

Parent support materials

Introduction

English

Maths

Part 2

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Basic outdoor play ideas

Why is outdoor play important?

When playing outdoors, children:

- develop strength and control of large and small muscles
- develop cross-lateral movement (movement which crosses the midline of the body)
- develop balance and coordination
- gain confidence and independence
- experience sights, sounds, smells and textures of the natural world
- experience freedom to run, jump, shout and be 'messy'.

Children should always wear a hat and sunscreen when outdoors.

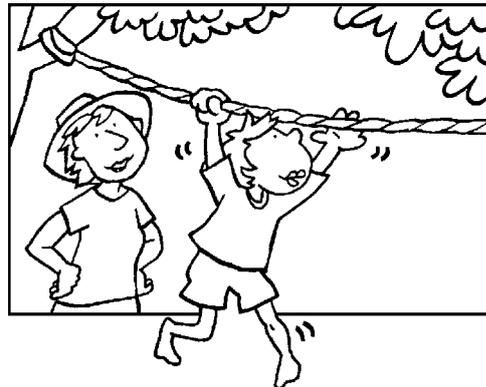
When outdoors, children can:



climb, run and jump



do messy art



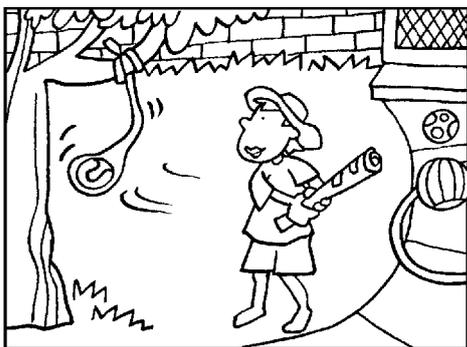
swing, for example, on a swing frame or a rope tied to a sturdy object, or monkey (hand over hand) along a low strong branch



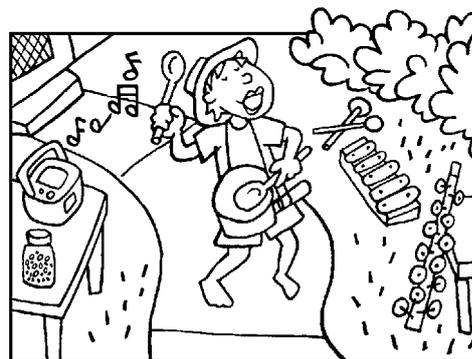
play with sand, water and mud, for example, using spades, trucks, boats, pieces of wood



engage in pretend play involving noise and action, for example, firefighters, farming, pirates or boats, emergency, zoos



play with bats, balls, hoops, ropes and other outdoor play equipment, for example, use different sized balls and bats (purchased or made from household objects such as rolled-up newspaper or wood)



move and dance using homemade or real instruments, scarves or ribbons, and recorded music

Building strength 1

Young children need to build hand, arm and upper-body strength, so they can control their body and movements when they write, cut and perform activities at a desk.

Children need to complete an activity that builds hand, arm and upper-body strength on most days, for example: climbing and swinging using their arms, manipulating dough or clay, lifting and playing with water and sand, or using cooking equipment that requires repeated strong movements.

Here are some ways to build students' strength.

Water play

What you need

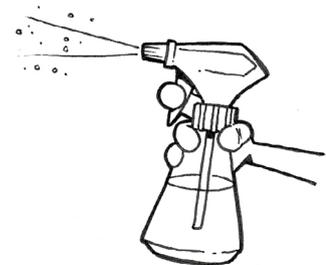
- Water in a large tub, sink, bath, bucket, pool, creek, dam or from a hose
- Everyday items for water play, for example, clean recycled plastic containers, bowls or jugs, 1- or 2-litre soft drink bottles, buckets, 'squeeze' bottles (shampoo or tomato sauce bottles), trigger-spray bottles, large sponges, funnels, water pump, water wheels



What to do

Students could:

- scoop, tip and pour water from container to container or back into the tub or bath
- squeeze water out of large sponges or 'squeeze' bottles
- fill and carry large buckets or containers of water
- spray water from a trigger-spray bottle using one or both hands.



Sand play

What you need

- Sand or dirt
- Water
- Everyday items and sand-play toys, for example, buckets, spades, scoops, toy trucks, ice-cream containers, large bowls, cooking trays, jugs, sieves



What to do

Students could:

- lift, carry and turn over or tip out large containers of wet and dry sand
- use a toy truck or dozer, or large shovel to dig and move large piles of sand
- tightly pack damp sand into containers or make a large mountain, volcano or sculpture and/or dig tunnels under castles.



Real or pretend cooking

What you need

- A real recipe and real or pretend cooking ingredients, for example, dough, soap, water, sand or dirt
- Cooking utensils, for example, grater, hand beater, spoon, bowl, masher



What to do

- Cook a recipe that requires students to mix, knead, grate, pour, beat (for example, butter and sugar, or eggs) with a hand beater or masher (for example, potato).
- Pretend to cook with dough by grating or squeezing dough through a garlic press (for example, to make pretend spaghetti or pizzas).
- Grate soap (into soap flakes). Cover grated soap with water and whip with a hand beater to make 'pretend' food or use it as finger paint.
- Mix, mash, scoop and lift wet sand or dirt (for example, to cook pretend cakes).



Building strength 2

Young children need to build both their leg strength and arm strength. Completing a strength activity on most days, as part of their play, will help students control their body movements and help them sit correctly and with control when they are working at a table or desk.

Note: Also see **Helpful information — Building strength 1**.



Note: Always ensure students are supervised and know the safety rules or safe ways to use equipment and complete activities. If students are outside, ensure they wear a hat and sunscreen, and/or complete activities in a shady area.

Building leg strength

You can help students build leg strength by asking them to try the following activities:

- Repeated jumping, for example, jump across a rope, hose or line drawn on the ground, in and out of a hoop, on a mattress on the ground, on an exercise mini-tramp or on a trampoline
- Skip with a hoop or rope
- Swim, for example, kicking with a board, pushing off a rock or wall
- Create a series of 'tricky jumps', for example, star jumps, jump and turn, or throw and catch a ball while jumping
- Continuous running or bike riding
- Dance, aerobics or exercises involving squats, kicks, jumps or leaps



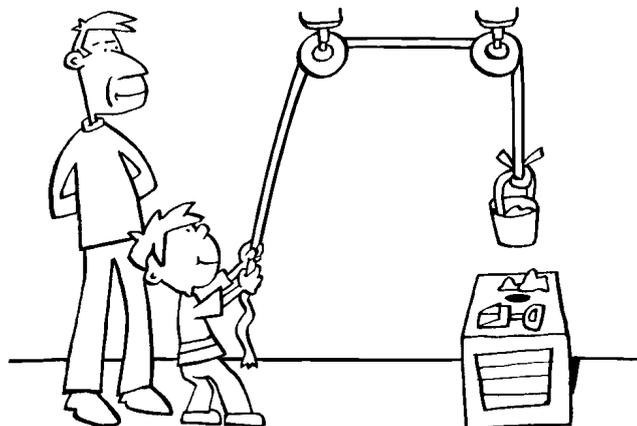
Building arm strength

You can help students build arm strength by asking them to try the following activities:

