

Spring Block 5

Building 9 and 10

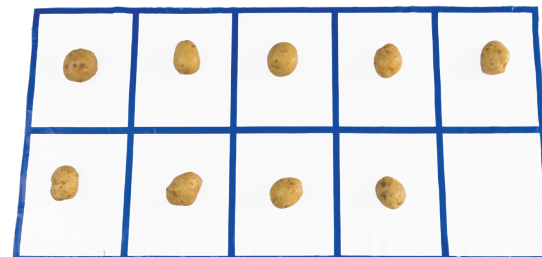
Teacher guidance



Key books

- *Nine Naughty Kittens* by Linda M. Jennings
- *Ten Little Fingers and Ten Little Toes* by Mem Fox
- *Cockatoos* by Quentin Blake
- *How Do Dinosaurs Count to Ten?* by Jane Yolen
- *The 'Ten Little ...' series* by Mike Brownlow
- *Anno's Counting Book* by Mitsumasa Anno
- *One Duck Stuck* by Phyllis Root
- *Mouse Count* by Ellen Stoll Walsh
- *Ten in the Bed* by Penny Dale
- *One Gorilla* by Anthony Browne
- *Mr Willy-Nilly and Zoey's Dream* by Ji-yun Shin
- *Pete the Cat and the Missing Cupcakes* by Kimberly and James Dean
- *Ten Black Dots* by Donald Crews
- *Two of Everything* by Babette Cole
- *Double the Ducks* by Stuart J. Murphy
- *One Odd Day* by Doris Fisher and Dani Sneed

Key resources



Small steps

Step 1

Find 9 and 10

Step 2

Compare numbers to 10

Step 3

Represent 9 and 10

Step 4

Conceptual subitising to 10

Step 5

1 more

Step 6

1 less

Step 7

Composition to 10

Step 8

Bonds to 10 (2 parts)

Small steps

Step 9

Make arrangements of 10

Step 10

Bonds to 10 (3 parts)

Step 11

Doubles to 10 (find a double)

Step 12

Doubles to 10 (make a double)

Step 13

Explore even and odd

Find 9 and 10

Notes and guidance

In this small step, children explore different representations of 9 and 10

As in previous blocks, the focus is on finding the representations rather than making them. Start by ensuring children can confidently say the number names 'nine' and 'ten'. Once they can do this, they will match the verbal number names to numerals and quantities.

Encourage children to count to 10 using objects in different arrangements by touching each object as they count. They should recognise that the final number they say is the quantity in that set.

Share stories and pictures that represent 9 and 10 and have children point out the groups they see. Encourage children to find objects in provision and notice groups of 9 and 10 as well as the numerals. This will prepare children to then be able to make their own representations as they have become so familiar with seeing 9 and 10 in different ways.

Key questions

- Where can you see 9/10?
- How many ways can you find 9/10?
- How many are there altogether?

Possible sentence stems

- I counted/I see _____
- There are 9/10 _____.

Links to the curriculum

- *Development Matters* – Reception
 - Count objects, actions and sounds.
 - Link the number symbol (numeral) with its cardinal number value.
- *Birth to 5 Matters* – Range 6
 - Uses number names and symbols when comparing numbers, showing interest in large numbers
 - Estimates (of) numbers of things, showing understanding of relative size
 - Counts out up to 10 objects from a larger group



Books

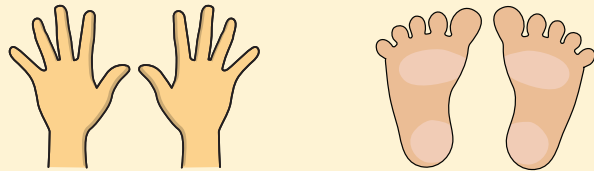
- *Nine Naughty Kittens* by Linda M. Jennings
- *Ten Little Fingers and Ten Little Toes* by Mem Fox

Find 9 and 10

Adult-led learning



Read stories such as *Nine Naughty Kittens* by Linda M. Jennings and *Ten Little Fingers and Ten Little Toes* by Mem Fox with children.

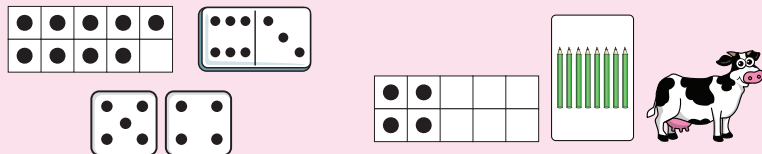


Prompt children to look at the illustrations and identify where they can see the different representations of 9 and 10



Provide children with a range of representations or picture cards showing 9 and not 9

Prompt children to sort the different representations into groups that show '9' and 'not 9'



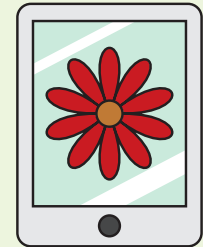
Repeat this activity with representations of 10



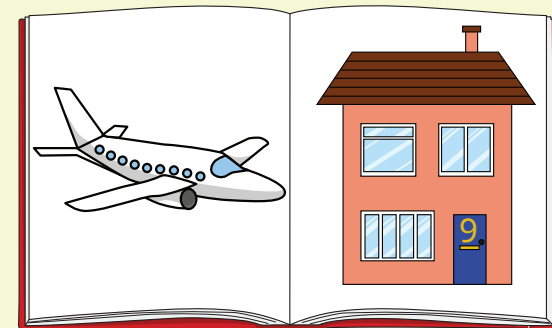
Go on a number hunt in the outdoor environment.

Prompt children to identify where they can see 9 and where they can see 10

Support children to take photographs of the different things they see.



Encourage children to look at books in the book area or library. Challenge them to independently find where they can see 9 and 10 in pictures or where they can spot the numeral.



Compare numbers to 10

Notes and guidance

In this small step, children continue to make comparisons with the numbers and amounts to 10

Encourage children to compare amounts directly by lining the items up with one-to-one correspondence. Through exploring comparison, they will develop an understanding of equivalence and non-equivalence. They understand that when making comparisons, a set can have more items, fewer items, or the same number of items as another set.

