



Numeracy in the Early Years



2022-2023

Playful Numeracy and Mathematical Development

Children are curious about the environments surrounding them, even before they are born. They want to know how things work and can use problem solving skills from an early age. Children constantly explore cause and effect through their play. Numeracy is not just about being able to count. It is about developing number sense which encourages creativity of thought and it allows children to interact with the world around them. Number sense can be used to understand everyday activities. Being able to recognise that symbols have different meaning in different contexts and the ability to quantify e.g. understand the two-ness of 2, is an important life skill.

Numeracy and mathematical thinking encompasses many different elements including recognition of numerical symbols, verbalising numbers and being able to recognise patterns and shapes. It involves many different skills such as understanding numbers, counting, problem solving, measuring, sorting and patterning. However, numeracy is not only about developing these skills. It is also about having the ability to apply these concepts in all areas of life. Therefore numeracy should be embedded throughout the curriculum and the environment and should not simply be seen as an area on its own.

Realising
the
Ambition



When I am a young child...

- Continue to provide me with richly illustrated story books with representations of number, shape and pattern to support conversations around these concepts.
- Continue to sing and recite counting songs and rhymes linking to visual representations of numbers that involve counting, ordering and recognising number.
- Encourage me to notice how numbers are evident in my environment and to enjoy using and writing numbers for a purpose.
- Continue to encourage me to play with numbers, having fun investigating and experimenting with quantity, through comparing and contrasting a variety of objects using mathematical language such as less than, more than, same as.
- Support my understanding and use of positional language within everyday experiences and through activities such as role-play, board games, digital technologies and programmable toys.
- Continue to include water and sand play to encourage me to explore, experiment, test and extend ideas developing more specific language and understanding around pouring, measuring, volume, and capacity.
- Provide a variety of materials which encourage my reasoning through experimentation, trial and error and prediction based on my developing understanding of mathematical concepts.
- Encourage me to create my own patterns and sets of objects, identifying and talking about the characteristics we notice together.
- Encourage me to identify and explore shape and symmetry, developing an understanding of characteristics within natural contexts and environments.
- Enable daily outdoor play which encourages me to explore size and perspective through my movements and by seeing familiar objects from a different angle, height or distance.

We can develop numeracy through...

size & shape

Do you think that will fit? Or is it too small / big? Or the wrong shape?

Jigsaw puzzles (or cut up cards or photos)

EARLY CHILDHOOD MATHS GROUP

predicting

What picture / colours will be on the piece that goes next to this one?

shape & fit

Can you see a piece that looks like this space? What shape will the piece be that fits here?



fit & which way round?

Oooh, shall we turn that around and see if it fits?

predicting

I wonder what it will look like when it is finished.

website



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

shape

How many sticky out / in bits does the piece that we need have?

Jigsaw puzzles (or cut up cards or photos)

EARLY CHILDHOOD MATHS GROUP

shape & fit

How do you know that piece is not the right one?

shape & position

I'm going to look for all the straight sided pieces to go around the outside



shape & position

Are there any pieces with corners? Where might they go?

position & informal shape language

I think we need a piece where the sticky out bits are opposite each other...can you find one?

website



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We can develop numeracy through...
.....

comparing capacities

Would you like this big jug or this small jug?

In the bath

(or water play with a bowl, pool or sink)

EARLY CHILDHOOD MATHS GROUP

capacity

comparing capacities

Let's pour all of the water from the yellow pot into this blue pot, what do you think might happen?



Let's see if one jug full will fill all these cups...

volume

Let's half-fill these ones so we can both have the same amount of 'drink'.

website



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volume

Can you fill it right up to the line?

In the bath

(or water play with a bowl, pool or sink)

EARLY CHILDHOOD MATHS GROUP

capacity & comparison

size & capacity

This ladle is HUGE! It holds more than this cup!



Which cup holds the most water do you think? How might we check?

capacity

how many & weight

I wonder how many pebbles I can fit in my pot / tub before it sinks?

If we keep on pouring, this will over-flow!

website



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

We can develop numeracy through...

position

The goat is under / on top of / behind / in front of / next to the bridge.

Reading a book

EARLY CHILDHOOD MATHS GROUP



more

This is a longer book, look at all the pages!

predicting & sequencing

What might happen next, do you think?

height, fit & size

I wonder if she'll be able to reach the top. I wonder if she will be able to hide behind the tree.

numbers

I think page 6 has a good picture... can you find it?

website



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

direction & routes

Let's retell the journey and remember what they passed on the way. Maybe we could draw a map?

Reading a book

EARLY CHILDHOOD MATHS GROUP



adding

How many fish do you think we will see on the next page, if there is one more?

counting & comparing

I think there are more birds than butterflies in this picture, what about you?

direction & routes

Which way should the hen go to get to the hen house?

time language

What happened first / next / after / before that?

website



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We can develop numeracy through...

position

What is next to the post office?

