Phase 3 – Light and Dark

#MathsEveryoneCan

Phase 3 – Book List

Reading to children is an essential part of their development. Any of these books would be useful during Phase 3 alongside traditional tales such as The Enormous Turnip and The Gingerbread Man.

Pete the Cat and his 4 Groovy Buttons–Eric Litwin
Witches Four – Marc Brown
Kipper's Birthday – Mick Inkpen
5 Little Fiends – Sarah Dyer
The Very Hungry Caterpillar- Eric Carle
Stella to Earth! – Simon Puttock
Square - Mac Barnett and Jon Klassen
Bear in a Square – Della Blackstone
Fox in the Dark – Alison Green
Peace at last- Jill Murphy
Kipper's Monster – Mick Inkpen
Day Monkey, Night Monkey – Julia Donaldson
The Dark, Dark Tale – Ruth Brown
Funnybones – Janet & Allen Allberg

Four

Guidance

Children count on and back to 4. They count or subitise sets of up to 4 objects to find how many and make their own collections of objects. They match the number names to numerals and quantities and are able to say which sets have more and which have fewer items. When counting, they continue to learn that the final number they say names the quantity of the set. They use their own mark-making to represent numbers to 4.

Other Resources

Pete the Cat and his 4 Groovy Buttons – Eric Litwin

Witches Four – Marc Brown

Washing Line – Jez Alborough

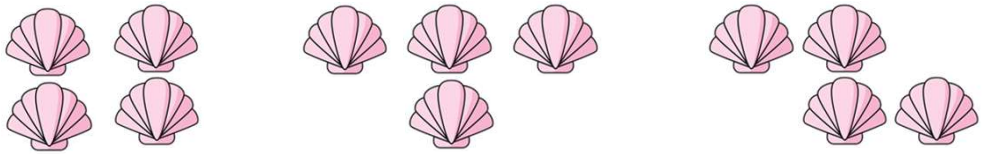
Anno's Counting Book – Mitsumasa Anno

Prompts for Learning

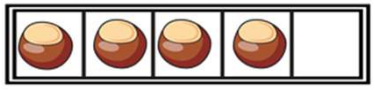
Note: All the prompts for counting to three can be applied to counting to four, plus these extra ideas.

Have a basket of something interesting to count. Ask the children to count out 4 items and arrange them on a whiteboard.

How many are there altogether?
Does your 4 look the same as mine?
Rearrange the items. How many are there now?
Can you make yours look the same as mine?
Can you arrange your 4 in a different pattern to mine?
What smaller groups can you see in your 4?



Arrange 4 items on a 5 frame – what do you notice?
Prompt the children to notice that 4 is one less than 5 so there will always be one empty space.

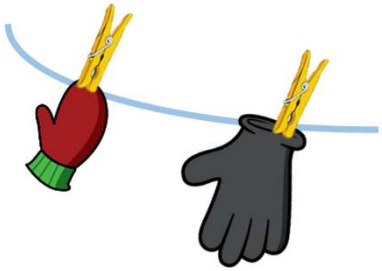


Circle game. Everybody stand up. Count round the circle 1, 2, 3, 4 1, 2, 3, 4 1, 2, 3, 4, etc. The person who says 4 sits down each time. Continue to count round the circle until there is only one person remaining. You can also count back 4, 3, 2, 1 and sit down on 1.

Four

Washing Line

Hanging clothes - linking to the book suggested, provide children with items to hang on the washing line. Can they count as they hang the items? How many items do they have altogether? Can we count them back into the basket?



Small World

In the small world area, create two areas (barns, fields) with signs that say 'two legs' and 'four legs'. Can children sort the animals into the correct areas by counting their legs?

Enhancements to areas of learning

Outdoor

In the parking bays, place signs for 2 wheels, 3 wheels and 4 wheels. When children park their bikes or toy cars, can they match the vehicle to the correct bay?

Outdoor

Set up a number hunt. Hide numerals or objects with numerals on them around the outside area. Ask the children to find the numerals and to sort them into 1, 2, 3, and 4. Encourage them to count out quantities to match each numeral.

Five

Guidance

Children continue to subitise up to 5 items and to count forwards, and backwards, accurately using the counting principles. They represent up to five objects on a five frame and understand that if the frame is full then there are five.

This is a good opportunity to link to birthdays as children will soon be five. Five is also the focus of many number songs and rhymes.