Model counting each set carefully and make comparisons by comparing the position in the counting order. As children's sense of number develops, so does their knowledge of where each number sits on a mental number line in relation to other numbers. They begin by comparing two quantities and progress to ordering three or more quantities.

Children may also naturally begin to subitise and compare 9 and 10 on ten frames.



Books

- *Cockatoos* by Quentin Blake

Key questions

- How many different ways can you find 9/10?
- How many did you count? How do you know?
- Which has more? Which has fewer?

Possible sentence stems

- _____ has more/fewer than _____.
- There are more/fewer _____ than _____.
- There are the same number of _____.

Links to the curriculum

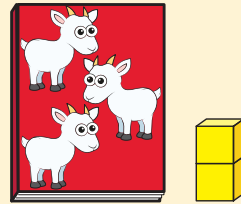
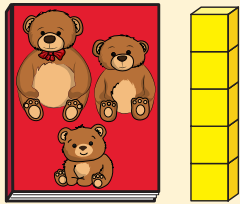
- *Development Matters* – Reception – Compare numbers.
- *Birth to 5 Matters* – Range 6
 - Uses number names and symbols when comparing numbers, showing interest in large numbers
 - Estimates (of) numbers of things, showing understanding of relative size

Compare numbers to 10

Adult-led learning



Ask children questions to make comparisons for a purpose. Set up a voting station for them to vote for their favourite book. Display two books and ask children to place a cube next to their favourite. Compare the number of votes by building towers using the cubes. Which is the most popular book?



Grab a handful of buttons from a pile of up to 10

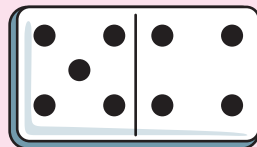
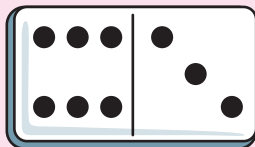
Ask children to guess how many you could be holding and check by putting them onto a ten frame.

Prompt children to see how many buttons they can hold in one hand and compare with their partner.

Who has more? Who has fewer?
Who has the same?



Provide children with sets of dominoes. Prompt them to sort the dominoes into sets with 9 spots, more than 9 spots and fewer than 9 spots.



Repeat the activity for 10 spots.



After reading stories such as *Cockatoos* by Quentin Blake, compare the number of different characters on the pages.



How many more are there on one page compared to the next page?

Represent 9 and 10

Notes and guidance

In this small step, children further explore representations of 9 and 10 and represent them in different ways. Provide opportunities for children to embed the counting principles when counting to 9 and 10 forwards and backwards. Remind them to touch each object as they count and that the final number they say is the quantity of the set. Encourage children to count and subitise as a way of checking their representations.

Extend how children represent 9 and 10 and support the abstraction principle by including movements such as claps or clicks. Cue children to listen to the number of sounds when banging a drum up to 10 times, and prompt children to show the number of beats on their fingers.



Rhymes

- *Ten Currant Buns*



Books

- *How Do Dinosaurs Count to Ten?* by Jane Yolen
- *The 'Ten Little ...' series* by Mike Brownlow

Key questions

- How many are there? How many are there now?
- How many different ways can you show 9/10?

Possible sentence stems

- There are 9/10 _____.
- There are _____ altogether.

Links to the curriculum

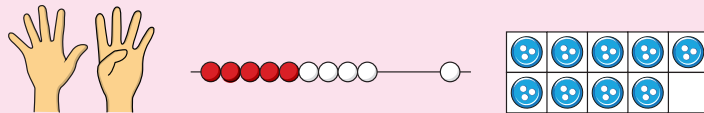
- *Development Matters* – Reception
 - Count objects, actions and sounds.
 - Link the number symbol (numeral) with its cardinal number value.
- *Birth to 5 Matters* – Range 6
 - Matches the numeral with a group of items to show how many there are (up to 10)
 - Estimates (of) numbers of things, showing understanding of relative size
 - Counts out up to 10 objects from a larger group

Represent 9 and 10

Adult-led learning



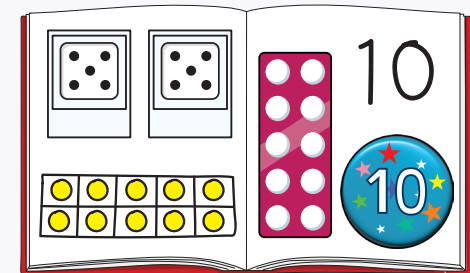
Prompt children to represent 9 and 10 on their fingers. What do they notice? Do they need to count their fingers?



Encourage them to show 9 and 10 in a range of different ways, such as with a bead string, with cubes or with buttons on a ten frame.

Make a class counting book that shows different representations of the numbers from 1 to 10

Children could draw pictures or stick in photographs of objects to represent each number.



Prompt children to talk about how they have represented each number.



In the outdoor environment, hold up a numeral card from 1 to 10 and ask children to do the corresponding number of actions, such as 9 bunny hops.

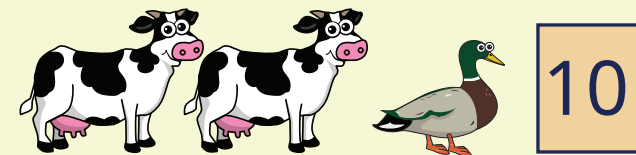
Encourage children to help you order digit cards from 1 to 10



Hide one of the cards and prompt children to work out which number is missing.



Encourage children to represent 9 and 10 in different ways using objects from around the classroom.



For example, they could show 10 legs using two cows and one duck. Ask children to explain why they have chosen those objects.

Conceptual subitising to 10

Notes and guidance

In this small step, children develop their conceptual subitising skills and start to recognise the groups in numbers to 10

Children use conceptual subitising to identify a whole quantity within 10 by subitising the smaller groups that make up that number. This skill will support children to develop mental images for addition and subtraction, which helps children to move away from counting on and counting back.

