

PARENT SUPPORT KIT

# GRADE EXPECTATIONS IN NUMERACY

## FOR KINDERGARTEN CHILDREN



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# Kindergarten Parent Numeracy Checklist



In Kindergarten, children work towards the following key skills. How confident is your child with the skills on this checklist? If you'd like help to help your child with these skills, you've come to the right place!

Your child will be learning the skills on this checklist throughout the year. There is no specific order to learning them and you can revisit them at any time.

## Whole Numbers

- ☐ 1 Count forwards and backwards to 30 from any number
- ☐ 2 Read the numbers 0 to 20
- ☐ 3 Compare and order numbers 0 to 20 (from largest to smallest and vice versa)
- ☐ 4 Read and use numbers to describe their place in an order to 10th (e.g. 1st, 2nd, 3rd)
- ☐ 5 Subitise small collections of objects
- ☐ 6 Use the phrase 'is the same as' to show equal groups
- ☐ 7 Recognise different coins and notes of Australian currency
- ☐ 8 Combine 2 or more groups of objects to show addition

## Addition and Subtraction

- ☐ 9 Recognise and remember number combinations that add up to 10
- ☐ 10 Take part of a group away to show subtraction
- ☐ 11 Compare 2 groups to work out 'how many more'
- ☐ 12 Show addition and subtraction using drawings, words and numbers

## Multiplication and Division

- ☐ 13 Explore, make and show equal groups
- ☐ 14 Use the word 'sharing' when dividing a group of objects

## Fractions and Decimals

- ☐ 15 Understand what one-half means
- ☐ 16 Show halves of objects using drawings

## Patterns and Algebra

- ☐ 17 Sort and classify objects into groups
- ☐ 18 Work with shapes, objects and pictures to recognise, copy, continue and make patterns

# Introduction to parent support kit in numeracy

Maths is everywhere! This kit can help you and your child to make real-life connections to what they're learning in the classroom. When children see, hear and use maths in real life, it gives their learning purpose. Use maths whenever you see the chance! Play maths games in the car. Involve the kids when you're cooking, shopping or budgeting. Add up the footy and cricket scores together. Talk about fractions as you serve food.

This parent support kit in numeracy is designed to help parents understand what children learn in each grade. At school, teaching is adjusted for the needs of each student. Children who show they have the skills listed in this kit will be working at grade level and assessed as sound.

This parent support kit uses parent-friendly language to explain the skills that children work to achieve by the end of each grade. We hope it empowers parents to help their children, and to participate in their child's education.

We know that every family is busy! The activities here are simple and straightforward. Any numeracy work you do at home with your child will help them in their learning. Your child's education is a partnership. Let's work together ...

## How to use this kit

This parent support kit:

- lists and explains the skills of children working towards a sound level
- shows ways to develop that skill with your child, including links to online resources like videos and games

Watch the videos to gain a deeper understanding of the skill. Work through the activities with your child. The suggestions here are a drop in the ocean – the internet has thousands! Use these as a starting point, and change them as you like.



**Definitions** are indicated by this icon throughout the kit. Lots of the definitions we use come from [www.schoolatoz.nsw.edu.au](http://www.schoolatoz.nsw.edu.au).



**Why is it important?** Next to this icon, you'll see 2 types of explanations:

- 1 Why this particular skill is important in the real world or for what children will be learning later on
- 2 Tips to help with learning



**A closer look:** This icon points the way to:

- an activity to help develop the skill or concept using familiar language for your child
- examples of problems
- handy tricks to help remember skills



**WEB link** This icon points the way to online resources you can use at home, like games, videos and further explanations.

[Video: Helping young kids get maths](#)

[Video: Helping your child with primary school maths](#)

Use the kit whenever and however you can! Your child will be working towards these skills all year. You might like to review the kit each term, or more regularly. If you have any questions about your child's learning, always talk to their teacher. Remember – we're all in this together!

## Where do I learn more?

The key skills listed in the Grade Expectations kit are taken from the NSW Standards and Education Authority's (NESA's) [Mathematics K-6 continuum of key ideas](#). You can find the complete [mathematics syllabus](#) for every grade at the [NESA website](#).