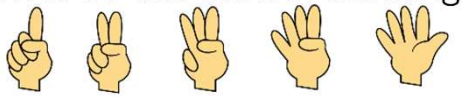
Other Resources

Kipper's Birthday – Mick Inkpen
5 Little Fiends – Sarah Dyer
Five Little Men in a Flying Saucer - Dan Crisp
5 Small Stars – Ladybird
Five Currant Buns
Five Little Monkeys
One Elephant Went Out to Play

Prompts for Learning

Note: All the prompts for counting to three and four can be applied to counting to five, plus these extra ideas.

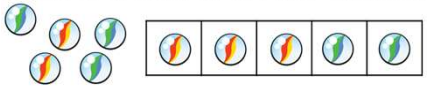
Can we count to five on our fingers? Can we count back from 5? Ask the children to show numbers to 5 using their fingers. Is there more than one way? As they become more confident encourage them to do this without counting.



Read Kipper's Birthday. How old is Kipper? How do we know?
Let's count the candles on his cake?
Stand up if you are 5 Stand up if you are 4
Do we have more 5 year olds or more 4 year olds?
Who will be 5 next?

Have a feely bag filled with cubes. Ask the children to predict how many cubes you can collect in one handful. Grab a handful and then lay them down one by one so the children can see how many. Ask who else would like to try. Can they hold the same as you? Try again. Do they get the same amount each time?

Fill five frames with a variety of objects. How many do we have? How do we know there are five without counting?



Five

Outdoors

You will need 5 beanbags, fly swatters, numerals 1-5 and a bucket or witches hat. Arrange the numerals around the edge of the area. Hide a quantity of bean bags under the bucket or hat and then reveal. The children subitise how many and then run to swat the correct number.

Outdoors

Provide children with a tray that has a range of natural items in - leaves, pebbles, conkers etc. Set out buckets that have the numbers 1 – 5 on the front. Can we put the right number of items in each bucket? Can we take a bucket and go and find up to 5 items?

Enhancements to areas of learning

Mark Making

Provide birthday cards with an assortment of ages for the children to match, sort, order and compare. This could start with cards from 1-5 and easily be extended to larger numbers. Blank cards can also be available in case the children would like to make their own cards.

Maths Area

Set up a number rhyme table to encourage the children to re-enact the songs and rhymes you sing. Provide characters, numerals, books and resources to enhance the area. The rhymes can be changed regularly.

Digging Deeper

Build and Count

Provide children with 5 separate connecting blocks. Encourage them to join their blocks to build a tower and then to explore other shapes they could build with 5 blocks. How many different ways can they find to join their blocks?

The children may build the same shape in different orientations so encourage them to turn their shapes around to check that they are not the same as another shape.

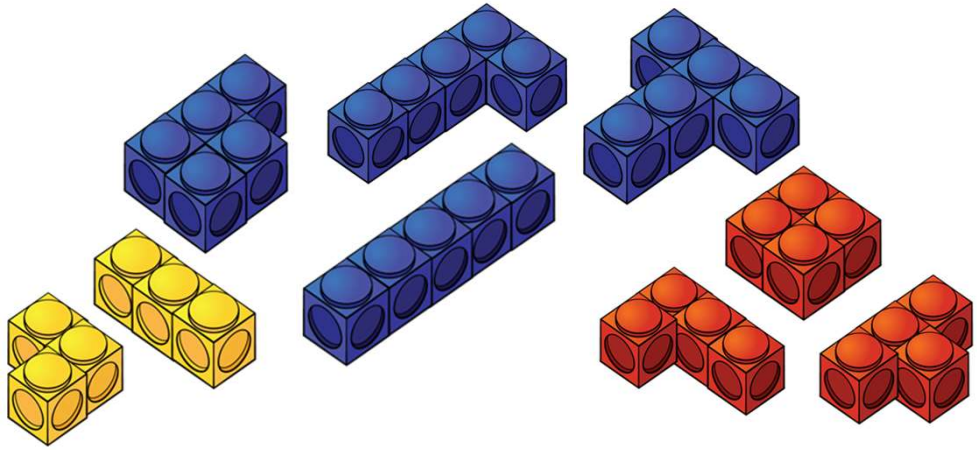
Ask the children to explore different shapes they could build using 2, 3 and 4 blocks.

There is just one way with 2 blocks, 2 ways with 3 blocks, a few with 4 blocks and many with 5 blocks.

Numberblocks Series 1 Episode 11 Stampolines also looks at different ways to arrange up to 5 blocks.

