

Here are some digit cards.

Use the cards to write a number sentence.

multiple possible answers, e.g.
 $5 + 1 = 6$
 $3 + 4 = 7$

Can you do it a different way? What do you notice?

Fact families - addition facts

2

Use "first, then, now" to tell simple maths stories to practise addition in real-life contexts.

First there were 3 children on the bus.
Then 2 more children got on the bus.
Now there are 5 children on the bus.

$3 + 2 = 5$

Ask children to act out the "first, then, now" story with counters and a ten frame.

Ask children what happens if they start with two children on the bus, then three children get on the bus. What has changed and what has stayed the same?

Complete the fact family.

Use the counters and the part-whole model to help you.

Complete the fact family.

Here are some digit cards.





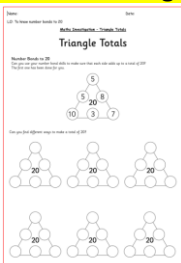



Use the digits to write four addition sentences.

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?

Can you use the numbers below to make an addition fact family?

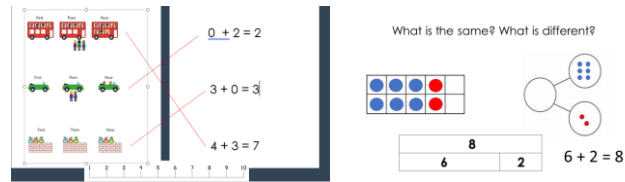
3 8 5

		<p>Use the counters and the part-whole model to fill in the missing numbers.</p> <p>Complete the number sentences.</p> <p>___ + ___ = 7 7 = ___ + ___ ___ + ___ = 7 7 = ___ + ___</p> <p>Use the number cards to make 4 addition sentences.</p>	
Maths Investigation – Fact Families			
<p>Number bonds within 10</p>	<p>1</p>	<div style="border: 1px solid #ccc; padding: 5px;"> <p>All the spots fall off two toadstools.</p> <p>Put the spots back on the toadstools. How many different ways can you find?</p> <ul style="list-style-type: none"> 8 and 0 7 and 1 6 and 2 5 and 3 4 and 4 3 and 5 2 and 6 1 and 7 0 and 8 </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>4 and 5 are a bond to 8.</p> <p>Use cubes to show that Tiny is wrong. Talk about it with a partner.</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>Which number bond is the odd one out?</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid #ccc; padding: 2px;">3 + 4</div> <div style="border: 1px solid #ccc; padding: 2px;">5 + 2</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid #ccc; padding: 2px;">6 + 1</div> <div style="border: 1px solid #ccc; padding: 2px;">3 + 5</div> </div> <p>3 + 5</p> <p>How do you know?</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>Tiny writes some number bonds.</p> <div style="border: 1px solid #ccc; padding: 2px; width: fit-content; margin: 5px auto;"> $3 + 5 = 8$ $1 + 7 = 4$ </div> <p>These are all the bonds to 9.</p> <p>No, 2 + 6 is missing. Children could also write the bonds the other way round.</p> <p>Is Tiny correct? Work systematically to check. Compare answers with a partner.</p> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>The butterfly has lost its spots!</p> <p>How many ways can you put them back on? Work systematically to find all the different ways. Draw your answers.</p> <ul style="list-style-type: none"> 0 and 6 1 and 5 2 and 4 3 and 3 4 and 2 5 and 1 6 and 0 </div>	<p>Scales falling off dragons</p>
<p>Systematic number bonds within 10</p>	<p>1</p>	<p>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.</p> <p>E.g. $5 = 3 + 2$</p> <p> $5 = 4 + 1$</p> <p>https://www.topmarks.co.uk/PlayPop.aspx?f=WaystoMake</p>	

