Education Futures
ACADEMY

Maths Meets Storytime: Activity Booklet

2025

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Our Innovative Approach:

Spatial Reasoning and Early Mathematical Development

Research tells us that early mathematical exploration and learning are largely underpinned by a set of key cognitive processes and skills that can be described as *Spatial Reasoning*.

Spatial reasoning is an "umbrella" term that describes the ability to understand and work with shapes, spaces, images, and objects.

Young children use this skill in everyday activities like building with blocks, completing puzzles, fitting objects into containers, and climbing playground equipment.

Research has confirmed that there is a direct link between a child's spatial reasoning and their mathematical competency, however, there is still a great divide between research and practice (Davis et al., 2015).

Prompting Play over Product

The foundation of the MMS approach is based on engaging parents and children in playful *experiences,* over creating a product.

This doesn't mean you can't do rich and meaningful craft-like activities!

However, we want parent's and children to experience "the maths" that is embedded into everyday activities and play, to build their confidence and competence in this critical, life long skills set.

Extending the Learning

During the Storytime Session, there is also a focus on providing parents with prompts and ideas to help extend the learning possibilities of the mathematical focus at home.

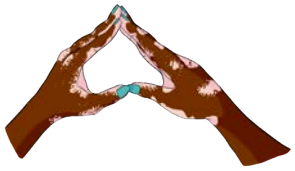
Lets explore the MMS possibilities!

Supporting Spatial Reasoning

There are TWO main ways parents can support the children's spatial reasoning an mathematical development during Storytime.

Gesture

A hand (or body) movement that supports the description of an object or location.



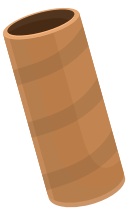

Language

Words to describe the features or movement of and object.
Words that describe the relationship between objects and their relative location.

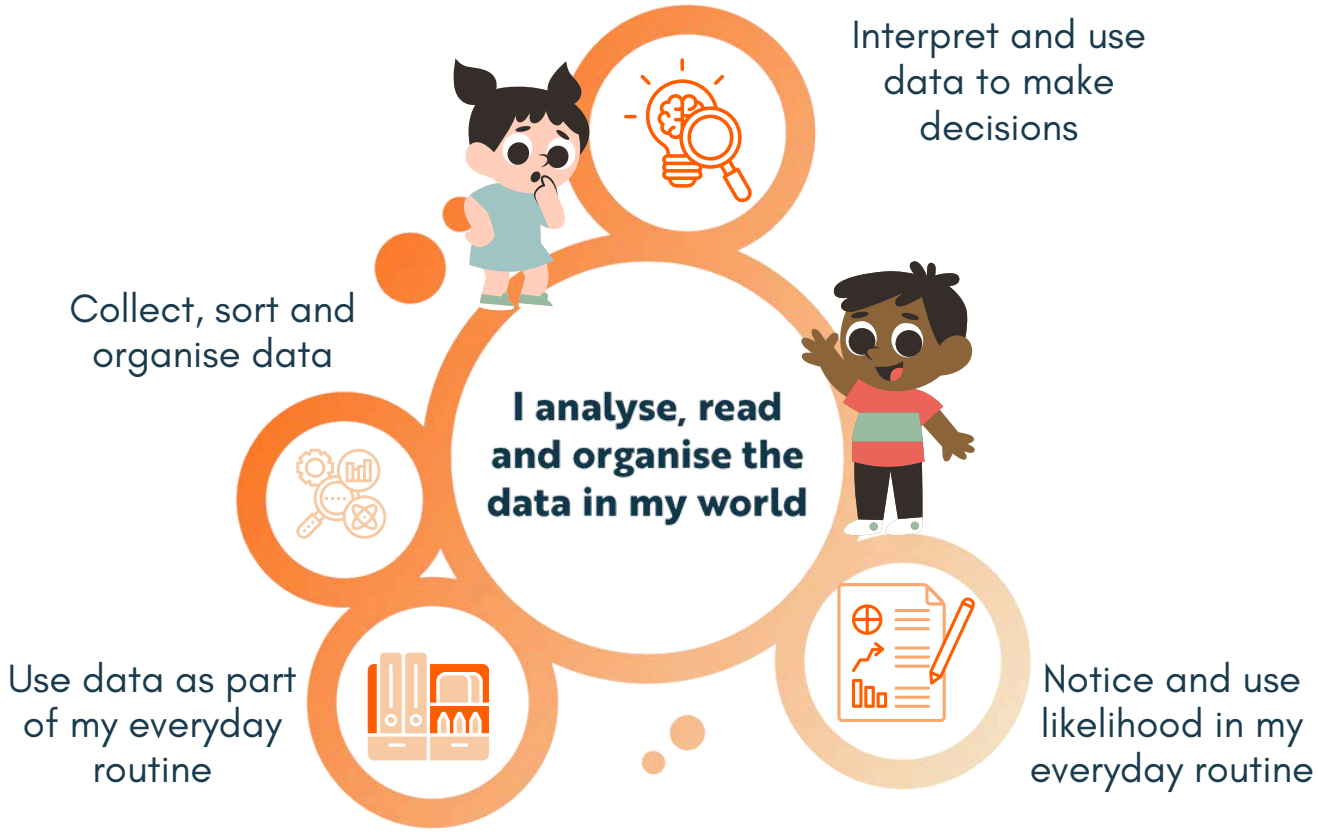

Smaller/Narrower


Bigger/Wider


Round

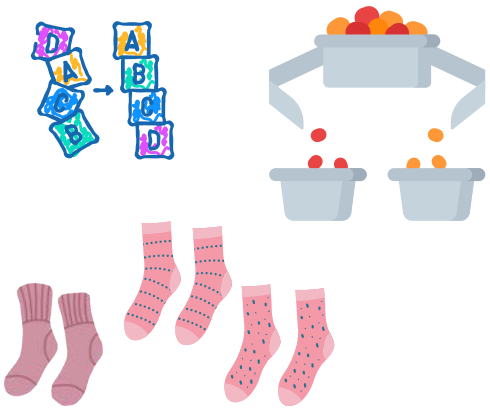

Hollow

I Analyse, Read and Organise the Data in My World



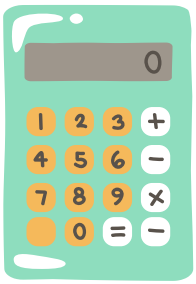
Interpret and use data to make decisions can look like...

Collect, sort and organise data can look like...



Noticing and using likelihood in my everyday routine can look like...

*I have my maths class today, I will **definitely** need my calculator!*



*Uh oh! Grey clouds mean it **might** rain, I better bring an umbrella!*

Using data as part of my everyday routine can look like...

Using a cup to measure flour for a cake

Reading a clock

Using a shopping list

Spatial Language possibilities...

First, second, next, last, before, after...

Bigger, smaller, next to, above, more than, less than

I'm Australian, Too I Analyse, Read and Organise the Data in My World

Numeracy Focus

Learning Processes:
- Noticing, wondering, sorting, generalising, comparing

Numeracy Indicator:
- I analyse, read and organise the data in my world

Key Elements:
- Collect sort and organise data
- Interpret data to make decisions

Literacy Focus

Learning Processes
- Creating and making meaning, reflecting critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that text conveys meaning
- Infer meaning from familiar texts

Picture Book

I'm Australian too!
By Mem Fox.

Storytime Experience

Many people from many places have come across the seas, to make Australia their home. How Australian is that?
From countries near and far, many have made their home in Australia, sharing it with the original inhabitants, and living in peace beneath the Southern Star.

Let's get to know each other and the wonderful gifts we share as Australians. Tell us about yourself by creating a picture graph/ display all about you!

Bigger

Smaller

Spatial Language Focus

Use words to describe attributes of the data categories. Use words that help describe the position and location of your home/ town and the objects your child chooses to use to represent this aspect.

For example:
- What is the same and what is different about you/ your family and a family in the book? Do you have more or less people in your family than...?
- What types of pictures/ objects did you use to represent your home/ town/ food/ environment/ favourite celebration...?
- What is our house next to...?

Gesture Focus

Supporting the attributes of each category and the relationship between categories. For example, when comparing bigger and smaller, use your hands to help gesture 'bigger' and 'smaller'.
Help your child gesture the features of your home/ town that you draw such as where they might be positioned. For example, gesturing that your driveway is windy, or that the garage is on the side of the house with a flat roof.

Extending the Experience

Share your poster with someone working next to you.

- What do you notice about your friend's family/ celebrations/favourite foods/ hometown based on the pictures they've drawn or stuck on their sheet?
- How many people are in your friend's family?
- How many different foods has your friend displayed?
- What is the same, and what is different to your sheet?

Materials and Resources

Poster paper (Categories optional)
Magazines/ Catalogues
Drawing materials

Take home Ideas for Parents

Talking with your child about what is the same and what is different about places or objects is a great way to explore how we can make meaning from different types of information. At home, you might ask your child to sort their toys into groups based on something they have in common – such as shape, colour, or size. Or, you might discuss what your family and a family in a book have in common.

Perhaps the story is set in a jungle or rainforest, which is different from where we live in South Australia. Help the children use the pictures in the book to describe what they think it would be like to live in a jungle and how it might be different from where we live.

All of these types of questions and discussions help your child interpret and analyse information – which is an important numeracy skill.

Ten Little Figs

I Analyse, Read and Organise the Data in My World

Numeracy Focus

Learning Processes:
- Noticing, wondering, sorting, reasoning generalising

Numeracy Indicator:
- I analyse, read and organise the data in my world

Key Elements:
- Collect sort and organise data
- Interpret data to make decisions

Literacy Focus

Learning Processes
- Creating and making meaning, reflecting critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that text conveys meaning
- Infer meaning from familiar texts
- Respond meaningfully to symbols and texts

Picture Book

Ten Little Figs by Rhian Williams

Storytime Experience

A child counts the figs on the backyard fig tree, as each one is snatched away by a different Australian animal, in this ode to Australia's natural landscape. Ten little figs are on my tree. I love figs and they're all for me.

During this story, provide 10 objects symbolising figs eg. tennis balls. 1 child at a time takes a fig away, and the remaining group count what is left.