Prompt children to recognise a number by grouping it into smaller sets and then saying each amount before confirming the whole number. Use dot plates to support children to see two or more groups within the whole. Encourage children to mark-make and print with bingo dabbers to represent the numbers to 10. They can then subitise where they see smaller groups and draw around them.

Ensure children are given opportunities for developing subitising skills outside as well as inside so these activities are practical and fun.



Books

- *Anno's Counting Book* by Mitsumasa Anno

Key questions

- What do you see? How do you see it?
- What is the whole?
- What are the parts?

Possible sentence stems

- The whole is _____
- _____ is a part and _____ is a part (and _____ is a part).
- I see _____ and _____
- There are _____ altogether.
- If _____ is a part, then the other part must be _____

Links to the curriculum

- *Development Matters* – Reception – Subitise.
- *Birth to 5 Matters* – Range 6 – Begins to conceptually subitise larger numbers by subitising smaller groups within the number, e.g. sees six raisins on a plate as three and three

Conceptual subitising to 10

Adult-led learning



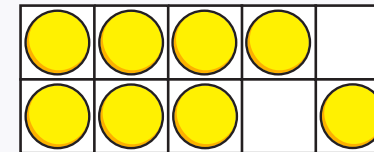
Provide children with a range of dot plates to 10



Ask children to talk about what they see and how they see it. Encourage them to talk about the groups they can see within the whole.

Show children an arrangement of up to 10 counters on a ten frame. After a few seconds, hide it and encourage children to build what they saw on their own ten frame.

What number was represented and how do they know?

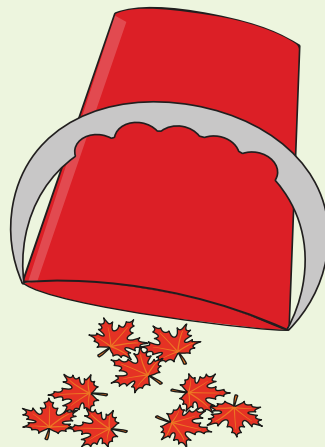


Encourage them to talk about the groups they can see within the whole.

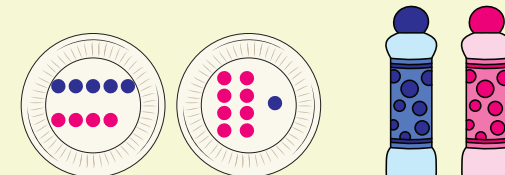


Arrange some objects under a blanket or bucket. Reveal the objects and ask children what they see. Prompt them to use a swatter to swat the correct numeral on number cards arranged around the outdoor area.

Encourage children to talk about what they see and how they see it.



Provide children with paper plates and bingo dabbers of two different colours. Prompt them to make their own two-colour dot plates.



Encourage children to represent the same number in more than one way.

1 more

Notes and guidance

In this small step, children build on their skills of finding '1 more' with numbers to 8 by now recognising this pattern with the numbers to 10

Children understand that as they count on, each number is 1 more than the previous number. They become aware of consecutive numbers and see that amounts increase in size when 1 more is added. They should recognise that the order of numbers when counting does not change and have the stable order principle embedded with the numbers up to 10

Read stories that include the '1 more' pattern and support children to notice and make comparisons as they play in provision.



Rhymes

- *One Potato, Two Potato*



Books

- *One Duck Stuck* by Phyllis Root
- *Mouse Count* by Ellen Stoll Walsh

Key questions

- What is 1 more than _____?
- How many are there now?
- What is the number after _____?

Possible sentence stems

- The number after _____ is _____
- _____ is 1 more than _____

Links to the curriculum

- *Development Matters* – Reception – Understand the 'one more than/one less than' relationship between consecutive numbers.
- *Birth to 5 Matters* – Range 6
 - In practical activities, adds one and subtracts one with numbers to 10
 - Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0
 - Increasingly confident at putting numerals in order 0 to 10 (ordinality)

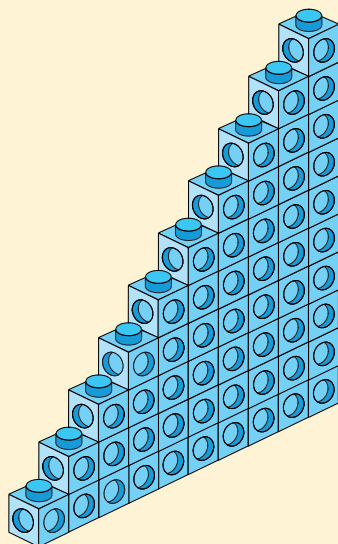
1 more

Adult-led learning



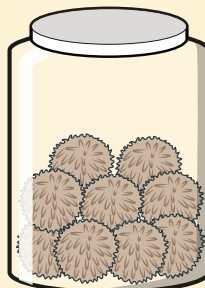
After reading books such as *One Duck Stuck* by Phyllis Root, explore the '1 more' pattern by prompting children to build towers to represent how many animals there are on each page.

Allow children to build the '1 more' pattern with staircase representations.

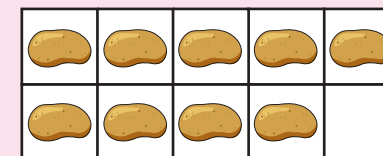


Re-enact stories such as *Mouse Count* by Ellen Stoll Walsh. As you read the story, use props, such as pom-poms in a jar, to represent the mice.

Prompt children to notice that as you add another pom-pom, you have 1 more.



Sing rhymes such as *One Potato, Two Potato*. As you sing the rhyme, represent what is happening by using real objects such as potatoes and place them onto a large ten frame.



Prompt children to see the '1 more' pattern and how the amount increases when a potato is placed on the ten frame. Do children recognise that when the ten frame is full, we have 10?



Provide children with bingo cards showing a selection of numbers from 0 to 9

4	6	9
8		10

Hold up a numeral or a picture representation card. If they have the number that is 1 more than that number, they place a counter over it.

The first one to cover up all their numerals is the winner.