<p>Number bonds to 10</p>	<p>1</p>	<p>Give children sets of cubes of two different colours. They should have 10 of each colour.</p>  <p>Ask children to build a tower of 10 cubes and then ask:</p> <ul style="list-style-type: none"> How many _____ cubes have you used? How many _____ cubes have you used? What bond to 10 can you see? <p>Ask children to repeat this to find more bonds to 10. Have they found the same bonds as their partner?</p> <p>Max shows a number on his fingers.</p>  <p>How many more are needed to make 10? What is the bond to 10?</p> <p>Here is a ten frame.</p>  <p>How many yellow counters are there? How many red counters are there? How many counters are there in total? Complete the number sentence.</p> $\underline{\quad} + \underline{\quad} = 10$ <p>Sam puts some counters on a ten frame and draws a bar model.</p>  <p>How many more counters does Sam need to fill the ten frame? Complete the bar model. Write a number sentence to show the bond to 10.</p>					
<p>Maths investigation – Number Bonds</p> 							
<p>Addition - add together</p>	<p>1</p>	<p>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.</p> <p>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.</p> <p>Ten frames, counters and Rekenreks are useful manipulatives to support this learning, and part-whole models can be used to represent additions.</p> <p>Make a tower using two different-coloured cubes. Ask children to complete the sentences.</p> <p>There are _____ red cubes. There are _____ yellow cubes. There are _____ cubes altogether.</p> <p>Get children to repeat this for other towers of cubes.</p> <p>Complete the sentences to match the ten frame.</p>  <ul style="list-style-type: none"> There are _____ stars. There are _____ circles. There are _____ shapes altogether. <p>Here are some flowers.</p>  <p>Complete the part-whole model and number sentence to match the flowers.</p>  <p>Complete the table to match the birds.</p>  <table border="1" data-bbox="873 1284 1108 1396"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table> <p>_____ is a part. _____ is a part. The whole is _____.</p> <p>Make up a story to match the part-whole model.</p> <p>Children will use a</p>					<p>part-whole model to understand the concept of addition. They should be accurately using the '+'</p>

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)

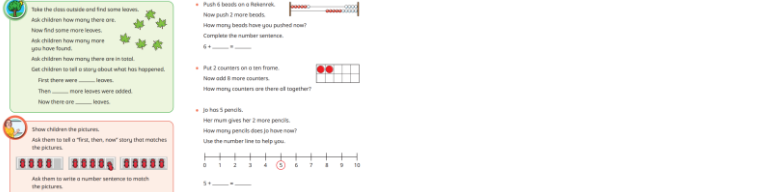


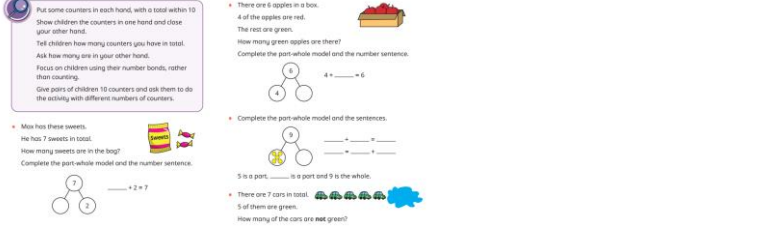
Q. What is different? (One is a ten frame and one is part whole model)

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

<p>Addition - add more</p>	<p>1</p>		
<p>Addition problems</p>	<p>1</p>		
<p style="text-align: center;">Maths Investigation – Addition – Two Dice</p> 			
<p>Find a part</p>	<p>1</p>	 <p style="text-align: center;">Children should apply their understanding of number bonds to solve missing number problems. Building from counting on,</p>	

		<p>children should start from the given part and count on to the whole, to find the missing part.</p> <p>Children should also be exposed to problems with one part and the whole being the same so they understand the role of zero.</p> <p>Practically in pairs to begin with, then on to individual work on sheet.</p> <div data-bbox="568 491 757 762"> </div> <div data-bbox="766 549 958 609"> </div> <div data-bbox="775 625 810 718"> </div> <div data-bbox="824 641 1169 715"> <p>Eva spends 10p on a chocolate bar and something else. What else could she have bought?</p> </div>	
<p>Subtraction - find a part</p>	<p>2</p>	<p>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.</p> <div data-bbox="568 1002 990 1232"> </div>	

In this small step, children are formally introduced to the subtraction symbol for the first time.

Finding a part in different ways

..... + =

..... + =

Names: _____ Date: WB/02.11.20

10 To find a part

If 10 is the whole and 4 is a part what is the missing part?

If 12 is the whole and 7 is a part what is the missing part?

If 9 is the whole and 9 is a part what is the missing part?

If 15 is the whole and 3 is a part what is the missing part?