Either individually or as a group, follow the book's instructions to :
10 leaves, 9 stones, 8 gumnuts, 7 pieces of bark, 6 green objects, 5 sticks, 4 brown objects, 3 big objects, 2 flowers, 1 feather.

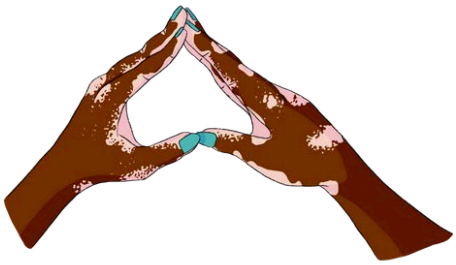
Ask your child to see how many different ways they can sort and organise their natural materials. What groups can you make? What do things in those groups share? For example, we could put all of the 'brown' coloured objects together, but make a group for 'brown and rough' which might include rocks and bark, and another of 'brown and smooth' which may be leaves and reeds/ stems.

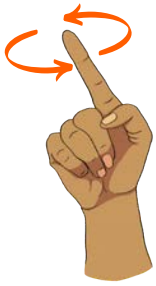
Spatial Language Focus

Help your child with words that describe the individual attributes of the objects, as well as the groups that they sort them into. For example, big, small, compare, thin, patterns, matching, large, tiny, round, etc.

Gesture Focus

As you are helping your child describe the objects, use your hands to gesture different attributes, such as holding your two index fingers together to gesture a point, or drawing a circular objects in the air when describing curves.





Extending the experience

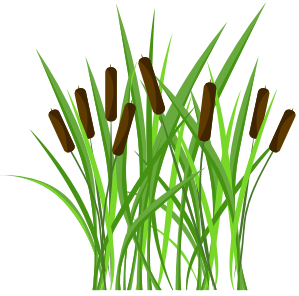
As a group, sort objects to create a giant mandala. How will we position the objects, so they create a circular representation of our environment?

Take home Ideas for Parents

After collecting some flora from your backyards and local parks, you might like to do a similar activity at home with your child at home. As you are travelling through your neighbourhood, describe and gesture the features of the different objects, landscapes you explore. What do you notice about our local parkland? Perhaps there are lots of small bushes with long thin leaves. Think about how you can gesture the different types of leaves in your local environment.

Materials and Resources

- Natural materials outside the library, e.g.
- Seeds
- Leaves
- Flowers
- Grass
- Reeds
- Sticks
- Rocks/ stones.



Almost a Fish I Analyse, Read and Organise the Data in My World

Numeracy Focus

Learning Processes:
- Noticing, wondering, sorting, reasoning generalising, communicating

Numeracy Indicator:
- I analyse, read and organise the data in my world

Key Elements:
- Collect sort and organise data
- Interpret data to make decisions

Literacy Focus

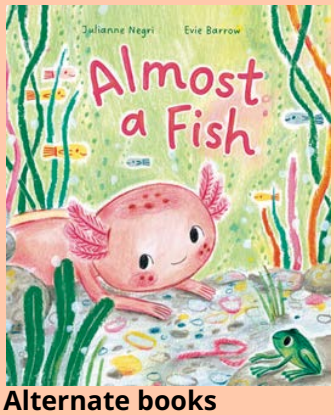
Learning Processes
- Creating and making meaning, reflecting critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that text conveys meaning
- Infer meaning from familiar texts
- Respond meaningfully to symbols and texts

Picture Book

Almost a Fish by Julianne Negri & Evie Barrow



Alternate books

Hatch and Match by Ruth Paul

The same but different too by Karl Newson

Storytime Experience

Story Context: Audrey may look a little different from the other creatures in the river, but that doesn't stop this curious and lovable amphibian from embarking on a quest to find out just who she is.

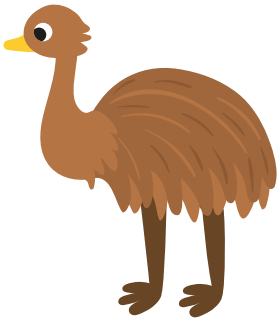
Dive into an underwater world as Audrey seeks answers, makes new friends and learns that being unique and finding your people is something to celebrate.

'What are you?
'Don't you know? I'm a fish, of course!'
The fish was nimble
The fish was gleaming
The fish could swim!
'Oh!' cried Aubrey. 'I can swim too! I'm almost a fish!'

Audrey is a bit confused about which animals live where, could you help her work it out? Caregivers and children are presented with a range of flying, swimming and walking animals. Can you group the animals into groups? Why did you group them into these groups?

Spatial language Focus: This may include words about the position and location of where animals may live, as well as their physical features or attributes. For example, a group of fish may live under, over, in an area, in the ocean, because they are taller, smaller, narrower, faster, slower. Apply this reasoning to other animals.

Gesture Focus: As you are helping your child describe the objects, use your hands to gesture different attributes, features or locations of the different animals and their environments.
For example, hold your hand above your head when describing a tall animal etc.



Extending the Experience:
Could you sort them a different way? Discuss the special features of each animal, could these features relate to where they might live?

Look in the mirror! How do you your features relate to where you live?

Take home Ideas for Parents:
Help your child point out their own features and special attributes. What features are the same and what is different between the two of you? Is your nose as long as mine? My eyes are a bit rounder than yours. Look at family photos and compare features with the rest of the family. How could you describe them?

Materials and Resources

- Animal figurines (or printed images)

My Flower, Your Flower I Analyse, Read and Organise the Data in My World

Numeracy Focus

Learning Processes:
- Noticing, wondering, sorting, reasoning, generalising

Numeracy Indicator:
- I analyse, read and organise the data in my world

Key Elements:
- Collect sort and organise data
- Interpret data to make decisions

Literacy Focus

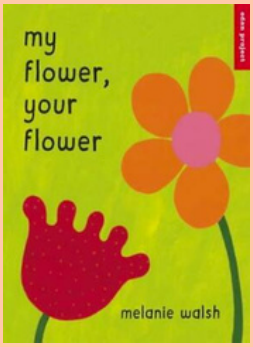
Learning Processes
- Creating and making meaning, reflecting critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that text conveys meaning
- Infer meaning from familiar texts

Picture Book

My Flower, Your Flower
by Melanie Walsh



Storytime Experience

This picture book explores the differences and similarities between various plants, highlighting how they grow and their unique characteristics, such as bluebells from bulbs.
What types of plants/ leaves/ flowers do we see in our garden beds at this time of year? Do you know why that is (e.g. it's spring).

There are many ways to describe flowers, plants, seeds, and leaves. Using seeds, flowers and leaves you have collected in your environment and make a pattern. Do you know what a pattern is? A pattern is a series of objects that are repeated. You might create your pattern like this: leaf, flower, stone and then repeat this sequence to create a pattern. How many items create your sequence? How long can you make your pattern?

Spatial Language Focus: Help your child use words that describe the attributes of the objects as they start to create a pattern. For example, what objects might you describe as 'spiky', or curved? Can some objects be described in more than one way? For example a flower might have a long thin stem, but have curved petals, and leaves that are pointy. How would this 'fit' into your pattern?

Gesture Focus
As you are helping your child describe the objects, use your hands to gesture different attributes, such as holding your two index fingers together to gesture a point, or drawing a circular objects in the air when describing curves. You may like to use hand gesture, or even your whole body to create a pattern, such as clap-clap-jump; clap-clap-jump as an example of an AAB pattern.

Extending the Experience
Ask your child to see how many different patterns they can make with their natural materials. How many items are in each sequence? What is the longest pattern sequence you can make? E.g., ABCD; ABBCC etc

Take home Ideas for Parents
What patterns can you find in nature/ at home? Perhaps you have a pattern on an item of clothing. Can you describe the pattern? After collecting some flora from your backyards and local parks, you might like to do a similar activity at home with your child at home.

Materials and Resources

- Seeds
- Leaves
- Flowers
- Sticks
- Stones

Five Steps to Bed I Analyse, Read and Organise the Data in My World

Numeracy Focus

Learning Processes:
- Noticing, wondering, sorting, communicating, reasoning

Numeracy Indicator:
- I analyse, read and organise the data in my world

Key Elements:
- Use data as part of my everyday routine
- Interpret data to make decisions
- Notice and use likelihood in my everyday routine

Literacy Focus

Learning Processes
- Creating and making meaning, reflecting critically

Literacy Indicator:
- I understand the language of my world

Key Elements:
- Demonstrate critical understandings of texts
- Understand what has been communicated
- Actively inquire to make meaning

Picture Book

Five steps to bed by Claire Potter & Ailie Busby

Alternate books
Time to get dressed by Penny Tassoni

Storytime Experience

Mummy's fed up of chasing her children into the bath. She's fed up of pestering them to take their pyjama bottoms off their heads. She's fed up of scraping toothpaste off the ceiling. Then she has an idea! They are going to bust their bedtime and make it an easy and enjoyable time of the day for everyone. Find out how they do it and follow them to bed while having lot of fun choosing things along the way!

Would you choose to have a bath in melted chocolate or with a mermaid?
Would you choose pyjamas that glow in the dark or ones that make you invisible?
Would you choose a bed made of jelly or one that tips you out in the morning?

The kids in the story now know how to get to bed but the mornings are a mess! Can you help them come up with a morning routine? What comes first in our house, getting dressed or eating breakfast? Is there anything special your family might do in the morning? How does your plan look different than a friends?