Walking to the shops

EARLY CHILDHOOD MATHS GROUP

numbers

Let's see who will be the first to see a number 3 somewhere. I'm going to look on the cars and the doors.



counting

Let's count the steps!

direction & routes

Which way do we go now?
Which way next?

estimating

I wonder - how many dogs we will see on the way to the shop today?



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

direction & routes

You give me the directions today!

Walking to the shops

EARLY CHILDHOOD MATHS GROUP

counting

There are lots of lampposts on this street... can we count them all?



remembering routes

Can you remember, what are we going to pass next? The post box or the garden gate where the dog lives?

direction & routes

Here's the bus stop. Let's see which buses stop here and where they go. Look - there's a map.

number order

Some of these door numbers are missing ...



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

We can develop numeracy through...

how many

How many cars have you got altogether?

Playing with toy vehicles and play people

EARLY CHILDHOOD MATHS GROUP

direction

My car is going over / under / around the bridge.



size

Which do you think is the biggest / smallest car? Why do you think that?

size & shape

Can we make a car park / garage to fit these cars?

website



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

counting

Here is a bus stop. Let's line up all the people to catch the next bus... it's late, there's a long queue. How many are waiting now?

Playing with toy vehicles and play people

EARLY CHILDHOOD MATHS GROUP

perspective

What can the driver of the silver car see?



position

Let's line up all the cars – where will the red car go? What about the blue one – maybe next to / behind / in front of the red car?

length

Which car goes furthest when we roll these down the ramp?

website



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We can develop numeracy through...

sharing

Lots of cherries today! Lets share them all out.

Making a snack

EARLY CHILDHOOD MATHS GROUP

counting or adding

Oh no! We don't have enough. How many more do we need?



comparing & how many

How many would you like? 1 or 2?

shape

Would you like your toast cut into fingers or triangles?

size

Would you like the big spoon or the small spoon to eat that?



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

sharing & counting

We have 10 crackers to share fairly. How many will you each get?

Making a snack

EARLY CHILDHOOD MATHS GROUP

counting

How many bananas do you think we need if we all want one?



shape

Would you like a circular or rectangular biscuit?

shape

Let's cut it exactly in half / into two pieces.

sharing & comparing

Let's share them so we all have the same number.



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

We can develop numeracy through...

counting

1 sock, 2 socks!

Getting dressed

EARLY CHILDHOOD MATHS GROUP

counting

1, 2, 3, 4.
4 poppers fastened up.



size & pattern

Are these your gloves or are they too small / big for your hands? Do they match?

which way round?

Oh no! It is upside down / inside out!
Let's turn it around.

position

Your shoes need their buckles on the outside of each foot.

website



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

position

Tights! Are the toes pointing forwards?

Getting dressed

EARLY CHILDHOOD MATHS GROUP

counting backwards

Let's count back as the zip goes down. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.



counting forwards

Let's count as the zip goes up. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

counting

Vest, T-shirt, jumper – that's 3 layers on today! When you put on your coat it will be 4! If you take off your jumper it will be 2.

position

Right arm in, left arm in.

website



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We can develop numeracy through...

how many

Candles! Whose birthday is it? How old are they? Have we the right number of candles so we can sing?

Playing with dough

EARLY CHILDHOOD MATHS GROUP

estimation & size

How many biscuits do you think you can make with that cutter?



counting / how many?

How many pieces have you cut it into?

volume

Let's share the dough so we all have the same amount. How shall we do that?

length

Who can make the longest worm with their dough?

website



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how many

How many holes you have made?

Playing with dough

EARLY CHILDHOOD MATHS GROUP

size & fit

Which cutter will you choose to make more biscuits this time?



how many

How many cakes are in the tray? How many spaces do we have left?

patterned arrangements

Can we make it the same on both sides?

weight

Here are the scales, let's weigh your cake.

website



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We can develop numeracy through...

size & which way round?

This box of cereal is huge, we'll have to lie it down I think.

weight

Which of these is the heaviest?

Putting away the shopping

EARLY CHILDHOOD MATHS GROUP



size, shape & fit

Where shall we put the big bottle so it will fit?

counting

How many apples do we have? Let's count them as we put them in the bowl. 1, 2, 3. There are 3 apples in the bowl.



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

Putting away the shopping

EARLY CHILDHOOD MATHS GROUP

size

This is a big potato!

weight

This box is heavy – can you lift it okay?



counting

1, 2, 3, 4. That's 4 cans of beans. Did we buy 4? Is that all of them?

position

Put the yogurt next to / on top of / in front of / behind the butter.



Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

We can develop numeracy through...

predicting

Jump, hop, jump, hop, jump, hop, jump... what comes next?