If 14 is the whole and 4 is a part what is the missing part?

If 17 is the whole and 7 is a part what is the missing part?

- Complete the number sentences to match the part-whole model.

$7 - 2 = \underline{\quad}$
 $7 - 5 = \underline{\quad}$
- Complete the sentences to find how many ice creams do not have flakes.

$6 - 2 = \underline{\quad}$
 There are _____ ice creams that do not have flakes.
- Write two subtraction sentences for each part-whole model.
- Ann has 3 red pens and some blue pens. She has 5 pens in total. How many blue pens does she have?

$\underline{\quad} - \underline{\quad} = \underline{\quad}$
- Max has 9 party hats altogether. 4 of them are red. The rest are blue. How many party hats are blue?
- There are 8 counters in total. How many counters are in the bag? Show this in a part-whole model and as a number sentence.

Fact families
- the eight parts

2

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:

$$\begin{array}{ll}
 3 + 5 = 8 & 8 = 3 + 5 \\
 5 + 3 = 8 & 8 = 5 + 3 \\
 8 - 5 = 3 & 3 = 8 - 5 \\
 8 - 3 = 5 & 5 = 8 - 3
 \end{array}$$

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.

- Here is a part-whole model.
- Write the fact family to match the picture.

$\underline{\quad} + \underline{\quad} = \underline{\quad}$
 $\underline{\quad} + \underline{\quad} = \underline{\quad}$
 $\underline{\quad} - \underline{\quad} = \underline{\quad}$
 $\underline{\quad} - \underline{\quad} = \underline{\quad}$
- There are 6 apples. 3 of them are red and 3 are green. Write the fact family to show this.
- Write the fact families for the part-whole models.
- There are 8 cars in a car park. 1 of the cars is blue. The rest of the cars are red. Complete the part-whole model. Write the fact family for your part-whole model.

Subtraction
- (take
away/How
many left?)

2

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.

Take the class outside and find some leaves.
Ask children how many there are.
Now remove some of the leaves.
Ask children how many you took away.
Ask children how many are left.
Get children to tell a story about what has happened.
First there were _____ leaves.
Then _____ leaves were taken away.
Now there are _____ leaves.

3 birds fly away.
Complete the sentences.
First there were _____ birds in the tree.
Then _____ of the birds flew away.
Now there are _____ birds in the tree.

Complete the sentences to write a story.
First there were _____ apples.
Then _____ of the apples were eaten.
Now there are _____ apples.
Draw a part-whole model for the story.
Write a story to match the pictures.
Draw a part-whole model for your story.

First, there were 7 birds in a tree. Then, three flew away. Now, there are 4 left.

Let's look at subtraction again in the part, part whole model and also in number sentences.

She ate 4 ice cream cones. Let's write a number sentence to show how many are left.

Now let's write this as a number sentence: $5 - 4 = 1$

There are 12 aeroplanes in the sky. 8 fly away. How many aeroplanes are left?

Take away -
how many
left?

1

Complete the sentences to match the pictures.
First there were _____ birds in the tree.
Then _____ of the birds flew away.
Now there are _____ birds in the tree.
 $7 - ______ = ______$

Complete the sentences to make a story.
First there were _____ apples.
Then _____ of the apples were eaten.
Now there are _____ apples.
 $10 - ______ = ______$

First there were 6 cakes.
Then 5 of the cakes were eaten.
How many cakes are left?
Complete the part-whole model and the subtraction sentence.
Complete the number sentence.
 $7 - 6 = ______$
Write a story to match the pictures.
There are 9 children on a bus.
1 child gets off the bus.
How many children are on the bus now?

Year 1

7 $\dots = \dots$

8 $\dots = \dots$

5 $\dots = \dots$

6 $\dots = \dots$

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](https://www.lego.com)). You cannot change the order of the cubes.

<https://nrich.maths.org/2284>

Subtraction on a number line

1

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.
- Complete the number lines and the subtractions.
- Use the number line to complete the subtractions.

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.

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 $7 - 2$

Use a number line to show that Tiny is wrong. What is the correct answer? Talk about Tiny's mistake.

Complete the subtraction.






