Numbers and Shapes

IMPORTANT Parent or Carer –
Check that you are happy with any weblinks or use of the internet.

Activity 1 – Exploring and recognising shapes

Go on a shape hunt

What to do	What you need
○ Explain that you are going to be going on a shape hunt looking for 2D (flat) shapes. ○ Talk about the different shapes that you might see - *this is more a warm-up than to test shape knowledge.* ○ Go on the shape hunt, spotting, describing and identifying the shapes that you can see. You could do this on a walk (*pavements, houses and signs have lots of potential for spotting*) or around your home. ○ Record the shapes you spot by drawing and/or photographing them. ○ Not all the shapes will be traditionally mathematical shapes (*like triangle, square, circle,* etc.). It is fine to have heart, star and moon shapes etc.	Paper, pencil, and something to lean on… Or a camera/phone. 
Extension	**Questions to ask**
Make a shape book. Draw or use photos and label the shapes. Talk about the properties – number of sides and points, straight or curved sides. Play a shape spotting games with Super Numtum: https://www.bbc.co.uk/cbeebies/games/numtums-kingdom-of-fluffy	What shapes will we see? How many sides/points does that shape have? Can we find any circles? How many triangles have we spotted? Why is a star shape not a triangle?

Activity 2 – Counting and number recognition

Create a counted collection

What to do	What you need
○ Show the collecting containers. Read the numbers together. ○ Discuss what sort of things your child could collect in them. Help them to think about what might fit inside and what might not. ○ Set them off collecting, encouraging them to count the objects in carefully. ○ Get them excited by saying that you are really looking forward to seeing what they will collect. ○ Ask your child to share their collection. Check the correct number is present together and admire their haul.	A selection of collecting containers, labelled with numerals written inside: e.g. • *an eggbox with 1,2,3,4,5,6 written, one number in each section* • *6 cupcake cases with numbers on the bottom 2,4,6,8,10,12 placed inside a tin (blu-tak-ed in place)* • *6 flowerpots labelled 10-15* • *A grid drawn in chalk with different numbers written inside the boxes* And things to collect, e.g. *different petals, leaves, grass blades, mini figures, Lego pieces, beads, buttons, hair bands,* etc.
Extension	**Questions to ask**
Display the collection. It could have labels and a sign to introduce it. Change the numbers for a new collection. Encourage your child to write some new numbers, forming each digit carefully*. Change where the collection is made – take it into the garden, into the kitchen, to the toy box, etc.	What are these numbers? Can you say them? Which is the biggest/smallest number? What could we collect 6 of in here? Would 6 fit? How could we check that there are 9 daisies in here? How many more/less do we need?

*If you are not sure about number formation, these rhymes are commonly used in schools:
https://www.youtube.com/watch?v=vjB5aSyWD6U

Activity 3 – Counting and using number facts

Jumping up and down a number track

What to do

- Draw a number track: a series of boxes or divisions in a line with numbers 1-12 written in order along it (*like hopscotch but only one square thick each time*).
- Jump on each number saying it aloud going forward. Repeat starting on 12 and jumping back.
- Play about, jumping forward and back saying 'add one/takeaway one' 'add two/takeaway two' as you jump forward and back.
- Start just before 1 on the track and flip the plate. The game starts on the first +2. Take turns to flip the plate jumping forward and back the displayed number of places. You win by landing on (or going past) the 12.

What you need

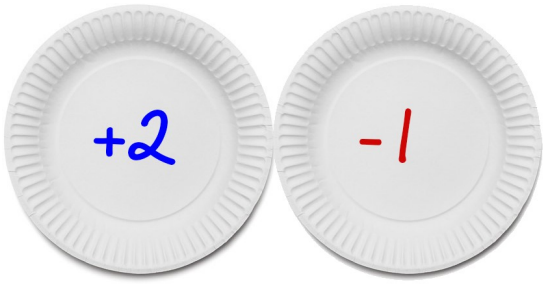
Chalk and a pavement or patio

Or

A large roll of paper and thick pen

and

a paper plate with +2 written on one side and -1 on the other



Extension

Make a game die (cube shape made sticking 6 card squares together). Include *+1, +2, -2, -1* and a couple of comedy actions, e.g. *pat your head and rub your tummy* on the other two squares.

Make a mini version on A4 paper and use counters to make a competitive game.

Questions to ask

I want to write the numbers from one to twelve in order. Can you help me?

Can you jump to one more/less?

Can we add 1/takeaway 1 by jumping?

How many jumps would +2 be?

The plate shows -1. What do we do?

