Autumn Block 2

Addition and subtraction (within 10)

Small steps

Step 1	Introduce parts and wholes
Step 2	Part-whole model
Step 3	Write number sentences
Step 4	Fact families – addition facts
Step 5	Number bonds within 10
Step 6	Systematic number bonds within 10
Step 7	Number bonds to 10
Step 8	Addition – add together

Small steps

Step 9	Addition – add more
Step 10	Addition problems
Step 11	Find a part
Step 12	Subtraction – find a part
Step 13	Fact families – the eight facts
Step 14	Subtraction – take away/cross out (How many left?)
Step 15	Take away (How many left?)
Step 16	Subtraction on a number line

Small steps

Step 17	Add or subtract 1 or 2

Introduce parts and wholes

Notes and guidance

In this small step, children begin to think about parts and wholes.

While this reinforces and reminds children of what they have learned in Reception, they are unlikely to have been formally introduced to the language of "parts" and "whole".

Ensure time is spent identifying the parts and the whole during activities. Allow children to explore and notice different compositions; for example, 5 can be composed of 2 and 3 or 1 and 4 or 1 and 1 and 3. Encourage children to recognise that numbers can be composed of two or more parts.

At this stage, children should be given the opportunity to explore this concept through play and physical activities. The part-whole model is introduced in the next step.

Things to look out for

- Children may make mistakes counting. Encourage children to subitise (to recognise instantly how many objects there are without counting).
- Children may mix up what the parts are and what the whole is. Physical activities can help with this, such as children standing in two hoops to make the parts, then physically coming together to make the whole.

Key questions

- Where is the whole?
- Where are the parts?
- Is the whole greater than the part? Is the whole always greater?
- Can zero be a part?
- Can the parts be swapped around?

Possible sentence stems

- _____ is a part.

  _____ is a part.

  The whole is _____
- The whole is _____ than the part.
- There is/are _____ in each part.

National Curriculum links

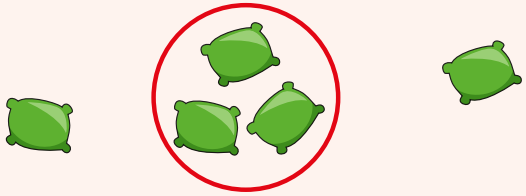
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer)

Introduce parts and wholes

Key learning

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?

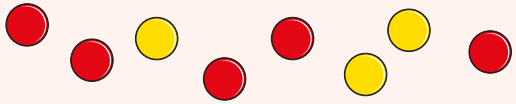
Provide each group of six children with two large hoops labelled "yes" and "no".

In each group, children take turns to ask questions, for example: "Do you like carrots?", "Have you got a sister?" Each child then stands in the correct hoop.

At the end of each turn, ask children to say the sentences out loud: "2 is a part. 4 is a part. The whole is 6"

Challenge children to find a question that sorts their group into 6 and 0

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



Ask children:

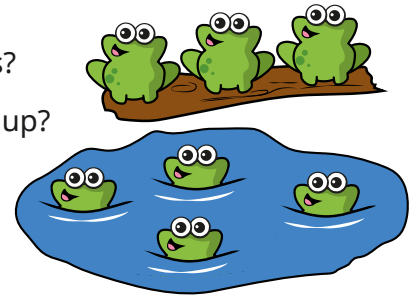
- How many counters are there? What is the whole?
- How many red/yellow counters are there? What are the parts?

- 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 _____



Introduce parts and wholes

Reasoning and problem solving

Here are five objects.

Put the objects into two groups.

Draw the groups.

Say out loud for your groups:

- _____ is a part.
- _____ is a part.
- The whole is _____

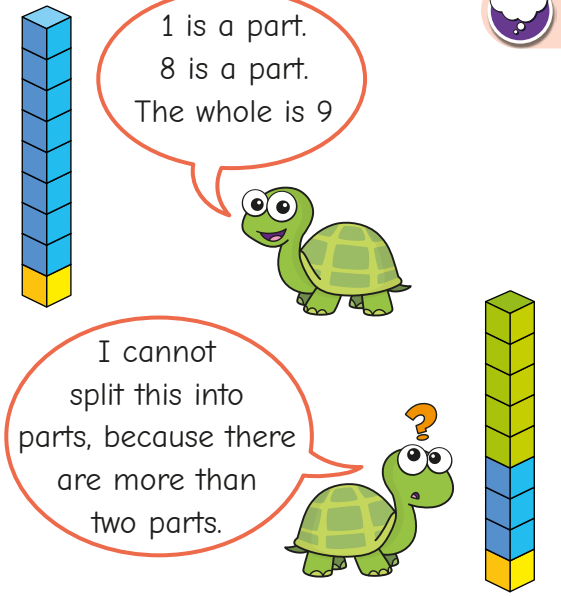
Is the whole always the same?

Compare answers with a partner.

multiple possible answers, e.g.

red and green (3 and 2)

food and not food (4 and 1)



Can you help Tiny?

Complete the sentences.

_____ is a part.

_____ is a part.

_____ is a part.

The whole is _____

1 is a part.

3 is a part.

5 is a part.

The whole is **9**

Part-whole model

Notes and guidance

Now that children have explored parts and wholes, in this small step they are introduced to the part-whole model. This is sometimes referred to as a "cherry model".

The main teaching point is for children to see that a whole group of objects can be composed of two or more parts and that they can represent this using a part-whole model. The group can be split in a variety of different ways. Draw children's attention to the fact that the parts cannot be bigger than the whole group.

Provide children with laminated part-whole models, so that they can experiment with physical objects – either drawing or placing pictures on the part-whole model. Encourage them to describe what they do by saying full sentences aloud. Children should be comfortable describing the parts and wholes in a variety of ways, sometimes starting with the whole and at other times with a part.

Things to look out for

- Children may assume that the whole is always at the top of the diagram, so expose them to the part-whole model in different orientations.

Key questions

- What can you see?
- Have you still got 5?
- What do you notice about the whole and the parts?
- What happens when you put the parts back together?
- How many different ways can you split the whole into two parts?

Possible sentence stems

- _____ is a part.

  _____ is a part.

  The whole is _____
- _____ is the whole.

  _____ is a part.

  _____ is a part.

National Curriculum links

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

Part-whole model

Key learning

Give children seven cubes, counters or other objects from the classroom and a laminated part-whole model.

Ask children to show that:

- 7 is the whole
- 1 is a part and 6 is a part
- 2 is a part and 5 is a part
- 3 is a part and 4 is a part

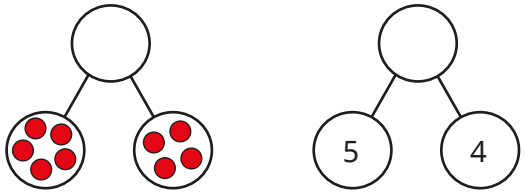
Repeat the activity with different numbers and with the part-whole model in different orientations.

The aim is to check that children understand what is the whole and what are the parts.

In the playground, draw a giant part-whole model with chalk.

Ask children to "act out" parts and wholes. For example, six children could stand in the whole and shout, "The whole is 6". The children then choose which part to move to and chant, "_____ is a part. _____ is a part. The whole is 6".

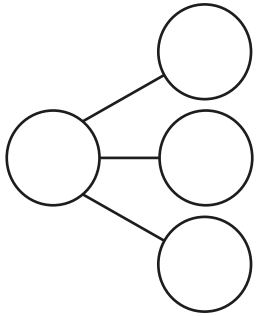
- Complete the part-whole models.



- Draw a part-whole model to match the sentences.

2 is a part.
6 is a part.
The whole is 8

- Here are seven pieces of fruit.



Put the fruit into a part-whole model.

Complete the sentences.

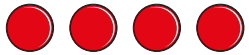
_____ is the whole.

_____ is a part, _____ is a part and _____ is a part.

Part-whole model

Reasoning and problem solving

4 is the whole.



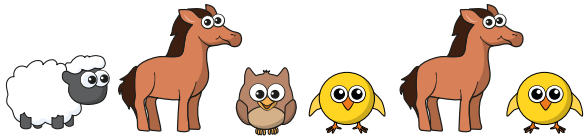
How many **different** part-whole models can you draw to show this?

4 and 0, 0 and 4

1 and 3, 3 and 1

2 and 2

Here are six animals.



How many different ways can you group the animals?

Draw a part-whole model for each way.