Spatial Language Focus
Emphasise words that help children identify an order or sequence of events or objects, such as first, then, next last, before, after, front, back, top, bottom

Materials and Resources

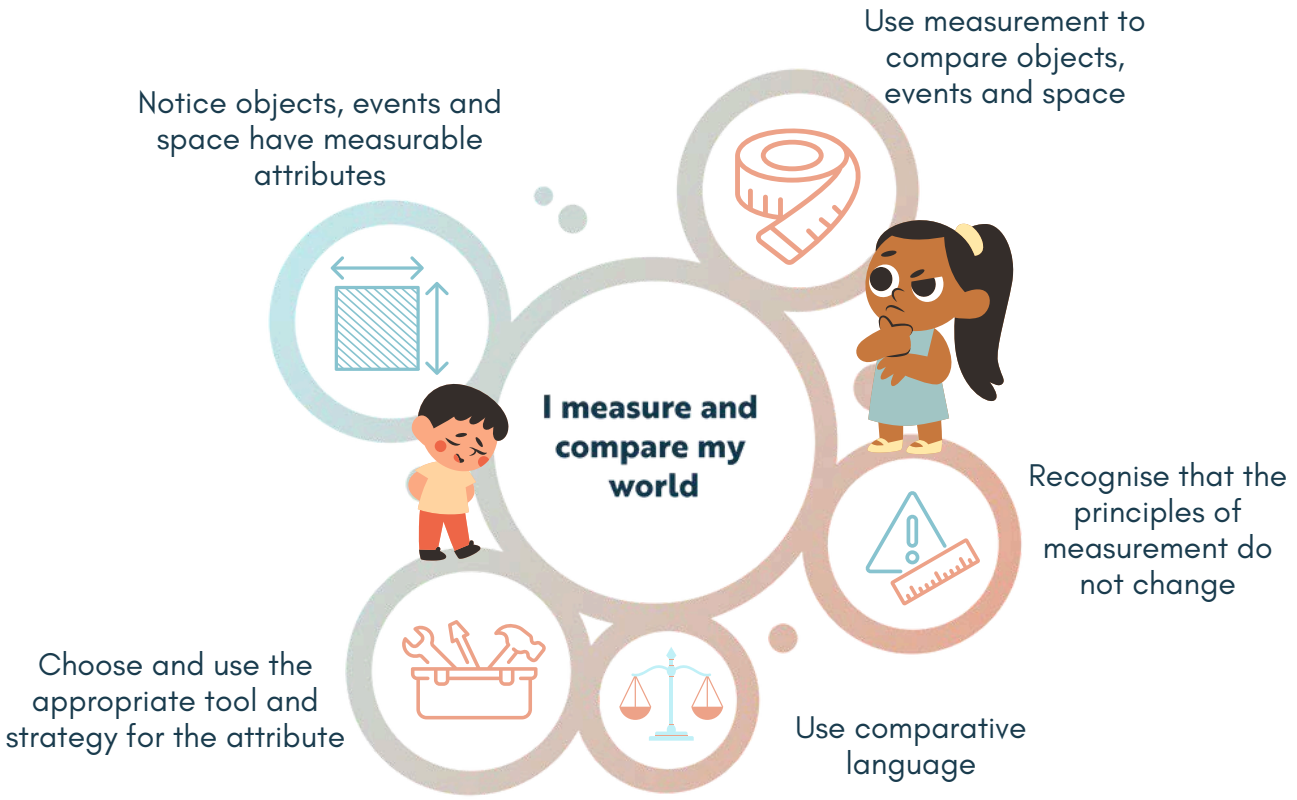
Drawing materials.

Gesture Focus
Using your hands/ fingers to help signify the order of the steps as they occur, such as first – 1 finger, second – two fingers, can assist children with the ordering and sequencing of the events and objects. Using your hands to help gesture the position of objects, such as top – placing your hand in an upright manner, will also help your child understand the position and location of objects that are being ordered or sequences.

Extending the Experience
What other tasks do we do around the home that have steps that need to be done in order? What about washing your hands? Do you dry your hands first? Or does that come last? Can you make a sign (or gestures) to represent each step needed to wash your hands?

Take home Ideas for Parents
Role playing a range of tasks you do at home is a great way to connect children's understanding of ordering tasks and how they are represented focusing on describing the sequence and order of the steps needed. You can also look for signs in your environment that point to different objects or directions to help use data in our daily lives to make decisions and choices. Some examples might be hand washing stations in public spaces, walk and don't walk signs on pedestrian crossings or exit signs.

I Measure and Compare My World



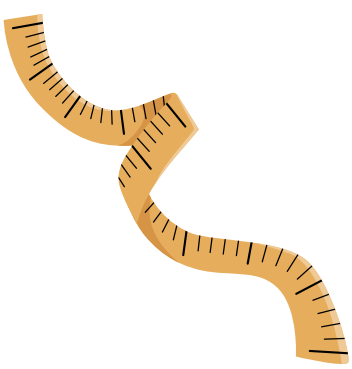
What do we measure?

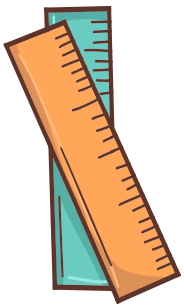
1 Dimension/linear measurements:

- Length
- Width
- Height
- Depth

What is the difference between these linear attributes?

It's the way we describe their orientation or position.



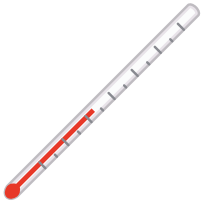


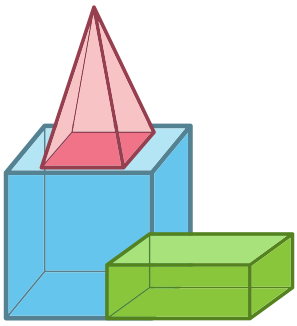
Space

- 2-Dimensional (Flat space) = Area
- 3-Dimensional Space = Capacity & Volume

Other things we measure

- Mass/Weight
- Time
- Temperature
- Angles...?





What does it **mean** to measure (and compare)?
How do we measure?
What are the **rules** for meaning?

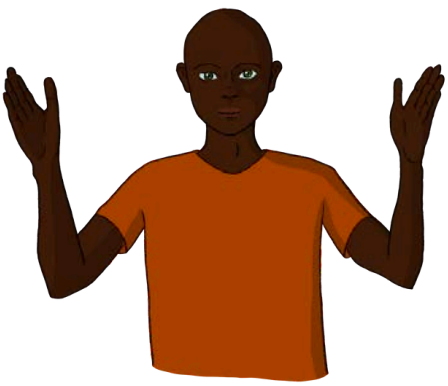
Words for measurement

- *Longer*
- *Shorter*
- *Wider*
- *Narrower*
- *Thinner*
- *Thicker*
- *Higher*
- *Lower*
- *Taller*
- *Shorter*
- *Deeper*
- *Shallower*
- *Slower,*
- *Faster*
- *Full,*
- *Empty,*
- *More,*
- *Less*
- *Too much*
- *Not enough*
- *Near*
- *Far*
- *Faster*
- *Slower*

Gestures for measurement

Using gestures can be helpful when exploring measurement ideas

- describe and **compare the features** or **movement** of an object
- the **relationship between objects** and their relative location



Wider

Narrower

Taller

How Big is a Pig? I Measure and Compare My World

Numeracy Focus

Learning Processes:
- Noticing, comparing, generalising, reasoning, visualising

Numeracy Indicator:
- I measure and compare my world

Key Elements:
- Use measurement to compare objects, events and space
- Notice objects, events and space have measurable attributes
- Use comparative language

Literacy Focus

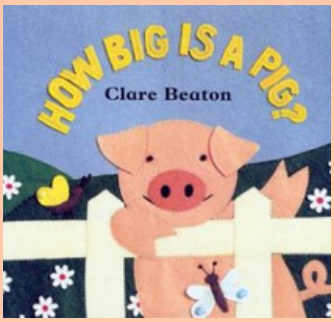
Learning Processes:
- Creating and making meaning, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Use language appropriate to purpose
- Describe experiences and express ideas

Picture Book

How Big is a Pig? By Clare Beaton.



Storytime Experience

Farmer Penny loves her farm animals. She has noticed that lots of the animals like to play together! So, she decided to reorganise her farmyard. She wants you to see if you can group the animals based on their size. What do you think that means?

This experience is focused on thinking about what we mean by size, as an attribute to measure. For example, the size of your animal might refer to its height, length or width. It's up to you! The focus here is on understanding that you are using the same attribute to compare and measure your animals.

Spatial Language focus

Words relating to linear attributes of different animals e.g., their height, width or length. Taller, shorter, fatter, thinner, wider, narrower, longer etc.

Gesture Focus

Hand movements that demonstrate the comparative measurement of the object (animal) we are measuring.

Extending the Experience:

What other ways could you measure and compare your animals? If Farmer Penny only had two paddocks, one for 'small' animals and one for 'big animals', which animals would go where? How do you decide what is big or small? What attribute of the animal are you comparing and measuring (e.g., height, width, length etc). The emphasis in this extension of the task is based on the comparison idea. We can only determine if something is 'bigger' or 'smaller' in relation to another objects, so what might be "tall" in one context – for example, a cat compared to a mouse, could be "short" in another – the same cat compared to a cow.

Take home Ideas for Parents

Your child might like to complete this activity with their toys or teddies, creating paddocks or groups for them to 'play' in based on a chosen measurable attribute. There are other ways to support your child's understanding of measuring and comparing through tasks such as putting the laundry or shopping away. Where do the longer, taller wider objects go? Where do the shorter, skinnier, narrower objects and item go?

How Big is too small? I Measure and Compare My World

Numeracy Focus

Learning Processes:
- Noticing, comparing, generalising, reasoning, visualising

Numeracy Indicator:
- I measure and compare my world

Key Elements:
- Use measurement to compare objects, events and space
- Notice objects, events and space have measurable attributes
- Use comparative language

Literacy Focus

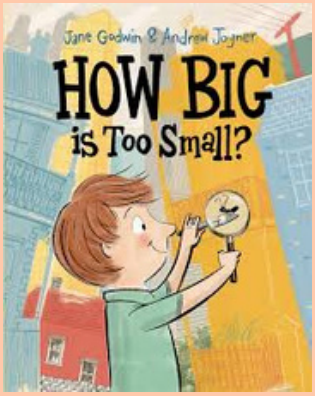
Learning Processes:
- Creating and making meaning, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Use language appropriate to purpose
- Describe experiences and express ideas

Picture Book

How Big is Too Small by Jane Godwin and Andrew Joyner



Storytime Experience

Story Context: 'A mouse is quite big when compared to a flea, but both would seem small if they sat next to me'

Are you smallest or tallest in your family/ storytime group? Let's arrange ourselves from smallest to tallest
What can we use to measure and compare size? Discussion around using objects to measure versus standard measurement, ie. Compare each other in height visually.

