

## Early Level Numeracy Activities



Here are some activities that could be incorporated into group times that link in with the numeracy progression framework.

**The activities are only examples and can be added and amended to meet the needs of the children in the group.**

**These activities should be used creatively by the staff and only as a guide.**

Some of these activities are taken from Education Scotland Numeracy Professional Learning Resource.

Remember to add extra support or challenge when needed.

The activities in **green can also be used outdoors to support numeracy development.** Some of these ideas are from wonderful Juliet Robertson Creative Star. [www.creativestarning.co.uk](http://www.creativestarning.co.uk)

## Number and Number Processes

I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order. **MNU 0-02a**

I use practical materials and can 'count on and back' to help me to understand addition and subtraction, recording my ideas and solutions in different ways. **MNU 0-03a**

**These activities should be used to introduce 0-10, 0-20, 0-30 challenge and support as needed.**

- **Count the number of children in the group**
- **Counting rhymes-**
  - 1,2,3,4, 5 once I caught a fish alive
  - 5 Current Buns,
  - 5 Little Speckled Frogs
  - 5 Little Ducks
  - Five Little Monkeys
  - 10 Fat Sausages
  - Zoom, Zoom, Zoom we're going to the moon
  - One, Two Buckle my Shoe
  - Five little men in a Flying Saucer ( counts forwards and backwards)



Online activities: <https://www.topmarks.co.uk/maths-games/3-5-years>

20 counting activities: <https://theimaginationtree.com/20-counting-activities-preschoolers>

**Physical activities:** I wonder who can do ... 5 star jumps, 4 hops, 3 claps etc.

- Count anything: children, loose parts, objects inside or outside.
- Using sensory art to create a number using sand, paint, foam, etc.
- Go on a 'number hunt' matching number names and objects of the same value.
- Create a numbered car park with numbered cars, suggest children to place, for example, car 8 in parking space number eight at tidy time.
- Having numbers and number names on containers. Children select a container and put objects of their choice in the container to match the number.
- Make a natural number line. Play games with it. Can you stand on number 5? etc
- Count forwards and backwards in sequences
- Hidden numbers- take a number away from a sequence. Oh no a number is missing, who can tell me what it is? What number comes after number...? What number comes before...?
- Mix up some of the numbers, make it into a drama. Oh no what has happened to the numbers? Who can help to sort them out and put them in the right order?
- Bury/ hide objects in the sand- Count the number of objects that are being re-buried. *"I see you buried another shell. That leaves two."*
- Look for addition and multiplication opportunities such as counting the total number of legs on four found dinosaurs.
- Create a large 10/ 5 frame out of an old pillow, use any loose part to demonstrate different numbers.
- How can you sort the hidden objects found in the sand? Size, weight, shape, living, non-living, can it be stacked? Rolled? Ask the kids for ideas.



### Objects in the bottle

- How many objects can be pushed inside one bottle?
- How many will stay inside when the bottle is turned upside down?
- Show your bottle to others to estimate the amount of objects inside your bottle.



## Estimation and Rounding

*I am developing a sense of size and amount by observing, exploring, using and communicating with others about things in the world around me. MNU 0-01a*

All of the activities above can be used to teach the concept of estimating.

Introduce the word **estimate, guess and check. Use I wonder questions**

- *I wonder how many sweets are on the table?*
- *Who can guess how many there are?*
- *How can we check how many there are?*
- *I wonder how many paintbrushes we will need for everyone to get one each?*
- *I wonder who has more shells, you or me?*
- *Can you find me one more/less?*

### How to make a simple Estimation Station

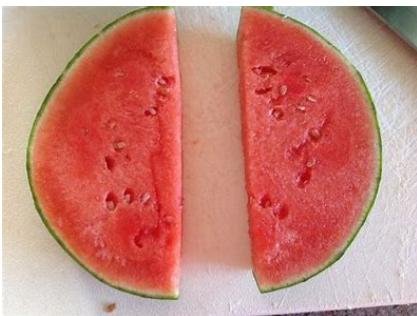


Introduce the words **big, bigger than, small, smaller than, the same** using the same activities.

