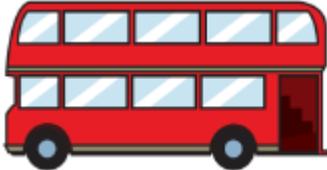
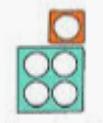
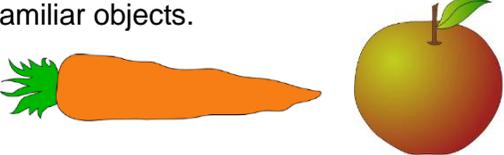
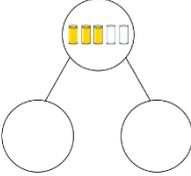
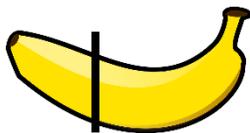


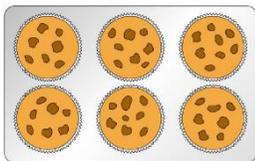
## Reception

|                           | Concrete  | Pictorial  | Abstract  |
|---------------------------|---|--|---|
| <b>Reception Addition</b> | <p><b>Counting and adding one more within five</b></p> <p>Children add one more person or object to a group to find one more within five.</p> <p>Make a bus route with one child at each stop. When the bus stops one child gets on.</p>   <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p>Use numicon to explore one more.</p> </div> | <p><b>Counting and adding one more within five</b></p> <p>Children see an image of a staircase built with lego, cubes, bricks.</p>  <p>Children build their own with one more each time.</p> <p>Children make a number on a five frame – Ask “Can you show me one more?”</p>  | <p><b>Counting and adding one more within five</b></p> <p>Use a number track underneath the concrete objects/pictures. Point to one more.</p>     |
|                           | <p><b>Understanding part-part-whole relationship</b></p> <p>Begin to introduce the idea of a whole using familiar objects.</p>  <p><i>‘This is the whole carrot because I have all of it’</i><br/> <i>‘Is the leaf part of the whole apple? What about the stalk?’</i></p>   | <p><b>Understanding part-part-whole relationship</b></p> <p>A whole group can be composed of two or more parts and this can be represented using part,part whole ‘cherry diagram’</p>   | <p><b>Understanding part-part-whole relationship</b></p> <p>So that children make connections between the concrete, pictorial and abstract use them alongside one another, continuing to explore a variety of contexts.</p>  <ul style="list-style-type: none"> <li>• <i>‘There are four cars. Two of them are blue and two of them are red.’</i></li> </ul> |

Introduce concept that a whole can be split into parts using concrete objects e.g banana

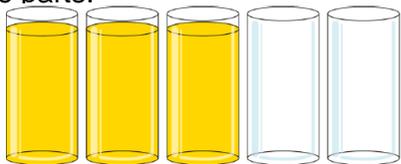


Use concrete representations to introduce the concept that a whole can refer to a full group of discrete objects.



*'How do we know this is a whole tray of cakes?'*

A whole group can be composed of two or more parts.



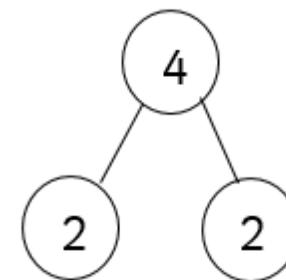
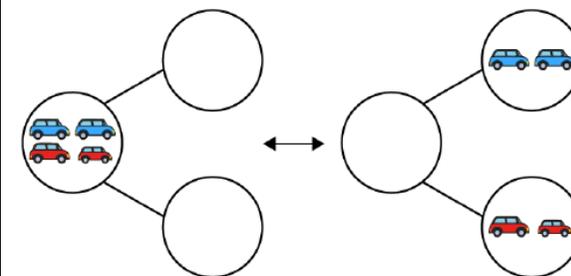
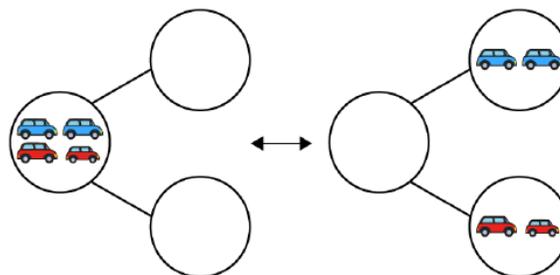
Describe the group. *'There are three full glasses and two empty ones'*



• *'There are four cars. Two of them are blue and two of them are red.'*

Children can physically manipulate the concrete objects and move the objects between the whole and the parts.