1 less

Notes and guidance

In this small step, children extend their skills of finding '1 more' with numbers to 10 to finding '1 less' with numbers to 10

Children understand that as they count back, each number is 1 less than the previous number. They become aware of consecutive numbers and see that amounts decrease in size when 1 is taken away. They should recognise that the order of numbers when counting back does not change and have the stable order principle embedded with the numbers up to 10

Read stories that include the '1 less' pattern and support children to notice and make comparisons as they play in provision.



Rhymes

- *Ten Green Bottles*
- *Ten Little Men in a Flying Saucer*



Books

- *Ten in the Bed* by Penny Dale
- *The 'Ten Little ...' series* by Mike Brownlow

Key questions

- What is 1 less than _____?
- What is the number before _____?
- How many are there? How many are there now?

Possible sentence stems

- 1 less than _____ is _____
- _____ is 1 less than _____

Links to the curriculum

- *Development Matters* – Reception – Understand the 'one more than/one less than' relationship between consecutive numbers.
- *Birth to 5 Matters* – Range 6
 - In practical activities, adds one and subtracts one with numbers to 10
 - Enjoys reciting numbers from 0 to 10 (and beyond) and back from 10 to 0
 - Increasingly confident at putting numerals in order 0 to 10 (ordinality)

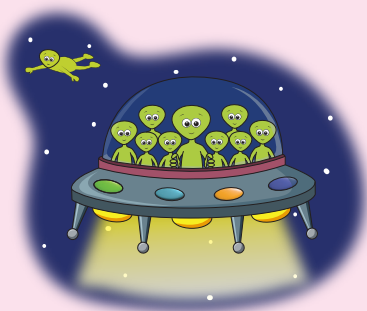
1 less

Adult-led learning

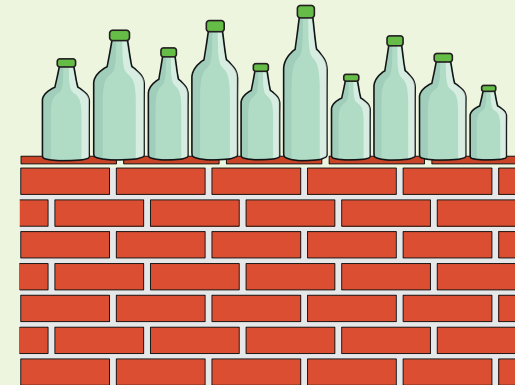


Sing and act out the rhyme *Ten Little Men in a Flying Saucer*. Prompt children to build a tower of 10 cubes. As they sing the rhyme and the aliens fly away one by one, encourage children to remove one of their cubes each time.

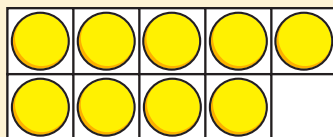
Prompt them to see that as they take a cube away, the number of cubes decreases.



Build a wall and provide children with 10 green plastic bottles. Sing the rhyme *Ten Green Bottles*. Each time a bottle 'accidentally falls', ask how many have fallen and how many are standing.



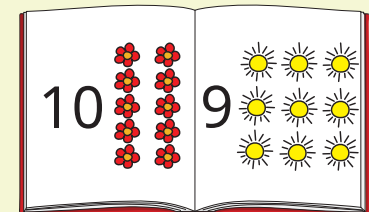
Prompt children to fill a ten frame with 10 counters. Read stories which show the '1 less' pattern, such as *Ten in a Bed* by Penny Dale. As one of the characters falls out of bed, encourage children to take a counter away.



How many are there now?



After reading a book from the '*Ten Little ...*' series by Mike Brownlow, support children to make their own books that start from 10 and count back. These can be linked to their own interests.



Composition to 10

Notes and guidance

In this small step, children are encouraged to build on their conceptual subitising, '1 more' and '1 less' skills by focusing on the composition of numbers to 10

As children's number sense develops, they learn to see greater numbers as a whole number and its parts at the same time.

Encourage children to represent their different compositions of numbers to 10 by providing varied representations to show the different compositions.

Explore partitioning in different ways with a wide range of objects to develop children's awareness. Play games that explore the composition of numbers to 10 so that children can then emulate these in their own play and self-chosen activities. Sharing stories and images that display different compositions and pointing these out will emphasise this concept to children. Talk to children as they use marks and signs to represent their ideas of composition. Point out composition to ten when playing with children in provision.



Books

- *One Gorilla* by Anthony Browne

Key questions

- What do you see? How do you see it?
- What is the whole?
- What are the parts?

Possible sentence stems

- The whole is _____
- I see _____ and _____
- There are _____ altogether.
- If _____ is a part, then the other part must be _____

Links to the curriculum

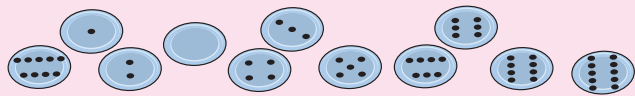
- *Development Matters* – Reception – Explore the composition of numbers to 10.
- *Birth to 5 Matters* – Range 6 – Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects

Composition to 10

Adult-led learning



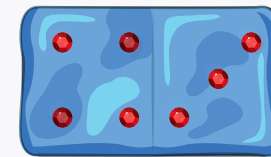
Spread out a range of dot plates from 0 to 10 on the floor.



Use a spinner to select a number from 5 to 10

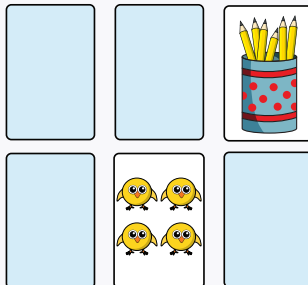
Prompt children to take it in turns to come to the front and collect two dot plates which total that number.

In the dough area, encourage children to make their own domino biscuits from dough.



Prompt them to sprinkle up to 10 sprinkles or jewels on their biscuit, using both sides of the domino to show different compositions.

Pick a 'magic number' from 5 to 10 out of a hat and place picture cards representing 0 to 10 face-down.