Spatial Language focus: Words relating to measuring and comparing height, such as taller and shorter.

Gesture Focus: Hand movements that help children understand that the 'orientation' of the linear measurement helps us visualise and compare the height of children and objects we will be comparing.

Extending the Experience
What is around us that we can describe as taller or shorter than you? Walk around the library and find things that you can compare to your height and describe if they are taller or shorter. You might be able to take a picture with a caregiver to share back in our group.

Take home Ideas for Parents
What can we collect from outside and sort into smallest to tallest? Leaves, sticks, bark, seeds – what about in your own backyard? Take your child on a nature walk discussing tall/ short in comparison to themselves, or other objects. Use gestures to help your child describe the differences in the height of objects as they compare.

Materials and Resources

Various items that can be used for measuring in both standard and informal units
Items outside and around the library

Mr Archimedes' Bath I Measure and Compare My World

Numeracy Focus

Learning Processes:
- Noticing, comparing, generalising, reasoning, visualising

Numeracy Indicator:
- I measure and compare my world

Key Elements:
- Use measurement to compare objects, events and space
- Notice objects, events and space have measurable attributes
- Use comparative language

Literacy Focus

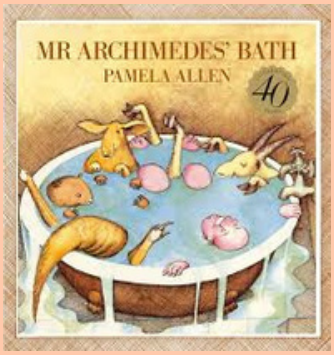
Learning Processes:
- Creating and making meaning, communicating, reflecting critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Respond meaningfully to symbols and texts
- Infer meaning from familiar texts

Picture Book

Mr Archimedes' Bath by Pamela Allen



Storytime Experience

Story Context: When Mr Archimedes takes a bath with three of his friends, Kangaroo, Wombat and Goat, the water always overflows and makes a mess. Mr Archimedes is determined to find the culprit.

Using a measure and taking turns getting out, they finally discover who it is.

Mr. Archimedes wants to know which "rock animal" makes the bath water rise the most. Can you help him sort them by size – from lightest to heaviest, or from smallest to largest?

Do you think the bigger "rock animals" will make the water rise more or less? Can you tell your parent or caregiver what you think will happen? Now, go ahead and place the "rock animals" in the water – what do you notice?

Children can also use markers to mark the waterline before each "rock animal" is placed in the water, then mark the new waterline afterward. They can compare how much the water level rises with each animal.

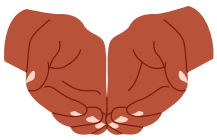
Spatial Language focus

Words relating to the capacity of the container. For example, full, empty, deep, shallow, more or less.

Words relating to the size of the rocks, such as bigger, smaller, skinnier, fatter, longer, wider, taller, narrower, heavier and lighter.

Gesture Focus

Arms showing weight of rocks i.e. heavier - two hands for carrying & lighter - might be able to carry with one hand.



heavy

Hand movements showing size of rocks i.e. Hands squashed together for narrower, hands spaced apart for wider.

Wider

Narrower

Extending the Experience
Invite the children to "act out" the story, in terms of gesturing or bobbing up and down to represent the water level as the animals get in and out of the bath.

Take home Ideas for Parents
Water play at home is a great way to extend children's understanding of capacity and water displacement. That is, there is the same amount of water in a container, but when objects are added, the water level appears to rise because it has made room for the object.

Try experimenting with different objects like a sponge versus a solid rock that are of similar size. The sponge is porous, which means it is not solid and has space inside for the water to go, so it won't make the water level rise as much as a rock. What objects can you and your child explore and compare?

Some things will float on top. Do they change the water level?

Materials and Resources

Containers
Water
Rocks and a range of objects to experiment with.

How Tall was a T-Rex? I Measure and Compare My World

Numeracy Focus

Learning Processes:
- Noticing, comparing, generalising, reasoning, visualising

Numeracy Indicator:
- I measure and compare my world

Key Elements:
- Use measurement to compare objects, events and space
- Recognise that the principles of measurement do not change
- Use comparative language

Literacy Focus

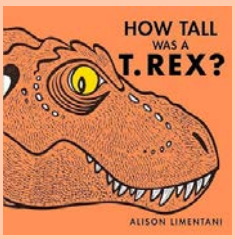
Learning Processes:
- Creating and making meaning, communicating

Literacy Indicator:
- I use language to connect with my world

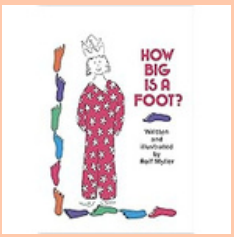
Key Elements:
- Use language appropriate to purpose
- Describe experiences and express ideas

Picture Book

How Tall Was A T-Rex? by Alison Limentani



How big is a foot? by Rolf Myller



Storytime Experience

This book explores the size of a T-Rex by comparing different attributes to everyday objects and modern animals (lions, balls, bananas etc.)

Children trace their own foot and cut it out with the help of an adult caregiver. They can then compare their foot to the provided template feet and observe whether their foot is longer, shorter, wider, or narrower than a T-Rex tooth.

37 children's footprints could fit inside one T-Rex footprint'. Trace around children's footprints and compare these. Discuss children's footprints being of different sizes. Use this to facilitate a conversation about the importance of choosing a consistent unit of measurement. Create a T-Rex footprint shape using 37 (of the same) footprint. Discuss arrangement of footprints and gaps. How many feet long is that space? Why is it less adult feet, than kids feet? Talk about and explore the idea of using a tool consistently to measure.

Extending the Experience

What else is as big as a T-Rex tooth – or other objects? They can use multiple copies of the same-sized feet to measure objects around the room and make observations. For example, they might discover that the room is 5 "big feet" long but 10 "little feet" long.

Take home Ideas for Parents

This activity has focused on the importance of using the same tool or object to measure something. You may like to compare the same space in your house or yard, using your feet in comparison to your child's feet to measure. How many feet long is that space? Why is it less of your feet, than of your child's? Talk about and explore the idea of using a tool consistently to measure.

Materials and Resources

Paper
Scissors
Pencils
Precut paper feet in different sizes (many copies available to measure with)

Swirl by Swirl I Measure and Compare My World

Numeracy Focus

Learning Processes:
- Noticing, comparing, generalising, reasoning, visualising

Numeracy Indicator:
- I measure and compare my world

Key Elements:
- Use measurement to compare objects, events and space
- Choose and use the appropriate tool and strategy for the attribute
- Use comparative language

Literacy Focus

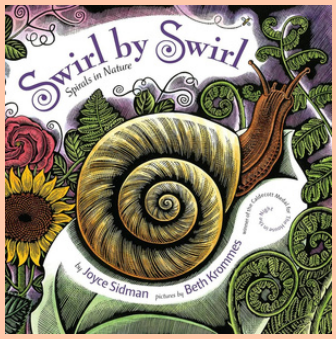
Learning Processes:
- Creating and making meaning, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Use language appropriate to purpose
- Describe experiences and express ideas
- Use increasingly sophisticated language to connect and communicate

Picture Book

Swirl by Swirl by Joyce Sidman



Storytime Experience

Where have you seen swirls before? (Snail shells, possum tails, plants, staircases) Can you make a swirl in the air with your hand? Describe how your finger/ hand is moving (starting at a central point, rotating outwards).

Today, we are going to use play-dough to make swirls. After you make a swirl with your playdough, measure its length (Educator to hold up a playdough swirl). How will I measure this swirl? What do I need to do? (e.g. Unroll it, use an object to measure how long it is.)

Spatial Language Focus

Focus on using words that can describe a swirl, such as spiral, round, curve, circular, spinning etc.

Gesture Focus

Explore creating spirals with your finger, hand whole body and even as a group.

Extending the experience:

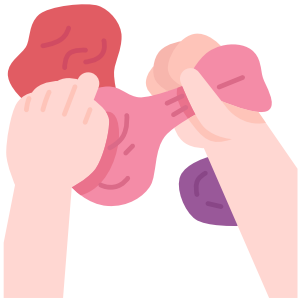
Compare your playdough swirl to someone working next to you. Whose swirl do you think is going to be the longest? Why?
Can you predict how many (pop sticks/ blocks/ counters) long your swirl will be?

Take home Ideas for Parents:

Where might we find swirls and spirals at home or in our environment? What about peeling an apple or a potato– can you make a swirl with mum or dads help? How long do you think your apple/potato peel spiral can stretch? You can ask your child to gesture the length and predict how long before peeling your apple or potato to compare. These types of conversations and simple activities help your child build their awareness of measurement, such as why and how we measure different objects in our world.

Materials and Resources

Playdough
Informal (uniform) units of measurement, e.g., Unifix,
Pop sticks,
Pipe cleaners,
Counters



I Understand My Place and Space in the World

Use the position location, arrangement and movement of myself, others and objects for a purpose

Use properties of shape to make things fit, balance and transform

Notice 2D aspects of 3D objects

Location and position of myself and objects

What am I next to?
What is next to me?

Geometric properties of shapes (2D) and objects (3D)

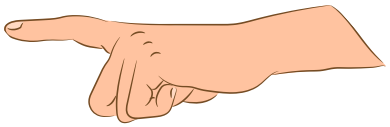
Why are some shapes flat? How do these shapes fit together?

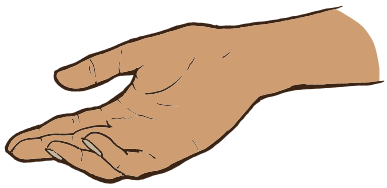
Wayfinding or movement through physical spaces

Finding your way around home, the shops, the zoo or your local park all require us to move through and around physical spaces.

