



Using the Outdoors

Some of these activities can be done with the whole class; others are more suitable for using with small groups.

❖ TREASURE HUNT

Hide a set of interesting objects (e.g. pretend jewels) around your outdoor area, then take the children on a hunt to find them. After a set amount of time, meet back together to talk about the 'treasure'.

Questions could include:

- How might you count your jewels?
- How many jewels have you found?
- How can you be sure you have counted all of the jewels? Could you check in a different way?
- Who has collected the most / least? How do you know?
- How could we sort the jewels?

❖ NUMBER HUNT

Hide a set of wooden numerals or number cards (one per child). The children have to find a number, bring it back to an agreed point and then arrange themselves in order. As a variation, they could place the numbers along a number line (either chalk the line or use a skipping rope - label the ends 0 and 10).

Questions could include:

- Which number will go before 7 / after 3?
- Hold up your number if it is less than 5.
- Show on your fingers a number between 4 and 8.
- Which is the largest number on the line? How do you know?
- I'm thinking of a number. My number has a straight line at the top. Which numbers on the line might I be thinking of?

❖ WRITING NUMERALS

Provide children with different resources to practise writing numerals. These could include large paintbrushes and buckets of water, chalk, paint (to use on large rolls of wallpaper). Numerals could also be traced in sand/talc or made out of playdoh/pieces of string. Children should work on a large as well as a small

scale. Also providing children with access to clipboards and paper outside will encourage them to record any mathematical work they are doing.

❖ **SHAPE HUNT**

Hide a set of shapes (2D or 3D - these could be plastic shapes or collected ones). Place a hoop on the ground for the children to place the shapes in when they have been found. Discuss the shapes that have been found and try out different ways of sorting them. Draw sets on the playground and write labels according to the children's suggestions.

Questions could include:

- What can you tell me about this shape?
- How do you know this is a square?
- How do you know this shape is not a square?
- I'm thinking of a shape. It has 3 corners. Can you see the shape I might be thinking of?
- What is the same / different about these two shapes?
- How could we sort these shapes?
- Why does this shape belong in that group?
- Why doesn't this shape belong?

❖ **PATTERNS**

Provide a range of materials for children to use to make repeating patterns.

These could include objects for printing or objects to be arranged e.g.

- dip old shoes with different patterned soles into water and print a pattern on the playground
- paint old tyres with paint and print a pattern on large sheets of paper
- use small apparatus - skipping ropes, quoits, bean bags etc - and arrange in a pattern on the playground
- collect natural materials - sticks, pebbles, leaves etc- and make a repeating pattern around the edge of the playground.
- use fingers / tools (feathers, combs, cotton reels, glue spreaders etc) to make patterns in wet sand
- use people to make a pattern e.g stand, stand, sit

❖ **DOMINOES**

The children stand in a circle, holding a large domino. Ask them to perform various actions depending on the domino being held.

Instructions might be:

- Swap places if your domino has 7 spots.
- Stand in the middle if your domino has more than 6 spots.
- Sit down if your domino has less than 4 spots.
- Turn around if your domino doesn't have 5 spots.
- Hop across the circle if your domino has between 4 and 7 spots.

❖ FIND THE NUMBER

Chalk numbers on the playground or stick number cards to the wall. There should be three or four copies of each number. Ask a question or give an instruction. The children have to stand by an appropriate number. Ask the children to explain their reasoning.

Questions/instructions could include:

- Which number is one more than 6?
- Stand by a number that is smaller than 4.
- Find a number that comes between 5 and 8.
- This is the number of toes you have.
- What is double 3?
- Why did you choose that number?

❖ GET IN GROUPS

Draw some large shapes on the playground. The children move about until they hear a drum beat. This is the signal to stand in a shape. Repeat asking different questions each time or giving different instructions (e.g. there must be three people in each shape, there must be 8 hands in each shape).

Questions could include:

- How many people are in your shape? How could you count them? How could you check?
- Which shape has the most / fewest people in?
- How many ears/feet/fingers in your shape? How did you count them? Can anyone think of a quicker way?
- How many groups of 3 can we make? How many children are left over?

❖ SAND / WATER

Put the sand and water trays outside for the children to use (less mess to worry about too!). Activities could include:

- digging for wooden numerals in the sand (place in order)
- using a sieve to 'fish' for milk bottle tops floating in the water (Who has caught the most / least?)
- using different shaped moulds in wet sand to make 'pies'.
- experimenting with emptying and filling different sized and shaped containers (order them according to how much they hold)
- using a squeeze bottle to make jets of water (How far can you make a jet travel? Alter the angle to make the jet travel further)
- making a 'cake' in the sand using different sized spoons, cups and jugs to 'measure' out the sand.
- hunting / fishing for shapes and sorting them into sets

❖ BALL GAMES

Use a variety of balls, beanbags and quoits to practise counting and estimating skills.

Tasks could include:

- Count how many times your partner can catch a ball without dropping it.
- Predict how many times you can bounce and catch a ball in a minute.
- Can you and a partner roll a ball 20 times between you in a minute?
- Who can throw and catch a ball in the air the most times without dropping it?

❖ NUMBER TRACKS AND LINES

Use floor tiles to make a number track or chalk a number line on the playground. Use the track / line for a variety of activities. You could also ask the children to make their own tracks and lines outside.

