

Helping your child with Mathematics at home

Stage 1

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Early Stage 1 – Stage 3

- Mathematics is mandatory for all students K–10.
- The [Mathematics K–10 syllabus](#) is divided into the strands of:
- number and algebra
- measurement and geometry
- statistics and probability.

Mathematics and Numeracy – What is the difference?

MATHEMATICS

- Mathematics is abstract – such as 5 dimensional shapes which can't be drawn but can be represented mathematically.
- The mathematical ideas used by engineers and mathematicians could be considered the 'numeracy' of those professions.
- Mathematics provides the foundations for being numerate.

NUMERACY

- Numeracy is applied.
- Numeracy uses and applies mathematical ideas to solve problems in everyday or applied concepts.
- Numeracy is flexible and relates to the context in which it is being applied.
- Numeracy is connected to other areas of mathematical concepts and to everyday concepts.

Working Mathematically

- The working mathematically components of communicating, problem solving, reasoning, understanding and fluency are integrated within the strands. Students who feel confident about working mathematically feel confident about themselves as learners of mathematics.



Stage 1

- tell the time to the half hour
- state the place value of digits in two digit numbers, eg 'in the number 32, the 3 represents 30 or 3 tens'
- begin to model multiplication using concrete objects, eg 3×2 is the same as 3 groups of 2
- describe halves found in everyday life, eg half a glass of water n use the terms 'add', 'plus', 'equals', 'is equal to', 'take away',
- 'minus' and 'the difference between'
- measure the lengths of a variety of everyday items

- recognise, describe and order Australian coins according to their value
- tell the time to the quarter hour
- count, read and write numbers to 1000
- model division using concrete objects, eg $6 \div 3$ is the same as sharing 6 objects into 3 equal groups
- Compare and order the area of two or more surfaces
- Use a calendar to calculate the number of months, weeks or days until an upcoming event
- Understand and draw graphs and diagrams of data, eg use simple picture graphs and tables
- count forwards and backwards by twos, threes and fives.

Helping your children feel good about maths

- **Have a positive attitude towards maths**
- Many parents are scared of maths or think they just can't do it, but it's the worst thing you can tell your child.
- Parents are just *so* crucial as role models.
- When parents tell their children that they themselves can't do it, it means they're communicating messages that it's OK not to be good at maths, which can carry all the way through high school.

Talk to your child about maths in everyday life

- cooking in the kitchen (measurement)
- operating a microwave oven (numbers and counting backwards)
- stacking containers in the cupboard (shapes)
- finding a certain house number down the street (counting by twos, fives).



Maths at school today

- <https://www.youtube.com/watch?v=E3fLp0QADUU&fs=1&hl=en%5FUS&rel=0>
- Maths today is about understanding **number patterns**, not learning by rote.
- There is always more than one way to get the right answer.
- Children are taught mental strategies, like **using number lines**, to figure problems out in their heads
- Ask "What is the question asking you?"
- Practise the times tables
- Don't jump in with the answers.
- Stay positive.
- Talk to the teacher if your child needs more help with the homework.

Ask your child to explain how they work things out

- You could ask your child, 'How did you get that?' they may at first say, 'I don't know', but if they realise there is an expectation that they will need to explain the way they do maths, they will start thinking about it. The more they think about how they did something, the more it might make sense to them – it really contributes to that meaning-making process.

