


Calculation policy information - Early Years


Reception representations by each unit
















Unit 1: Just like me

- Matching to find same and identify different
- Sorting – things that have something in common
- Comparing – size and quantity

Matching

Can you cut out these buttons? 

Now can you find all of the buttons that match? 



Making representations of numbers – seeing them as part of a bigger group



Comparing size




More and fewer




Unit 2: It's me 1,2,3

- Representing 1,2,3
- Comparing 1,2,3
- Composition of 1,2,3

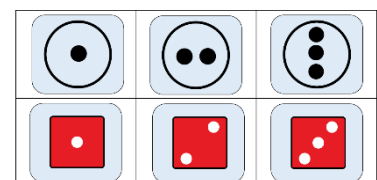
Make a collection of objects to represent the number two. 


How many different ways can you find?



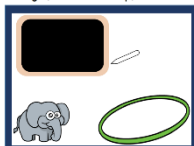
Cut out these cards and have a go at the memory game! 


Look out for those matches!

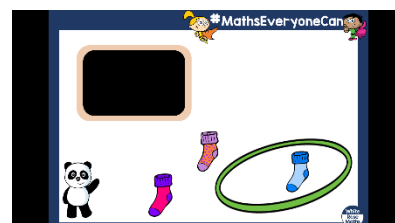


Now it's your turn to have a go at the aiming game. 

You will need a target, such as a hoop, and three objects to throw.



How many landed inside the hoop? How many landed outside the hoop?
Now record your score and then have another go!
Did you score more or less this time? 



Unit 3: Light and dark

- Representing, comparing and composing 4 and 5
- 1 more and 1 less

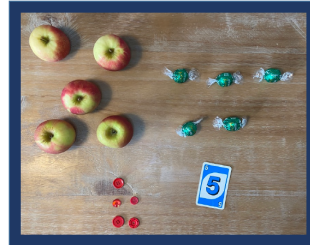
Gather together a set of 5 objects.

Just like we arranged our 5 frogs with some in the pond and some on the grass, explore how many different arrangements of 5 you can make.



Have you found all the possible ways?

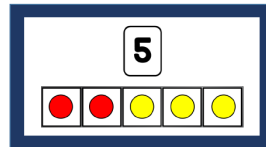
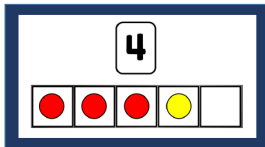
Make a collection of objects to represent the number five.
How many different ways can you find?



As well as collecting objects, you could also represent the number five by drawing a picture.

Shake 4 double-sided counters (or painted butter beans) and then let them fall on the table.

How many counters have landed on the red side?
How many have landed on the yellow side?



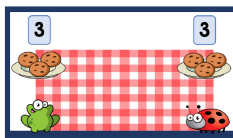
How many different ways can you find to make 4?

Now use 5 counters. How many different ways can you find to make 5?

Unit 4: Alive in 5:

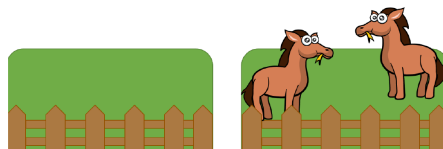
- Introducing zero
- Comparing numbers to 5
- Composition of 4 and 5

Set up a teddy bears picnic and gather some food or objects to share.
Explore sharing the food or objects between 2 teddies.



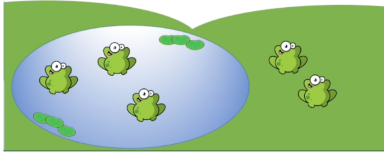
Do both teddies have the same? Or does one teddy have more or fewer?
Now have a go at sharing between 3 teddies.

Can you draw some pictures to represent the numbers to 5
How would you represent 0?



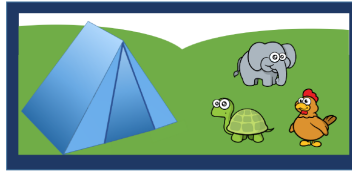
You could even go on a walk and look to see where you can spot zero.
You might spot 0 cars on the road or 0 horses in the field.
How many 0s can you find?

Have a go at exploring the composition of numbers to 5.
Place a group of teddies or toys on the bed.
Place another group of teddies in a different place, such as on the floor.



How many teddies are in each group?
How many teddies do you have altogether?

Gather together a collection of up to 5 objects.
Hide some of them in a bag or box, leaving the rest of your objects on the floor where you can see them.



How many objects can you see?
How many of your objects must be hidden in the bag?

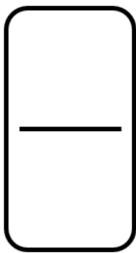
Explore filling different sized containers.
What do you notice?
Which pot holds the most? Which pot holds the least?