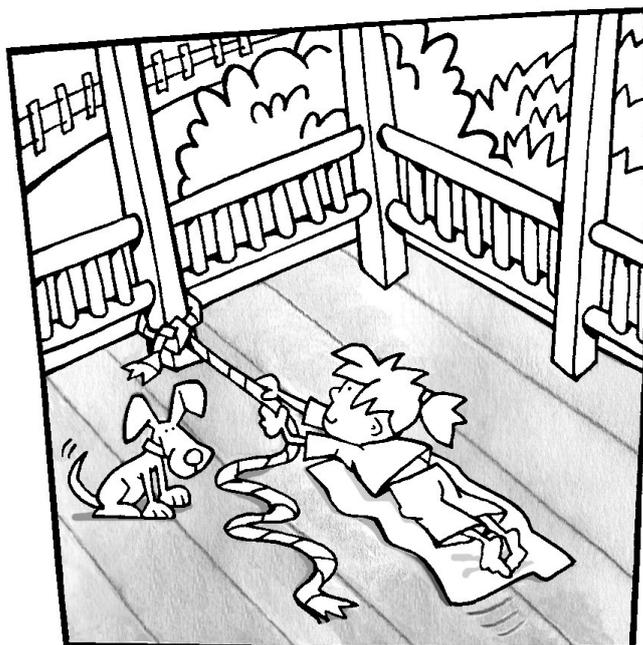
- Lift large spades full of sand, or buckets full of sand or water by hand or with a pulley system



Note: Use two pulleys in sequence, so students do not have to stand under the bucket when it is raised.



- Pull themselves along ropes, the ground or climbing frames using their arms
- Scrub a path, mat or wall with a small scrubbing brush and soap (using big, wide, arm actions)
- Swing on a Tarzan rope or trapeze swing
- Wheelbarrow walk (a person holds the child's legs and the child moves forward by 'walking' their hands)
- Swim using different arm movements
- Paint walls, trees or large sheets of paper with diluted water paint (using large brushes and big, wide, arm actions)
- Dance, aerobics or exercises involving repeated arm movements above the head or with outstretched arms



Card games

Go fish

Aims:

- To collect pairs of cards with matching numbers
- To have the most pairs of cards at the end of the game

You will need:

- a deck of cards (remove the jacks, queens and kings)
- two or more players.

Rules:

1. Players are dealt five cards each. The remaining cards are placed in a pile, facedown. This is called the 'fish' pile.
2. Decide who will start (usually the player on the left of the dealer). Player 1 looks at the cards in their hand and places any matching pairs face up on the table in front of them. Player 1 then asks the other player for a card that matches one in their own hand, for example: *(Larry) do you have a 6, please?*
3. If Player 2 has the card, they must hand it to Player 1 who puts the matching pair on the table and asks for another card. Player 1 continues asking for cards until the other player cannot give them one. That player then says, 'Go fish'.
4. When a player is told to 'Go fish', they take a card from the fish pile and add it to their hand. If it makes a matching pair, they place the pair on the table and fish again. When the player cannot make a pair, play moves to the next player.
5. If a player uses all the cards in their hand, they take another five from the fish pile and continue playing. The game ends when there are no cards left in the fish pile and all possible pairs have been placed on the table. The winner is the player with the most pairs.

Variation: The game can be played for a set amount of time (for example, five minutes).



Snap

Aims:

- To identify matching numbers on cards
- To have the most cards at the end of the game

You will need:

- a deck of cards (remove the jacks, queens and kings)
- two or more players.

Rules:

1. The dealer deals the cards evenly to the players. Players pick up their pile without looking at the cards.
2. Decide who will go first. Player 1 takes the top card from their pile and places it face up on the table.
3. Players then take turns to take their top card and place it face up on top of the previous card.
4. If the top two cards represent the same number, players slap their hand on the cards and call, 'Snap'. The player with their hand on the matching cards takes all the cards in the pile and adds them to their own. That player begins play again by placing their top card face up on the table.
5. Play stops when only one player has cards to turn over, or after a certain amount of time. The winner is the player with the most cards at the end of the game.



Concentration

Aims:

- To remember the position of cards
- To gather the most pairs

You will need:

- a deck of cards (remove the jacks, queens and kings)
- two players.

Rules:

1. All 40 cards are dealt, facedown and in five rows of eight.
2. Decide who will go first.
3. Player 1 turns up two cards without removing them from their position in the array. If the two cards show a representation of the same number, the player takes the cards, places them face up on the table and then turns up two more cards. Player 1 continues to turn up cards until they turn up two cards that don't match. Cards that don't match are returned to their original position, facedown on the table.
4. Player 2 repeats the process.
5. Play continues until all cards have been matched and taken. The winner is the player with the most pairs at the end of the game.

Variation 1: Remove the aces, twos, threes, fours and fives from the deck to limit the number of cards players have to memorise.

Variation 2: Players can be challenged by being asked to match four cards before they can claim them (for example, the 6 of hearts, diamonds, spades and clubs).



Sevens

Aims:

- To collect pairs, threes and fours of the same number
- To be the first player to get rid of their cards

You will need:

- a deck of cards (remove the jacks, queens and kings)
- two or more players.

Rules:

1. Deal seven cards to each player, then place the remaining cards facedown in a pile. Place one card beside the pile, face up. This is the discard pile.
2. Players sort their cards into order from smallest to largest.
3. Decide who will go first.
4. Player 1 takes a card from either the facedown pile or the discard pile and places it in their hand. They look for pairs, threes or fours of the same number and put them on the table, face up, if they have any. Player 1 then discards one of the cards left in their hand by placing it face up on the discard pile. They should choose one that has no other matching cards.
5. Player 2 takes Player 1's discard card (if it matches one of their cards) or a card from the facedown pile. Player 2 places their matching sets of cards in front of them and/or adds cards to Player 1's sets. For example: if Player 1 has a pair of 6s in front of them, Player 2 can add another 6 to Player 1's pair, making it three; this helps Player 2 get rid of their cards.
6. Player 2 discards one of the cards left in their hand.
7. Players, in turn, continue to take a card from either pile and match it to their own cards, or those of other players, until one player gets rid of all their cards.
8. The player 'going out' can place their last card either on the table or on the discard pile.



Getting along with others

Getting along with others is important for success in learning and life. Children learn to get along with others when adults **make it clear** to them what they need to **think** about and **do** to work well with other people.

What do students need to learn to get along with others?

To get along with others, children need to learn to:

- follow rules or negotiate rules with others
- be fair, take turns and share
- listen to others and respond positively to their ideas, needs and feelings
- explain ideas, needs and feelings clearly and positively to others
- join in activities positively
- leave activities positively
- keep activities or games going happily
- 'give and take' and negotiate with others
- resolve conflicts and solve problems
- seek help, when needed.



How can I help students learn to get along with others?

To help students learn to get along with others:

- point out **why** it helps to work positively with others

If you work together, you can do things you can't do by yourself. When you worked together, you finished that puzzle more quickly. You had more fun when you played together. You learned something new by working with your sister.