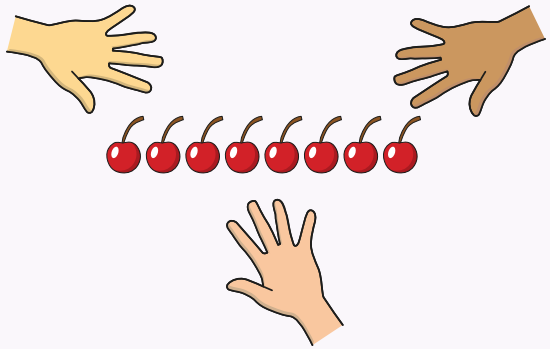
Can you make more than two groups?

multiple possible answers, e.g.

brown and not brown

4 legs and 2 legs

Show children that three friends have eight cherries.



Ask them to use cubes to show the cherries.

Ask how many ways the three friends can share the cherries.

Encourage them to think of the best way to record their results, and to think about the question if there were more cherries.

multiple possible answers, e.g.

1, 1, 6

3, 2, 3

in a part-whole model

Write number sentences

Notes and guidance

In this small step, children learn that the addition symbol (+) can be used to represent combining two or more parts and the equals symbol (=) can be used to show the equivalence between the whole and the sum of the parts.

At this stage, children consider a specific order to the number sentence ($a + b = c$). They focus on the language associated with this number sentence, for example 7 apples plus 3 apples is equal to 10 apples. Once understanding is established, children explore number sentences written in a different order, such as 4 = 1 + 3

"First, then, now" stories are a great way to link real-life situations to the number sentences and part-whole models.

Things to look out for

- When using interlocking cubes, ensure that children join the cubes together to make the whole rather than create an additional row of cubes, which could cause confusion about what the total is.
- Encourage children to use the phrase "is equal to" rather than "equals". This helps them to write equations more flexibly, as saying the word "equals" suggests an answer rather than an equivalence.

Key questions

- How many were there at the start?
  Then how many more were added?
- What is the total?
- What does "=" mean?
- Which number tells you how many you had to start with?
- Which number shows what has been added?
- Which number shows the total?

Possible sentence stems

- _____ plus _____ is equal to _____
- _____ is equal to _____ plus _____

National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer)
- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

Write number sentences

Key learning

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.

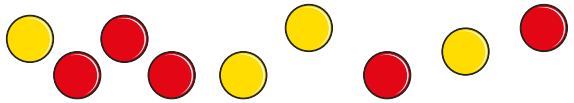
Encourage children to count how many altogether as more children join them.

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.

- Here are some counters.

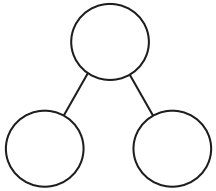


Group the counters by colour.

- Complete the sentence and say it out loud.

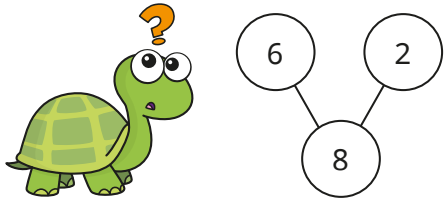
_____ red counters plus _____ yellow counters is equal to _____ counters.

- Complete the part-whole model and the number sentence.



_____ + _____ = _____

- Correct Tiny's mistake.



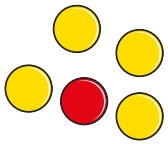
6 = 2 + 8

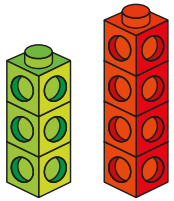
Write number sentences

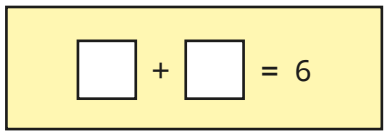
Reasoning and problem solving

Which picture helps with the number sentence?

Why?







Think of number sentences for the other pictures.

bead string

5 + 1 = 6 or

1 + 5 = 6

counters

4 + 1 = 5 or

1 + 4 = 5

cubes

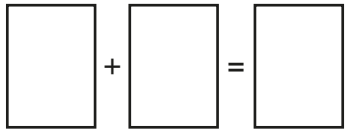
3 + 4 = 7 or

4 + 3 = 7

Here are some digit cards.

0	1	2	3	4
5	6	7	8	9

Use the cards to write a number sentence.



Can you do it a different way?

What do you notice?

multiple possible answers, e.g.

5 + 1 = 6

3 + 4 = 7

Fact families – addition facts

Notes and guidance

In this small step, children build on their learning about writing number sentences by looking at addition fact families.

Children recognise that the order of an addition sentence can be varied, and they begin to discover that addition is commutative. For example, 3 + 2 = 5 2 + 3 = 5 5 = 3 + 2 5 = 2 + 3

Continue to use concrete resources and pictures to support children's understanding – ten frames and counters and cubes are particularly useful. Using different colours can help children to form addition sentences and see that the order they say the numbers in is irrelevant. They can physically move counters on a ten frame to show this.

Things to look out for

- Children may think that they can write the three numbers in any order, for example 3 = 5 + 2. Spend time identifying the parts and the whole in a number sentence.
- Children may find number sentences such as 2 + 2 = 4 confusing. Do not avoid these examples, rather highlight them and discuss that when the two parts are the same, there are only two possible number sentences.

Key questions

- Which numbers are the parts?
- Which number is the whole?
- What is the same/different about the four addition sentences?
- What happens when the parts are the same?
- Can the parts change place? Can the whole change place? Why/why not?

Possible sentence stems

- _____ plus _____ is equal to _____
- _____ is equal to _____ plus _____
- _____ + _____ = _____
- _____ = _____ + _____

National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer)
- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

Fact families – addition facts

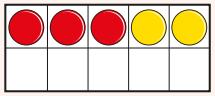
Key learning

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

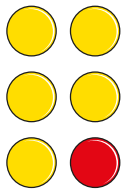
Ask children to act out the "first, then, now" story with counters and a ten frame.

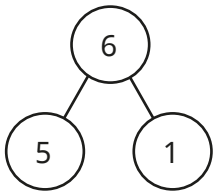


Ask children what happens if they start with two children on the bus, then three children get on the bus. What has changed and what has stayed the same?

- Complete the fact family.

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





1 + _____ = 6

_____ + 1 = 6

_____ = _____ + 1

6 = _____ + _____

- Complete the fact family.

_____ + _____ = 7

_____ + _____ = 7

7 = _____ + _____

7 = _____ + _____

- Here are some digit cards.

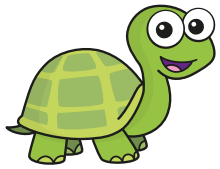
4	7	3

Use the digits to write four addition sentences.

Fact families – addition facts

Reasoning and problem solving

Tiny has three digit cards.



3	5	2

Tiny uses the digits to write number sentences.

3 + 5 = 2	3 = 5 + 2

What mistake has Tiny made?

Correct Tiny's number sentences.

Complete the fact family.

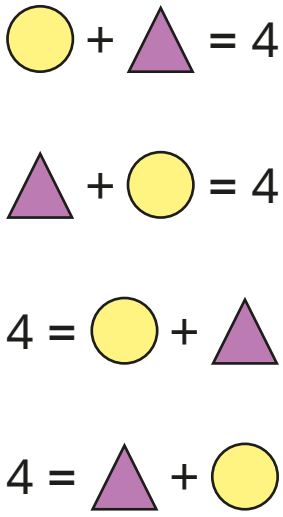
3 + 2 = 5

2 + 3 = 5

5 = 3 + 2

5 = 2 + 3

Here is an addition fact family.



What number is the circle?

What number is the triangle?

Is there more than one answer?

possible answers:

circle: 0, triangle: 4

circle: 1, triangle: 3

circle: 2, triangle: 2

circle: 3, triangle: 1

circle: 4, triangle: 0

Number bonds within 10

Notes and guidance

In this small step, 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. Double-sided counters and ten frames are useful concrete resources, together with dot patterns. Children will see numbers made from dot patterns differently, for example some may see 6 as being made up of 5 and 1, while others may see it as being made up of two 3s. Exploring patterns is a good way to encourage discussion and expose children to different ways of thinking.

Throughout this step, continue to look at number sentences written with the symbols in different places and talk about the commutative nature of the calculations, for example 3 + 1 = 4 is the same as 1 + 3 = 4

Key questions

- What is the whole? What are the parts?
- Does the whole always stay the same?
- How can you partition the whole?
- Do the parts stay the same or change?
- If 8 is the whole, what could the parts be?