*Children can draw pictures to represent concrete objects in a part, part whole diagram.*



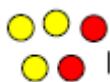
### Knowing and finding number bonds within 5

Use real life objects and familiar contexts to explore the composition of numbers up to 5.



Play games and ask children to record results in their own way.

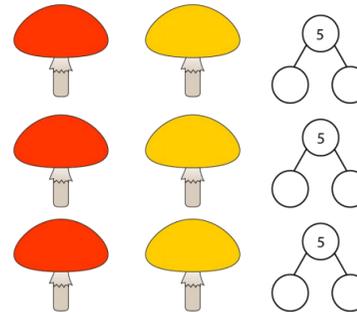
Play 'Bunny ears'  
How many ways can you show 5?



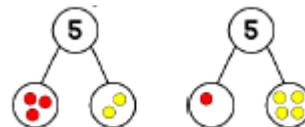
Use 5 double sided counters  
Shake and drop them on the table. How many are red?  
How many are yellow?

### Knowing and finding number bonds within 5

*'There are a total of five spots on the mushrooms. Find different ways to split them between the two mushrooms.'*



Show the counters on a part,part whole model.

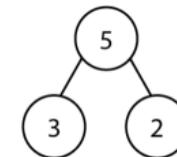


### Knowing and finding number bonds within 5

*'Maisie has these colours.'*



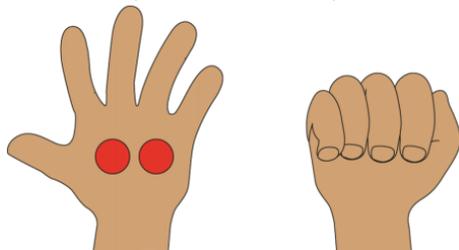
Part-part-whole cherry model:



- *'The 5 represents all the counters.'*
- *'The 3 represents the three blue counters.'*
- *'The 2 represents the two red counters.'*

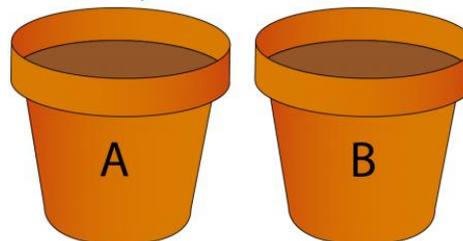
### Finding a missing part if we know one part.

*'I have five counters. There are two counters in my open hand. How many counters are there in my closed hand?'*

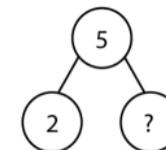


### Finding a missing part if we know one part.

*'There are five seeds altogether. Four of the seeds are in Pot A. How many are in Pot B?'*



### Finding a missing part if we know one part.



*'The whole is five and one part is two, so the other part must be three.'*

Use a stem sentence of the form: **'The whole is \_\_\_ and one part is \_\_\_, so the other part must be \_\_\_.'**

**Combining two groups to find how many altogether. (aggregation)**



Look for opportunities to combine 2 groups during independent play. For example, 'I see you have some red cars and some blue cars. I wonder how many cars you have altogether.'

**Combining two groups to find how many altogether.**

Tell your partner about the leaves.



How many are red? How many are green?  
How many leaves altogether?

**Combining two groups to find how many altogether.**

**Knowing number facts for ten**

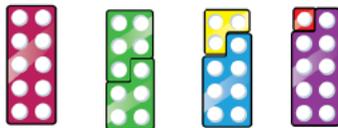
The children explore number bonds to 10 using a 10 frame.

10 frames can be filled in different ways to show the 5-and-a-bit structure and the pair structure.



5-and-a-bit structure pair structure

How many ways can they build a new 10 on top by combining 2 different number shapes?

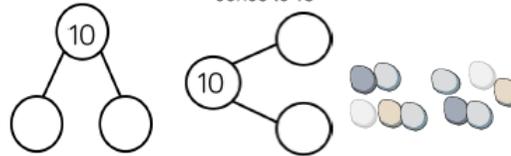


Use bead strings to show and explore number facts for ten.



**Knowing number facts for ten**

Ask the children to count out 10 loose parts into their part-whole model. Explore the different ways they can show pairs of number bonds to 10



Show the pairs of numbers on a part,part whole model.

**Knowing number facts for ten**

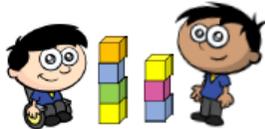
### Adding more to a group. (augmentation)

Concrete/practical:

**First**, four children were sitting on the bus.  
**Then**, three more children got on the bus.  
**Now**, seven children are sitting on the bus.'