Gestures for place and space

- A hand (or body) movement that supports the description of an object or location.
- Pointing, patting a spot and waving can show a location or place





Language for place and space

- Words to describe **features or movement** of an object
- Words that describe the **relationship between objects** and their relative location

Here/There, Near/Far, Next to/Beside, Between Above/Below, Under/Over, In front of/Behind, Inside/Outside, On top/Underneath, Left/Right, Middle, Corner, Edge, Around, Through, Across, Up/Down, Forward/Forward, Sideways, Toward/Away, Closer/Further, Turn, Tilt, Angle

Tangled I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, comparing, communicating.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Notice 2D aspects of 3D objects
- Use the position location, arrangement and movement of myself, others and objects for a purpose

Literacy Focus

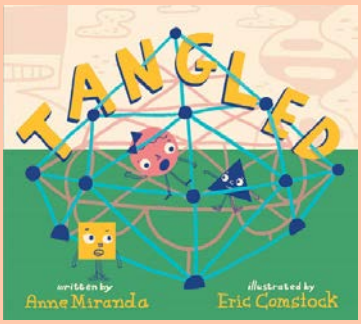
Learning Processes:
- Creating and making meaning, Encoding and Decoding, Communicating

Literacy Indicator:
- I understand the language of my world

Key Elements:
- Understand what has been communicated
- Actively inquire to make meaning

Picture Book

Tangled by Anne Miranda.



Storytime Experience

When the neighbourhood shapes go climbing on the park jungle gym the last thing they expect is a tangle. First the circle, next the triangle and then the square. One by one, all sixteen shapes are trapped. They push and pull and tumble and cry for help. Who will save them? One special shape can set the others free.

Shape hunt Bingo!

What shapes can we find in our library/ local environment?
With mum/ dad/caregivers' help, see how many shapes you can find hiding in our library!

Spatial Language Focus
Encourage words that describe the physical properties and attributes of the 2D shapes, such as round, curved, circular, straight, square, triangular, etc...

Materials and Resources

Suggested A4 Sheet or similar

Gesture Focus
Encourage the children to use hand gestures to describe the location and position of the shape, such as under the desk, on top of the bookshelf. We also can use gestures to represent the physical shape, such as drawing the shape in the air.

Extending the Experience
What other shapes can you see or find that were not on our bingo card? How can you describe them and where you found them?

Take home Ideas for Parents
Playing with shapes is a wonderful way to encourage children to explore the properties and attributes of geometry. When exploring your local environment, or even at home, you might ask your child to notice the different shapes used in tiled or paved areas.

Shape	Where?
	
	
	
?	

Knock Knock Dinosaur I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, wondering comparing, reasoning.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use the position, location arrangement and movement of myself, others and objects for a purpose.

Literacy Focus

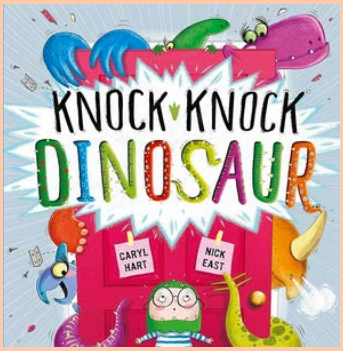
Learning Processes:
- Creating and making meaning, Encoding and Decoding, Communicating, reflecting Critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that texts convey meaning
- Respond meaningfully to symbols and texts

Picture Book

Knock Knock Dinosaur by Cath Hart



Storytime Experience

A visit from a dinosaur might sound like fun, but when T. Rex's friends turn up too–munching and crunching, skating down the hall and drawing on the walls–it's time for this little boy to panic. What is Mum going to say when she gets home?!

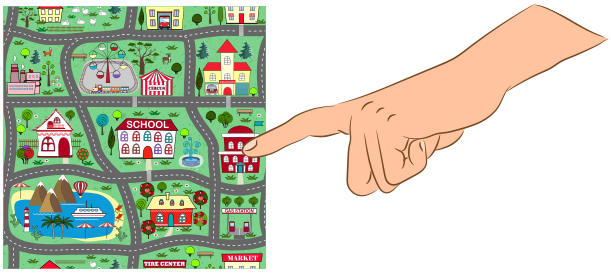
The children will be asked a series of engagement questions, such as which dinosaur they think made the most mess and if they think they would be able to clean their house before their mum/ parent came home if the dinosaurs came to their house.

The educator will pose the following prompt.

"Did you know what the dinosaurs got up to once they left the little boy's house? They went into town to sightsee! I wonder if you can figure out where the dinosaurs went. In small groups, you are going to sit on one of the carpet mats on the floor, which is a map of a town. I'm going to give your parents/ caregivers a set of clues. They are going to read the clues to you, and you need to work out where each of the dinosaurs was spotted. You can place a plastic dinosaur on the mat that matches each of your clues."

Spatial Language Focus: Using words such as farther, nearer, longer, shorter, behind, in front of, next to encourage location and wayfinding spatial language.

Gesture Focus: Using gestures that accompany the position and location of the dinosaur described in the clues, helps children connect these terms to the map and environment.



Extending the Experience:

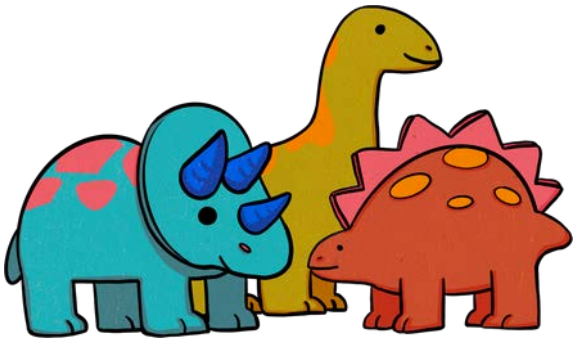
Some of the clues might have multiple possibilities, so encourage your child to explain why they think the location they choose matches the clue and ask if there are other possibilities. For example, a clue might be that a dinosaur was seen on the railway track but closer to a duck pond than the car park. Here, you can encourage the child to think about how they could estimate and compare the distances between objects and locations using some of the materials we have also provided (linking cubes/ match sticks/ pop sticks/ counters, string).

Take home Ideas for Parents

At home, you can continue to play with these ideas such as describing a location in your house or in your garden for your child to guess (e.g., I am standing closer to the couch than the table, but I'm not next to a window...where could I be?

Or, you could play hide and seek with a teddy by hiding a teddy in the house and providing clues for your child to try and find it.

Let your child hide the teddy next time, and see what clues they give you to find the hidden item! Don't find the teddy right away, take some time to explore the space. Ask them comparison questions, such as "Is it closer to the chair, or closer to the door?"



Materials and Resources

4-8 Capet town maps - e.g:
Plastic dinosaur figures
Clue cards relevant to each town map - e.g.:
"Map 1 Clues"...

- A dinosaur was standing *between* two trees near the train track. Where could she be?.
- Two dinosaurs were standing *in* a car park *next to* each other.
- A dinosaur was splashing *in* the pond, *facing* the police station.

A dinosaur was spotted *in front of* the hospital...

Out of Shapes I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, comparing, reasoning, communicating.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use properties of shape to make things fit, balance and transform
- Notice 2D aspects of 3D objects

Literacy Focus

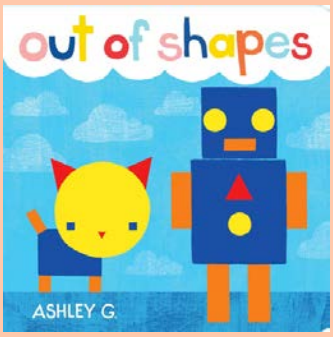
Learning Processes:
- Creating and making meaning, Encoding and Decoding, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Describe experiences and express ideas
- Use language appropriate to purpose

Picture Book

Out of Shapes by Ashley G.



Storytime Experience

In this charming book, little ones will love seeing how just a few shapes make up all of their favourite things—from a rocket ship, to a kitty cat, to a friend, and beyond!

This delightful little book about shapes showcases how many things in our world are created by shapes.

During the story, ask the children What shapes can you see? What shapes add together to make...a friend, a party etc.

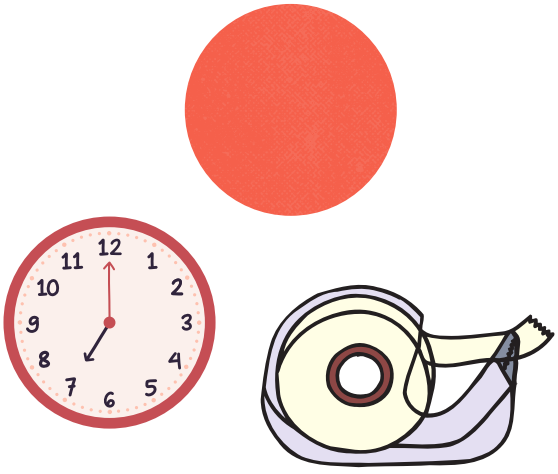
Choose a cut-out (paper) shape and walk through the inside (or outside) of the library to match shapes. Swap and find different shapes. Walk outside the library, through the nature play garden and find shapes. Where are the shapes? Over, across, up, on, around.

Extending the experience

What objects did you find that were the same as your shape? Children might identify a sticky tape roll on the library desk as being the same shape as their circle. What objects were similar or had things in common with your shape? A computer chair may have a curved backrest, similar to a child's circle.

Take home Ideas for Parents

Travelling in the car can provide opportunities for you to continue the shape hunt game. As you drive, ask your child to look out the window and describe a shape they might see, like a rectangular window, or a tringle shaped roof on a house. You can set different rules for the game too, such as today we can only describe shapes that have straight edges – how many can we find?



Materials and Resources

Paper Shapes printed

Shapes of Australia I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, comparing, reasoning, communicating.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use properties of shape to make things fit, balance and transform
- Notice 2D aspects of 3D objects

Literacy Focus

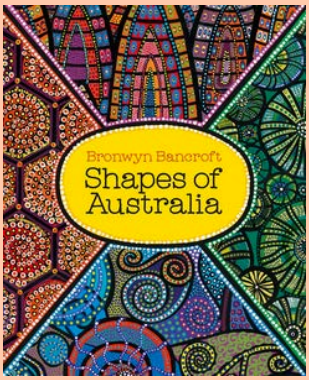
Learning Processes:
- Creating and making meaning, Encoding and Decoding, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Describe experiences and express ideas
- Use language appropriate to purpose

Picture Book

Shapes of Australia by Bronwyn Bancroft



Storytime Experience

Go on a shape hunt around the Library. You could record on a recording sheet or use iPads to take photos of shapes found. Alternatively, take children and parents outside to search for shapes around the grounds/building. You can record on paper or take photos. Share the shapes you found back together as a group.