Possible sentence stems

- _____ plus _____ is equal to _____
- _____ is equal to _____ plus _____
- _____ + _____ = _____
- _____ = _____ + _____

Things to look out for

- Encourage children to find answers to additions by either subitising or counting on from a start number. For example, if the addition is 3 + 2, children should start at 3, then count on 2 more to get 5

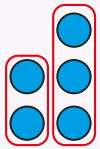
National Curriculum links

- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer)
- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs

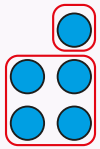
Number bonds within 10

Key learning

Show children different arrangements of dots and ask them what numbers they can see. For example, they may see this arrangement as 2 and 3 or 1 and 4

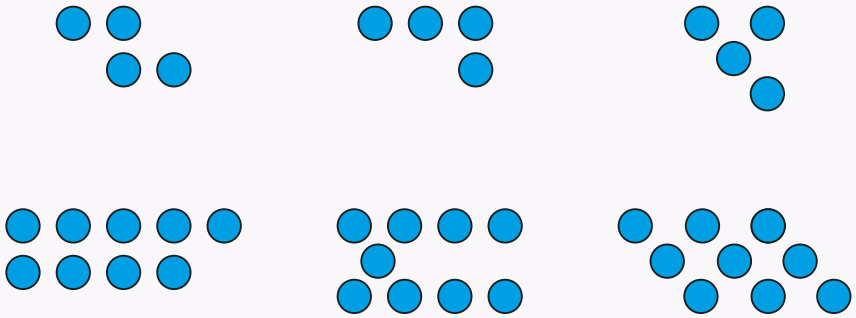


2 + 3

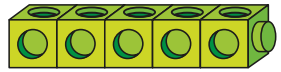


1 + 4

Record what children say as an addition sentence.

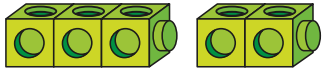


- Here are five cubes.



Break them apart in different ways to find all the number bonds to 5

One has been done for you.



3 + 2 = 5

- Use seven double-sided counters.

Make 7 in different ways.

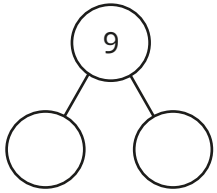
How many ways can you do it?

Write number sentences to match your counters.

- 9 is the whole

What could the parts be?

Draw a part-whole model for each of your answers.

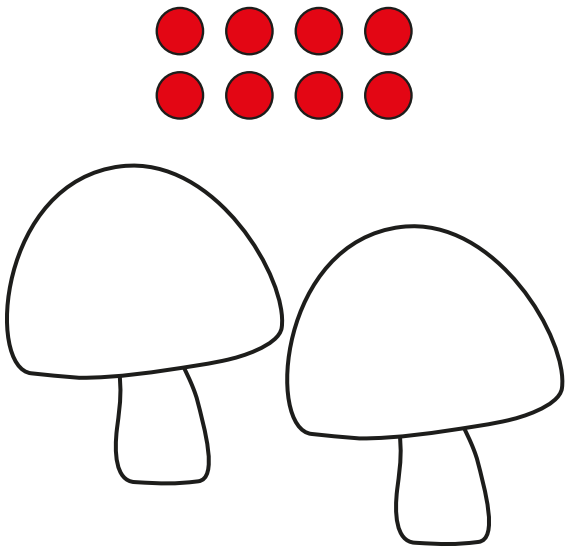


Write an addition sentence for each part-whole model.

Number bonds within 10

Reasoning and problem solving

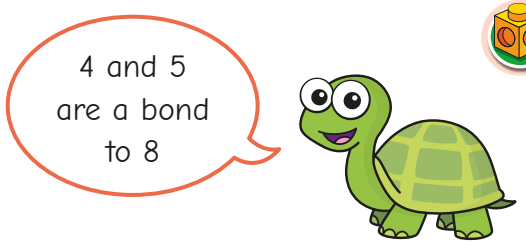
All the spots fall off two toadstools.



Put the spots back on the toadstools.

How many different ways can you find?

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



Use cubes to show that Tiny is wrong.

Talk about it with a partner.

Children use cubes to show that 4 and 5 are a bond to 9, not 8

Which number bond is the odd one out?

3 + 4	5 + 2
6 + 1	3 + 5

How do you know?

3 + 5

Systematic number bonds within 10

Notes and guidance

Now that children have explored number bonds within 10, in this small step they start to work systematically to identify all the number bonds. Some children may have started to do this naturally, whereas others will need to be exposed to this way of thinking. It is important that children learn to work systematically to ensure that they organise their thinking and consider all the possibilities in a problem.

Double-sided counters are extremely useful in this step, as children can clearly see the pattern formed when they work systematically to find number bonds. If they start, for example, with 5 counters all showing the same colour, they can turn 1 over to show that 1 + 4 = 5, turn another over for 2 + 3 = 5 and so on to find all the number bonds in a systematic way.

Things to look out for

- Children may not see the connection between bonds such as 2 + 3 = 5 and 3 + 2 = 5. Link back to earlier learning on addition fact families to support them.
- Children may not recognise bonds that involve zero. For example, 5 red counters show that 5 + 0 = 5

Key questions

- How many _____ are there?
- How many _____ are there altogether?
- What happens if you turn over one counter?
- What happens if you turn over another counter?
- Can you write any of the bonds another way?
- How do you know that you have found them all?

Possible sentence stems

- There are _____ red counters and _____ yellow counters.

  There are _____ counters altogether.

  This means that _____ and _____ are a bond to _____

  _____ + _____ = _____

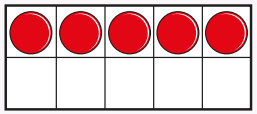
National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

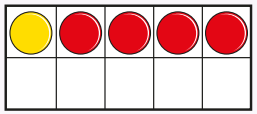
Systematic number bonds within 10

Key learning

Give children a ten frame with 5 double-sided counters on.



Ask children what bond they can see. Then ask them to turn the first counter over.



Ask children what bond they can see now.

Get children to continue this pattern to find all the bonds to 5

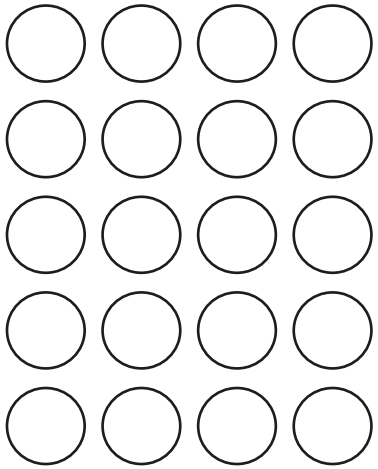
How do they know they have found them all?

Arrange children to work in pairs to repeat the activity, finding bonds for other numbers within 10

They do not need to record these yet, but could be encouraged to do so.

- Use two different-coloured crayons.

  Colour the counters to find all the bonds to 4



_____ + _____ = 4

_____ + _____ = 4

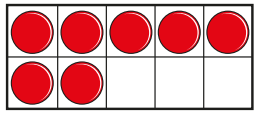
_____ + _____ = 4

_____ + _____ = 4

_____ + _____ = 4

  Which number sentences show the same bond?

- Which bond to 7 does the ten frame show?



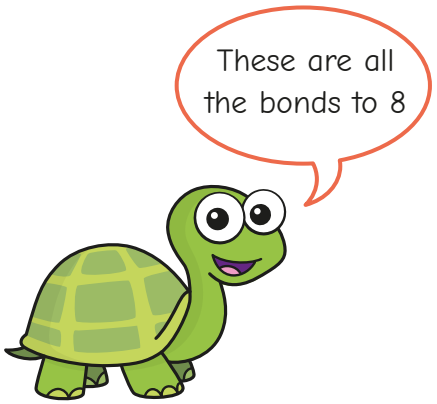
  Work systematically to find all the bonds to 7

Systematic number bonds within 10

Reasoning and problem solving

Tiny writes some number bonds.

3 + 5	0 + 8
1 + 7	4 + 4



Is Tiny correct?

Work systematically to check.