# Whole Numbers: *Key Skill 1*

## Count forwards and backwards to 30 from any number



Counting forwards and backwards helps children learn how numbers work in relation to each other.

Knowing the names of the numbers to 30 is essential to mastering this skill. Children will find counting forwards easier than counting backwards. Counting over 10s can sometimes be tricky for children, especially when counting backwards.



Find any opportunity around you to count together!

- Beads as you make a necklace
- Cars as you pack them away
- People riding the bus

Make popcorn together and count forwards or backwards to 30 before putting your popcorn back on the stove. ([Here is a great popcorn recipe](#))

Talk to your child about counting. 'Let's count forwards from 17 to 30. Let's count backwards from 26 to 0.'

Take turns skipping a number while counting and see if the other person can guess which number was skipped. Turn it into a competition and see who can get the most guesses right!

Play Hide and seek.



**WEB LINKS go to:**

[Video: Counting strategies](#)

[Video: Count forwards and backwards to 10](#)

[Video: Count to 20 song](#)

[Game: Chinese dragon ordering and sequencing](#)

[Game: Interactive number chart](#)

## Whole Numbers: *Key Skill 2*



### Read the numbers 0 to 20



A **digit** is a symbol used to write a numeral. The digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 are used to write all the numbers in our number system. A 2-digit number is any 2 numbers together e.g. 12 or 20.



Being able to read numbers helps build fluency when working with numbers. This is one of the most important skills that children need to learn for maths.

Be careful that the teen numbers are read and said clearly e.g. seven**teen** not seven**ty**! It is common for children to write the teen numbers back to front e.g. 41 instead of 14 for fourteen. Sometimes when 18 and 81 are written next to each other, children see them as the same number.



Play a game of Uno to build fluency reading the numbers 0 – 9.

Make 2 sets of flash cards and play old maid, memory or fish. ([Here's flash cards you can print](#))

Challenge yourselves to learn the numbers to 20 in another language. Other languages name numbers in a logical pattern and can be easy to learn. Many Asian languages use a simple system of ten = 10, ten and one = 11, ten and two = 12, ten and three = 13 and so on.



**WEB LINKS go to:**

[Video: Help your child to count](#)

[Video: Learn to count 1-10 in 4 languages song](#)

## Whole Numbers: *Key Skill 3*

### Compare and order numbers 0 to 20 (from largest to smallest and vice versa)



Comparing and ordering numbers helps children learn about number relationships. It builds understanding of where numbers are in relation to each other e.g. 10 is bigger than 1.

Children will find 1-digit numbers easier to work with than the teen numbers (11 – 20). Check when teen numbers are included in your group.



Order numbers together! Write the numbers to 20 on cups. Have your child order them from 0 to 20 making a tower. Try reversing and ordering from 20 to 0.

Create a number line and plot the numbers 0 to 20. Take 1 away and try to find the missing number. Make mistakes on purpose and help your child to find and fix them.

Write the numbers 0 – 20 on Lego or Duplo blocks (Jenga pieces would work too!). Work together to put the blocks in order. Put 1 block in the wrong place and work together to find it and put it where it belongs. Jumble all the blocks up and challenge yourselves to put them back in order in the least amount of moves or the fastest time.



**WEB LINKS go to:**

[Notes: Number games](#)

[Notes: 0-20 Number line](#)

[Video: Ordering numbers 0 -20](#)

[Game: Number trains](#)

## Whole Numbers: *Key Skill 4*



**Read and use numbers to describe their place in an order to 10th (e.g. 1st, 2nd, 3rd)**



Numbers used to describe a place in an order are called **ordinal numbers**. They tell the position of something in a sequence e.g. 1st, 2nd, 3rd, 15th, 100th. First and 1st mean the same thing.



We use ordinal numbers in everyday life to order and compare people, events and things. It is helpful to use both words and numbers when learning ordinal numbers – first and 1st.

Children learn this skill by finding first and last before moving on to places in the middle like third or fourth. It is helpful to remember that ordinal numbers depend on the starting point e.g. last **from the car** or second **from the door**.



Find your position in the line at the supermarket. Are you 3rd from the register? Last in the line?

Find things to compare and order e.g. heights, times, sizes and find the first, last and a place in between.