## Fractions

*I can share out a group of items by making smaller groups and can split a whole object into smaller parts. MNU 0-07a*

Introduce the concept of sharing, equal and a half.



- *I wonder what the best way is to share these 4 apples between me and my friend?*
- *I need to make sure that we have the same number, we call this equal.*
- *I wonder how can we make sure that you and your friend have the same number of bricks?*

- Use a range of scenarios and children to create real life

examples

- Snack time- Who can cut their toast into two pieces that are the same size?
- Sharing food will be restricted during Covid
- Use playdough to introduce a half. I wonder who could give me half of their playdough?

## Money

*I am developing my awareness of how money is used and can recognise and use a range of coins.*

**MNU 0-09a**

- Allow the children to play with real money, **1p ,2p, 5p, 10p ,20p, 50p, £1 and £2.**
- Create shops for the children to buy and sell things.
- I wonder who can point to the 1p coin etc
- Who can give me a 5p coin?
- I have 5p do I have enough money to buy this banana for 6p?  
Discuss more or less.
- Introduce the concept of change. “If I give you 10p it’s too much money so the shopkeeper will give me some change back. “
- **Hide coins in the sandpit for a treasure hunt.**



## Time

*I am aware of how routines and events in my world link with times and seasons, and have explored ways to record and display these using clocks, calendars and other methods.* **MNU 0-10a**

- Days of the week song
- Here we go round the mulberry bush
- What’s the time Mr Wolf?
- Hickory Dickory Dock
- Talk about their daily routine, eg
- What’s the first thing you do in the morning? What happens next?
- Discuss the routine in the ELC.
- What happens at night time? How do we know it is night time?
- What happens in the morning?
- You could use some clothing and resources to help bring this to life. E.g. Who can choose which item of clothing I would wear to bed? Etc
- Use a simple interactive calendar to teach the months of the year, seasons, day of the week and the weather.
- Clock or watch hunt
- Who can tell me where you would see a clock?
- Why do we need to know the time?



### Time events happening in the sand pit

- Use a sand timer
- Try a countdown timer, like you find in a kitchen shop
- Sing a song (it's a non-standard unit of time)
- Count in elephants, e.g. "1 elephant, 2 elephants, etc. This is an approach to counting seconds.

### Invent time challenges

- Can you make a sand castle in less than three minutes?
- Can you stand still with your feet completely covered in sand for one minute? Congratulations – you are a sand statue.
- Can you learn to walk across the sand pit so that it takes you exactly one minute?
  - Is it possible to make your own sand clock from available loose parts?



## Measure

*I have experimented with everyday items as units of measure to investigate and compare sizes and amounts in my environment, sharing my findings with others. MNU 0-11a*

- Sand and water tray – Allow the children to fill, empty, pour, combine different sizes of containers into each other.
- I wonder which container will host the most water/sand?
- I wonder if all this sand will fit in this container? (**discuss most/ least**)
- Use balance scales to explore which objects, items are **heavy/heaviest, light/lightest**. Ask the children to hold the items to guess before you check on the scales.
- Simple baking activities using teaspoons, table spoons, scales and cups.
- Draw around their hands to compare the size. Use them to measure things.
- Eg. How many hands does it take to reach the end of the room?
- How many steps does it take to...?
- Use sticks to discuss which stick is **longer, smaller, thicker, thinner**.





- Who can find me something that is long?
- Who can find me something that is short?
- Who can find me something that is longer/shorter than...
- Put the children in order according to their height.
- Mark their measurements on a wall, monitor over the year how much they have grown.
- Who is the tallest in the group? Setting?
- Who is the fastest runner?
- Bury, hide, find objects in the sand – I wonder which one feels the heaviest? Etc
- How many scoops of sand does it take to cover each object?
- Why are some objects easier to hide than others? Size, shape etc.
- **Transporting items- explore mass, weight, movement –**
- Have a big bucket, truck or container where the children know they can dump the sand. This reduces the chances of the sand ending up in all sorts of places.
- Set up a pulley system. Pulleys are useful in terms of exploring mass and weight as they involve lifting or moving items vertically and horizontally. The purpose of a pulley is to make this work easier.
- Ensure wheel barrows and other wheeled containers are available. Talk about how it feels to move quantities of sand this way and whether it makes the mass of sand feel heavier or lighter.