You coul put some pictures of cityscapes or landscapes on the smart board (or use posters) and ask children to point out different shapes they notice.

Spatial language Focus:

Use words that describe the attributes of shapes, such as circle, big, oval, triangle, triangular, long, domed, diamond, circular, round, curved, square, rectangle, straight, as well as movement or wayfinding terms such as wavy, around, through over.

Take home Ideas for Parents:

Using recycling materials such as cereal boxes, cardboard tubes etc, you might like to create your own cityscapes or tessellation images. Encourage your children to explore what shapes they are using, how they create different 'buildings' or objects using different shapes.

Gesture Focus:

During this experience, you can stop throughout the book and ask children to gesture the following shapes and positions.
- make the shapes in the book by using fingers e.g. "Treetops circle each other in a wild bush dance"
- make a circle shape with fingers (or motion a circle shape with one finger)
- Move hands apart to show size e.g. big
- move hand up for "Skyscrapers rise"
- make 'domed' shape with hands
- motion 'wavy' using hands (like the ocean)
- use finger to motion 'around' etc.

Extending the Experience

You may challenge the children to choose one shape and see if they 'fit together' (tessellate). Alternatively, could use pattern blocks to create a picture and explore which shapes tesselate (fit together without gaps).

Using sponges cut in different shapes, have children dip these in paint and create their own cityscape.

Gary I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, comparing, reasoning.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use the position, location arrangement and movement of myself, others and objects for a purpose.
- Use properties of shape to make things fit, balance and transform

Literacy Focus

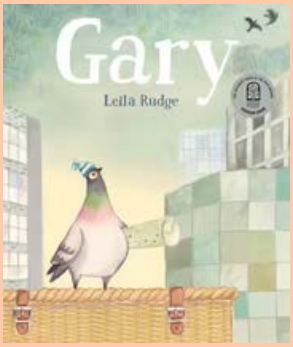
Learning Processes:
- Creating and making meaning, Encoding and Decoding

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Respond meaningfully to symbols and texts
- Understand that texts convey meaning

Picture Book

Gary by Leila Rudge



Additional Texts
Maps: from Anna to Zane by Vivien French

Storytime Experience

Story Context: Gary is a pigeon who can't fly, but he collects travel mementos and dreams of seeing the world.

Through an unexpected adventure, Gary learns about his own unique way of experiencing the world, even without flying.

Children can create a 3-D map to represent their street or a space/route to get to their library, encouraging discussions that will enhance spatial awareness, using recycled materials or large blocks.

Spatial Language Focus
As questions about the shapes and objects that engage children in the spatial language associated with the shapes/ objects in their town, such as round/curved/angle, here/there, corner/edge, as well as wayfinding position and location terms like around, under/over, above/below, beside/ under, in front of/behind.

Extending the Experience.
Talk about direction and ask the children to describe how they might get from one place to another in their town they have created.

Take home Ideas for Parents:
At home you could include using toy figures and cars to navigate their 3D map and discussion about direction. For example, driving to the shop, going past the trees, we're going over the bridge. You may have blocks to represent buildings and create your own town in your loungeroom!

Materials and Resources

- Large piece of cardboard or butcher's paper as the map base
- Blocks or small boxes (eg small tea box) to represent buildings, house, school, library etc
- Paper rolls for trees, signs using cardboard tubes etc
- Draw or use coloured paper, for grass, parks, and roads (or use printable roads and signage found online.)

Bears Love Squares I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, comparing, reasoning, communicating.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use properties of shape to make things fit, balance and transform
- Notice 2D aspects of 3D objects

Literacy Focus

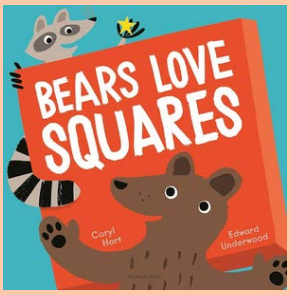
Learning Processes:
- Creating and making meaning, Encoding and Decoding, communicating

Literacy Indicator:
- I use language to connect with my world

Key Elements:
- Describe experiences and express ideas
- Use language appropriate to purpose

Picture Book

Bears Love Squares by Caryl Hart



Alternatives:
Circle Rolls by Barbara Kanninen
Walter's wonderful web by Tim Hopgood
Watch This! A Book about Making Shapes by Jane Godwin
Mouse Shapes by Ellen Walsh

Storytime Experience

Triangles are tremendous, circles are sensational, but Bear likes squares. Can Raccoon convince his friend that other shapes can be fun too? He's got his work cut out, that's for sure, because Bear likes SQUARES!

Triangles are tremendous, circles are sensational, but Bear loves squares - Squares are nice and even. Their corners are just so. Squares are always just the same, anyway they go.

Can Raccoon convince his friend Bear that other shapes can be fun too? He's got his work cut out because "triangles are too pointy" and" circles are too circley". And Bear loves SQUARES!

A gloriously colourful celebration of shapes, friendship and the power of seeing things from a different perspective.

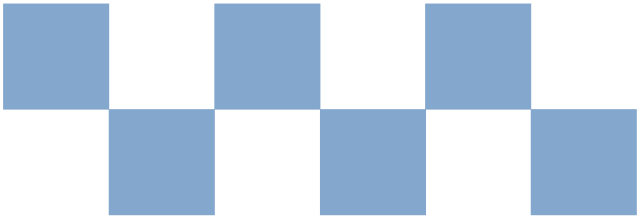
Stack, Roll or slide

Bear wants to prove to Raccoon that squares are the best! Squares can slide and stack up into high towers, Bear is sure that only squares can do that! What do you think? Does the other shapes slide or roll and can they stack on top of each other?

Set up a simple ramp (cardboard or other smooth surface) and test each shape to see if it rolls down the hill or slides? Next, test each shape to see if it can be stacked easily on top of another shape. Parent can explore the understanding of why a shape does (or does not) roll, slide or stack.

Spatial Language Focus

Words that describe the attributes of an object as well as how this affects their movement, such as roll, slide, stack, corner, curve, pointy, sharp, even, same



Gesture Focus
Be creative with exploring how to gesture or use your whole body to represent the movements and attributes of the objects. For example, you could ask the children to show me how they would roll or slide along the ground. Shapes can be made with hands and bodies, corners with two fingers together, curve with a smooth bent hand

Extending the Experience:
Shape Collages: Template with different shapes on them in the shape of a truck. Children can cut out the shapes and make a new image, a house, a tower etc. This can also be done with some translucent geometric shapes and perhaps a light table (optional).
Feely Bags
Geometric shapes in a "feely bag": Children reach into the bag and feel the shapes without looking. They try and identify the shape just by touching and being prompted by caregiver - How does it feel? Does it have pointy corners? Does it feel round? Once the children are familiar with names of the shapes, it's fun to guess the shape they're holding before revealing it!

Take home Ideas for Parents:
Playing a modified game of "what am i?" is a fun way to continue the ideas about shapes, objects and their movement. For example, you might ask your child what can roll, but can stack? A ball! What can stack, but doesn't roll very smoothly? A Rubix cube!.

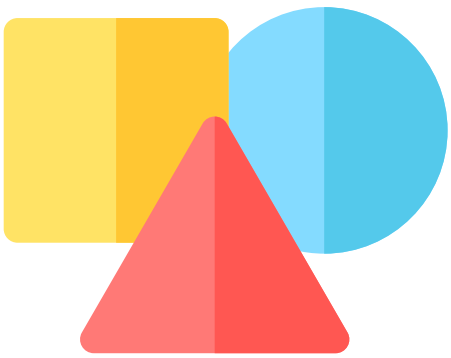
Materials and Resources

Piece of smooth cardboard (or similar)
A prop to make an incline ramp.
3D shapes

Shape rhymes and songs

3D Shape Rhyme
3D Shapes are fat not flat
A cone is like a party hat
A sphere is a bouncy ball
A prism is a building tall
A cylinder is like a can of pop
A cube is like the dice you drop
3D shapes are here and there
3D shapes are everywhere!

Shape song
(sung to: "Farmer in the dell")
A circle's like a ball,
A circle's like a ball,
Round and round
It never stops,
A circle's like a ball!
A square is like a box,
A square is like a box,
It has 4 sides,
They are the same!
A square is like a box!
A triangle has 3 sides,
A triangle has 3 sides,
Up a mountain,
Down and back
A triangle has 3 sides!
A rectangle has 4 sides,
A rectangle has 4 sides,
2 are long and
2 are short.
A rectangle has 4 sides!



Ducks Away! I Understand My Place and Space in the World

Numeracy Focus

Learning Processes:
- Visualising, noticing, wondering comparing, reasoning.

Numeracy Indicator:
- I explore and understand my place and space in the world

Key Elements:
- Use the position, location arrangement and movement of myself, others and objects for a purpose.

Literacy Focus

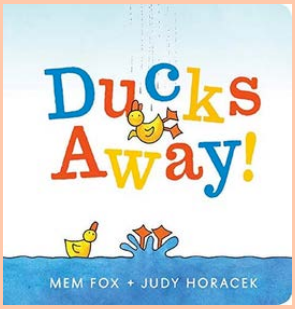
Learning Processes:
- Creating and making meaning, Encoding and Decoding, Communicating, reflecting Critically

Literacy Indicator:
- I engage with texts and make meaning

Key Elements:
- Understand that texts convey meaning
- Respond meaningfully to symbols and texts

Picture Book

Ducks Away! by Mem Fox and Judy Horacek



Storytime Experience

Count along with Mother Duck as her ducklings try to waddle across the bridge. When a sudden gust of wind sweeps one of Mother Duck's ducklings into the river, she doesn't know what to do. With four ducklings on the bridge and one below, Mother Duck is torn as to which way to go. Suddenly, a second duck falls and Mother Duck grows more panicked. Should she stay on the bridge or fly down to her ducklings in the river?