- show or explain to your child **what to do or say**, so they get on better with others

It will help if you tell Billy what you do want him to do, instead of telling him what he can't do.

Explain to Vanessa why it would be better to build the tower together.

You can say to Tania, 'I need a turn now!'

- point out how using a positive or happy **voice tone** helps people to get along

When you yell, Sam doesn't want to play. Explain your idea using a calm voice.

You explained your idea for a game very happily, so Laura is excited about the game now.

- point out **what** students did that **worked well** or what else they could try.

You noticed that Mandy wasn't happy with that idea, so you changed the rules. Then you both enjoyed the game.

Perhaps you could try showing him how to do it. Then he can help you.

Investigating letters and sounds

When you see quote marks around a letter (for example, 'b') it means you should say the name of the letter.

When a letter is marked with forward slashes (for example, /b/) it means you should say the sound of that letter.

As each new letter and sound is introduced, remind students that learning about letters and sounds helps them to read and write.

Use the following steps to introduce letters and their sounds:

1. Discuss words that begin with the sound, using examples from a familiar text or context.
 - Talk about the sound the letter makes at the beginning of words.
 - Find and talk about words from a shared book, print items in the environment or people's names.
2. Say the sound clearly and point out the shape of the mouth. Describe the sound (for example, a soft, hard, short or long sound) and how it is made. For example: *Say the /m/ sound with your lips pressed together gently. Listen to the humming sound /m/ makes.*
3. Ask students to make the sound and use a mirror, or watch a partner's mouth, to monitor the positions and shapes of the mouth and tongue. (**Note:** Feeling the changes in the shape of the mouth when saying single sounds helps students understand that words are made up of groups of sounds.)
4. Name the uppercase and lowercase letter that makes the sound and practise writing the letters (using the Beginner's Alphabet — refer to the **Alphabet chart** in the Starter kit for letter formation):
 - in the air
 - on a desk with their finger
 - on a scrap piece of paper
 - in a sand tray or finger paint.
5. Show everyday objects or pictures that start with the sound. Write the names vertically (one under the other) and line up the beginning letters. Say the words slowly, emphasising the beginning sound.
6. Play simple games to reinforce letter–sound knowledge. For example, sort objects or pictures into groups that do or don't begin with the sound or letter. Vary the game by saying a series of words and asking students to identify the words that do or don't begin with the sound or letter.

How a child begins to read

Reading involves **thinking** and **making sense** of ideas in a text by putting together lots of information. Reading is not just about working out letters and sounds and saying the words on a page.

Reading involves using:

- memory
- visual information (for example, in pictures, logos, colour and size of words or letters, body or facial expressions)
- knowledge of how print is organised (for example, from left to right across the page, from top to bottom down a page, the use of sections, headings or subheadings)
- skills to work out words (for example, breaking words into **useful** chunks such as tr-ap, pl-ate, Sat-ur-day; looking at letters and sounds and knowing when a word cannot be 'sounded out', like the word 'one'; using the picture clues)
- patterns in the text (for example, rhyme or repeated words or sentences)
- knowledge of the world to predict words and check their reading makes sense.

When learning to read, students need to have a real purpose for reading (for example, to have fun or find out something) and feel it is okay to have a go.

During their Prep year, many children will approximate reading as they:

- look at pictures and tell a story to match the pictures
- look at pictures and remember the story
- run their finger under the words as if they are reading and make up or remember the story
- read, fairly accurately, a simple familiar text (for example, by looking at the pictures, using their memory, remembering repeated words or sentences, and looking at some letters or sounds).

How can I help students to read?

It is important that Prep students **see themselves as readers** and as someone who can, and will, learn to read gradually over time.

Students will be more successful if you:

- avoid pressuring them to read correctly
- encourage them to approximate and **think**, 'Does that make sense?'
- read to them every day
- let them see you read every day for real-life purposes (for example, signs, lists, recipes, letters, websites, labels, packaging, CDs, DVDs and words on clothing)
- help them to use lots of different clues to read (for example, use pictures, memory and beginning letters or sounds rather than just sounding out words)
- read books (and write or make books for them to read) that are **familiar, repetitive, short, interesting and fun**
- re-read enjoyable, familiar texts so they can join in the reading

- talk about how texts are organised and how they are used (for example, how a recipe, list or letter is set out and read)
- encourage them to **talk out loud** about the clues they are using (for example, *I looked at the picture. This letter says 'p' so the word might be puppy. I remembered that word because it was on every page.*)
- point out when and how to use different clues (for example, you could say: *Look at the first/last letter in the word. This word has two parts — 'Sun' and 'day' — so it says 'Sunday'. This word matches the picture. What might this word be? Try to point to the words as you read from left to right. Can you remember what happened? What does the old man keep saying?*)

How do I build a student's confidence to read?

To build a student's confidence to read:

- tell them it is okay to be learning to read and learning to read takes time
- make sure reading is fun, enjoyable and purposeful
- make sure they know you will help them
- praise them for their approximations or having a go
- explain clearly what they did that was useful and what else they could do to help them read a word or sentence.

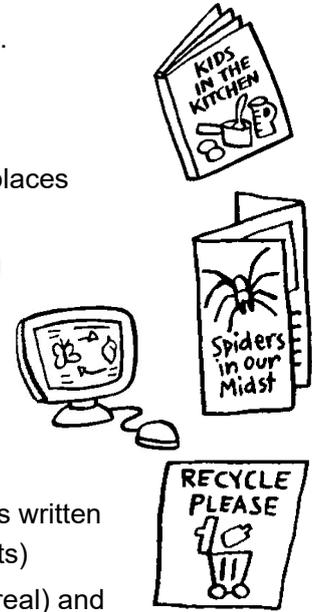
Learning about reading

Learning about reading helps children to build understandings needed for learning to read.

Children need to learn that reading involves **more than** just reading words.

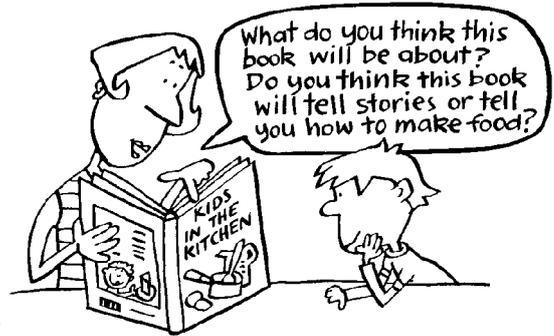
Reading involves:

- using **general knowledge** about the world
- **remembering** what has been seen or heard before in the text or other places
- thinking about **where and how ideas are presented**
For example: on signs, in shops or in magazines; ideas presented using words, pictures, symbols, diagrams or maps
- using information about how different **texts are organised**
For example: recipes, fiction books, letters or emails, and factual books are organised differently
- using information about the **purpose** of the text (for example, written to entertain, give directions or information, or sell or advertise) and who it is written for (for example, children, boys or girls, teenagers, women or men, adults)
- **deciding** if the ideas are **pretend** (imaginary) and not 'true', or factual (real) and 'true', and whether the ideas are **accurate and fair**.