Key Questions

How many blocks are there?
Can you build them into a different shape?
Can you find another shape like yours?
Can you make a shape different to all the others?
How many shapes can you build with 3 blocks?
Are there more shapes with 4 blocks or 5 blocks?
How many different shapes do you think there will be with 6 blocks?
Can you create your own stampoline prints?



Put a selection of the shapes into a feely bag. Can the children find a 4 shape without looking? How did they know it was 4? If it is not 4, why not?

One More and One Less

Guidance

Children continue to count, subitise and compare as they explore one more and one less. Encourage children to use a five frame to represent numbers and to predict how many there will be if they add one more or take one away. Prompt children to see the link between counting forwards and the one more pattern and counting back and the one less pattern. There are many books and rhymes to support one more and one less.

Other Resources

The Gingerbread Man- Traditional Tale
The Enormous Turnip- Traditional Tale
The Very Hungry Caterpillar- Eric Carle
Stella to Earth! – Simon Puttock

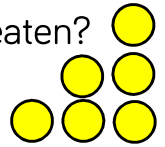
Five little speckled frogs
Five currant buns
Five Little Ducks

Prompts for Learning

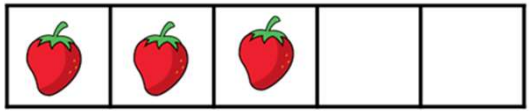
Use the songs and stories suggested to role play one more and one less with the children e.g. Five currant buns.

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. Encourage the children to notice that there is one less bun each time, but one more penny.

Read The Gingerbread Man and as you read, represent the growing pattern of characters using counters or cubes. Can the children see the one more pattern building? Can they predict what will come next? What will happen when the gingerbread man is eaten?



Ask children to make a number on a five frame.

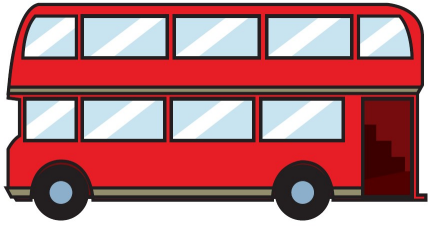


Can you show me one more? One less?
Use a 1-5 number track underneath the five frame.
Can you point to the number you made?
Can you point to one more and one less than your number?

One More and One Less

Outdoor

Create a bus route around the outdoor area. Start with a driver on the bus and have different bus stops around the route. To start with, ask one child to stand at each stop. When the bus stops, one more child gets on the bus. Encourage them to say how many are on the bus altogether, noticing there is one more each time.

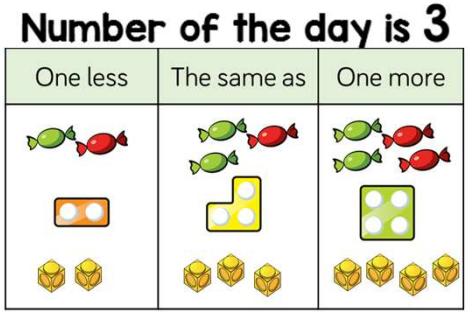


This activity can be extended as children explore one less when people get off the bus and further addition and subtraction as multiple people get on and leave the bus.

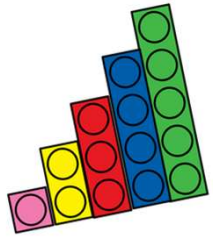
Enhancements to areas of learning

Maths Area

Provide numerals, objects and picture cards for the children to compare. Have a number of the day and ask the children to find one more and less than the number using different representations.



Construction



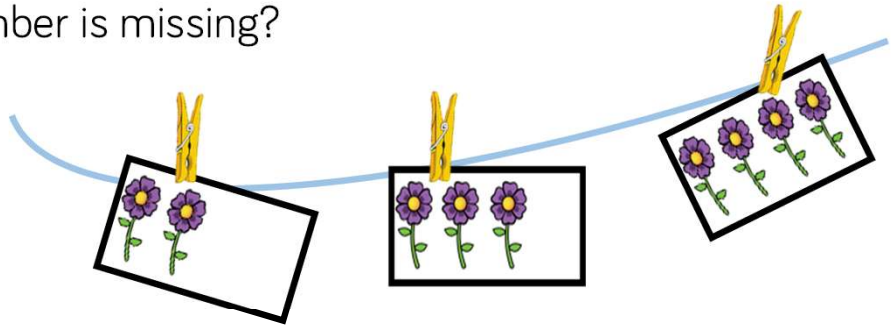
Show the children one more staircase patterns built with different materials e.g. lego, building blocks, bricks. Encourage them to build their own staircases looking at how many items they use for each step. Can they match them to the number track?