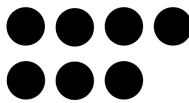
Key vocabulary	
smaller	smallest
larger	largest
most	least

Unit 5: Growing 6,7,8

- Representing, comparing and composing 6, 7 and 8
- Making pairs
- Combining groups



Explore all of the different ways that you can make 7 on a domino.
Have you found all the possible ways?



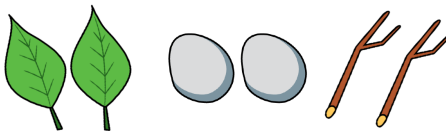
How else could you represent 7?

Look carefully at the picture.
Can you find 4 flowers and 4 flowers? How many flowers altogether?
Can you find 2 and 5? How many altogether? What else can you see?



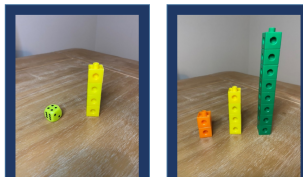
Now make your own picture and draw some groups to count.

Go on a walk to collect some natural objects.
Explore making pairs with what you have found.



How many pairs have you found?
Do you have any objects left over or do they all group into pairs?

Roll the dice. Collect the corresponding number of cubes and build a tower.
Now build a tower that is taller and a tower that is shorter.

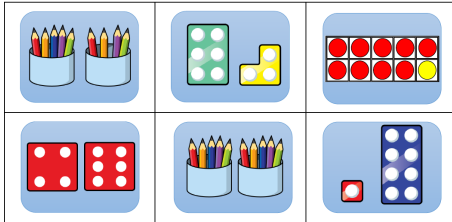


Key vocabulary	
short	shorter
tall	taller
shortest	tallest
more	fewer

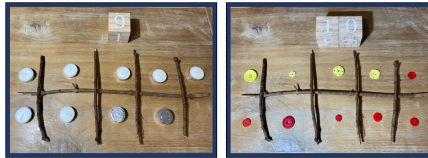
Unit 6: Building 9 and 10

- Representing, comparing and composing 9 and 10
- Comparing numbers to 10
- Bonds to 10

Have a look at each card. Does it represent 9 or 10?
Sort the cards into two groups.

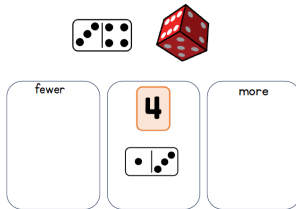


Explore how many different ways you can make 9
Then see how many different ways you can make 10



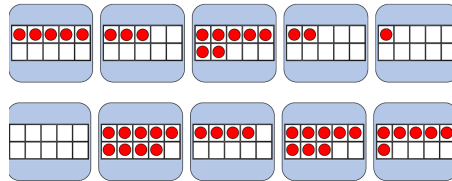
What do you notice?
Can you spot numerals 9 and 10 in the environment?

Roll the dice. What number have you landed on? This will go in the middle.
For example, if you land on 4, the number 4 will go in the middle group.



- Then sort your dominoes into:
- dominoes that show 4
 - dominoes that have fewer than 4 spots
 - dominoes that have more than 4 spots

Turn over one card. What number is shown on the ten frame?
How many more counters would you need to make 10?
Go and find that numeral as quickly as you can.

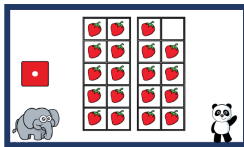


Unit 7: To 20 and beyond

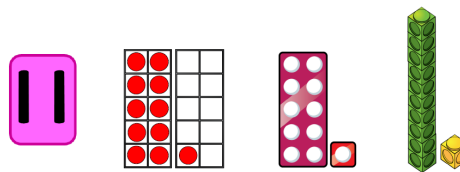
- Subitising, sorting and matching, composition, counting, comparing and ordering
- Building numbers beyond 10
- Counting patterns beyond 10

Shuffle the 11-20 numeral cards and select one at a time.
Represent each number in different ways.

Play the 10 frame subtraction game with a friend.
First collect 20 objects to fill two 10 frames. Take turns to roll the dice and take away the corresponding number of objects.

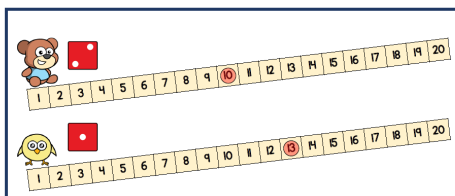


How many objects are left each time?
The winner is the player that takes away the last object.



You could use cubes or objects from around your house.
You could also use the ten frames on the next page to help you.
What do you notice about each number?

Play the race to 20 game with a friend.
Roll a 1-3 dice and count on that number of spaces on the track.
The first player to reach 20 is the winner.



Unit 8: First, then, now

- Subitising, sorting and matching, composition, counting, comparing and ordering
- Adding more
- Taking away

Count out a group of toys, then cover your eyes whilst a friend adds some more toys to your group.