How to help children learn about reading

1. **Read the words and talk about the picture** on the cover of, or introduction to, the book or text.
2. **Ask questions** to help children **predict** (make sensible guesses about) what the book or text will be about.
3. **Read the book or text together**. Encourage **children to join in** to read favourite, repeated or rhyming parts, or easily predicted ideas.
4. **Stop reading** from time to time and ask children to **look at, or talk and ask questions** about, the ideas presented in the words, pictures, diagrams or maps.
5. As you read, **point to the print** (on **some pages**).
For example: Run your finger under the print to show how you read words from left to right across the page and from the top of the page to the bottom of the page.
6. **Point to each word** separately, as you read **one or two sentences**. This shows children that **each word** you say is **written** as a **separate word** on the page.
7. Use **exact words** to talk about print.
For example: 'letter', 'sound', 'number', 'word', 'sentence', 'page', 'capital letter', 'full stop'



8. Point to **some words** that **match pictures**.

For example: Point to the word 'dog' and show that it matches the picture of the dog.

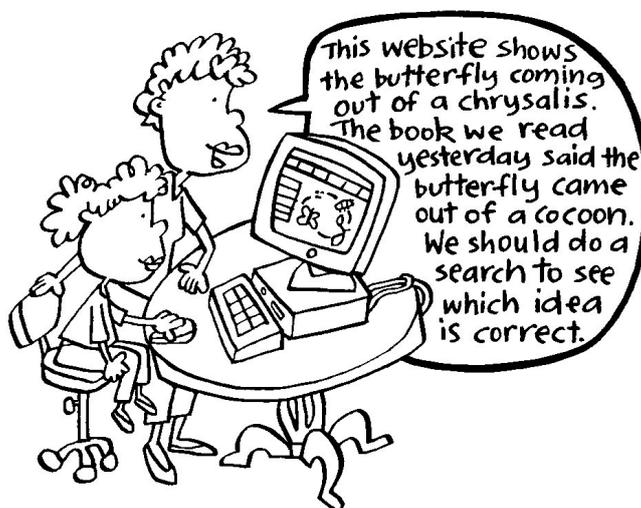
9. **Play with words, rhyme, letters and sounds.**

For example: 'Bee' and 'me' rhyme. They end with the same sound. Can you think of a word that rhymes with 'bee' and 'me'?

Note: Many preparatory children need clues or help to think of rhyming words or words that start with the same letter or sound. You can give hints (for example: *How old is your sister? She is 1, 2, 3. 'Three' rhymes with 'bee' and 'me'.*) or point to an everyday object that starts with the letter or sound, or rhymes.



10. Take time to **listen and respond to children's comments**, what they notice about the print, pictures and meanings or ideas that interest them.
11. Sometimes **compare** ideas (look for similarities and differences) in books to what children know, have experienced, read or seen and **think about the accuracy and fairness** of the ideas.
12. Make reading an **enjoyable experience** for everyone. Talking **too much** about the letters, words and ideas can make children dislike reading.



Sharing reading: Books

Reading is a complex activity that occurs inside the reader's head. It is very difficult to explain to a student what a reader needs to do to read a text. Shared reading is a strategy used to help the student learn about why people read and how people read. Shared reading is one way to model the process of reading, and how and when to use reading strategies. It allows an experienced reader to demonstrate concepts about print and the features of books and writing.

The process of sharing books involves not only reading to the student, but also encouraging their active response to ideas, words and illustrations. When sharing a book for the first time, spend time completing the activities below.

Exploring the cover

- Discuss the cover illustrations (picture walk): *Who is on the cover? Where are they? What are they doing? How are people or places represented?*
- Discuss the title and the author's and illustrator's names.
- Predict the content of the book.
- Discuss clues that help the reader know what type of book it is.

Sharing the text

- Talk about the title page and compare it to the cover (title and illustrations).
- Take turns to read parts of the text.
- Refer to illustrations, the table of contents, glossary and index as a guide to the text.
- Read with expression to make meanings clear.
- Predict what will come next and confirm predictions.
- Read through the book and stop to discuss the meaning of the text.

Examining the text

- Share opinions about the book and the characters.
- Ask questions to explore how people, places, events and things have been represented in the book.
- Identify similarities and differences between the student's experiences and those shared in the text.
- Make connections between the book and other texts or literature.

Re-reading the text

- Encourage re-reading to increase confidence in themselves as readers.
- Encourage the student to read more parts of the text each time.
- Encourage the student to read the book independently.
- Look for known sight words, and discuss letters and their sounds.

Talking about sentences, words, letters and sounds

To help students learn about print, adults can talk out loud about sentences, words, letters and sounds:

- **sometimes**, during or after reading or writing a text with students
- for a **short time**
- when students ask questions or **show interest**
- **informally** (in a chat), rather than being too formal
- when **responding to** students' ideas
- by keeping the learning **fun** and interesting.

Note: Children will lose interest if you talk too much about print every time you read a text.

Ideas for talking about sentences

Read a sentence to students and:

- Talk about what a sentence is
For example: *A sentence is a group of words that tell an idea. We put lots of sentences together to tell a story / explain what happened / describe what we see and know.*
- Talk about how to find a sentence
For example: *A sentence starts with a capital letter and ends with a full stop. The full stop tells you to stop reading / pause before you start the next sentence.*
- count the number of words in the sentence.
For example: Read, *The little cat was lost. Say, There are 1, 2, 3, 4, 5 words in this sentence.*

Ideas for talking about words

Read a short sentence to students and:

- show students that each word you say matches one written word on the page
For example: Point to each word and/or say, *Each word I say matches one word on the page.*
- explain what a word is
For example: *A word is a group of letters. This word has three letters — c-a-t. There is a space in front and at the end of each word to show you where the word starts and ends.*
- **point to** and **count** the words in a line, sentence or title, or on a page
- **point out familiar words** or words that start with a familiar letter (for example, 'Mum', 'dog')
- help students **point to each word** as they say it, or read the sentence with you or from memory.

Note: It is okay if students approximate reading or do not read accurately.

Ideas for talking about letters and sounds

Look at words, sentences or pages in texts and:

- **point to** and **count** the **letters** in some words
- **talk** about some **letters or sounds** that students **know** or show interest in
For example: *This word starts like your name. It starts with a 't'. The word says 'tree'. 'Tree' starts with a /t/ sound. Or, Can you think of some other words that start with this letter/sound? (/p/ for p-ie, p-en, p-op)*



- **talk** about **obvious sounds** students can hear at the beginning, middle or end of words
For example: /c/, /r/ and /t/ in 'carrot'
- **talk** about one or two **letters or sounds** students **are learning** or need to learn about
For example: *This word says 'door'. It starts with a 'd'. The letter 'd' says /d/.*



Begin to **introduce** some other ideas or ways to talk about letters and sounds that students will learn more about in the early years of schooling. For example, the ideas that:

- letters can **work together** to make a sound
For example: 'ph', 'sh', 'ch', 'ee', 'oo' or 'ay'
- letters can make more than one sound
For example: 'o' can have a short sound (as in 'cot') or a long sound (as in 'bone'); 'y' at the end of words says /ee/ (as in 'baby'); 'c' can say /s/ (as in 'city')
- some letters are **silent**.
For example: 'e' in 'table' or 'b' in 'lamb'

Playing with sentences, words, letters and sounds

Play simple games to help students learn about print.