Digging Deeper

Washing line

Provide children with pictures of objects to arrange on the washing line in order. As the children order the pictures encourage them to use the language of one more and one less.
What can you tell me about 3?
Prompt the children to see that 3 is one more than 2 and also one less than 4.

Hide one of the cards and ask the children to work out which number is missing.
What strategies will they use to work out which number is missing?



Key Questions

Can you find 1 more than 3?
Where will you place this on the washing line?
Can you find a picture with 1 less than mine?
Can you find a picture that is 1 more than …. but 1 less than ….?
How many are in the bag?
If I add 1 more, how many will there be now?

Hidden Objects

With the children count 4 items into a bag.
Ask the children to confirm how many there are inside the bag.
Put in one more or take one out. How many are in the bag now?
Once the children are confident in predicting 1 more and less, this can be extended to adding 2 or 3 more or less.
Encourage the children to use their fingers or 5 frames to represent the hidden objects.

Shapes with 4 Sides

Guidance

Children learn that squares and rectangles have 4 straight sides and 4 corners. They begin to recognise these shapes on everyday items in the classroom and outside. Encourage the children to build their own squares and rectangles. It is important to show squares and rectangles in a variety of different sizes and orientations. Can they spot any other shapes with 4 straight sides.

(Note for teachers: In mathematics, squares are classed as special rectangles with 4 equal sides)

Other Resources

Square - Mac Barnett and Jon Klassen

Mr Strong – Roger Hargreaves

Bear in a Square – Della Blackstone

Number blocks Series 1 Episode 6 - Four

Prompts for Learning

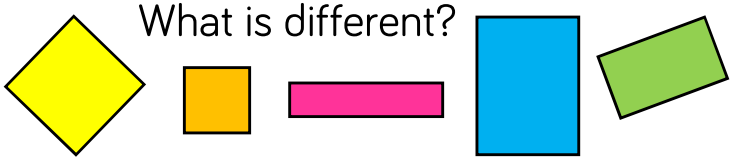
Show the children a variety of squares and rectangles in different sizes and orientations.

Choose one of the shapes. Ask the children to tell you what they notice.

How many corners can they see?

What if we turn it around, is it still the same shape?

Compare a square and a rectangle. What is the same? What is different?

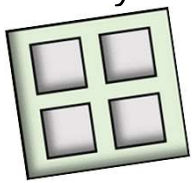


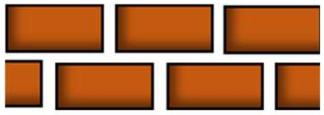
Show the children pictures of buildings or street scenes.

What shapes can you see in the picture?

How many squares and rectangles can you count?

Can you make your own pictures using squares and rectangles?





Go on a shape hunt. Where do you see squares and rectangles on everyday objects?

How many different squares and rectangles can you find inside and outside?

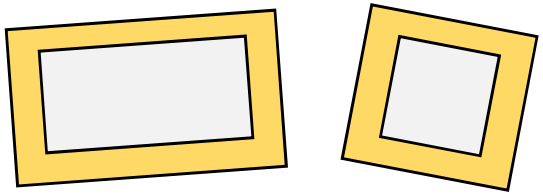
Shapes with 4 Sides

Modelling

Using the street scene images, discuss the different types and shapes of different homes. Provide a variety of boxes and ask the children to build their own models to create a street scene. Can they add square and rectangular windows and use torches to light the homes up from the inside.

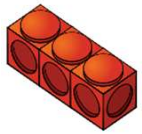
Loose Parts

Provide square and rectangular frames of different sizes and a selection of loose parts. Ask the children to fill each frame with different loose parts. Which frames hold the most? Compare how many different sized loose parts can fit inside a frame E.g. fir cones, pebbles and shells.



Enhancements to areas of learning

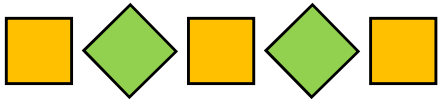
Maths Area



Show the children how 4 multilink cubes can be joined to build a square face.
Can they build squares using 4 cubes? What other quantities of cubes will build a square face? How many different rectangles faces can they build using the cubes?

Art Area

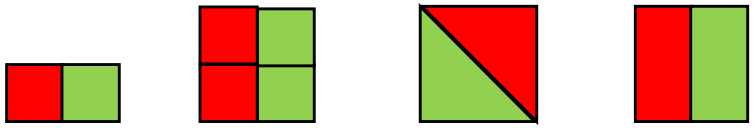
Provide a range of items such as wooden blocks, duplo, lego etc for the children to print with. Which objects make the best square and rectangle prints? Can you make a repeating pattern? Can you make a pattern like the bricks on a wall?