Is there more than one answer?

multiple possible answers, e.g. $5 - 3 = 2$

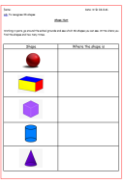
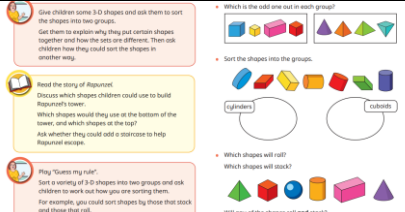
Add or subtract 1 or 2

2

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.

		<ul style="list-style-type: none"> Tom has these cakes.  <ul style="list-style-type: none"> 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.  <ul style="list-style-type: none"> 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.  <ul style="list-style-type: none"> 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.  	
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Geometry - shape

<ul style="list-style-type: none"> To recognise and name 3D shapes 	1	<p>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.</p> <p>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</p> <p>Have labels ready (cube, cuboid, pyramid, cone, cylinder, sphere)</p> <p>3D Hunt Outside</p>  <p>Make 3D shapes with clay outside classroom after hunt</p>	<p>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.</p>
<ul style="list-style-type: none"> Sort 3 d shapes 	1		

<ul style="list-style-type: none"> Recognise and name 2D shapes 	1	<p> Take the class outside to collect sticks. Ask children how many triangles they can make from their sticks. Discuss whether they always use the same number of sticks for each triangle. Repeat with squares and rectangles. Ask whether it is possible to make a circle using sticks.</p> <p> Show children a picture made of different shapes, for example a house, a rocket or a house. Ask children what shapes they can see in the picture. Ask them how many triangles/squares/rectangles/circles they can count. Give children shapes to make their own pictures. Take the class on a shape hunt, looking for circles, squares, rectangles and triangles on the surface of everyday objects.</p> <p> Play 'Guess my card'. Sort a variety of 2-D shapes into two groups and ask children to work out how you are sorting them. For example, you could sort shapes by shapes with 4 sides and shapes with 3 sides. Give children another shape and ask them which group it belongs in.</p> <p> Read 'Which One Doesn't Belong?' by Christopher Danielson. Using the book as a prompt, ask children to explain which shape is different from the rest. Can they find more than one answer? Challenge them to find a reason why each of the shapes could be different from the rest.</p> <p> Give children some 3-D shapes to draw around. Ask them to name the shapes they have drawn. Ask how many different 2-D shapes they can draw using 3-D shapes in this way. Can they draw a circle? Can they draw a square?</p> <ul style="list-style-type: none"> Match each shape to its name. <ul style="list-style-type: none">     rectangle circle square triangle Which shapes are triangles? Which shapes are rectangles? <p> Take children on a shape hunt around the school. Take photos of 2-D shapes they sort them by name. Can children sort them another way?</p> <ul style="list-style-type: none"> How have the shapes been sorted? <ul style="list-style-type: none">   Draw one more shape in each group. Which shape is the odd one out in each group? <ul style="list-style-type: none">   Is there more than one answer? 		
<ul style="list-style-type: none"> Sort 2D shapes 	1	<p>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.</p> <p> Use natural objects to build a repeating pattern. Ask children to describe and continue the pattern. Ask children to continue longer patterns. Challenge children to create a different pattern using similar structures. Can their partners continue their patterns?</p> <p> Tell each child to draw either a triangle or a circle on their whiteboard. Now ask the children to line up and make a pattern from their whiteboards. How many different patterns can they make? Repeat for other shapes and patterns.</p> <p> Kay makes a pattern. Say the pattern out loud: rectangle, triangle, circle, rectangle, triangle, circle ... Which shape comes after the circle? Which shape comes before the rectangle?</p> <p> Ben makes a pattern. He uses 3-D shapes to print 2-D shapes. Which 3-D shapes can Ben use to continue the pattern? Use 3-D shapes to make your own print pattern.</p> <p> What are the missing shapes in this symmetrical pattern? How do you know? Can you make or draw your own symmetrical pattern?</p>		
<ul style="list-style-type: none"> Patterns within 2D shapes 	1			
<ul style="list-style-type: none"> 		<p>Maths Investigation – Shape</p> <p>Jig Shapes Age 3 to 11 Challenge Level</p> <p>This challenge is best done in a group of at least four children.</p> 		