1. Write, on separate pieces of paper, each word from one sentence in a text.
2. Help children put the words in order to make the sentence.
3. Look for and talk about the capital letter and full stop.



4. Cut up one or more words to show the letters.
5. Put the letters in order to make the word.



Counting and subitising

Subitising and counting are used to determine how many are in a collection.

Counting

Students require efficient counting skills to function in everyday contexts and to make sense of the world around them.

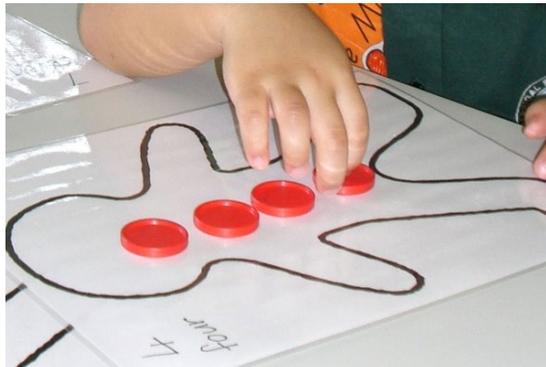
Early number study aims to develop a deep and flexible understanding of number and quantity. The development of counting principles becomes a major focus for young learners by focussing on counting principles.

The counting principles are:

- Each object must be counted, and counted only once.
- Numbers must be said once and in the conventional sequence.
- The arrangement of the objects does not affect how many there are in the collection.
- The starting point or the order in which objects are counted does not affect how many there are in the collection.
- The last number said tells how many in the collection; it does not refer to the last object counted.

Students develop these skills:

- in everyday contexts
- by seeing these skills modelled
- with frequent practice
- supported by explicit instruction and discussion on counting.



Subitising

The Australian Curriculum refers to the use of subitising to order and compare collections. The definition of subitising is recognising the number of objects in a collection without consciously counting.*

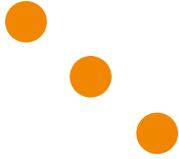
Many students can see how many in a collection at a glance before they learn to count. Students' ability to subitise extends to larger quantities and to seeing parts in a collection as they progress through the early years.

Students recognise quantities at a glance based on:

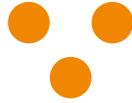
- a strong sense of a particular quantity, for example, 'twoness' or 'fiveness'
- familiarity with a collection or arrangement such as dice patterns
- rearrangement of the collection to make it more recognisable
- seeing smaller familiar parts within the collection.

* The Australian Curriculum: Mathematics for Prep (F)-10 Version 5.0

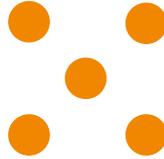
For example:



This is 3 just like the domino tile.



This is 3 because I can see 2 and 1.



This is 5 just like the dice arrangement.



This is 5 because I know what 6 looks like and this has 1 missing.

Subitising assists students to quantify collections and explore part-part-whole relationships.

Students need the ability to recognise parts and to count to calculate whole and decimal numbers.



Counting back

The strategy

As students develop their understanding of numbers and the concept of subtraction, they are ready to learn thinking strategies to support their gradual memorisation and recall of subtraction facts.

Counting back is an efficient strategy that can be used when **subtracting 1, 2 or 3**. Students start with the **larger number** and **count back** the number being subtracted to arrive at an answer.

At this stage, students are only expected to count back 1 and 2. Much practice is needed using materials and number tracks before applying the count back strategy in mental computations.

Activities for practising the count back strategy

Counting

- Count back from different numbers. For example: count back from 20 to 0; count back from 17 to 5.
- Say a number and ask students to say the number 1 or 2 before it. Use the terms 'before', 'less' and 'fewer', as students need to understand that these words are interchangeable.



Using the count back strategy in everyday situations

There is \$4 in a bag and the order is for \$2. Ask students how much money will be left.

(Say: *There was \$4 and the order cost \$2. How many dollars do I have left?*) Remind students to start at the larger number and count back 2: 4, 3, 2.



Removing items from containers

Place a number of items (up to 20) in a container. Tell students how many are in the container and ask them to remove one or two items. Remind them each time to start with the number in the container, then count back 1 or 2.



Using a number track

Ask students to place a counter on a number on the number track. Ask them to move the counter back 1 or 2, counting back as they move, and saying the number sequence as they move the counter, for example: 15, 14, 13.

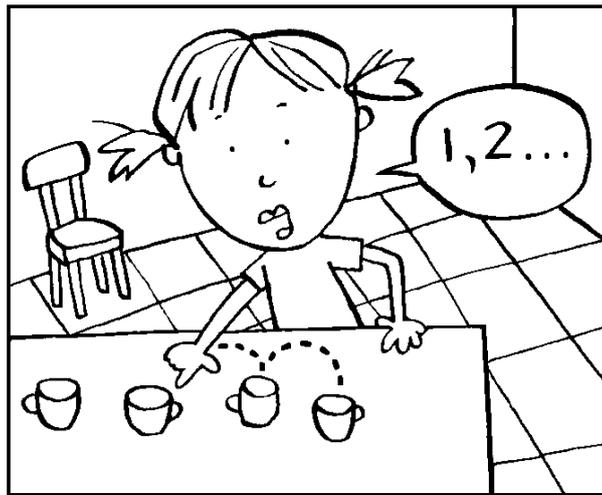


One-to-one correspondence

One-to-one correspondence is the matching of one object or one number to each object, and is an essential prerequisite to working mathematically.

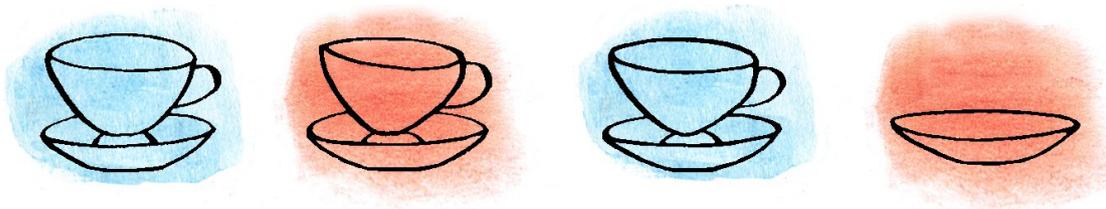
Until students can match one-to-one, they will not be able to count the number of objects in a collection or make comparisons between collections of objects.