Digging Deeper

Combining Shapes

Ask the children to investigate which shapes they can make by combining squares, rectangles and triangles in different ways.



Can you build a small square, a medium square and a large square? You could draw outlines for the children to fill initially.

What shapes did you use to make your squares?
Is there a different way to build the same shape?

Can you build a square using rectangles?
How do you know it is square?
Can you build a rectangle using squares?
How do you know it is a rectangle?

Key Questions

What shapes can you build?
Is there more than one way to make this shape?
What shapes can you make by joining 2 squares?
By joining 2 rectangles?
2 triangles?
Can you fill this shape leaving no gaps?

Matchstick Shapes

Use matchsticks to build squares and rectangles.
What is the smallest square you can make?
How many matchsticks did you use?
What is the largest?
Can you count all of the matchsticks you used?

What is the smallest number of matchsticks needed to build a rectangle?

Night and Day

Guidance

Children talk about night and day and order key events in their daily routines. They use language to describe when events happen e.g. day, night, morning, afternoon, before, after, today, tomorrow.
Children begin to measure time in simple ways e.g. counting the number of sleeps to an important event or using timers to measure durations of events.

Songs and Stories

Fox in the Dark – Alison Green
Peace at last- Jill Murphy
Kipper's Monster – Mick Inkpen
Day Monkey, Night Monkey – Julia Donaldson
The Dark, Dark Tale – Ruth Brown
Funnybones – Janet & Allen Allberg
Days of the week song

Prompts for Learning

Make a visual timetable of the important events in the school day. Order the events each day and talk about what we are doing 'now', 'next' and 'later'.
Refer back to the timetable throughout the day, asking the children questions relating to it.
What are we doing now? What are we going to do next?
What are we doing this afternoon?

Sing songs to sequence the days of the week – which days do we come to school and which do we stay at home?
Use a class calendar to introduce time durations and think about 'how many sleeps' there are to important events.

Use stories and non-fiction books to introduce the idea of nocturnal animals and explain that as we go to sleep, some animals are waking up and come out at night.

Use pictures to order familiar activities and stories using key language to describe the sequence e.g. making pancakes, getting ready for bed, retelling a story.

Night and Day

Home Corner

Put a calendar into the home corner. Can we put everyone's birthdays onto the calendar? Whose birthday is next? Can we put other important events on to the calendar? How many sleeps is it until the next important event?

Outdoor

Label 2 areas outside daytime and night time. Call out an activity and the children run to the day time or night time area. For example, stars appear, we put on pyjamas, we get dressed, foxes come out, we eat lunch, owls hunt etc. Encourage the children to suggest some of their own night and day activities.

Enhancements to areas of learning

Cooking Area

Make pictures for a simple recipe. Ask the children to order the pictures to help them to follow the recipe. Encourage the children to make pictures to represent the steps for their own recipes in the mud kitchen.

Water

Provide a sand timer, a fishing rod and magnetic fish in the water area. How many fish can the children catch before the sand runs out? Use the timer to measure the activity and then count the fish.

Digging Deeper

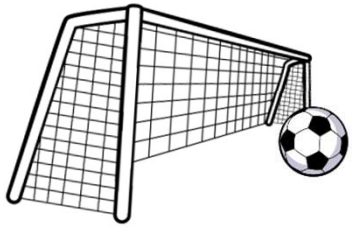
Obstacle Course

Make an obstacle course in the outdoor area.
What do we do first? What comes next? Can we make picture cards to explain the instructions to other children?

Use a timer to measure how long it takes each child to complete the obstacle course.
How will we know if we get faster at completing the course? Will the number of minutes go up or down?
How can we work out who comes first? Can we count aloud to measure how long it take us to complete the course?

Encourage the children to make their own obstacle courses that take a longer or a shorter time.

Goal!



Set up some mini goal posts. Ask the children to score as many goals as they can before the timer runs out. Each time they score a goal they can collect one bean bag and take it back to their bucket.
At the end of the time ask each child to count their bean bags. How many goals did they score?
Repeat the activity – if the children want to score more goals will they need to work more quickly or more slowly? Count up again – did they beat their score?

Key Questions

What do we need to do first?
What do I do next/after that/then?
How many minutes did you take?
Who was the fastest? Did they take more minutes or less minutes than you?
How many goals did you score?
How could you score more goals this time?