Chairs could be arranged to support acting out this story.

The children take turns to roll a 1-3 dice and collect 1, 2 or 3 cubes to add to their tower.



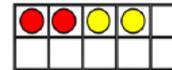
### Adding more to a group. (augmentation)

Once children are confident with the use of concrete/practical representations, begin to introduce pictorial representations. To help children make a connections between the concrete/practical and pictorial representation, introduce the matching pictorial representation alongside the practical representation.

Use first, then now to tell simple maths stories to practise adding more in real life contexts.



First there were 2 people on the bus.  
Then 2 more people got on the bus.  
Now there are 4 people on the bus.



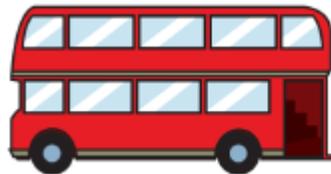
### Adding more to a group. (augmentation)



### Subtraction

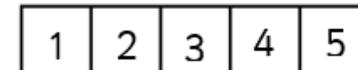
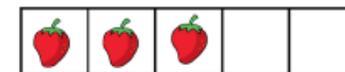
#### One less

Make a bus route with a full bus. At each bus stop, one person gets off. Discuss how many on the bus each time noticing there is one less each time.



How many buns are there altogether? Put the penny in the pot, how many pennies do we have? How many buns do we have now? Repeat the song and questions highlighting there is one less bun each time, but one more penny.

Use a number track underneath the concrete/physical objects. Point to one less.



Children use their counting and comparing skills to find one less than numbers up to 5. Encourage children to use a five frame to represent numbers and then make one less. Children should see the link that one less than a number is the next number they say when they are counting backwards.

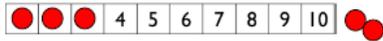
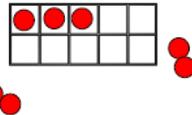
### Taking away

The children use real objects to see that the quantity of a group can be changed by taking items away.

Use first, then now to tell simple maths stories to practise taking away in familiar contexts.



First there were 5 people on the bus.  
Then 2 people got off the bus.  
Now there are 3 people on the bus.

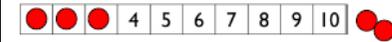
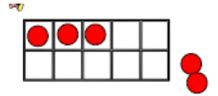


Encourage the children to adapt and re-enact favourite rhymes such as 10 Green Bottles by making 1, 2, or 3 fall each time. Similarly they could have 10 Currant Buns and choose to buy 1, 2, or 3 buns each time. Prompt the children to say how many are left each time.



Use number tracks to illustrate songs and represent stories.

First there were 5 people on the bus.  
Then 2 people got off the bus.  
Now there are 3 people on the bus.



### Multiplication

#### Doubles

The children will learn that double means 'twice as many'



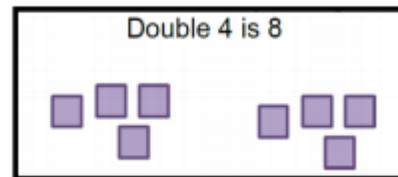
Children will explore different ways to build doubles using real objects and practical equipment.



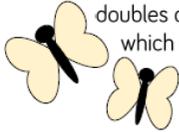
Play snap or matching pairs games using pictorial playing cards or dot cards. Encourage the children to say the doubles as they make them. The person with the most doubles or pairs at the end wins the game.



Encourage them to say the double as they make them.



Provide ladybird or butterfly templates and ask the children to use the tweezers to make doubles by adding the same number of pompoms to each side. How many different doubles can they make? Can they make one which is not a double and tell you why?



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## Division

Provide examples of doubles and non-doubles for the children to sort and explain why.



### Halving and sharing

#### Snack

Ask the children to come for snack in pairs and provide quantities of food that they need to share onto their plates, e.g. A box of raisins, a bunch of grapes, a handful of crackers. Progress from halving to sharing equally between 3 or 4 children.



#### Teddy bear picnic



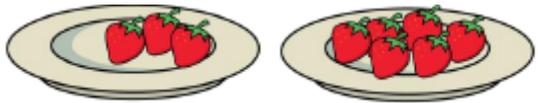
Provide 2 teddy bears, 2 plates and small even quantities of loose parts to represent different food items.

## Sorting

Have some pictures ready to show the children. Some will show equal groups and some will show unequal groups. Ask the children to discuss and sort the pictures. The children might also like to make their own examples of equal and unequal groups to sort.



Vary the sharing by sharing unequally. Ask if it is fair. How could you share fairly?



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