Activity 4 – Exploring and recognising shapes

Make a shape picture

What to do

- Make some shape stencils by drawing them on card and cutting them out, e.g. *circle, square, rectangles and triangles of different types.*
- Show your child how to use the stencils to draw their own shapes. They may need support knowing how to hold the stencil still with one hand while drawing around it with the other. *This can be tricky and may require adult help each time.*
- Together cut out the shapes and talk about the different ones you have made.
- Now your child can make some pictures arranging the shapes and sticking them down when they are happy with their position.

What you need

Card, children's scissors, pencil, paper (coloured if possible), paper glue

Extension

Do not provide glue. This can be a reusable activity which just needs a small container to keep the pieces in.

Include a greater range of shapes, e.g. *hexagon, octagon, parallelogram*, but focus talk on describing these shapes' properties rather than learning their names.

Questions to ask

How can we use a stencil?

What shapes do we have stencils for?

How do we know this is a triangle?

How many points does a square have?

Is this a rectangle or a square? How can we tell?

What different patterns/pictures could you make?

What shape did you use for the hat?

Activity 5 – Counting and using number facts

Play with number bond egg puzzles

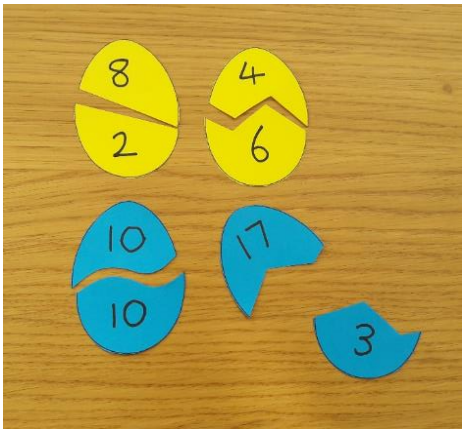
What to do

- Start with number bonds to make 10. *These are pairs of numbers which when added together make ten.*
- Print the egg shapes (or draw some) on card. Cut each egg in half to make a different 'crack' design. On the top and bottom of each egg, write a pair of numbers which total 10.
- Your child can then explore matching the egg halves to make the correct number bonds to 10.

Tip: *You don't have to include all possible combinations to start with. Select from the possible pairs and add more when your child seems confident.*

What you need

Card, scissors, thick pen, egg template (*see below*)



Extension

Hide the shell halves to make a treasure hunt game (around the garden/house or in dry cereal).

Make a second set which are not differently cracked – your child can use counting and/or memory of the bonds to match them.

Create a new set (a different colour if possible) with number bonds to make 20.

Questions to ask

Do you know some number bonds to make 10?

Which pair of numbers make 10 when you add them? Can you find the pairs?