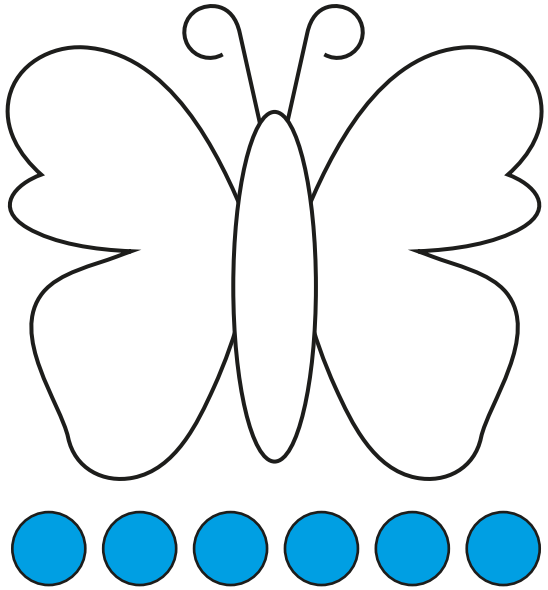
Compare answers with a partner.

No

2 + 6 is missing

Children could also write the bonds the other way round.

The butterfly has lost its spots!



How many ways can you put them back on?

Work systematically to find all the different ways.

Draw your answers.

0 and 6

1 and 5

2 and 4

3 and 3

4 and 2

5 and 1

6 and 0

Number bonds to 10

Notes and guidance

In this small step, children move on from number bonds within 10 to number bonds **to** 10

Initially, allow children to explore finding the number bonds. They could use two different colour cubes to build towers of 10 and represent their tower in a number sentence. For example, if their tower is made up of 2 blue cubes and 8 red cubes, they have 10 cubes altogether, so 2 + 8 = 10

As children become more comfortable in finding these bonds to 10, encourage them to use their earlier learning to work systematically to find all the number bonds. Ten frames and double-sided counters can support them with their thinking.

This is essential learning that forms the basis of our number system, so time should be spent ensuring that children are comfortable with finding and recognising these bonds.

Things to look out for

- Children may not write "= 10" with their number bond, writing, for example "2 + 8". Recording "= 10" at each point will reinforce that the pair of numbers are a bond to 10
- Children may not recognise where a bond includes zero, for example 10 + 0 = 10

Key questions

- How many _____ are there?
- How many more do you need to make 10?
- What number bond can you see?
- What is the same about 2 + 8 and 8 + 2? What is different?
- Can you write any of the bonds another way?
- How do you know that you have found them all?

Possible sentence stems

- There are _____ red counters and _____ yellow counters.

  There are _____ counters altogether.

  _____ + _____ = 10

National Curriculum links

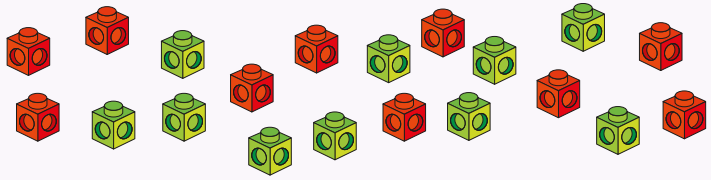
- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Number bonds to 10

Key learning

Give children sets of cubes of two different colours.

They should have 10 of each colour.



Ask children to build a tower of 10 cubes and then ask:

- How many _____ cubes have you used?
- How many _____ cubes have you used?
- What bond to 10 can you see?

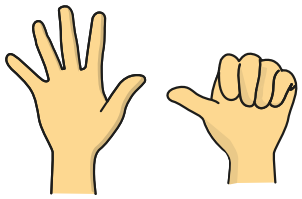
Ask children to repeat this to find more bonds to 10

Have they found the same bonds as their partner?

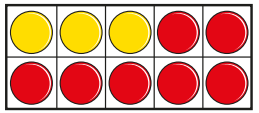
- Max shows a number on his fingers.

  How many more are needed to make 10?

  What is the bond to 10?



- Here is a ten frame.



  How many yellow counters are there?

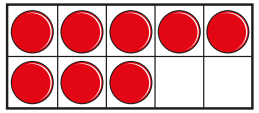
  How many red counters are there?

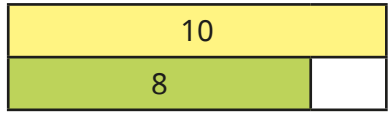
  How many counters are there in total?

  Complete the number sentence.

  _____ + _____ = 10

- Sam puts some counters on a ten frame and draws a bar model.





  How many more counters does Sam need to fill the ten frame?

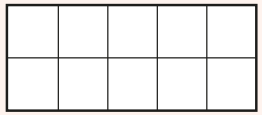
  Complete the bar model.

  Write a number sentence to show the bond to 10

Number bonds to 10

Reasoning and problem solving

Start with an empty ten frame.



Ask children how many counters they need to make 10

Now show 1 on a ten frame.

Ask how many counters are needed now to make 10

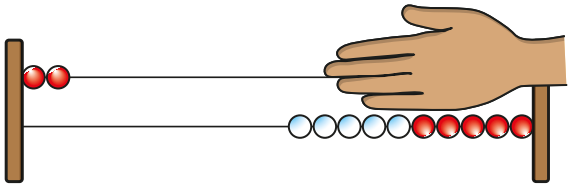
Challenge children to work systematically to find all the number bonds to 10

Encourage fluent recall rather than counting.

Ask children to write a number sentence for each number bond, and if any of the number sentences show the same bond.

Children should notice that, for example, 4 + 6 and 6 + 4 show the same number bond.

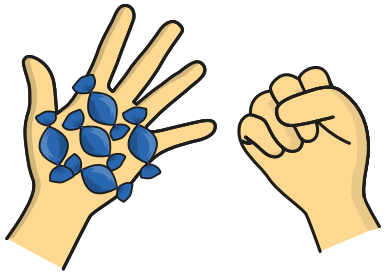
How many beads are covered?



How do you know?

8

Ben has 10 sweets.



How many sweets are in Ben's closed hand?

How do you know?

5

Addition – add together

Notes and guidance

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.

Things to look out for

- Children may read "=" as "makes", which can reduce understanding and cause issues in later learning.
- If children represent both the parts and the wholes within a part-whole model, for example showing 2 cubes in one part, 3 in another and 5 in the whole, they may think that there are 10 cubes altogether.

Key questions

- How many _____ are there?
- How many are there in total?
- What are the parts? What is the whole?
- What is the addition sentence?
- What is _____ plus _____?

Possible sentence stems

- One part is _____ and the other part is _____

  The whole is _____
- _____ plus _____ is equal to _____
- _____ + _____ = _____

National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Addition – add together

Key learning

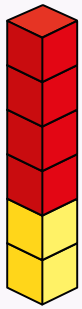
Make a tower using two different-coloured cubes.

Ask children to complete the sentences.

There are _____ red cubes.

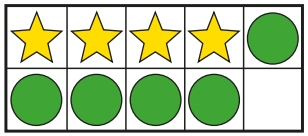
There are _____ yellow cubes

There are _____ cubes altogether.



Get children to repeat this for other towers of cubes.

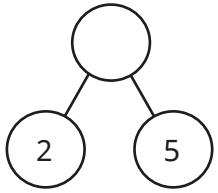
- Complete the sentences to match the ten frame.



  - There are _____ stars.
  - There are _____ circles.
  - There are _____ shapes altogether.

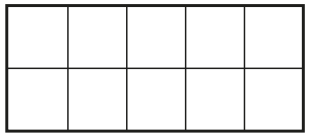
- Here are some flowers.

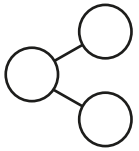
Complete the part-whole model and number sentence to match the flowers.



_____ + _____ = _____

- Complete the table to match the birds.





_____ + _____ = _____

_____ = _____ + _____

_____ is a part. _____ is a part. The whole is _____

Make up a story to match the part-whole model.

Addition – add together

Reasoning and problem solving

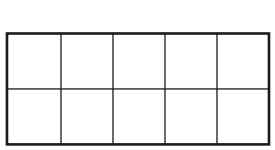
Mo has five red cars and some blue cars.

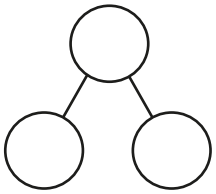
I have fewer than 10 cars in total.

How many blue cars could Mo have?

How many answers can you find?

Show all your answers.



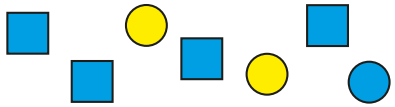


_____ + _____ = _____

Compare answers with a partner.