Read the story "Room on the Broom" by Julia Donaldson and recreate the story in the order the animals join the witch on her broom.

Work together to retell a story that you like or something that happened in real life. Remember to use the words firstly, secondly, thirdly etc

Cook a recipe and work together to follow the order of the recipe. Use phrases like 'What do you we do 1st?', 'What comes 2nd?' and 'What is the last thing to do?'

Play any games where turn taking and places are a part of the game like backyard races, table tennis, Twister, card games, Jenga, Monopoly Junior, Operation, Hungry hippo and many more!



**WEB LINKS go to:**

[Notes: Recipes for kids](#)

[Video: Room on the broom book reading](#)

[Video: Ordinal numbers song](#)



## Whole Numbers: Key Skill 5



### Subitise small collections of objects



**Subitising** is the ability to know how many objects there are in a group without counting. The group is randomly shown and not in a standard pattern like a dice.



We use **subitising** everyday! This is a fundamental skill and needs to be practiced many times. It is a skill that helps children split or break apart numbers to count groups.

Being able to split or break apart numbers makes them easier to work with. This is an important tool for doing mental calculations (doing maths in your head) e.g. 7 can be seen as 5 and 2 or 1 more than 6.

Look for an instant answer or grouping to count. If a child is counting or showing one-to-one counting (pointing a finger to each object as they count) they are not subitising. To guide you, adults can generally subitise about 5 or 6 objects.



Look for everyday situations where one-to-one counting is not needed.

'Grab 3 books for a story tonight'

'We need 4 spoons for dessert'

'How many photos are on that shelf?'

Play subitising peek-a-boo! 1 person closes their eyes and the other places up to 6 items in front of them randomly. When they open their eyes, can they instantly tell you how many objects are in front of them? Take turns and change up the placement and types of objects. See how many you can get right in a row.

Play a subitising memory game – have cards with groups of items (randomly placed dots are a great one!). Take turns turning 2 over and looking for a match. If they do, that player gets to keep the pair. The person with the most pairs at the end of the game wins! Ask questions like 'do they have the same number? How do you know?' 'what is 1 more?' 'what is 1 less?'.

Play any games that use dice or dominoes.



**WEB LINKS go to:**

[Video: Subitising explained](#)

[Video: Subitising](#)

[Video: Subitising with a child](#)

## Whole Numbers: *Key Skill 6*

### Use the phrase 'is the same as' to show equal groups



**Equal groups** means to have the same amount in each group.

**Conservation of number** means that children know that the number of objects is the same when rearranged e.g. 6 dice in a row is the same as 6 dice in a group or 6 dice spread far apart.



Children sometimes think that the bigger the space the items take up, the more items there are.

Learning to conserve number helps children to learn about numbers, counting and place value. This is a fundamental skill and needs to be practiced many times. Children often count each object in each group to confirm the amounts are equal.



Make 2 groups with the same amount of objects in each group and arrange them in different ways. Work together to count them and find out if they are 'the same'.

Find opportunities to share and ask your child to create equal shares. It could be at dinner time, sharing toys or time on the computer.



**WEB LINKS go to:**

[Video: Child not conserving number \(from 1 min 24 secs\)](#)

[Video: Child not conserving number](#)

[Video: Children conserving number](#)

## Whole Numbers: *Key Skill 7*



### Recognise different coins and notes of Australian currency



**Australian currency** is the money that is used in Australia.



Knowing and understanding the value of coins and notes is an essential skill for everyday life. It is important that children begin to learn the value of Australian coins and notes to be confident with money in later life.

It can be hard for children to understand money because many children do not see physical money or money exchanges (we use eftpos machines). Talking about and playing with money together helps children to learn the concept of money, as well as the types and value of coins and notes.



Play heads and tails!

If you have coins and notes from different countries, compare them to Australian money. Talk about what's the same and what's different.

Open up a pretend shop or restaurant and practise using money.

Create a 'coin caterpillar' that uses different coins. Don't forget to draw the legs and antennae!

Make coin rubbings by rubbing a pencil over a piece of paper with the coin underneath.