### A human weighing machine

- Pretend to be a weighing machine.
- When you have two small buckets – hold them outstretched in your hands and show which one feels heavier and which one feels lighter.
- Tell the person the results. You are a talking weighing machine.

## Pattern and Relationships

*I have spotted and explored patterns in my own and the wider environment and can copy and continue these and create my own patterns. MTH 0-13a*

- Sort clothes by their patterns
- Copy and create rhythms to clap or use percussion instruments to follow.
- Create their own pattern on a ... t-shirt, shirt, shoes, dolly's dress etc.
- Look at and discuss patterns in the environment e.g. animal prints, leaves, flowers, insects etc.
- Create their own natural pattern.
- Create repeated patterns using a wide range of resources.
- Print patterns using fruit, hands, stampers etc.
- Go on a pattern hunt.



- Copy patterns in the sand, mud, rice, on stones etc.
- Extend: Introduce **first, next, before and after**

### Pressing and making prints

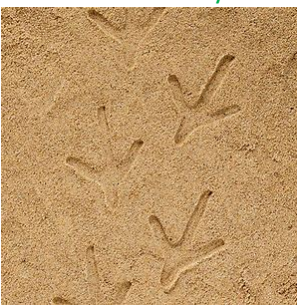
- **Footprint fun**
- Experiment with different ways of creating footprint patterns by moving in different ways:
  - Like a duck
  - A frog
  - Tiptoe-ing
  - Heel-to-toe

- **Make a footprint trail**

- Can you retrace your steps by placing your feet inside the footprints?
  - Is it possible to walk backwards and then walk forwards into your own footprints?
  - Use language such as bigger, smaller, curved sides, symmetrical, longer, shorter, wider, narrower.
- **Be a detective**

This is an important job for any visiting police to the sand pit.

  - Does every object make a print?
  - Can children recognise which object has made which print?
- Use Sammy the one-metre snake to measure with width and length of the print.



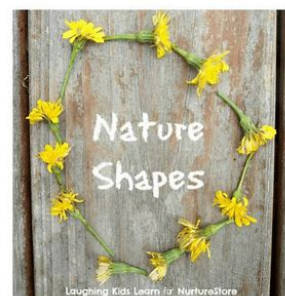
## Shape Position and Movement

### Properties of 2D shapes and 3D objects

I enjoy investigating objects and shapes and can sort, describe and be creative with them.

MTH 0-16a

- Go on a shape hunt. ( **square, circle, rectangle, triangle** )
- Create pictures/animals using 2D shapes
- Look at shapes in the environment
- I wonder why a wheel is **round** like a circle?
- I wonder why an ice cream cones in a cone shape?
- Junk modelling with 3D shapes
- Create patterns with shapes
- Use their body to make shapes
- Mystery shape bag, describe the shape and guess what it is.



- Eg. I wonder what this shape is, it has 4 **straight sides**. A square.
- Printing with vegetables to make shapes.

### Sculpting and shaping sand

- Damp sand is a wonderful medium for any shape work, especially on a large scale. You may need water near dry sand so that children can explore what happens when water is mixed with sand.
- Problem-solving naturally occurs as children work out how much water is needed. When the sand becomes too wet, patience is needed as it dries out and ideas for assisting the process are worth investigating. Sculpting and shaping help children see 3D objects from a range of perspectives and angles and can help with spatial thinking and reasoning.



### Sand sculpting

Big or small, there's always things to make. Sculpting is a hands on approach to exploring 3D objects. It enables children to view their work from a range of different angles. It helps foster the imagination which is an essential maths skill for helping to understand geometry and how shapes look in different dimensions and on different planes.

- A sand monster – think about the shapes of the scales and other parts of its body.
- Forts and rooms that are interesting shapes.
- Creating 3D models by packing sand into a range of containers and then gently emptying out, similar to sand castle building.
- Cars to sit in, lorries to ride on.
- Anything else?
  - Write recipes in the sand, create mud cakes, cut them up equally, create patterns on them etc.



If you don't have a sand pit, Kinetic sand will work brilliantly too!