Pattern spotting

EARLY CHILDHOOD MATHS GROUP

pattern rules



Oooh! There's a zigzag pattern on that wall paper, 'up, down, up down, up, down'. I can do it with my finger!

noticing

I can see a stripey pattern. What do you think I am looking at?

reflection patterns

That building has a window and a door on each side. They're the same but the other way around!

patterned arrangements

I'm having a biscuit with spots around the edge. Do you want one with spots around the edge or in the middle?

predicting

"Heads, shoulders, knees and toes, knees and toes. Heads shoulders knees and toes, knees and _____". a song with a pattern

website



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circle patterns

I'm arranging the toys in a circle!

Pattern making

EARLY CHILDHOOD MATHS GROUP

lining up patterns



I'm putting them in a line, all looking the same way.

lining up patterns

I'm using all the same bricks to make a tower

fixing mistakes

Which one's gone wrong? Can you fix it for me?

size patterns

I'm making a circle, inside a bigger circle, inside a bigger circle, inside an even bigger circle.

noticing

Oh, you've put them in a spiral!

website



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We can develop numeracy through...

fixing mistakes

Can you spot my mistake?

spotting what repeats

Let's see - what is the repeating unit?

copy

Can you copy my pattern unit (e.g. red blue blue). Now let's make it again and again to make a long train that goes on and on, with this pattern.

copy & continue

Can you continue (carry on) my pattern?
Can you copy my pattern? (underneath)

finding the rule

Can you tell me what the pattern is? (big small, red blue, or AB)

website



Pattern making

EARLY SCHOOL
CHILDHOOD
MATHS GROUP



making a pattern with 2 things

Can you make up your own pattern with two things that repeat over and over?

Watch your child playing • See what they enjoy doing • Join in and use these ideas when they seem ready

pattern rules

What is your pattern unit? What is the smallest part that repeats over and over?

pattern rules & mistakes

Can you make up a pattern with a mistake for me to spot?

copying (a new way)

Can you do actions in the same pattern as your objects?

copying (a new way)

Can you make the same pattern but this time with different objects?

continuing (in both directions)

Can you continue your pattern to the left as well as to the right?

website



Pattern making

EARLY SCHOOL
CHILDHOOD
MATHS GROUP



border patterns

Let's make your pattern go around a shape (circular plate, large triangle or square). Does your pattern 'work' and keep going round forever? Why / why not?

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We can develop numeracy through...

height

I'm going to make a tall tower with the bricks

Making plans

EARLY SCHOOL
CHILDHOOD
MATHS GROUP

days of the week & pattern

Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday... over and over!



how many & shape

How many T-shirts do you think you need to take on holiday? Help me fold them.

fit

Help me pack your things in your bag. How will we make everything fit inside?

sequencing

Shoes on, then go outside.



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direction & routes

Which way shall we go? Around or through the park?

Making plans

EARLY SCHOOL
CHILDHOOD
MATHS GROUP

counting backwards

It is five days until your birthday. Let's write the numbers and cross one out each day to countdown.



days of the week & counting

Monday, Tuesday, Wednesday... 1,2,3, that's three days away.

estimating

I wonder - how many red cars will we see on our walk today?

time language

We'll have lunch first then go to nursery after.



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Vision

At Mid Yell Junior High School we aim to provide a learning community that is broad, aspirational and enjoyable within a safe and inclusive environment.

School Motto

Mid Yell Junior High School, learning at the heart of our **ISLAND**.



Values

Inclusive

- We welcome everyone into our school in a happy, warm and friendly way.
- We value every member of our learning community, celebrating diversity and treating everyone with respect.
- We understand the importance of empathy and value the experiences and emotions of others.

Supportive

- We work together with pupils, parents, staff and partner agencies to provide a positive learning experience.
- We work together as a team to ensure everyone meets their full potential.
- We communicate with others in a fair, positive and honest way.

Learning

- We engage in a broad education that is inspiring, varied and exciting.
- We use our creativity to meet challenges, using our initiative to solve problems.
- We are curious and critical thinkers, using modern approaches and technology to help us succeed.

Aspirational

- We understand the learning journey we are all on and work hard to achieve our full potential.
- We have high expectations for ourselves and strive to succeed in whatever we set out to do.
- We reflect on our actions and experiences and aim to be the best possible version of ourselves.

Nurturing

- We support, nourish and encourage every member of our learning community.
- We feel safe and trusted in school and confident to express our feelings and opinions.
- We participate in activities that promote a positive physical and mental well-being and understand the importance of self-care.

Developing

- We face challenges with a growth mindset and learn from our mistakes.
- We develop the skills for work, learning and life and actively promote positive leaver destinations.
- We actively engage with our wider community and promote and celebrate what makes our island unique.