Mother Duck is looking for the ducklings but they seem to have trouble understanding what she is saying. Can you help them out?

Set up a little bridge (water tray under optional). Put laminated cards with positional language in a pile or give one card to each duck. Caregiver pretending to be Mother Duck asks the children if they can help the ducklings do as mother duck asks. Example - Can the little duckling go under the bridge? Where would that be? Can the duckling go back/forward?

Spatial Language Focus

Use words that describe how the ducklings might travel to their mother, such as over, under, down, back, behind, upside down, forward.

Gesture Focus

When the children are exploring how a duckling might get to their mother, use a hand signal to assist their understanding, such as moving your hands together to show fast, or up and down to show hopping, or moving your hand side to side to show movement.

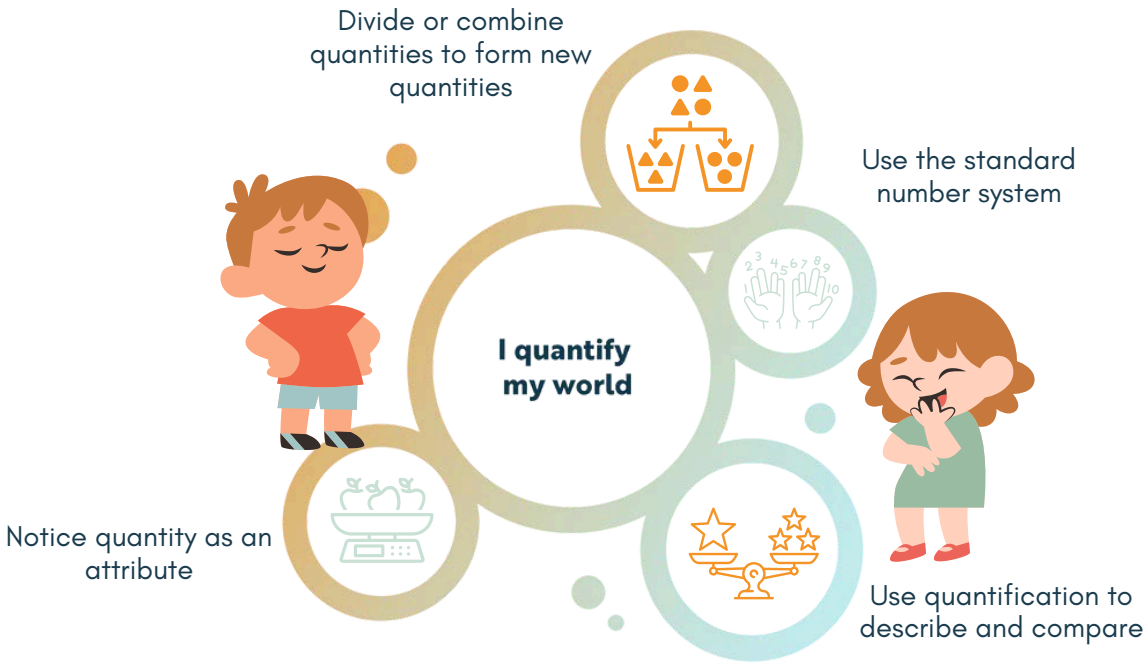
Extending the Experience

Encourage the children to explore all the possible ways the ducklings could travel to get to their mother, and which one they think is the shortest and safest.

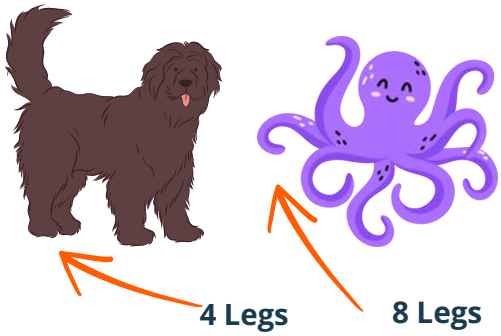
Take home Ideas for Parents

When you are travelling to familiar places in your town or neighbourhood, encourage your child to describe the path you will take. For example, to get to kindy, we have to go past a post office and a church.

You can point out the things you pass out as you drive or walk past those places. Ask your child what things they can see as you pass.



Notice quantity as an attribute



If a dog has 4 Legs, and an octopus has 8 legs, what creatures might have 6 legs?

Dividing or combining quantities to from new quantities

How could we sort these items?
How many groups?
Which group has the most/least?
Can you organise the materials in a pattern?
How could you describe your pattern?

What gestures could be used to help children think about quantifying?

A hand (or body) movement that supports the **description** of an object in groups or categories.

Use hands to describe the **number** and **quantity** of objects

Anno's Counting Book I Quantify my World

Numeracy Focus

Learning Processes:
- Patterning, comparing, visualising, noticing, generalising.

Numeracy Indicator:
- I quantify my world

Key Elements:
- Use the standard number system
- Use quantification to describe and compare

Literacy Focus

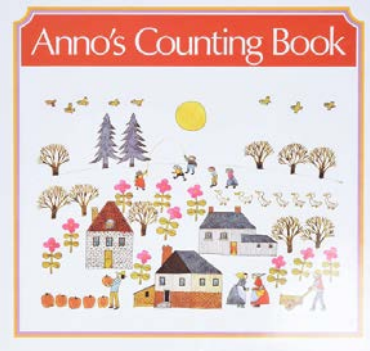
Learning Processes:
- Encoding and decoding communicating
- Creating and making meaning

Literacy Indicator:
- I represent my world symbolically

Key Elements:
- Represent ideas/ theories in multiple ways
- Use a range of symbols to convey meaning

Picture Book

Anno's Counting Book by Mitsumasa Anno



Storytime Experience

This wordless book stands out for its unique feature of a 3-D visual counter displayed in the margin of each two- page spread, tracking the increasing number of buildings, animals objects, people vegetation, etc

Each child receives a laminated copy of the picture that is shown on the front cover of the book, along with a selection of blocks measuring approximately 2.5 to 5 cm each.

The children can use the blocks to build towers that reflect the amount of each object shown in the picture.

Spatial Language Focus

Words such as more or less, few/some, all/none, one more/one less, can be discussed as the children count, take away/add blocks and sort.

Extending the experience

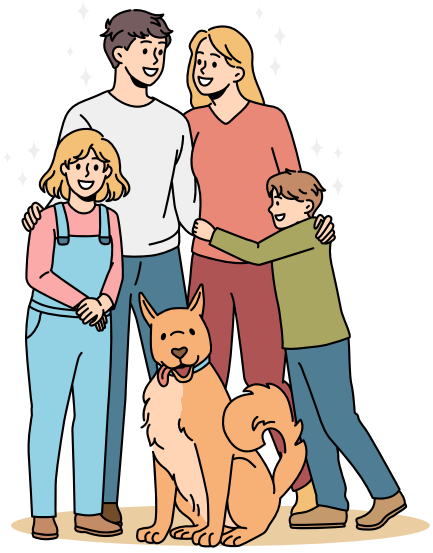
Alternatively, provide children with laminated picture cards showing various grouped items- such as trees, buildings, and people in quantities up to 12.

The children will then place the correct number of blocks into towers to match the quantity of each item shown on the card.

Take home Ideas for Parents

At home you might like to as your child to quantify different items or people and represent using blocks or other materials.

For example, you may ask your child to represent how many people and pets live in your house, using blocks or even their own toys and teddies to quantify. You can ask them to think about quantity in different ways like, if we have 4 people and 2 dogs, how many legs 'live' in our house?



Materials and Resources

Laminated pictures
Blocks

Duckie's Ducklings

I Quantify My World

Numeracy Focus

Learning Processes:
- Wondering, noticing, comparing, visualising.

Numeracy Indicator:
- I quantify my world

Key Elements:
- Use the standard number system
- Use quantification to describe and compare

Literacy Focus

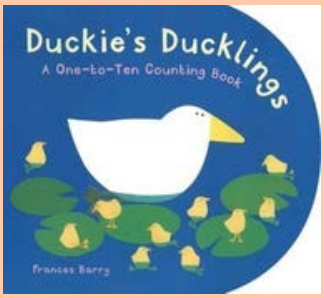
Learning Processes:
- Encoding and decoding communicating

Literacy Indicator:
- I represent my world symbolically

Key Elements:
- Represent ideas/ theories in multiple ways
- Use a range of symbols to convey meaning

Picture Book

Duckies Ducklings by Frances Barry
(a one to ten counting book)



Storytime Experience

This picture book features interactive page cutouts and hidden ducklings, demonstrating number recognition, sequencing, and encourages out-loud counting.

Each child chooses a laminated picture of a lily pad which will be placed on a blue silk scarf in a tray to represent a pond.

Each lily pad will have sticker dots corresponding to a number between 1 and 10.

The children will need to place the correct number of duckies (perhaps scattered around in close proximity) on to each numbered lily pad.

Spatial Language Focus

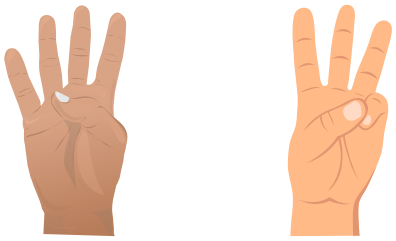
By using vocabulary describing positions as shown in the book, eg: behind, by the..,below the.., between, on..etc this could become a 'hide and seek 'game with descriptive clues for children to find and count the ducklings.

Materials and Resources

- Laminated pictures of lily pads
- Blue scarf
- Sticker dots

Gesture Focus

Using your fingers to represent the number of ducks/ dots as the child counts can also help children recognise these quantities in different contexts.



Extending the experience

Ask children to describe the patterns, or arrangements of the ducks, to see how they might recognise the quantity, without counting. For example, four ducks might be placed in a square like formation similar to that on a dot dice, which children associate with the quantity of 4.

Take home Ideas for Parents

Look for opportunities to practice quantifying objects that may not involve counting. For example, children recognise two objects very easily without need to count each object individually. Go on a "two" hunt in your house. How many objects can you find that come in twos or pairs? For example socks, shoes, gloves, hands feet etc. What other quantities can your child find?