In the early stage of counting, students may touch objects and say:



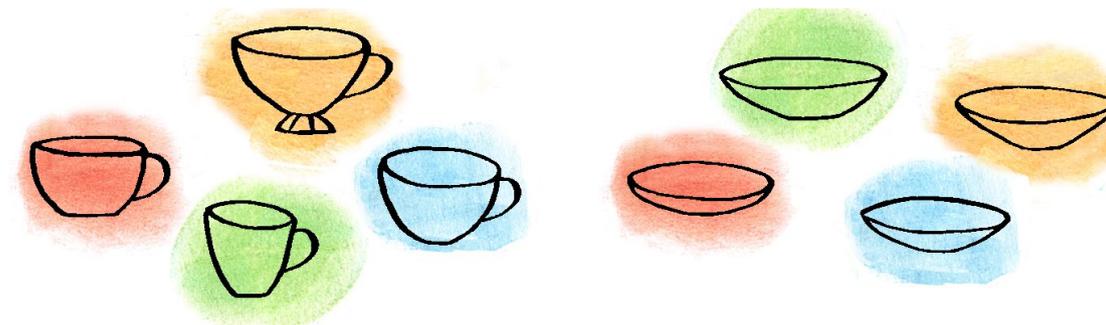
The idea of one-to-one correspondence is developed through handling concrete materials such as linking cubes, buttons, counters or stones. Matching and comparing collections is done without using numbers. For example:

Are there enough cups for the saucers?



There are too many saucers or not enough cups. Are there more saucers than cups?

This ability to match objects one-to-one will vary among students. Often students can match more easily when the items being matched are set close together. For example:



To help students understand matching, provide them with a variety of situations where they are required to match the elements of two groups to determine if the groups have the same or a different number of elements. For example:

- Lay the table with one placemat, plate, knife, fork and spoon for each person.
- Hold a family picnic. Students should pack one plate, one cup, and one or two straws (one-to-many correspondence) for each family member at the picnic.

- Match illustrations or felt-board cut-outs of objects and characters in stories such as 'Goldilocks and the three bears' or 'The three little pigs'.
For example: *Match the bowls of porridge with the three bears. Did each one get a bowl?*

- Play musical chairs.
- Play 'Pack the eggs', where students are given a number of 'play' eggs, such as ping-pong balls, golf balls or papier-mâché eggs, to pack into an empty egg-carton; the number of eggs may be enough, not enough or too many.

- Play a game of 'Clothes line'.
Give students items of clothing (or cardboard cut-outs of clothes) and a number of pegs. Ask them to peg the clothes to a clothes line, matching one peg to each side of the items of clothing. As an extension, students could also match the colour of the pegs to the colour of the clothes.



In all of these situations, encourage students to predict whether there will be enough, not enough or too many items. Ask questions such as:

Have we got enough plates for everyone sitting at the table?

Do you think we have enough lids here for all of those containers?

Do you think we have enough pegs to hang out all of the washing today?

Why do you think so?

Talking about numbers

From an early age, children learn about numbers as they count everyday objects with help, play games, watch television and see numbers used in everyday life.

Learning about numbers in the Prep year

In the Prep year, your child will:

- count by touching one object or picture each time they say a number name (one-to-one correspondence)
- learn that the **last number** they say, as they point to and count objects or pictures, is the number of objects in that group
For example: 1, 2, 3, 4. *There are four cakes.*
- use numbers in play and real-life situations
For example: in card and board games, counting for hide and seek, counting collections of seeds, rocks or leaves, measuring or cooking, reading road signs, price tags, tickets, clocks, electrical appliances
- explore how to record numbers by drawing, gluing, making a tally or other marks, and copying, tracing or writing numerals (1–10)
- show the same number in different ways
For example: show 6 by making a tower with 6 blocks, gluing 4 red and 2 blue sticks on a collage, copying number 6, indexing 6 on a clock, and drawing 6 dots
- learn about the position and sequence of numbers
For example: 5 comes before 6, 4 is between 3 and 5
- use language to describe and compare quantities
For example: use number names, compare numbers or quantities (less or more; bigger or smaller number; few, many or lots)
- recognise the number in small groups of objects without counting (subitising)
For example: see three dots on a domino and say, '3' without counting
- explore the idea of estimating (making sensible guesses) about how many objects or pictures are in a group
- play with ideas about adding (early addition), taking away (early subtraction), sharing (early division) and making multiple groups with the same number (early multiplication).

How to help your child learn about numbers

You help your child to learn about numbers when you:

- **talk about** and **use numbers every day**
For example: when packing up pencils, counters or cards, counting forks or plates when setting the table, counting stairs or steps taken, reading the clock, changing the television channel, counting the number of days until an event, counting cups or spoonfuls as you cook, and counting socks or clothes when sorting washing



- encourage your child to **count and point** to real objects and pictures **rather than** counting by **rote** (chanting numbers without meaning)
- **read and use numbers** in the environment with your child
For example: signs, posters, labels, books or magazines, clocks, TV remote, microwave oven
- **play** card and board **games**
For example: count cards as you deal, count pairs at the end of a game, count dots on a dice and count as you move a counter along a board, keep or add up score/s
- help your child to **record numbers**
For example: when scoring for a game, writing a list, recording times or turns, using numbers in pretend play (to write prices, make road signs or tickets, etc.)
- **ask** your child to tell you **how many** in a group, which group has more or less, which group or number is bigger or smaller, whether there are a few, many or lots of objects or pictures
- encourage your child to try to say how many in small groups (1 to 5) **without** always **counting**
For example: *How many fingers are you holding up? How many pictures are left to glue? How many dots are showing on a dice?*
- show how or ask your child to make a **sensible guess**
For example: *I think this jug will hold more cups of water than this bottle. I think there will be about eight stones in that group. Let's count. Which group do you think has three in it?*
- sing **songs** and say **rhymes** that involve counting, adding one more or taking one away
For example: 'Five little ducks' or 'Ten in the bed'
- make groups bigger by **adding** more, and make groups smaller by **taking** some away
- **group a number** of objects in **different ways**
For example: 8 can be grouped as 6 and 2, 4 and 4, 3 and 5
- **share** out biscuits, cards, counters or regroup larger groups into groups of the same size.
For example: 12 biscuits can be made into 3 groups of 4, or 6 groups of 2; 16 counters can be shared between two people (each will have 8)

Respond positively as your child explores numbers

To support your child as they approximate accurate counting, you could say:

- *That was good counting. Let's count them again together to check that everyone has three each.*
- *You tried hard to count all of the pencils. Well done!*
- *That was a bit tricky. What could you do next time to help you write the number '9'?*
For example: look at the **Number chart** or calendar
- *I liked the way you pointed to each animal as you counted!*

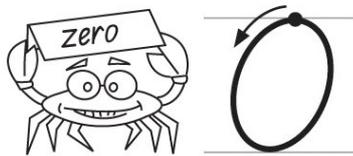


Writing numbers

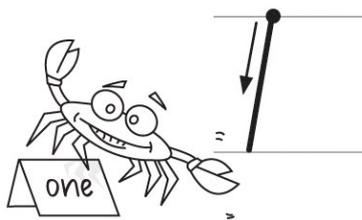
The ability to write numbers is a handwriting skill and in no way reflects a child's understanding of particular numbers.

Reversal of some or all numbers is common with immature writers. Consistently modelling correct forms, giving immediate feedback on student's attempts and encouraging continued effort will solve this problem for most students.

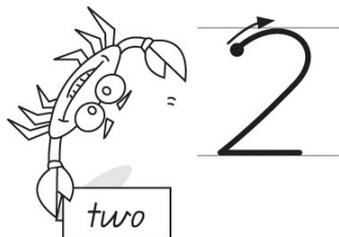
Say aloud the poems below as you demonstrate how to write each of the numbers. Encourage students to say the poems as they write the numbers.