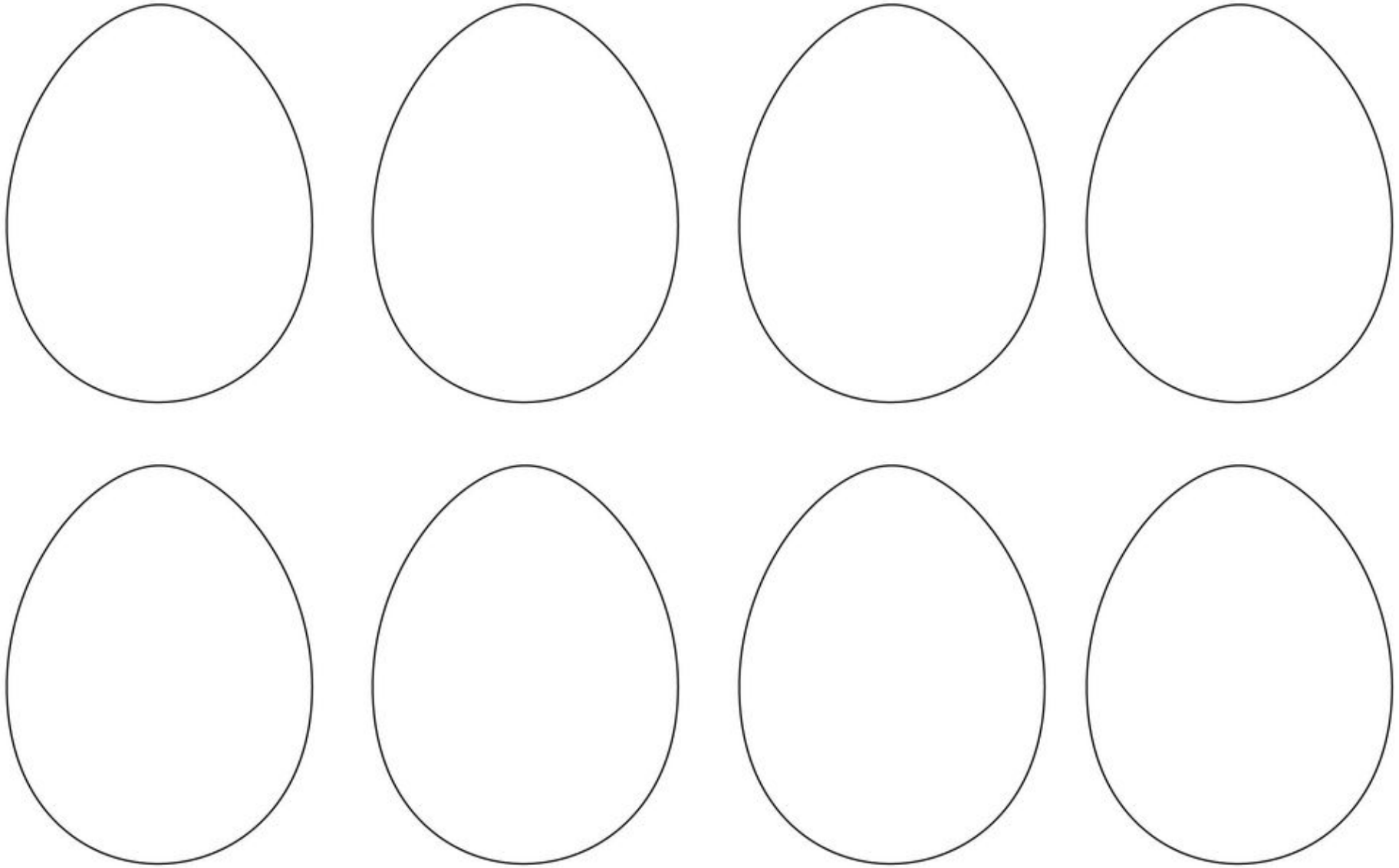
I have 8 here. How many more will I need to count to 10?

Which is the biggest/smallest number?

Number Bonds to 10

0+10
1+9
2+8
3+7
4+6
5+5
6+4
7+3
8+2
9+1
10+0

Number Bonds - Egg Template



Activity 6 – Counting and using number facts

Work out a missing number

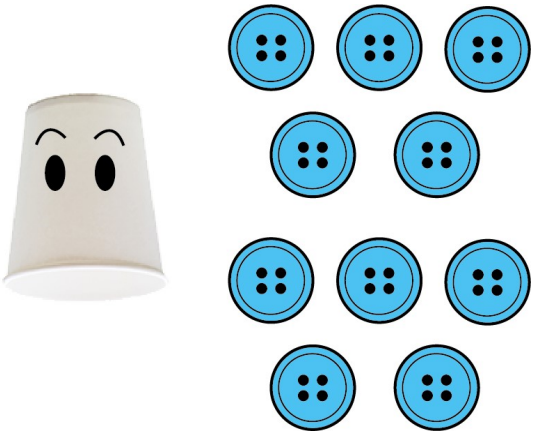
What to do

- Start with 5 counters on a surface. Count them together. Explain that the cup is going to catch some counters and the only way to free them is to say how many are under the cup.
- Make a game of the cup hovering over and then 'catching' some counters. Can your child work out how many have been caught underneath using the number of counters remaining?
    - *They may use number facts (3 still free, 3+2=5 so 2 caught), counting on with fingers (3 free, so 4…5…= 2 under the cup) or guessing.*
- Repeat the game. Your child may become more strategic in their working out as they play, or you can reduce the number of counters to help them.
- You can repeat this game, changing the number of counters in play.

What you need

A cup (optional eyes drawn on)

5-10 counters (*cereal shapes, buttons, coins*, etc.)



Extension

Perform the trick together in front of an audience but tell them you are using 'magic'. You could cover the counters with a magic hat (paper rolled in a cone with stars drawn on it) and see if you and your child can hoodwink the audience using magical maths.

Use this principle with small animals or people and a box for a building. How many people are in the house/animals in the barn?

Reverse roles and get your child to test you.

Questions to ask

How many counters are there?

What if the cup trapped one? How many would still be free?

There are 5 Cheerios. *Munch, munch, munch.* Now there are two left. How many has the cup eaten?

Can we count on to find how many are hidden?

If there are 4 still free then how many are under the cup?