How many legs? I Quantify My World

Numeracy Focus

Learning Processes:
- Patterning, comparing, wondering, visualising.

Numeracy Indicator:
- I quantify my world

Key Elements:
- Use the standard number system
- Use quantification to describe and compare
- Notice quantity as an attribute

Literacy Focus

Learning Processes:
- Encoding and decoding, communicating, creating and making meaning

Literacy Indicator:
- I represent my world symbolically

Key Elements:
- Create texts for a range of purposes
- Represent ideas and theories in multiple ways

Picture Book

How Many Legs by Jim Field and Kes Gray

Alternate:
Come Count With Me by Marika Wilson

Storytime Experience

'How many legs would there be if a dog walked in with a chimpanzee? Or a squid rode in on a buffalo?'

Tell families to find the number of legs. They must find a combination of animals to make the number. E.g. 6 legs- a giraffe and a duck.

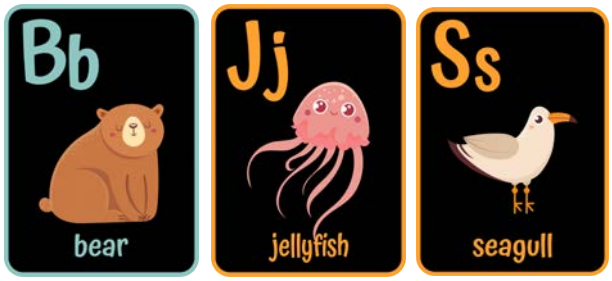
Choose 2 plastic animals (or 2 animal pictures) and use pom poms or counters to represent the number of legs the animals have altogether. What if you added another animal? What if one animal left?

Spatial Language
Ask how many? Use numbers and words like counting, add, more, less, together, join, lots and less.

Gesture Focus
Use fingers to show numbers, and hand movements to show 'lots' or 'less'

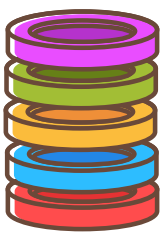
Extending the experience:
Create your own animal. How many legs, tails, wings or fins does it have?

Take home Ideas for Parents
Look for opportunities to talk about how one object might be quantified. For example, one flower, might have 5 petals. One vase, might have 8 flowers. 1 car, might have 4 wheels, one bike might have 2 pedals. How many objects in your how can you find to describe in this way?



Materials and Resources

Laminated pictures of animals or plastic animals
Counters/pom poms etc.



One is a Snail, Ten is a Crab I Quantify My World

Numeracy Focus

Learning Processes:

- Patterning, comparing, visualising, reasoning.

Numeracy Indicator:

- I quantify my world

Key Elements:

- Divide or combine quantities from new quantities

Literacy Focus

Learning Processes:

- Encoding and decoding, communicating, creating and making meaning, reflecting critically

Literacy Indicator:

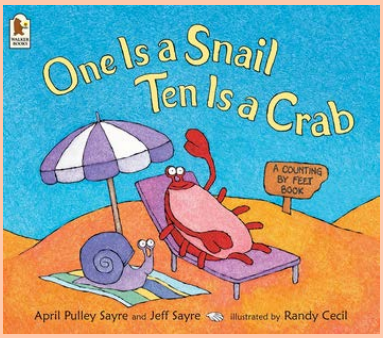
- I represent my world symbolically

Key Elements:

- Use a range of symbols to convey meaning
- Represent theories and ideas in multiple ways

Picture Book

One is a snail, Ten is a Crab by Jeff Sayre an April Pulley Sayre



Storytime Experience

If one is a snail, two is a person...What could be 7? How many ways to make a crab?

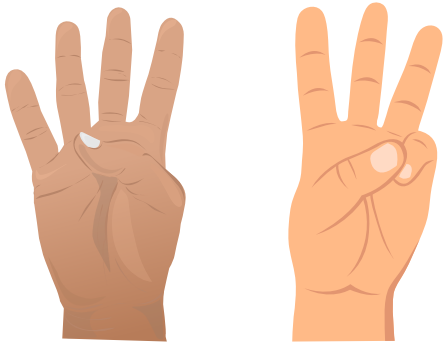
Using plastic counters (or something similar) to symbolise each foot, eg. 5 is one dog and 1 snail. Invite children to get 4 counters for the dog then ADD 1 counter and what do we have? 5! Repeat this for several pages.

Spatial Language

Ask how many? Use numbers and words like counting, add, more, less, together, join, lots and less.

Gesture Focus

Use fingers to count, or hands spread wide to gesture lots.

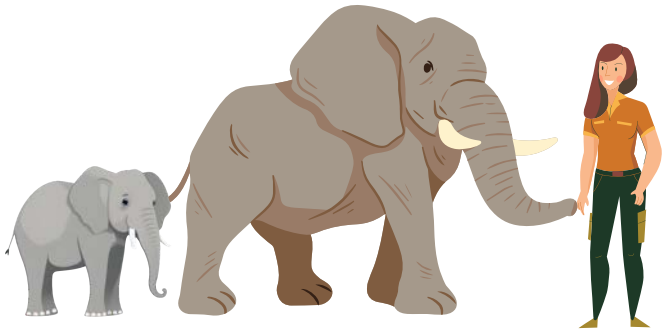


Extending the Experience

Invite children and their caregivers to explore how many ways can you make the same quantity.

Take home Ideas for Parents

Next time you are visiting a wildlife park, zoo or even pet shelter, see how many ways you can make different quantities based on the animals or nature you see. For example, if you're at a zoo, 10 might be two elephants and a zookeeper!



Materials and Resources

- Counters
  - e.g. Pompoms
  - Sticks
  - Plastic counters

Ten Red Apples I Quantify My World

Numeracy Focus

Learning Processes:
- Patterning, comparing, visualising, sorting, reasoning, generalising.

Numeracy Indicator:
- I quantify my world

Key Elements:
- Use the standard number system
- Use quantification to describe and compare

Literacy Focus

Learning Processes:
- Encoding and decoding, communicating, reflecting critically

Literacy Indicator:
- I represent my world symbolically

Key Elements:
- Create texts for a range of purposes
- Use a range of symbols to convey meaning

Picture Book

Ten Red Apples by Pat Hutchins

Alternative Text:
The Very Hungry Caterpillar by Eric Carl

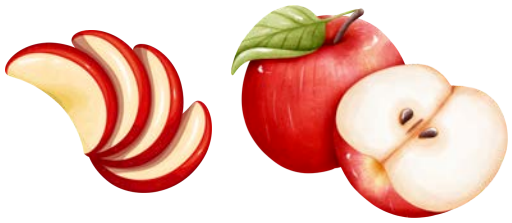
Storytime Experience

Ten red apples hanging on a tree. Yippee, fiddle-dee-fee! But they are not there for long. Horse, cow, donkey, pig, hen, and the other farm animals each eat one. "Save one for me," calls the farmer. But what about the farmer's wife? She wants to bake a pie with the apples.

It is feeding time at the farm. Horse is very hungry and the hen is only a little bit hungry - should we give the horse more apples than the hen? Cow and sheep need to share the apples. Is it possible to share the apples evenly between cow and sheep? Goat has taken all the apples, can she share some with the donkey and the farmer?

Spatial Language Focus

This experience focuses on using words relating to comparing quantity (rather than just counting), such as noticing how quantities can be joined, separated and created. This may include share, less, more, fairly, little bit, very or many, empty, full, all, none



Gesture Focus

Show 'a little' by pinching fingers together, Or show 'a lot' but spreading hands wide.

Extending the Experience

You might like to invite families to explore if the animals fairly share the apples between them, and how many ways they might do so?

Take home Ideas for Parents

Cooking and preparing food are a great way to explore the idea of sharing different quantities of food, in different contexts. For example, you might cut up some fruits into equal parts to share between friends like a watermelon, or you might have groups of the same food like grapes, or crackers that are shared equally. Next time you are in the kitchen encourage your child to describe the different quantities of ingredients you are working with.

Materials and Resources

- Pictures/figurines of animals
- Playdough/pom poms/counters/images of small apples other food
- Cut out/paper circles/stickers, Paper plates (optional)

Stack the Cats I Quantify My World

Numeracy Focus

Learning Processes:
- Patterning, comparing, visualising, generalising, reasoning

Numeracy Indicator:
- I quantify my world

Key Elements:
- Use the standard number system
- Use quantification to describe and compare

Literacy Focus

Learning Processes:
- Encoding and decoding, communicating, generalising

Literacy Indicator:
- I represent my world symbolically

Key Elements:
- Use a range of symbols to convey meaning
- Represent ideas and theories in multiple ways

Picture Book

Stack the Cats by Susie Ghahremani

Storytime Experience

Stack the Cats is a charming book about counting and organising cats in various formations. But what happens when the cats decide to go their own way?

It's time for the cats to go to bed. Can you help figure out which cats might sleep where?

- The orange cats like to sleep on their own.
- The purple cats like to sleep together.
- The green cats like to sleep in big groups.

If each cat needed to sleep in the bed with at least 1 other cat, what could it look like? How many beds would you need?

Each bed has to have the same number of cats on them. Is that possible?

Spatial Language Focus

Use words relating to comparing quantity, noticing how quantities can be joined, separated and created. Use words like more than, less than, one at a time, bigger/ smaller groups, cut into pieces or shared fairly.

Gesture Focus

Hand movements that help children understand how we might share, divide, join and or separate quantities. Includes using fingers to help represent quantity. Two cats = 2 fingers.

Extending the Experience

There are many ways you can vary this experience by changing the 'rules' or preferences of where and how the cats like to sleep, such as if each cat needed to sleep in the bed with at least 1 other cat, what could it look like? How many beds would you need? You can make this simpler or more complex by adding or reducing the number of cats and beds to suit the age group of your children.

Take Home Ideas for Parents

You might like to recreate this activity at home with your child's teddies, and creating "beds" for them to sleep. Remember to emphasise words related to comparing quantity, noticing how quantities can be joined, separated and created, such as more than, less than, one at a time, bigger/ smaller groups, cut into pieces, shared fairly, not just counting each group/ bed.