**WEB LINKS go to:**

[Notes: Coin based games to teach money](#)

[Video: Australian money - coins](#)

## Whole Numbers: *Key Skill 8*



### Combine 2 or more groups of objects to show addition



**Addition** is the process of combining collections of objects into a larger collection. It is the opposite of subtraction. Add, addition, plus and sum mean the same thing.



This helps to build number skills and helps children to move towards mental calculation (doing maths in your head) in later years.

Look for one-to-one counting where they are matching 1 object to 1 number. Children can sometimes get stuck if they forget to move or touch objects when counting. Look for every object being counted once and given a number as your child adds. Check that they know the last number they count is the answer.

Children in Kindergarten will often count all the objects starting at 1 to find the total.



Play board games where 2 dice are used to move around the board!

Create an 'addition machine' from recycled materials that has 2 paths (holed out cups or rolled up cardboard) that join to a box underneath ([see Notes: Addition Machine](#)). Drop each group of objects through the different paths to combine them in the box below. Count up the amount in the box to find your answer!

Imaginative play is a great time to use maths! Look for opportunities to weave in simple addition problems into the game e.g. 'Shimmer and Shine want their 4 genie friends to come too! How many cups do we need for the party now?'



**WEB LINKS go to:**

[Notes: Addition machine](#)

[Video: Learning addition up to 10](#)

[Video: Adding and taking away number 0 - 10](#)

# Addition and Subtraction: Key Skill 9

## Recognise and remember number combinations that add up to 10



**Number combinations** are a pair of numbers that add up to 10 e.g. 9 and 1, 8 and 2, 7 and 3, 6 and 4 etc. They are also called number bonds to 10 and friends of 10.



This is an important skill for working out mental calculation (doing maths in your head) in future years. Knowing number combinations makes adding and subtracting in your head easier. Through number combinations, children can start to see the relationships between numbers e.g.  $5 + 5 = 10$  because 5 and 5 are friends of 10. This skill needs a lot of practice!



Practise quick recall of numbers that add to 10.

$$9 + 1 = 10 \quad 1 + 9 = 10$$

$$8 + 2 = 10 \quad 2 + 8 = 10$$

$$7 + 3 = 10 \quad 3 + 7 = 10$$

$$6 + 4 = 10 \quad 4 + 6 = 10$$

$$5 + 5 = 10$$

Your child might learn about 'friends of 10', e.g. 3 and 7 are 'friends' of 10 because  $7 + 3 = 10$  and  $3 + 7 = 10$ .

Use a coat hanger and 10 pegs to group friends of ten ([see Video: Number bonds to 10](#)).

Friends of 10 is often shown as a rainbow with 9 and 1 joining at the biggest arc and 5 and 5 the smallest ([see Notes: Friends to 10 rainbow](#)). Make your own rainbow friends to 10 artwork.

Make friends of 10 paper chains where  $3 + 7$  would be 3 green links and 7 red green links etc. Show how each chain can be flipped for  $3 + 7$  or  $7 + 3$ . Can you find all the friends of 10?

Play a game where you have 10 straws and then hide a number behind your back. Your child has to work out how many straws are behind your back using their friends of 10.



**WEB LINKS go to:**

[Notes: Friends to 10 rainbow](#)

[Video: Activities with number bonds](#)

[Video: Number bonds](#)

[Video: Number bonds to 10](#)

# Addition and Subtraction: *Key Skill 10*

## Take part of a group away to show subtraction



**Subtraction** is taking 1 number or amount away from another. It is the opposite of addition. Decrease, minus, subtract, subtraction and take away mean the same thing.



This helps children to build number skills and move towards mental calculation (doing maths in your head) in subtraction in later years.

Look for one-to-one counting where they are matching 1 object to 1 number. Children can sometimes get stuck if they forget to move objects when working out their answer. Look for every object being counted once and given a number as your child subtracts. Check that they know the last number they count is the answer.

Children in Kindergarten will often count all the objects, then count and take away the amount they need to subtract, then count the remaining objects starting again from 1 to find their answer.



Play Snakes & Ladders or a game of skittles!

Play a pirate treasure hunt game where you start with 10 objects and the Kraken hides some away. Keep the left overs in a box so the pirate can work out how many items have been hidden.

Then go on the treasure hunt to find all the missing items! Take turns being the pirate and the Kraken. This game could be a princess and a goblin or any other characters your child likes!