- Swap over some of the numbers and the children have to work out which have been moved
- Hop to 10 using right and left legs e.g. 6 hops on the right leg and 4 hops on the left leg
- Choose a large domino and find the total number of spots. Place the domino on the corresponding number on the line. Can you cover all of the numbers? Which number has the most dominoes on it?
- Roll two large dice and find the total. Place one of your colour beanbags on the number on the line. Play with a partner to see who can cover the most numbers (there can only be one beanbag on a number).
- Throw a large die and double the number. Place a beanbag on the answer. Repeat several times. What do you notice about the numbers that are covered?
- Mark out a number track or line but don't write on the numbers. Children choose a wooden numeral and place it correctly.

❖ MAKING SHAPES

The children need to be in small groups and each group needs a large loop of ribbon. The children hold the ribbon and experiment making different shapes.

Questions could include:

- What can you tell me about the shape you have made?
- How many different triangles can you make? How do you know the shape you have made is a triangle?
- Can you make a shape with 4 corners? All of the sides must be different lengths.

❖ SCORING GAMES

Games could include:

- Hoopla - throw 5 beanbags towards a hoop and score one point for every beanbag that lands in it (extend the game by placing a bucket inside the hoop - score two points for a beanbag in the bucket and one point for a beanbag in the hoop).
- Skittles - throw 2 balls to try to knock down 6 skittles - score a point for every skittle knocked down (make the scoring more difficult by numbering each skittle).
- Target - draw a number of shapes on a wall - throw a ball against the wall and score a point each time a shape is hit (change the scoring system by writing a number in each shape).

Encourage the children to record their scores in some way e.g. by using numerals or tally marks or by drawing pictures.

❖ MEASURING

Measure the length of the playground / how far from the door to the gate / how far around the grassy area:

- using footsteps (giant/fairy)
- by putting people in a line touching hands
- by laying out skipping ropes / lengths of ribbon / paintbrushes

Lie on a large piece of paper and ask a partner to draw round your body outline.

Dip your hand in paint and use handprints to measure:

- how many handprints tall you are
- how many handprints long your leg is
- how many handprints fit on your body

See how many children can fit:

- on a rug (lying down)
- in a hoop (sitting down)
- in a 'blob' drawn on the playground with chalk (standing up). Can you draw a 'blob' that exactly 7 children will fit in?

Compare how far two objects travel. This could include:

- rolling two different cars down the same slope
- rolling two identical cars down different slopes (e.g. make one slope out of a piece of cardboard and the other out of a piece of sandpaper)
- rolling two different balls down a path
- throwing a beanbag or javelin (a soft one!)

All of these activities provide the opportunity to discuss the difficulties with the use of non-standard units.

❖ BUILDING

Provide opportunities for the children to build a range of structures using boxes/bricks (different shapes and sizes) and other available materials. The children could choose what to construct or be given a set task e.g. a den that at least four children can fit inside, a bridge that stretches from the door to the fence. Use the structures to discuss the properties of different 3-D shapes.

Questions could include:

- What are you planning?
- Do you think you have all the shapes you need?
- Which shapes are the best for building? Why?
- Why do you think your tower fell down?
- How could you make the bridge longer?
- Describe how you made your 'den'.

❖ ROUTES

Provide a range of opportunities for children to hear and use words describing position, direction and movement.

Tasks could include:

- drawing a track on the playground (right-angled turns only) and giving a partner directions to move from the start of the track to the end (your partner could close their eyes to make this more difficult).
- laying out a number of pieces of apparatus and giving instructions to move through the obstacle course e.g. go between the cones, over the bench and under the bar. (The children could also make up their own sequence of actions and then give instructions to others).
- pretending to be a robot and asking the children to give you directions to pick up a box placed on the other side of the playground.
- playing a game of 'Simon Says' e.g. Simon says stand opposite your partner / stand between the benches / hop on your left foot / run around the outside of the playground

❖ SYMMETRY

Lay a skipping rope on the ground to represent the mirror line. Two children stand opposite each other on either side of the rope (imagining they are looking in a mirror). One child makes a shape and the other child makes the reflection. Increase the difficulty by allowing movements. The children could also make a symmetrical pattern by laying out objects on either side of the mirror line. Take photos of the shapes/patterns to record the children's work.

❖ SOUNDS

Have an object that makes a clear sound e.g. a drum, a puppet that squeaks, coins dropped into a cup

The children count the sounds (making the sounds in an irregular rhythm makes the counting more difficult).

Some ways of response are suggested below:

- the children jump or hop the same number of times
- they get into groups of that number
- they collect that many beanbags or markers (place these around the playground)
- they put the same number of feet in a hoop (place hoops at regular intervals around the playground - children can put one or two feet into it).

❖ PARTITIONING

Explore different ways of partitioning the number six.

Activities could include:

- arranging 6 children onto 2 mats (4 on one mat and 2 on the other)
- throwing 6 beanbags towards a hoop (1 in the hoop and 5 outside)
- knocking down 6 skittles (3 down and 3 still standing)
- throwing two large foam dice and trying to score 6
- putting 6 spots on a ladybird (2 spots on one side and 4 on the other) - draw a large ladybird on the playground with chalk and use quoits as the spots.