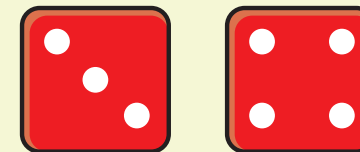


Children take it in turns to turn over two cards. If they total the magic number, then they get to keep those two cards. The person with the most cards at the end wins.



Give each child a 1 to 6 dice and ask them to roll it.

Explain that you have a secret way to work out what number is on the bottom of each dice without looking.



Prompt children to mark-make to record how many spots are on the top and how many spots are on the bottom. Can they see a pattern?

Bonds to 10 (2 parts)

Notes and guidance

In this small step, children explore number bonds to 10 using real objects in different contexts and build 10 using two parts.

In provision, explore different ways of building the bonds to 10, for example, parking 10 toy cars in two car parks. Ten frames or egg boxes with 10 holes can be partially filled with objects. Ask children how many more we need to make 10

Providing sets of 10 objects in provision supports children to make their own self-chosen explorations of the bonds to 10. Seasonal songs also support children making bonds, using actions with fingers to represent making 10



Rhymes

- *Five Eggs and Five Eggs*



Books

- *Mr Willy-Nilly and Zoey's Dream* by Ji-yun Shin
- *Pete the Cat and the Missing Cupcakes* by Kimberly and James Dean

Key questions

- What is the whole?
- What are the parts?
- How many different bonds to 10 can you find?

Possible sentence stems

- The whole is _____
- _____ is a part and _____ is a part.
- _____ and _____ are a bond to 10
- If _____ is a part, then the other part must be _____

Links to the curriculum

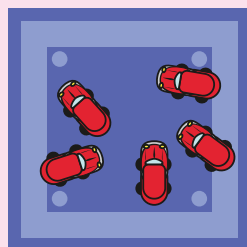
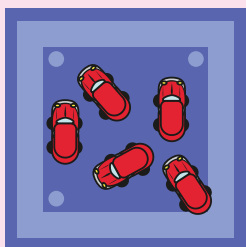
- *Development Matters* – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.
- *Birth to 5 Matters* – Range 6 – Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects

Bonds to 10 (2 parts)

Adult-led learning



Prompt children to explore different ways to represent bonds to 10 with small world resources.



For example, how many ways can you place 10 fairies on two toadstools? How many ways can you place 10 cars in two car parks?

Provide each child with a number shape. Encourage them to make a bond to 10 with a partner.



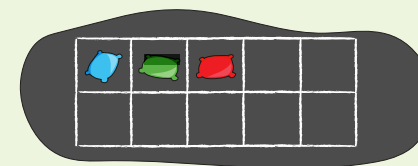
Which number shapes combine to make a total of 10?
Children can check by placing their two number shapes on top of the number 10 piece.

Compare the different tens that are made.



Chalk a large ten frame on the ground and hide 10 objects, such as beanbags, around the outside area.

Prompt children to hunt for the hidden objects and place them on the ten frame as they find them.



As each object is found, ask children how many they have now and how many are left to find.



Provide pots labelled with numbers 0 to 10 and a selection of loose parts, such as beads.



Ask children to count the correct number of beads into each pot. Can they find two pots that have 10 beads in total? Is there more than one way?

If there are 4 beads in one pot, which other pot do we need to total 10?

Make arrangements of 10

Notes and guidance

In this small step, children explore the number 10 and the different ways 10 can be arranged.

Show children different arrangements and ask what they notice. Support children to make patterns with concrete resources to 10 to allow them to become familiar with manipulating numbers. They may also then wish to explore making arrangements of different numbers.

Support children to notice that the overall number is still the same, no matter where they count from or what arrangements they make. This is the 'order irrelevance counting principle'. These activities will help deepen children's understanding that numbers can be made of many different arrangements and each arrangement tells a story about that number.

Using objects of interest, encourage children to make pattern-like arrangements and discuss what the pattern might tell us about the number 10

To deepen children's understanding, prompt them by asking questions such as, "Do 5 and 5 always make 10?"



Books

- *Ten Black Dots* by Donald Crews

Key questions

- What do you see? How do you see it?
- What does this arrangement tell us about the number 10?
- What can you tell me about your pattern?

Possible sentence stems

- I can see _____ here and _____ here.
- There are _____ altogether.
- _____ and _____ are always _____
- I know there are _____ altogether because ...

Links to the curriculum

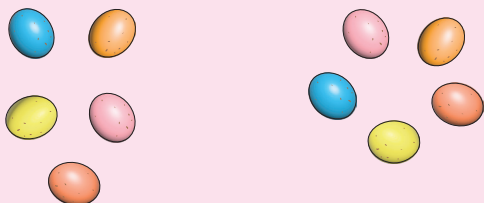
- *Development Matters* – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.
- *Birth to 5 Matters* – Range 6 – Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects

Make arrangements of 10

Adult-led learning



Show children different arrangements of 10 objects. Prompt them to discuss what they notice about how the objects have been arranged.



Provide children with loose parts and encourage them to find different ways to arrange 10 items.

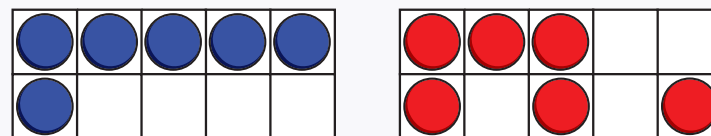


Read the book *Ten Black Dots* by Donald Crews and prompt children to talk about what they notice about the different dot arrangements.



Encourage children to make their own black dot pictures.

Model representing numbers to 10 on a ten frame in different ways and talk about what the children notice.

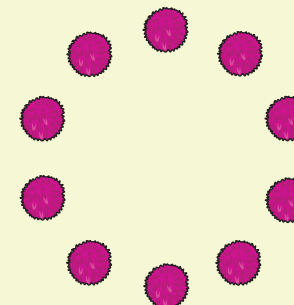


What does each arrangement tell us about that number?



Encourage children to play a barrier game in pairs. One child makes an arrangement of 10 objects, such as pom-poms, that their partner cannot see.

Their partner then has to ask questions about how they have made the arrangement, such as whether the objects are in rows, and tries to make the same arrangement. Remove the barrier and encourage them to talk about what is the same and what is different about the arrangements.