Imaginative play is a great time to use maths! Look for opportunities to weave in simple subtraction problems into the game e.g. '3 trains had to leave Sodor to help the Fat Controller at the Abbey Station. How many are left at the Tidmouth Sheds now?'



**WEB LINKS go to:**

[Video: Basic subtraction](#)

[Video: Subtraction snake](#)

[Video: Adding and taking away number 0 – 10](#)

# Addition and Subtraction: *Key Skill 11*

## Compare 2 groups to work out 'how many more'



First, children need to be able to conserve number to learn this skill (see Key Skill 6). Children will sometimes think that the bigger the space the items take up, the more there are. Once they can conserve number they can work out accurately, how many more are in an uneven group.

Look for one-to-one counting where they are matching 1 object to 1 number. Children can sometimes get stuck if they forget to move objects when working out their answer. Look for objects being counted once and given a number as your child adds. Check that they know the last number they count is the answer.



Check your child can conserve number before learning this skill (see Key Skill 6).

Compare the fruit in the fruit bowl at home. How many more apples than oranges?

Play a game of snap, fish or memory. The winner won by how many more cards/pairs?

How many more boys than girls are there in your family? (or vice versa).



**WEB LINKS go to:**

[Video: How many more word problems](#)

[Game: Number games](#)

[Game: How many more to 10](#)

# Addition and Subtraction: Key Skill 12

## Show addition and subtraction using drawings, words and numbers



**Addition** is the process of combining collections of objects into a larger collection. It is the opposite of subtraction. Add, addition, plus and sum mean the same thing.

**Subtraction** is taking 1 number or amount away from another. It is the opposite of addition. Decrease, minus, subtract, subtraction and take away mean the same thing.



Children begin to learn about addition and subtraction by moving objects and using pictures. Children can sometimes get stuck if they forget to move objects when working out their answer. Look for every object being counted once and given a number as your child adds or subtracts. Check that they know the last number they count is the answer.

Find everyday events to give your child experiences using addition and subtraction.



Play a game with dominoes and try and find all the dominoes where all the dots add up to 10. Then ask them to find 1 with more or less than 10.

Create an 'addition machine' from recycled materials that has 2 paths (holed out cups or rolled up cardboard) that join to a box underneath ([see Notes: Addition machine](#)). Drop each group of objects through the different paths to combine them in the box below. Count up the amount in the box to find your answer! Use the addition machine to create questions and write the questions and answers using numbers.

Play a game of Subtraction Dice! Start at 20 and roll the dice. Minus your answer from 20. The first person to 0 wins! Write down each subtraction question as you play.

Play a game of skittles or go ten pin bowling.



**WEB LINKS go to:**

[Notes: Addition machine](#)

[Video: Beginning to learn addition](#)

[Video: Beginning to learn subtraction](#)

[Video: Math strategy - draw a picture](#)

[Game: Number games](#)



## Multiplication and Division: Key Skill 13

### Explore, make and show equal groups



Putting objects together in **equal groups** helps children to understand early multiplication and division. Encourage your child to move objects to create equal groups.



There are lots of opportunities to make and show equal groups in everyday life. Think about events when sharing is needed and ask your child to help you create equal groups.

- Sharing equal amounts of food
- Baking biscuits or cupcakes where the mixture is shared equally
- Building 2 Lego towers the same height
- Giving equal amounts of time to play with a toy
- Organising your toys into equal groups.
- Sharing out cards for a card game

One of the best ways to explore equal groups is to make unequal groups and problem solve together how to make them equal.



**WEB LINKS go to:**

[Video: Cookie monster finds equal groups](#)

[Video: Forming equal groups](#)

## Multiplication and Division: Key Skill 14

### Use the word 'sharing' when dividing a group of objects



**Sharing** is to divide big groups into smaller equal or unequal groups. Division, dividing, splitting, quotient and sharing all mean the same thing.



Putting objects together in equal groups helps children to understand early multiplication and division. Encourage your child to move objects to create equal groups when sharing.



Read the story "The Doorbell Rang" by Pat Hutchins and act out the story with your child. Make cookies (real or pictures) and work together to share out the cookies every time the doorbell rings.