1, 2, 3 or 4

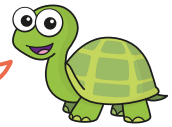
Ron, Tiny and Kim are finding parts and wholes from these shapes.



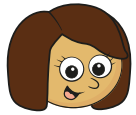
5 is a part, 2 is a part and the whole is 7

Ron

7 is a part, 2 is a part and the whole is 5



Tiny



4 is a part, 3 is a part and the whole is 7

Kim

Who is correct?

Write a number sentence for each correct answer.

Ron and Kim

Ron: 5 + 2 = 7

Kim: 4 + 3 = 7

Addition – add more

Notes and guidance

In this small step, children build on their understanding of addition as they explore the structure of "adding more". The focus is on increasing one quantity by a given amount, while continuing to work within 10

As in the earlier steps, classroom items and concrete resources can be used to support children's learning and "first, then, now" stories can help to build their understanding. For example, "First Rosie has 3 pencils. Then she is given 2 more pencils. How many pencils does she have now?" While exploring with physical pencils will help children with initial understanding, moving towards representations such as ten frames and counters and Rekenreks will support when working in the abstract.

A number line can also support children in finding how many there are. When working on a number line, they should start from the "first" number, and draw jumps to find the total.

Things to look out for

- Children may count along the number line rather than using numeral recognition to identify the starting point.
- Children may include the starting number when counting more. For example, if there are 3 pencils and they get 2 more, they may count "3, 4".

Key questions

- How many _____ are there?
- How many more are added?
- How many are there now?
- What is the total?
- What is the addition sentence?
- What is _____ plus _____?

Possible sentence stems

- First there were _____

  Then _____ more were added.

  Now there are _____

  _____ + _____ = _____

National Curriculum links

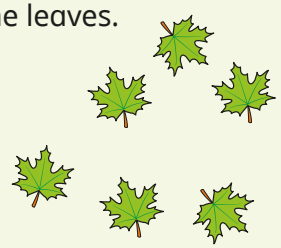
- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Addition – add more

Key learning

Take the class outside and find some leaves.

Ask children how many there are.



Now find some more leaves.

Ask children how many more you have found.

Ask children how many there are in total.

Get children to tell a story about what has happened.

First there were _____ leaves.

Then _____ more leaves were added.

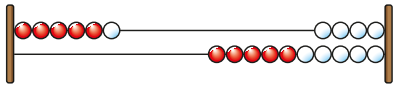
Now there are _____ leaves.

Show children the pictures.

Ask them to tell a "first, then, now" story that matches the pictures.

Ask them to write a number sentence to match the pictures.

- Push 6 beads on a Rekenrek.



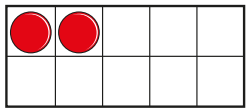
Now push 2 more beads.

How many beads have you pushed now?

Complete the number sentence.

6 + _____ = _____

- Put 2 counters on a ten frame.



Now add 8 more counters.

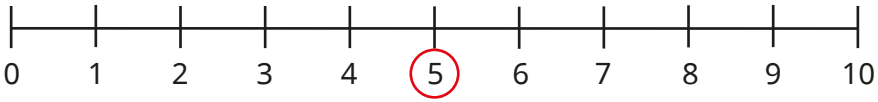
How many counters are there all together?

- Jo has 5 pencils.

Her mum gives her 2 more pencils.

How many pencils does Jo have now?

Use the number line to help you.

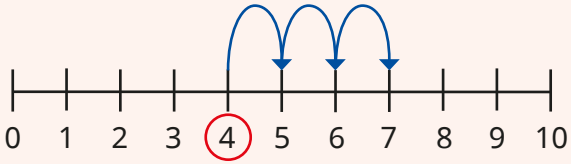


5 + _____ = _____

Addition – add more

Reasoning and problem solving

Tell children that the number line shows that Max had some sweets, then his dad gave him some more.



Ask children how many sweets Max had to start with, and how many more sweets was he given. Can they tell you how many sweets Max has now?

Ask children to write a number sentence to show this and to work with a partner to write a "first, then, now" story.

4

3

7

4 + 3 = 7

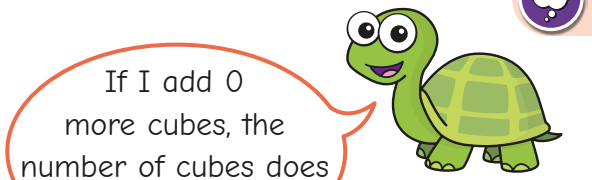
Ann spills paint on her story.

There are 5 birds in a tree.
more birds land.
Now there are 7 birds.

What number is covered up?

How do you know?

2



Is Tiny correct?

How do you know?

Yes

Addition problems

Notes and guidance

This small step brings together the learning from the previous steps, as children start to answer addition problems that are not isolated to a specific structure. As this is the first time that they are likely to have explored multiple structures within different contexts, this can initially be overwhelming for children. The use of manipulatives and realistic situations can support children to understand what is happening.

While concrete resources and visual representations are useful, children should move towards working in the abstract. This is an excellent opportunity to reinforce learning on number bonds, from earlier in the block. Children should start to use these bonds to find answers to additions rather than always relying on counting.

Things to look out for

- Children may struggle to understand the context of the question, so their difficulty is with comprehension rather than addition.
- Children may always rely on counting, rather than using number bonds.

Key questions

- How many _____ are there?
- How many more are added?
- How many are there now?
- How many are there in total?
- What is the addition sentence?
- What is _____ plus _____?
- How can you use bonds to help you?

Possible sentence stems

- The bond to _____ for _____ is _____
- _____ plus _____ is equal to _____
- _____ + _____ = _____

National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Addition problems

Key learning

- Complete the bonds to 8
  - 5 + _____ = 8
  - 2 + _____ = 8
  - _____ + 1 = 8
  - 8 = 4 + _____
  - 8 + _____ = 8
  - 8 = _____ + 3

- Dan has 5 stickers.

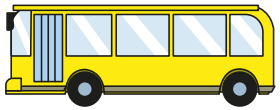
  

  Fay has 3 stickers.

  How many stickers do they have in total?

  How do you know?

- First there are 6 children on a bus.

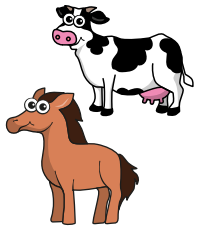
  

  Then 2 more children get on the bus.

  How many children are on the bus now?

  How do you know?

- There are 7 cows and 3 horses.

  How many cows and horses are there altogether?

  What is the number bond?

  _____ + _____ = _____

- 4 boys and 3 girls are playing at the park.
  - How many children are there in total?

    _____ + _____ = _____

    What is the number bond?

  2 more girls come to play.
  - How many children are there now?

    _____ + _____ = _____

    What number bond did you use?

- Jo has 5 green sweets and 2 red sweets.
  - How many sweets does she have altogether?

    _____ + _____ = _____

    What number bond did you use?

  Jo gets 3 more red sweets.
  - How many sweets does she have altogether now?

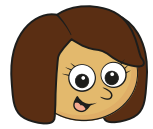
    _____ + _____ = _____

    What number bond did you use?

Addition problems

Reasoning and problem solving

Kim and Mo have some bricks.



Kim: I have 3 blue bricks and 5 red bricks.

Mo: I have 4 blue bricks and 3 red bricks.

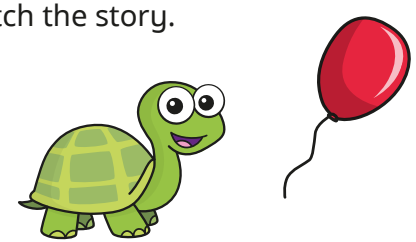
Who has more bricks?

How do you know?

Kim

Ron tells Tiny a number story about balloons.

Tiny writes a number sentence to match the story.



$8 + 1 = 9$

What is Ron's story?

multiple possible answers

Tom has 3 marbles.

Sam has 2 more marbles than Tom.

How many marbles do they have in total?

8

Find a part

Notes and guidance

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.

A practical way to introduce this to children is through games. If you tell them that you have 5 counters altogether, and show them 2 in one hand, they can use their knowledge of bonds and their earlier learning to work out how many are in the other hand. Children then begin to work more abstractly and use their earlier learning to identify what is missing.

Questions will be presented in the form 3 + _____ = 5, rather than 5 – 3 = _____. They will be introduced to the subtraction symbol formally in the next step.