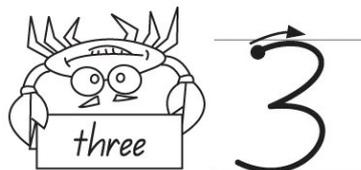
Start at the top and left we go
All the way round to make a zero.



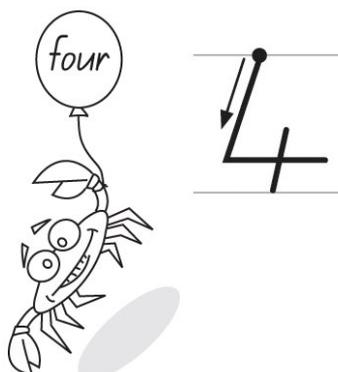
Nothing's faster than a one
Draw a line down and it's done.



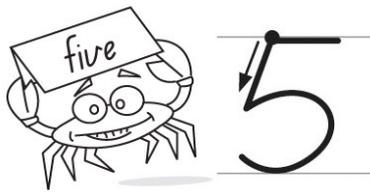
The secret is: just let it flow.
Curve around then down you go.
Across the floor, then thanks to you
We have a lovely number 2.



Make your pencil do a swerve
Then race around another curve.
Before we all cry out, 'Yippee!'
You have made a number 3.



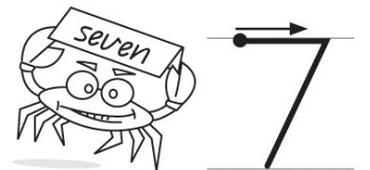
If you want a number 4
Start at the top, head to the floor.
Go across — draw a little line
Our number 4 is looking fine.



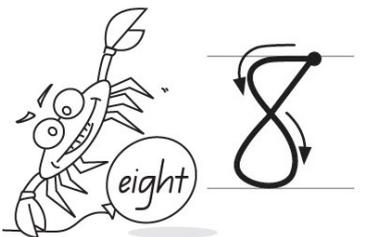
To make a 5, slide it down
Next, send it curving round.
Almost there — but don't you stop
Until you've put a hat on top.



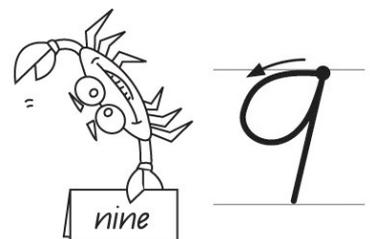
Straight little back and big round tummy
Number 6 looks very funny.



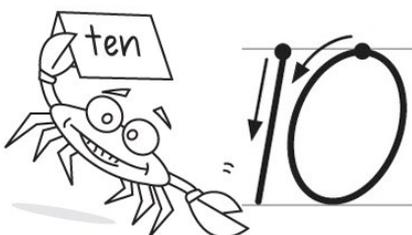
Left to right and down we run,
7 is standing. That was fun.



Make an S and then go straight
Back to the top, you've made an 8.



First go left and then around
To finish the 9, go up then down.



Draw a 1, a nice straight line.
Draw a 0, that looks fine.
Stamp your feet and wave your pen.
You have drawn a number 10.

Ways to practise writing numbers

You can help students practise writing numbers with, and then without, a model by:

- writing numbers on their back or hand with your finger — the student might guess the number
- painting numbers on a blackboard or section of concrete with a large paintbrush and a bucket of water
- drawing numbers on large sheets of paper with a large crayon or felt pen
- bending chenille sticks into the shape of numbers
- writing numbers in sand or with finger paint
- writing numbers in the air with the index finger of their writing hand, their nose or their elbow
- moulding playdough or modelling clay into the shape of the numbers
- stretching elastic bands on a geoboard to form numbers
- gluing beans, corn or seeds over numbers written on cards
- walking, hopping or skipping around numbers made by sticking masking tape to the floor
- tracing models on a sheet of paper (written lightly or dotted)
- making edible numbers using biscuit dough.

About 2D shapes

During the Prep year, students will learn about four 2D shapes:

- squares
- rectangles
- circles
- triangles.

Shape and line

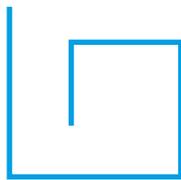
Students will be involved in constructing and deconstructing shapes using a variety of materials. During these activities, they will see how lines can join together to make angles:



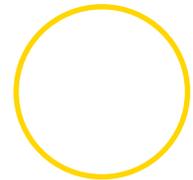
and when they close to form shapes:



Through these activities, they will come to know the difference between shapes that are **open** and shapes that are **closed**.



Open shapes



Closed shapes

2D shapes and 3D objects

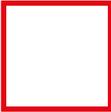
Students should have the opportunity to develop an understanding of the links between 3D objects and 2D representations. For example, when students are using a 3D object to create a print, talk to them about the 2D face of the shape that is represented.



Geometric terms and properties

Students will also explore the following properties of 2D shapes:

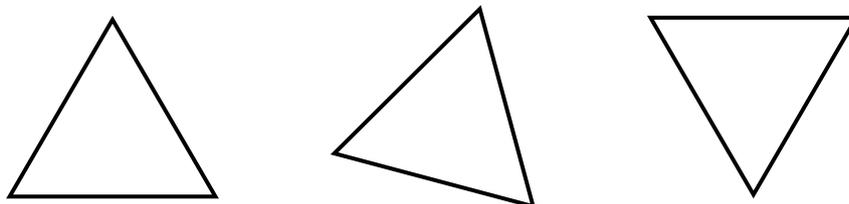
- straight and curved sides
- the number of sides
- the number of corners.

2D shape	Straight or curved sides	Number of sides	Number of corners
	straight	4	4
	straight	4	4
	curved	1*	0
	straight	3	3

* Mathematicians cannot agree on how many sides a circle has. Some say 1, some say 2 (inside and outside) and some say there are an infinite number. In this course, we will say that a circle has 1 side.

Visualisation

Students need to see different representations of shapes. This will help them identify shapes regardless of their orientation. For example, students need to recognise that all of the following shapes are triangles.



Activities to help develop an understanding of 2D shapes

- Observe shadows. Ask students to describe the shadows they see.
- Pose shadow problems. For example: *Make a shadow that looks like an aeroplane. Stand so your shadow has only one leg.*
- Match shapes with their shadows. Draw silhouettes of common objects and ask students to suggest what objects the shadows belong to. Ask them to explain their choices.
- Identify shapes by touch. Put attribute blocks in a feely bag for students to identify.
- Make 2D shapes using modelling material, pipe-cleaners, cardboard, drinking straws or wire coathangers.
- Sort shapes. Cut shapes from magazines and brochures and ask students to sort them, then explain how they sorted them. Each time, ask them to think of a different way they could sort them.

Direct and indirect measurement of objects

Direct comparisons

Students make direct comparisons of two objects when they place them side by side to see which is longer, taller, thicker, thinner, and so on.



Compare similar objects (for example, books) and different objects (for example, a shoe and a pencil) using direct comparisons.

