

Thinking about maths with preschoolers!

Number

The ability to **rote** count is very important. Children will attach **meaning** to the words through experiences with **concrete materials**. Children need lots of opportunities to count forwards and backwards. Finger plays and songs are great here eg: “five little speckled frogs”, “five little monkeys”, “once I caught a fish alive” etc. Count beyond 10 from time to time. Numbers 11, 12, and 13, can be awkward to learn as they don’t follow the usual word pattern.

Use fingers for counting. When adding two sets together fill up one hand first ie: $3+3$ would look like five fingers up on one hand and one finger on the other hand. This way the children will be able to move toward using **counting on** skills. They will quickly learn that there are always five fingers on one hand so they don’t have to count them each time – so... $3+3$ when it looks like $5+1$ is easier to count.

Opportunities to develop children’s understanding of number happen everywhere. Toddlers in the family play area often demonstrate their understanding of number when setting the table for their dolls. They will often know instinctively that 3 chairs are needed for 3 dolls, and then be able to set the table with 3 plates, and 3 cups etc. Lots of **concrete experiences** through sharing out food, counting out items, or seeing numbers on letterboxes, number plates, or on the clock/calendar etc. are all valuable learning opportunities.

Measurement

Children need to learn that stuff can be measured and that there are different ways to measure different things – **speed, distance, weight, volume, area, temperature, length**. The language of measurement is really important and revolves around concepts of “same”, “more”, and “less”. So heavier, taller, faster, bigger, further, fuller, hotter, and their opposites are all important words for children to be getting experience with.

Standard and non-standard units of measurements are both important. Standard units like cm, grams, Celsius, km/h, m², litres maybe useful in some instances, but it is good to start with concrete comparisons eg: this block is longer/shorter/ or the same length as your shoe. Non standard units like blocks can be used either by flipping one block over repetitively or by using several blocks of the same length and then counting them eg: This wall is the same length as 10 big blocks.

Algebra

We can help children to develop concepts of patterns by providing examples and lots of opportunities to practice patterns.

Repeating patterns are everywhere – days of the week, routines, visual patterns on fabric, and wallpaper. Finding, describing/identifying, and copying simple patterns are important. Threading beads and print making are opportunities for children to design their own patterns.

Examples of **growing patterns** include spirals, seriated puzzles and counting rods. Any opportunities to put things in order of size are valuable.

Geometry

My main tip here is to make sure we give children the correct names for shapes, particularly 2D and 3D shapes. A ball is a sphere rather than a circle and a box is a cube rather than a square. Opportunities to find shapes in the environment are great and if the opportunity is there it may also be appropriate discuss the rules or definitions of shapes, eg what can or can't be a rectangle??

Statistics

Statistics is about **collecting, sorting, recording, analysing, and the language of probability**. Children enjoy collecting and sorting things and there are usually lots of opportunities for this in general play. Sorting out a pile of matchbox cars for instance offers a range of options. Cars can be sorted according to their use eg: vehicles for shifting loads/ vehicles for shifting people, vehicles that you would use on a farm/vehicles for building roads, they can be sorted by size or colour, which are new or old, which travel down the slide the fastest etc. Helping children to articulate what their sorting rule is and why other items can or can't be included is a useful. You can challenge children to formulate more complex rules too.

Collecting data can be as simple as asking who has a cat at home, or who has white shoes on. Data can be recorded simply by putting blocks in a pile to represent those who have cats, and another pile representing those that don't. This will make a good visual record like a bar graph. Children recording the growth of a sunflower could make predictions based on recorded growth as to how tall the sunflower will be by this time next week. The possibilities are endless!!!