Bonds to 10 (3 parts)

Notes and guidance

In this small step, children explore bonds to 10 further and learn that there can be three or more parts, not just two. Children will need to see this in a variety of different ways, exploring this concept practically to embed it. In provision, explore different ways of building the bonds to 10, for example, with small world animals: 3 ducks in the water, 4 in the grass and 3 on the bridge.

Ten frames or egg boxes with 10 holes can be partially filled with objects, but now with three colours available. Fill the holes with a combination of two colours and ask how many more of a third colour we need to make 10. Providing sets of 10 objects in provision will support children to make their own self-chosen explorations of the different bonds to 10



Rhymes

- *Chuck Chuck*



Books

- *Ten Black Dots* by Donald Crews

Key questions

- How can you show 10 as three parts?
- How can you make the same number in a different way?
- What number have I made?
- How many did you count? How do you know?

Possible sentence stems

- I can see that _____ is made up of _____, _____ and _____
- There is _____ here, _____ there and _____ there, so there must be _____ altogether.

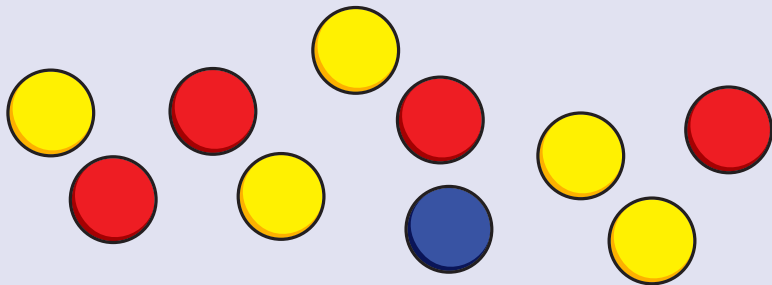
Links to the curriculum

- *Development Matters* – Reception – Automatically recall number bonds for numbers 0–5 and some to 10.
- *Birth to 5 Matters* – Range 6 – Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects

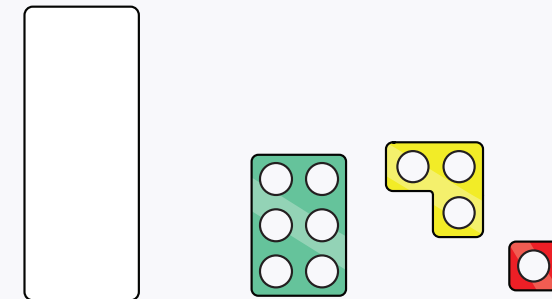
Bonds to 10 (3 parts)

Adult-led learning

Provide children with sprayed butter beans or counters in three different colours. Ask them to count out 10 and shake them in their hand before dropping them. How many are red? How many are yellow? How many are blue?



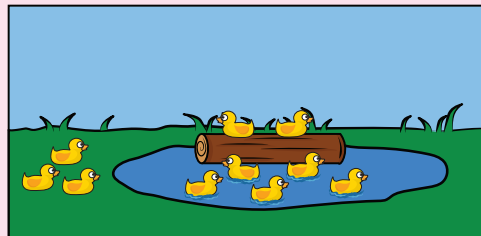
Give children an outline of a 10-piece number shape.



Support them to find different ways of filling their shape with three different parts. How many different ways can they find?



Set up a small world scene such as a field with a log in a pond and 10 ducks. Ask children how many ducks they can see in each of the three areas. Can they move the ducks to find different ways to make 10 in three parts?



Place dice pattern stickers on small world vehicles such as trains. Encourage children to make a train with three carriages so that it has a total of 10 dots.



Challenge them to find different ways to make 10 using three parts.

Doubles to 10 (find a double)

Notes and guidance

In this small step, children build on their explorations and findings about doubles to 8, by progressing to doubles to 10

Children will be used to the concept of doubling and the fact that this means 'twice as many'. Further support children to see a range of visual representations of doubles and identify them in patterns, in pictures and in arrangements.

By repeating these activities, children will naturally be able to find doubles and recognise them in their play. Encourage children to find the doubles to 10 by sorting doubles and 'not doubles', so that they can begin to categorise the numbers and amounts/ representations.

A good way to embed this concept and encourage children to see doubles is to make up rhymes that use the language of doubling. Prompt children to see the doubles to ten in all areas of provision.



Rhymes

- *Doubling Rhyme*

Key questions

- Where can you see a double?
- Is this double or not double? How do you know?
- What is double _____?

Possible sentence stems

- I have found double _____
- There are _____ here and _____ there.
- Double _____ is _____
- _____ is double _____

Links to the curriculum

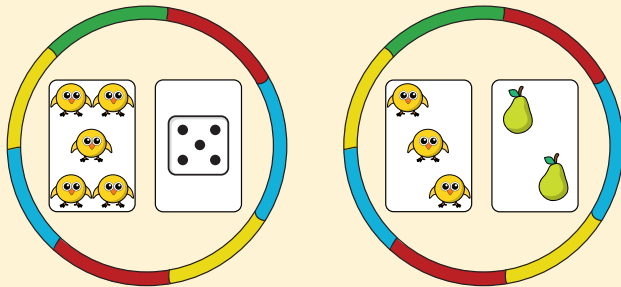
- *Development Matters* – Reception – Explore the composition of numbers to 10.
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Doubles to 10 (find a double)

Adult-led learning



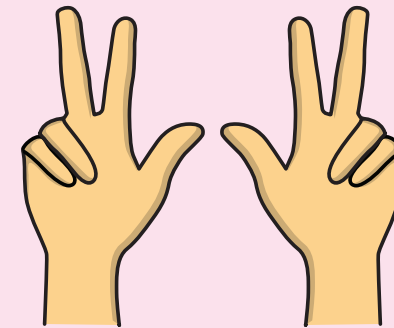
Show children images or picture cards that represent doubles and 'not doubles' to 10



Encourage children to say whether the representation shows a double or not. How do they know?



Sing a doubling rhyme together. Encourage children to represent the doubles on their fingers as they sing.