Things to look out for

- Children may add the numbers in the question together rather than realising that they need to find a part. For example, in 3 + _____ = 5, they may think that the missing number is 8, because 3 + 5 = 8

Key questions

- What is the whole?
- What is one of the parts?
- What is the other part?
- How do you know?
- How can you use number bonds to help you?
- What is the addition sentence?

Possible sentence stems

- If the whole is _____ and _____ is a part, then the other part is _____
- _____ plus _____ is _____
- The bond to _____ for _____ is _____
- _____ is a part, _____ is a part and _____ is the whole.

National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Find a part

Key learning

Put some counters in each hand, with a total within 10

Show children the counters in one hand and close your other hand.

Tell children how many counters you have in total.

Ask how many are in your other hand.

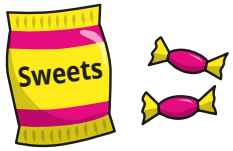
Focus on children using their number bonds, rather than counting.

Give pairs of children 10 counters and ask them to do the activity with different numbers of counters.

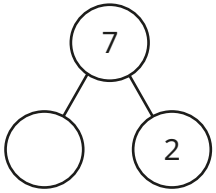
- Max has these sweets.

  He has 7 sweets in total.

  How many sweets are in the bag?



  Complete the part-whole model and the number sentence.

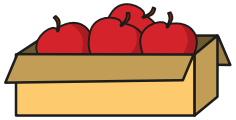


_____ + 2 = 7

- There are 6 apples in a box.

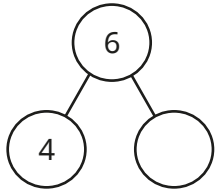
  4 of the apples are red.

  The rest are green.



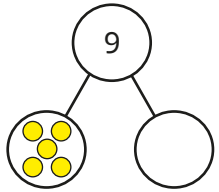
  How many green apples are there?

  Complete the part-whole model and the number sentence.



4 + _____ = 6

- Complete the part-whole model and the sentences.

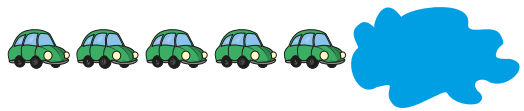


_____ + _____ = _____

_____ = _____ + _____

5 is a part, _____ is a part and 9 is the whole.

- There are 7 cars in total.



  5 of them are green.

  How many of the cars are **not** green?

Find a part

Reasoning and problem solving

Ron and Jo have some stickers.

I have fewer than 4 stickers, Jo has the rest.

Ron

We have 10 stickers in total.

Jo

How many stickers could they each have?

How do you know?

Ron 3 and Jo 7

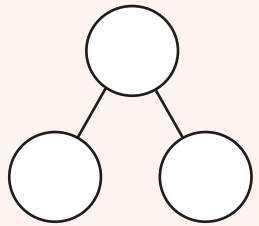
Ron 2 and Jo 8

Ron 1 and Jo 9

Ron 0 and Jo 10

Give children digit cards from 0 to 9 and a blank part-whole model.

0	1	2	3	4
5	6	7	8	9



Ask them to place the 4 in one of the parts.

Then ask children to complete the part-whole model in as many different ways as possible, using the remaining digit cards once only and remembering that one part must always be 4

Ask children to explain why they cannot use zero.

Ask if there are any other digits they cannot use.

multiple possible answers, e.g.

4, 1 and 5

4 would be needed twice

8

Subtraction – find a part

Notes and guidance

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

As in the previous step, the structure of all the questions is partitioning. The only difference is the way in which children represent their findings. They are still required to use their knowledge of number bonds to find parts, but represent them using the subtraction symbol.

To begin, children focus on the meaning of the subtraction symbol rather than having to identify missing values. They are given a completed part-whole model and write the related subtractions using the numbers in the part-whole model to start to build their understanding.

As children become more secure in this, and understand what the subtraction symbol represents, they then use it to answer missing number problems similar to the ones they saw in the previous step.

Things to look out for

- Children may think that, because addition is commutative, then subtraction must also be, leading them to write incorrect statements, for example 5 – 2 = 3 so 2 – 5 = 3

Key questions

- What is the whole?
- What is one of the parts?
- What is the other part?
- How do you know?
- How can you use bonds to help you?
- What is the addition sentence?
- What is the subtraction sentence?

Possible sentence stems

- If the whole is _____ and _____ is a part, then the other part is _____
- _____ minus _____ is _____

  _____ – _____ = _____

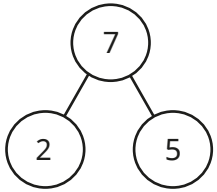
National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Subtraction – find a part

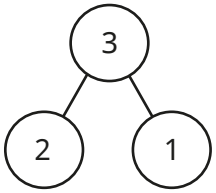
Key learning

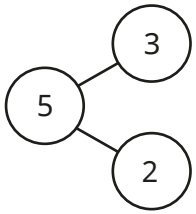
- Complete the number sentences to match the part-whole model.



  - 7 – 2 = _____
  - 7 – 5 = _____

- Write two subtraction sentences for each part-whole model.

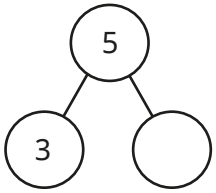




- Ann has 3 red pens and some blue pens.

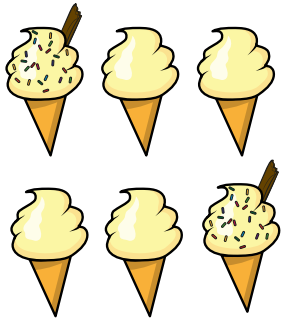
  She has 5 pens in total.

  How many blue pens does she have?



_____ – _____ = _____

- Complete the sentences to find how many ice creams do **not** have flakes.



  - 6 – 2 = _____
  - There are _____ ice creams that do not have flakes.

- Max has 9 party hats altogether.

  4 of them are red.

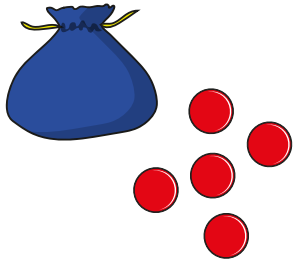
  The rest are blue.

  How many party hats are blue?

- There are 8 counters in total.

  How many counters are in the bag?

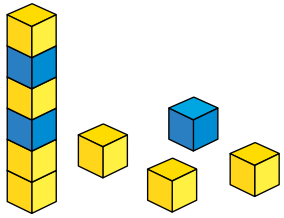
  Show this in a part-whole model and as a number sentence.



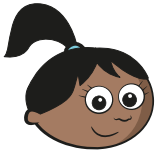
Subtraction – find a part

Reasoning and problem solving

Here are 10 cubes.



Sam and Mo use a subtraction to find something out about the cubes.



10 – 6 = 4

What has Sam found?

10 – 3 = 7

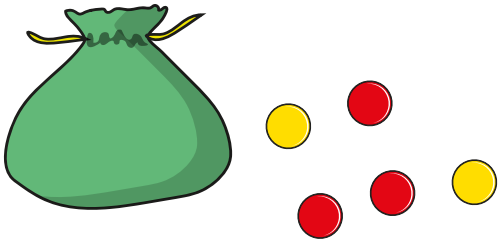
What has Mo found?

What else can you find?

number of cubes not in a tower

number of yellow cubes

Ben has got some counters.



There are no more than 10 counters in total.

How many counters could be in the bag?

There are no more than 7 red counters in total.

What counters could be in the bag?

Compare answers with a partner.

0, 1, 2, 3, 4 or 5

multiple possible answers, e.g.

2 red and 1 yellow

Fact families – the eight facts

Notes and guidance

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.

Things to look out for

- Children may miss out some number sentences from their fact families. Encourage them to count to ensure that they have eight sentences.
- Children may think that, because addition is commutative, then subtraction must also be, leading them to write incorrect statements, for example 5 – 2 = 3 so 2 – 5 = 3

Key questions

- What is the whole? What are the parts?
- What addition sentences can you write?
- What subtraction sentences can you write?
- Can you write any of them another way?
- How do you know that you have got them all?
- What is the same and what is different about the number sentences?

Possible sentence stems

- _____ is a part, _____ is a part and _____ is the whole.
- _____ + _____ = _____
- _____ – _____ = _____
- I know I have found all the facts, because ...