Indirect comparisons

Students make indirect comparisons when they compare two objects using an intermediary device such as a piece of string. Indirect comparisons are often used to compare objects that cannot be lined up easily such as the length of your foot and the circumference of your head.



Early measurement

Early measurements are usually made in comparison to familiar objects and events.

Students may compare:

- features of an object including the mass, length and capacity
- the time of an event including the duration, sequence, speed, rhythm (regularity) and frequency (how often).

They may compare these:

- directly (for example, side by side)
- indirectly (with a go-between such as a piece of string)
- using continuous materials such as sand, streamers, string
- using discrete materials such as environmental objects.

The comparisons are reflected on using the language of:

- measurement — size, length, capacity, space, height, width, measure, mass, time, how long, sequence, order, speed, daily, weekly
- opposites — tall, short, thick, thin, long, short, skinny, fat, full, empty, light, heavy, fast, slow, wide, narrow
- comparison — same, different, longer, shorter, heavier, lighter, larger, smaller, bigger, tinier, longer time, shorter time, faster, slower.

Later, students may order objects or events according to:

- mass — lightest, heaviest
- length — longest, shortest, tallest, thickest, thinnest, widest, narrowest
- capacity — holds the most, holds the least, holds the same as
- time — fastest, slowest, longest time, shortest time, first, second, third, last.

Students learn to compare events and objects:

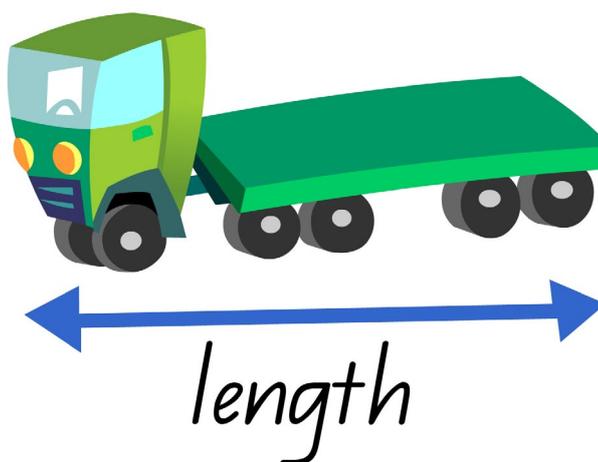
- in relation to themselves in everyday contexts
- with frequent exposure to the language of measurement
- using explicit instruction and discussion about measurement.

Length terms

What is 'length'?

Length is the distance from one end of an object to the other.

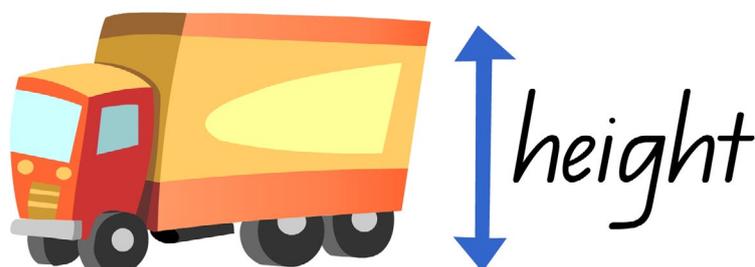
The words most often used to compare the length of objects are 'longer', 'longest', 'shorter' and 'shortest'. During daily activities, take the opportunity to ask students to compare the lengths of different objects, for example: *Whose shoe is longer? Line the shoes up from longest to shortest.*



What is 'height'?

Height is the distance from the bottom to the top of an object.

The words most often used to compare the height of objects are 'taller', 'tallest', 'shorter' and 'shortest'. Take advantage of opportunities to use this language, and to encourage students to compare heights of people and objects during daily activities.



What is 'width'?

Width is the distance from one side of an object to the other.

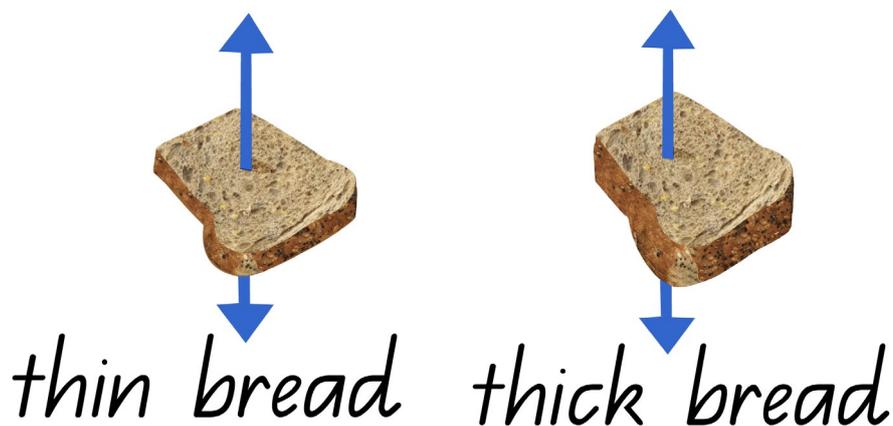
The width of an object is usually shorter than its length. The words that are usually used to compare the width of objects are 'wider', 'widest', 'narrower' and 'narrowest', for example: *The car is narrower than the truck.* Encourage students to compare objects using these terms.



What is 'thickness'?

An object's thickness is the distance between two surfaces.

The words used to describe an object's thickness are 'thick', 'thicker', 'thickest', 'thin', 'thinner' and 'thinnest'. Encourage students to compare the thickness of objects using these terms.



Patterning

Patterns describe consistent change and relationships.



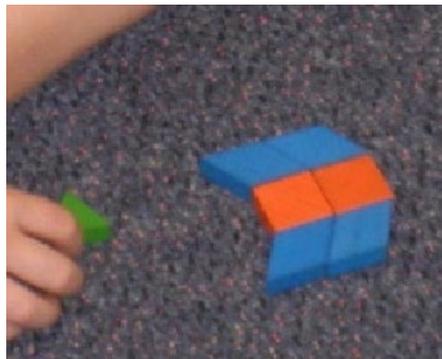
Recognising patterns and using pattern rules help students make sense of the world around them. Algebraic reasoning and spatial reasoning are enhanced when students in the early years become aware of:

- patterns in their environment
- the relationships between patterns and rules
- how patterns can be described using numbers.



Patterns can be described in a variety of ways. These include:

- repeating patterns — where elements or units are repeated
- growing patterns — where new elements are positioned at each phase
- number patterns — where numbers are used to describe a growing pattern
- linear patterns — where the pattern changes and continues in one direction
- 2D and 3D patterns — where the pattern continues in many directions or levels.



Repeating patterns



Students learn to identify and describe patterns through:

- exploring their natural and man-made environments
- copying and continuing sensory, movement and symbolic patterns
- explicit instruction and discussion about patterning.

The Australian Curriculum refers to early patterning with objects, drawings and number patterns formed by counting. The connection between environmental patterns and number patterns is an important focus in the early years.



Sound patterns can be repeated.

2D patterns can be copied.



Patterns can be identified to make sense of the world around us.



**Number patterns can be created when a function is repeated, for example:
+2 +2**