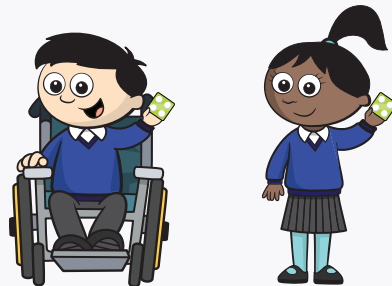


What doubles do they notice?

Give each child a number shape representing a number from 1 to 5

Prompt them to go and find a partner that has the same number as them.

Encourage children to talk about the double they have made using a stem sentence.



Prompt children to make up their own doubling rhyme. Encourage them to perform their rhyme to a friend.



They could mark-make or use manipulatives to help them to represent the doubles as they sing.



Doubles to 10 (make a double)

Notes and guidance

In this small step, children embed their learning of finding doubles to 10 and then make their own sets and arrangements of doubles. If encouraged and supported to do this, children will be naturally curious to explore their own findings.

Encourage children to represent their understanding by making doubles with manipulatives such as counters on ten frames or in activities such as printing. Barrier games are a good way of supporting children to make and describe the doubles they have made. Allow children to explore and demonstrate this both inside and out using large ten frames and encourage them to show their thinking using the pair-wise pattern. Use and enact doubling stories to embed children's understanding and help them make doubles.

Children may also recall that all doubles are even numbers, in relation to their exploration of even and odd numbers.

Key questions

- What double have you made?
- Is it a double or not a double? How do you know?
- What is double _____?

Possible sentence stems

- I have made double _____
- There are _____ here and _____ there.
- Double _____ is _____
- _____ is double _____

Links to the curriculum

- *Development Matters* – Reception – Explore the composition of numbers to 10.
- *Birth to 5 Matters* – Range 6 – Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects



Books

- *Two of Everything* by Babette Cole
- *Double the Ducks* by Stuart J. Murphy

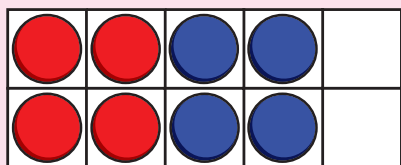
Doubles to 10 (make a double)

Adult-led learning



Provide children with double-sided counters and a dice labelled 1 to 5

Prompt children to roll the dice and represent that number on a ten frame. Encourage them to then make the double.

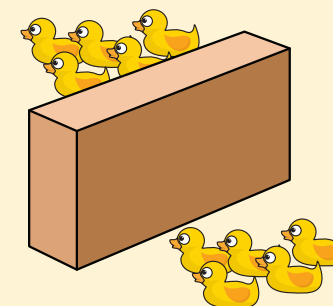


Building the double in a pair-wise pattern will support children's knowledge of doubles.



In pairs, prompt children to sit facing each other with a barrier between them. Provide them with collections of small world animals, such as ducks or sheep. Encourage one child to represent a number up to 5 with the objects.

They lift the barrier briefly to show their partner, who builds the same number. Children remove the barrier and check if they have made a double. Which double have they made?



Support children to use number shapes 1 to 5 to print. Encourage them to place the shape into paint and then press it onto a piece of paper twice to double that number.



What double have they made? Prompt children to use the stem sentences to talk about the doubles.



Provide children with numeral cards 2, 4, 6, 8 and 10 in a pile. Prompt them to select one numeral and ask them to build the two numbers that make that double.

Ask children to talk about the double they have made.



Explore even and odd

Notes and guidance

In this small step, children expand on their first introductions to the concept of even and odd numbers.

As mentioned in the last step, children may have recognised the concept of 'even' from their explorations of doubling. This small step allows children to develop this skill by recalling past knowledge as well as recognising new patterns with numbers up to 10 in different contexts.

Encourage children to solve problems by using mathematical graphics to draw out their thinking. By doing this, children can be supported to explain their reasoning of why a number of objects may be odd or even.

Adults can then prompt children to explain how they know by using key questions and supporting them to use stem sentences. By building up this skill over time, children will be more confident explaining their thinking towards the end of the Reception year.

Key questions

- Does the group have two equal/unequal groups?
How do you know?
- Is the number odd/even?

Possible sentence stems

- I know this in an equal/unequal group because ...
- _____ is odd/even because ...

Links to the curriculum

- *Development Matters* – Reception – Explore the composition of numbers to 10.
- *Birth to 5 Matters* – Range 6
 - Shows awareness that numbers are made up (composed) of smaller numbers, exploring partitioning in different ways with a wide range of objects
 - Begins to explore and work out mathematical problems, using signs and strategies of their own choice, including (when appropriate) standard numerals, tallies and "+" or "-"



Books

- *One Odd Day* by Doris Fisher and Dani Sneed

Explore even and odd

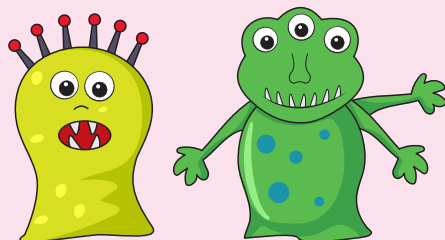
Adult-led learning



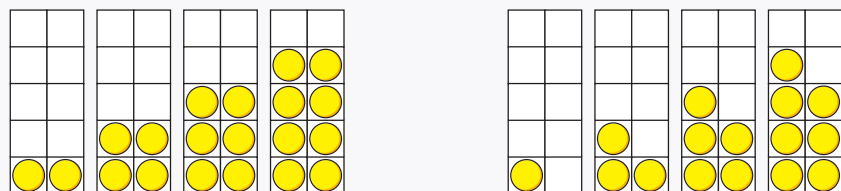
After reading stories such as *One Odd Day* by Doris Fisher and Dani Sneed, encourage children to create their own odd and even pictures.

Look at the pictures together.

Is this an odd or an even picture? How do you know? Encourage children to talk about the pictures. How many odd and even features can they spot?