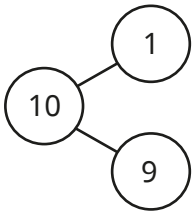
National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Fact families – the eight facts

Key learning

- Here is a part-whole model.



Complete the fact family for the part-whole model.

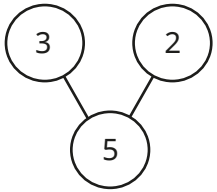
_____ + _____ = 10 10 = _____ + _____

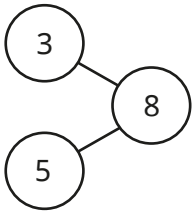
_____ + _____ = 10 10 = _____ + _____

10 – _____ = _____ _____ = 10 – _____

10 – _____ = _____ _____ = 10 – _____

- Write the fact families for the part-whole models.





- Write the fact family to match the picture.

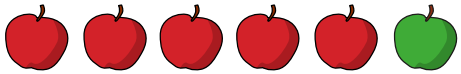
_____ + _____ = _____ _____ = _____ + _____

_____ + _____ = _____ _____ = _____ + _____

_____ – _____ = _____ _____ = _____ – _____

_____ – _____ = _____ _____ = _____ – _____

- There are 6 apples.



5 of them are red and 1 is green.

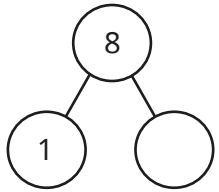
Write the fact family to show this.

- 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.

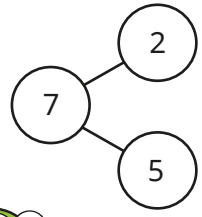


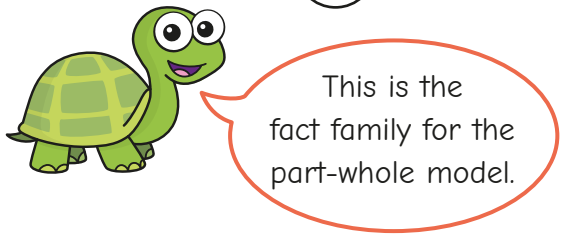
Write the fact family for your part-whole model.

Fact families – the eight facts

Reasoning and problem solving

Here is a part-whole model.



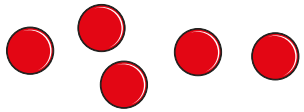


5 + 2 = 7	7 = 5 + 2
2 + 5 = 7	7 = 2 + 5
7 − 2 = 5	7 = 5 − 2
7 − 5 = 2	7 = 2 − 5

Has Tiny made any mistakes?

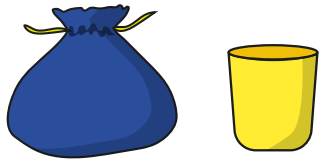
The last two in the right-hand column are wrong.

Max has five counters.



He puts the counters away.

Each counter is either in the bag or in the cup.



How many counters could be in the bag and in the cup?

Write eight number sentences to show this.

How many different answers can you find?

Talk about it with a partner.

multiple possible answers, e.g.

4 in the bag and 1 in the cup

Subtraction – take away/cross out (How many left?)

Notes and guidance

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.

Taking away is often the structure of subtraction that children are more familiar and comfortable with, as they can physically take things away to support their understanding. They can then move on to crossing out on diagrams and pictures. In each question, children are required to find out how many are left.

In later steps, children will use number sentences for this type of problem. Although physically taking away can aid initial understanding, moving towards crossing out can help children to relate the numbers in the number sentences to the question and understand what each number represents.

Things to look out for

- If things are physically removed, children may not be sure why this has happened or where they have gone, and this may hinder understanding in later steps.

Key questions

- How many _____ are there?

  How many were taken away?

  How many are left?
- How many _____ were there at first?

  Then what happened?

  How many _____ are there now?
- How can you show this in a part-whole model?

Possible sentence stems

- First there were _____

  Then _____ were taken away.

  Now there are _____

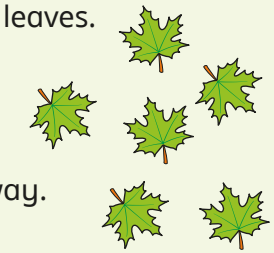
National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Subtraction – take away/cross out (How many left?)

Key learning

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.

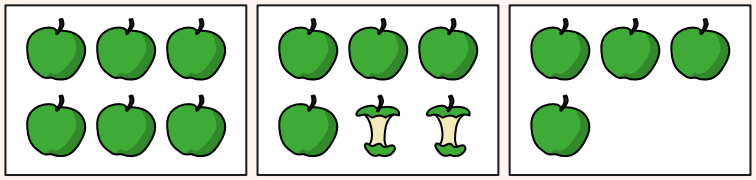
First there were _____ leaves.

Then _____ leaves were taken away.

Now there are _____ leaves.

Show children the pictures.

Ask them to tell a "first, then, now" story that matches the pictures.

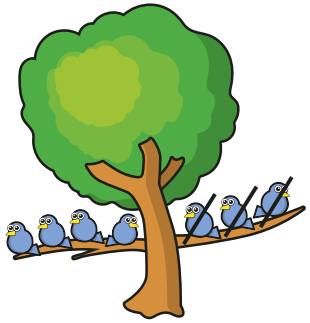


- There are 7 birds in a tree.

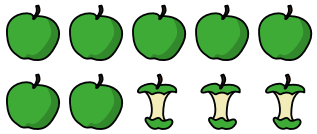
  3 birds fly away.

  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.

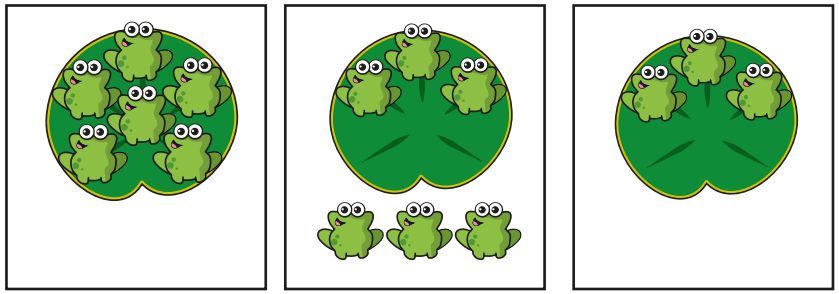
  Draw a part-whole model for your story.

Subtraction – take away/cross out (How many left?)

Reasoning and problem solving

The pictures show a story.

First | Then | Now



Complete the sentences.

First there were _____ frogs on the lily pad.

Then _____ frogs jumped off.

Now there are _____ frogs on the lily pad.

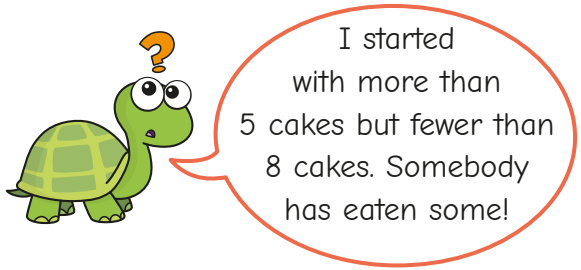
In the "then" picture, do the 3s show the same thing?

Why?

6, 3, 3

No

Tiny has got some cakes.



Here are the cakes that are left.

How many cakes could Tiny have had to start with?

How many cakes could have been eaten?

Draw a part-whole model.

Find all the different answers.

Talk about it with a partner.

6 cakes, then 4 eaten

7 cakes, then 5 eaten

Subtraction – take away (How many left?)

Notes and guidance

In this small step, children formalise their learning from the previous step. They again focus on subtraction questions that require them to take away, but this time record their findings in a number sentence.

The use of "first, then, now" stories can aid understanding and help children to relate the question to the number sentence. For example, for the story "First there were 5 birds in a tree. Then 2 of the birds flew away. Now there are 3 birds in the tree", the related subtraction sentence is 5 – 2 = 3. Encourage children to recognise that the 5 represents the number of birds at the start, the 2 represents the number of birds that flew away and the 3 represents the number of birds that are left.

Initially, children simply form the subtraction sentences for a given scenario. Then they move on to questions where they need to work out how many are left. Use of concrete resources and pictorial representations is useful throughout.

Things to look out for

- Children may write the numbers the wrong way round, which will not correctly exemplify the question. For example, they may write 5 – 3 = 2 as the subtraction sentence for the example given above.

Key questions

- How many _____ were there at first?

  Then what happened?

  How many _____ are there now?
- How many are left?
- How can you show this in a part-whole model?
- What is the subtraction sentence?