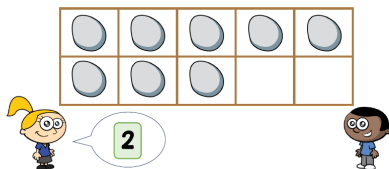
How many toys did you have first?
 How many toys do you have now?
 How many toys did your friend add?

Gather together some toys and a box.
 Create your own first, then, now stories as different toys fall out of the toybox.



How many toys were in the toybox first?
 Then how many fell out?
 How many are left now?

With a friend collect ten objects to play the taking away game.
 Take it in turns to take away 1, 2 or 3 objects.



How many objects are left each time?
 The player that avoids taking away the last object wins the game.

Unit 9: Find my pattern

- Subitising, sorting and matching, composition, counting, comparing and ordering
- Doubling
- Sharing and grouping
- Even and odd

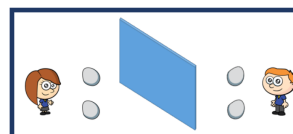
Encourage the children to investigate whether small quantities are odd or even by sharing into 2 groups and by making pairs. Prompt them to recognise that sometimes there is one left over.



Ask the children to build pair-wise patterns on the 10 frames and sort them into those which have two equal groups (even numbers) and those which have two unequal groups (odd numbers).



Sit opposite a friend with a barrier between you.
 Set out a quantity of objects, show your friend quickly and then hide again.



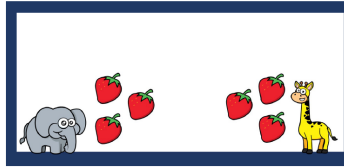
Your friend then needs to match your quantity.
 Remove the barrier and check if you have a double.
 Which double have you made?

Gather together some objects from around your house and some pots.
First, start with 12 objects and explore what happens when you put 3 objects in each pot. How many pots do you need?



What would happen if you put 4 objects in each pot?
How many pots will you need now?

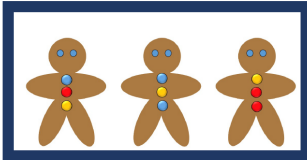
Share snacks into two groups for you and a friend.
Have you shared into two equal groups?
Is it fair?



Now share out a different number of snacks.
What do you notice?

Make equal groups.

Can you give each gingerbread man 3 buttons?
Then give each of them 4 buttons? What do you notice?



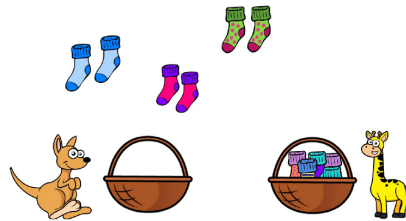
Explore what happens when you change the number of gingerbread men or if you change the number of buttons you give them.

Just like in the book, *One Odd Day by Dani Sneed*,
can you make your own odd day picture.



Then can you tell a friend all about your picture?
How many odd numbers can you see in your picture?

Gather together lots of different socks.
Explore what happens when you group them into pairs.



Do you have an even number of socks or an odd number of socks?
How do you know??

Unit 10: On the move

- Subitising, sorting and matching, composition, counting, comparing and ordering
- Patterns and relationships

Can you create your own 'How many legs' problems?
You could combine different characters and find the total number of legs they would have altogether.



Or you could select a number and explore which combinations of characters would total that number of legs.

Gather together a bucket and some of your favourite toys.
First, place a number of toys inside the bucket.
Then, ask a friend to add more toys or take some out while you watch.



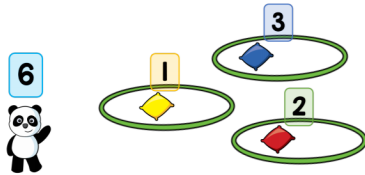
Can you predict how many toys will be in the bucket now?
Will there be more or fewer?

Who could be in Mr Gumpy's boat if there are 8 legs altogether.
 What if there are 6 legs or 10? Who could be in the boat this time?
 I wonder if there could be 9 legs in the boat?



You could draw pictures to help you to work it out.

Gather three hoops or buckets and number them 1, 2 and 3
 Throw your bean bags and then add up your points.



How many points have you scored?

Is there more than one way to score 6 points?
 What is the highest possible score?

Early Years Calculations

Nursery – officially up to 5

Reception – officially up to 10 (but we represent numbers to 20 and count beyond)

Addition and Subtraction

- Representing the number – eg seeing 3 as 2 and 1
- Counting along a number track in a game
- Counting forwards and backwards (beginning of 1 more and 1 less)
- How many altogether?
- How many have been taken away/are left?

Reception only:

- Doubles
- Some of the objects have hidden – how many are hiding
- First, then, now (calculations with missing numbers in all 3 locations)
- Representing the teen numbers as 10 and x more
- 1 more and 1 less

Multiplication and division

- Sharing
- Pairs being 2 of something

Reception only:

- Counting in 2s
- Doubling
- Seeing 9 as three 3s
- Grouping for division