Ask children to explore and build pair-wise patterns on ten frames. Prompt them to sort the ten frames into those which have two equal groups (even numbers) and those which have two unequal groups (odd numbers).

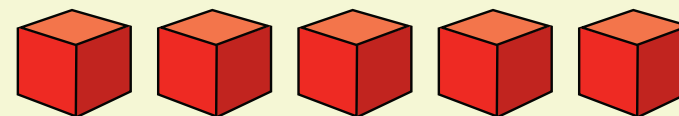


Place number shapes 1 to 10 in a feely bag. Ask children to feel inside the bag and find an odd number. How do they know it is odd? Encourage children to find an even number. How do they know it is even?

Prompt them to sort the number shapes into odd and even numbers. Can we line them up to see the 'odd, even, odd, even' pattern as we count?



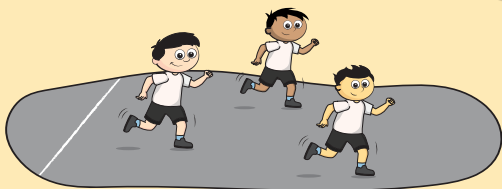
Prompt children to collect an odd number of cubes. Encourage them to check each other's and compare the different quantities. Are all the quantities odd? How could you check?



Ask children to collect one more cube and add it to their set. How many do they have now? Is there still an odd number of cubes?

Continuous provision

Provide a starting line. Ask children to take 9 giant steps, 9 tiny steps, 9 jumps and 9 tiptoes.



How far do they travel each time? Who can travel the furthest in 9 giant steps? Who can travel the shortest distance with 9 tiny steps?

Repeat this with 10 of each action. What do they notice?

Provide children with a range of items with letters on, such as blocks or butterbeans, and ask children to build their names with them.



How many letters does their name have? Prompt children to compare the number of letters they have with a partner. Who has more letters? Who has fewer letters? Does anyone have the same number of letters as them?

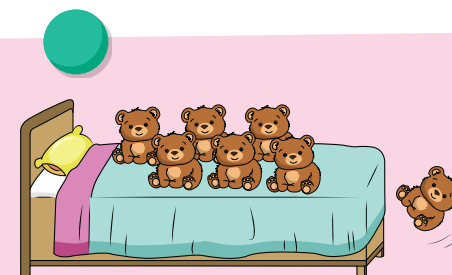
Provide children with a range of different classroom objects and loose parts.



Encourage them to make a number 9 and a number 10 museum.

Prompt children to talk about why they have chosen those objects and how they represent 9 or 10

In the rhyme area, provide children with props for the rhyme *Ten in the Bed*. Encourage them to sing the rhyme and represent what is happening each time.



Prompt children to make up their own similar rhyme that counts on instead of back, using props to act this out.

Continuous provision

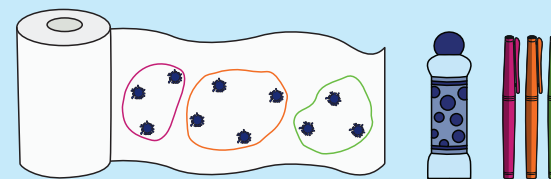
Set up a game of 'race to 10' for children to play in pairs. Each pair will need a track with 10 spaces, loose parts (up to 10 objects) and a 1 to 3 dice. Children roll the dice and place the corresponding number of objects on the track.



How many do they have? How many more do they need to reach 10?

To explore the composition of different numbers, repeat this with different numbers of spaces on the track.

In the mark-making area, provide children with large pieces of paper and bingo dabbers.



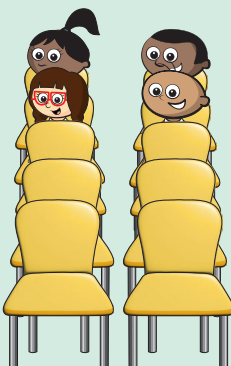
Prompt them to use the dabbers to make different arrangements of 9 and 10 and then use different coloured felt tips to draw around them.

What different groups do they see? Are they odd groups or even groups?

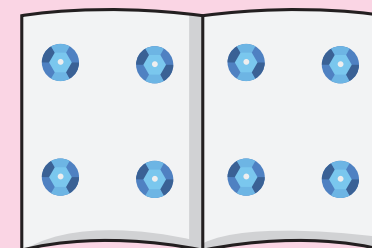
Place 10 chairs into 5 rows of 2 to resemble seats on a bus. Encourage some children to get on the bus. How many passengers are there on the bus?

Prompt children to use their knowledge of bonds to 10 to predict how many more passengers could get on the bus.

Repeat with different numbers of children getting on the bus.



Provide a range of collage and mark-making materials along with some blank folded paper.



Prompt children to explore making doubles by adding spots to each side of the paper. Encourage them to talk about the doubles they have made.

End of block checkpoint

Checkpoint 1

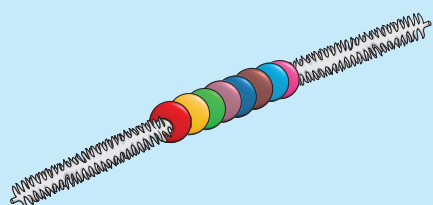
Make a caterpillar by threading up to 10 beads onto a pipe cleaner.

Are children able to make caterpillars with more and fewer beads than you?

Which caterpillar is the longest?

Which is the shortest?

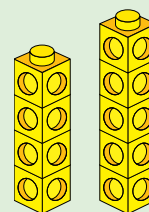
Can we arrange the caterpillars in order?



Checkpoint 2

Provide children with 9 cubes. Prompt them to work in pairs where one person holds the 9 cubes behind their back and breaks them into two parts. They reveal just one part.

The other child in the pair has to work out how many cubes are hiding behind their partner's back.



This activity can be varied by giving children 10 cubes or by asking children to snap the cubes into three parts.



Checkpoint 3

Hand out a range of 1 to 10 number shapes so that each child has one shape.

Ask questions and give instructions such as, "Stand up if you have an odd number." Can you find someone with a number shape that is double your number? Can you find someone who has an even number shape or someone who has an odd number shape? Encourage children to talk about what they notice.