Other books that you can read are "A Remainder of One" by Elinor J. Pinczes and "Divide and Ride" by Stuart Murphy.

Play card games where cards are shared evenly like fish or old maid. How many cards does each person get? Are there any left over?

Help your child share out treats around the family. One of the best ways to explore sharing is to share unevenly and problem solve together how to share fairly.



**WEB LINKS go to:**

[Notes: Sharing](#)

[Video: Forming equal groups](#)

[Video: "The Doorbell Rang" book reading](#)

[Video: Sharing division](#)

# Fractions and Decimals: Key Skill 15

## Understand what one-half means



A **half** is 1 of 2 equal parts of a whole.



This is the beginning of learning about fractions. Encourage your child to discover that a fraction is a part of a whole. The whole could be an object, a group of objects or a number.

Show that to create a half, a whole is split into 2 **equal** parts.



Find as many opportunities to create half in daily life and share them with your child;

- Pour half a glass of milk
- Grab half a dozen eggs
- Use half a cup of flour when cooking
- Cut an apple in half
- Play outside for half an hour
- Explore the northern or southern hemisphere (half of the world) on a globe
- Bring oranges for half time in their weekend sport game
- Play with half the pink playdough
- Cut the ribbon or string in half



**WEB LINKS go to:**

[Video: Introduction to half in the classroom](#)

[Video: How to teach a half](#)

[Video: Ernie's half eaten sandwich](#)

## Fractions and Decimals: Key Skill 16

### Show halves of objects using drawings



A **half** is 1 of 2 equal parts of a whole.



This is the beginning of learning about fractions. Work with your child to discover that a fraction is a part of a whole. The whole could be an object, a group of objects or a number.

Show that to create a half, a whole is split into 2 **equal** parts.



Make a folding butterfly artwork where you paint 1 half of the paper, fold the clean half over and press onto the painted half. Cut out the butterfly! You can do this with any shape or object that can easily cut in half – paint an apple, ball, tram or a robot etc.

Make a circle tree ([see Video: Making circle trees](#)).

Take turns drawing half a shape on a piece of paper e.g. a triangle, circle or square. Cover the half and the other person has to draw the other half of what they think the shape is. See if you can make a full shape!



**WEB LINKS go to:**

[Notes: Butterfly artwork instructions and template](#)

[Video: Introduction to half in the classroom](#)

[Video: How to teach a half](#)

[Video: Ernie's half eaten sandwich](#)

[Video: Making circle trees](#)

## Patterns and Algebra: Key Skill 17

### Sort and classify objects into groups



Sorting and classifying objects is a child's first look at patterns. Looking for similarities and differences between objects such as size, colour and shape is the beginning of finding patterns. Patterns are like puzzles and encourage logical thinking, which is important for maths.



Sort building blocks or Lego pieces into groups, by colour and size. Talk about how you grouped them and why.

Complete a jigsaw puzzle! Sort the pieces into corners, edges and middle. Then try to complete the puzzle.

Sort shoes into groups, by colour, size, type, owner (e.g. boots, sandals). Talk about how you grouped them and why.



**WEB LINKS go to:**

[Video: Sorting toys](#)

[Video: Ernie sorts his toys](#)

## Patterns and Algebra: Key Skill 18

**Work with shapes, objects and pictures to recognise, copy, continue and make patterns**



A **pattern** is made up of a number of elements that repeat.



Patterns can be like puzzles and encourage logical thinking which is important for maths. Looking for similarities and differences between objects such as size, colour and shape is the beginning of finding patterns. Identifying patterns is the easiest of these skills, with continuing and then explaining patterns being harder.



Challenge yourselves to learn some hand-clapping games!

Create a collage artwork that uses the same repeating shapes. See what interesting animals you can make with the patterns!

Create a pattern using items around the house and deliberately make a mistake. Work together to find the mistake and fix it. Take turns to be the Pattern Spy and find the mistake and then fix it!



**WEB LINKS go to:**

[Notes: 10 hand clapping games](#)

[Video: Patterns practice song](#)

[Video: Shape patterns](#)

[Game: Moon rock patterns](#)

[Game: Make your own pattern](#)

[Games: Identifying and continuing patterns](#)