Possible sentence stems

- First there were _____

  Then _____ were taken away.

  Now there are _____
- _____ – _____ = _____

National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

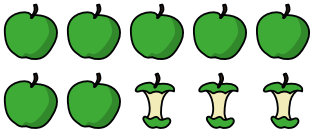
Subtraction – take away (How many left?)

Key learning

- 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.



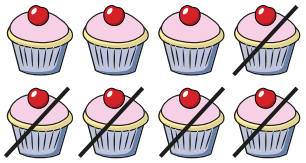
  - First there were _____ apples.
  - Then _____ of the apples were eaten.
  - Now there are _____ apples.
  - 10 – _____ = _____

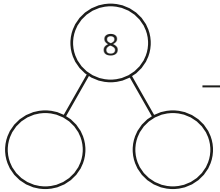
- First there were 8 cakes.

  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 picture.

- There are 9 children on a bus.

  1 child gets off the bus.

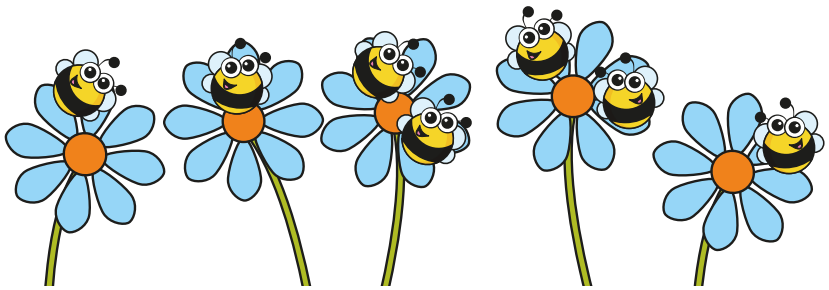
  How many children are on the bus now?

Subtraction – take away (How many left?)

Reasoning and problem solving

There are 7 bees on some flowers.

Some bees fly away.



How many ways can you complete the subtraction?

_____ = 7 – _____

Tell a story for each one.

Why can you not use 8 or 9?

Talk about it with a partner.

multiple possible answers, e.g.

5 = 7 – 2

Fay and Dan have 9 grapes in total.

Fay eats 2 grapes and Dan eats 3 grapes.

How many grapes do they have left?

How do you know?

4

Complete the number sentence in different ways.

□ – □ = 0

What do you notice?

multiple possible answers, e.g.

5 – 5 = 0

Subtraction on a number line

Notes and guidance

In this small step, children look at subtraction on a number line for the first time.

Children use the method of "counting back" to find the answers to subtraction calculations. As they did when adding more, they start from the "first" number and then count back to find the answer. These questions can be linked to examples and scenarios they have used in earlier steps in this block. This allows children to first focus their attention on how the number line helps with the calculation, before they move on to work more abstractly to complete subtractions by counting back.

As in the previous step, encourage children to think about each number within a calculation, what it represents and how it is shown on the number line. For example, in 5 – 3 = 2, 5 is the number they start at, 3 is the number of jumps back they do and 2 is the number they land on.

Things to look out for

- Children may count the number they start on when counting back. For example, when calculating 5 – 3, they may count "5, 4, 3", leading to an incorrect answer.
- Where calculations have repeated numbers, children may not understand the different meanings of the numbers.

Key questions

- What number do you need to start from?
- How many jumps back do you need to make?
- What number do you land on? What does that tell you?
- Why do you not say the number that you are starting on when you count?
- What is the subtraction sentence?
- Can you tell a story that matches the number line?

Possible sentence stems

- I need to start from _____

  I need to make _____ jumps backwards.

  I land on _____

  This means that _____ – _____ = _____

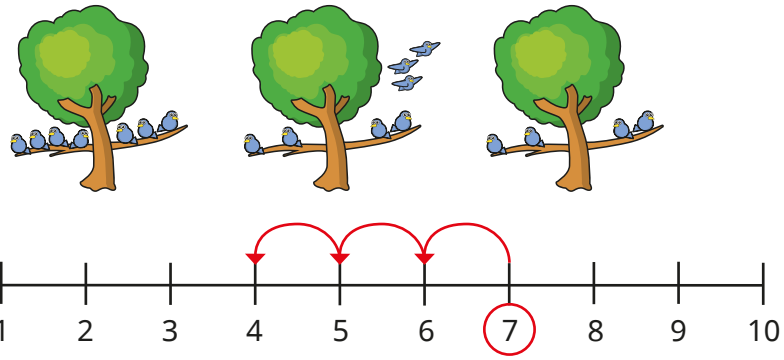
National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Subtraction on a number line

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?

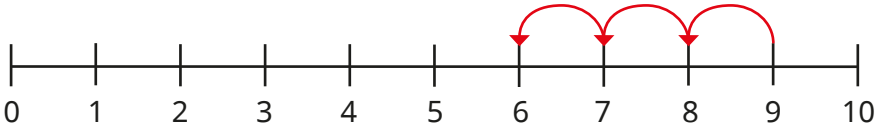
- Jo has 8 sweets.

  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?

- Tom counts backwards from 9

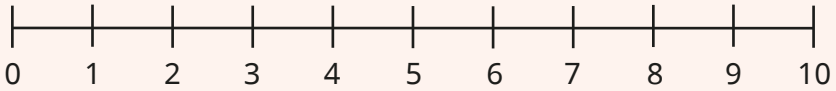
  How many jumps does it take to get to 2?

  Show this in a number sentence.

Subtraction on a number line

Reasoning and problem solving

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

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

Add or subtract 1 or 2

Notes and guidance

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.

The main difference between this learning and the previous learning is that children need to decide for the first time whether the question is an addition or a subtraction. So far, they have only seen each skill in isolation.

Encourage children to make connections between adding/subtracting 1 and adding/subtracting 2. It is important that they recognise that adding 2 is the same as adding 1 twice, and similarly subtracting 2 is the same as subtracting 1 twice. This will help children to be secure in their understanding of the composition of 2

Things to look out for

- Children may not understand what the question is asking.
- Children may be overwhelmed by the context of the question and find this difficult, rather than the maths itself.
- When adding/subtracting, children may start counting on the first number, for example incorrectly finding that 5 – 2 = 4, because they count "5, 4".

Key questions

- How many are there at first?
- Do you need to add or subtract? How do you know?
- How many do you need to add or subtract?
- What is 1 more/less than _____?
- What is 2 more/less than _____?
- What is the same about adding/subtracting 1 and adding/subtracting 2? What is different?

Possible sentence stems

- 1 more/less than _____ is _____
- 2 more/less than _____ is _____
- To add 2, I can add 1 _____ times.
- To subtract 2, I can subtract 1 _____ times.

National Curriculum links

- Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
- Represent and use number bonds and related subtraction facts within 20
- Add and subtract 1-digit and 2-digit numbers to 20, including zero

Add or subtract 1 or 2

Key learning

- 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.

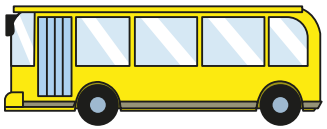
  - His mum gives him 1 more sticker.
    How many stickers does Max have now?
  - His mum gives him 1 more sticker.
    How many stickers does Max have now?
  - How many stickers has Max's mum given him altogether?
    Write an addition sentence.

- 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.

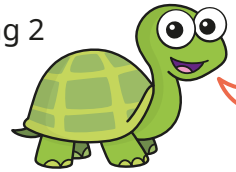
- There are 8 people on a bus.
  2 more people get on the bus.
  How many people are on the bus now?
  Write a number sentence.



Add or subtract 1 or 2

Reasoning and problem solving

Tiny is adding 2



To add 2,
I can just add 1 and
then add another 1

Is Tiny correct?

How do you know?

Yes

Here is a number line.

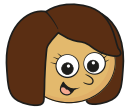
Use the number line to work out the subtractions.

7 – 2	7 – 1 – 1

What do you notice?

5, 5

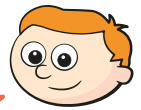
Kim, Ron and Sam have some crayons.



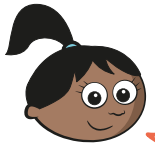
I have
5 crayons.

Kim

I have
1 more crayon
than Kim.



Ron



Kim has
1 more crayon
than me.

Sam

How many crayons does Ron have?

How many crayons does Sam have?

How many more crayons does Ron have than Sam?

6

4

2