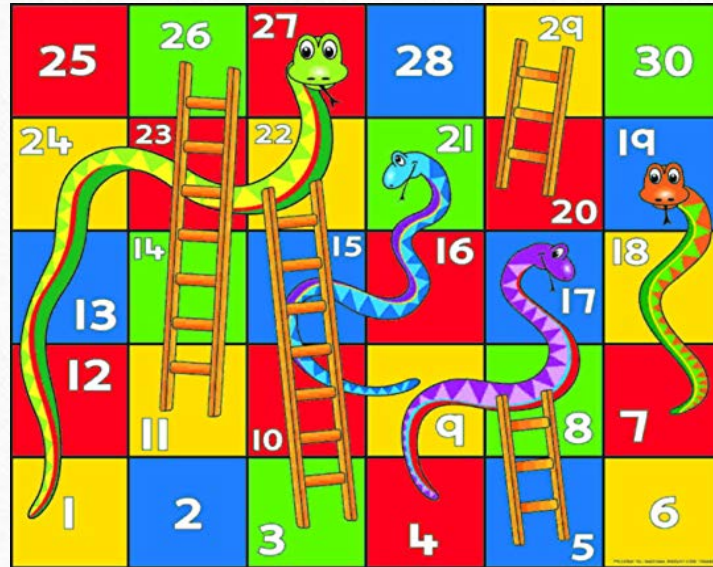
Look at patterns with your child

- Asking your child to identify patterns – whether it's a pattern in a sequence of numbers, the beads in a necklace or the way bricks are arranged in a pathway – is helpful because through patterns, children identify structure.
- When we get to more advanced levels of maths such as algebra, it's all about identifying and dealing with patterns, so if we can get children at a very young age to start looking at them, no matter how simple they are, they're developing a mindset that they are important.

Get your child to work things out in their head

- Children are encouraged to work things out in their mind in the early years of school rather than using pen and pencil to work out number problems, because it leads to a deeper understanding of the maths involved.
- Maths is about building upon foundations. The more complex maths kids learn later on is made easier if they've got solid foundations in those early years. That's why it's so crucial for children in the younger grades to understand those foundational concepts of maths: [addition, subtraction, multiplication and division](#).

Games to play at home



Card games

- Use the cards 1 (Ace) to 10
- **Kindergarten - Year 2**
- **Snap** – Recognising numbers. numbers before and after a given number, combinations to 10,
- Divide the cards amongst the players.Snap the cards that are the same.
- **Variations:**
- Snap the cards that come after the one played.
- Snap the cards that come before the one played.
- Snap the cards that add up to 10.

- **Fish** – Recognising numbers

Deal out seven cards to each player.

Each player finds pairs of numbers from their hand and places them down in front of them. Player 1 asks the player sitting to their left if they have a card that matches one of theirs so that they can make a pair. If they do have the card, they give it to player 1. If they do not have the card they say “fish” and player 1 picks a card from the pack. Play continues in this way. After all the deck has been used, players count the number of pairs they made. The winner is the one with the most number of pairs.

Place in order – Numeral recognition, numbers before and numbers after a given number

Place all the cards 1(ace) -10 face down in rows of ten so that there are four rows with ten cards in each row.

The aim of the game is to have the cards in order in each row. (cards places 1 – 10). Player 1 turns over the first card and tries to work out where it should be in the row and places the card down. The next player picks up the card where player 1 placed their card and then works out where to put that card. Play continues in this way until all the rows are from 1 – 10.

Make 10 – Addition

A pack of cards 1-10

One player deals out ten cards and places them face up in a row. The first player then looks across the row of cards for combinations that add up to 10 (any number of cards is fine). Only one combination can be removed. The aim of the game is to collect as many cards as possible, so combinations that require more cards are favoured. Once a combination of cards has been removed the cards are replaced with new ones from the pack. Play continues until there are no more cards or combinations to 10. The winner is the player with the most cards.

Variation

Choose a different target number for the combinations.

Year 1 - Year 3

Addition snap – Addition of number facts

You need:

Cards 1(ace) – 9

two players

Players divide the cards evenly. At the same time each player turns over one card. Players add the two numbers together as quickly as possible and say the answer aloud. The player who says the correct answer first, keeps the two cards. Play continues until one player collects all the cards.

Year 1 - Year 4

24 – Addition and subtraction using mental strategies

Deal out all the cards, an equal number to each player. The person to the dealer's left goes first and the game continues clockwise. The first person turns over a card and places it face up in the centre of the play area. The next player turns over a card and adds it to the card already played, says the sum out loud, and places the card on top of the previously played card. The next player turns over a card and adds the card to the sum of the first two cards. Play continues in this way until someone adds a card that makes 24 or more. If the sum is exactly 24 that player wins. If the sum is over 24 the value of the card is taken away from the previous total. Play continues until someone gets a total of exactly 24.

Year 1 - Year 6

Addition and subtraction – addition and subtraction facts

You need cards 1 (ace) - 10

Players divide the cards evenly between themselves and place one card face up in the middle/ The first player places down a card places the card next to the card in the middle. If it is a black card the cards are added together. If it is a red card subtract the number from the previous total.

Year 2 - Year 6

Add or subtract – Addition and subtraction

Start with a selected two digit number such as 35. Players take turns to turn over a card. If the card is black it is added to the number (35). If the card is red, the number of the card is subtracted from the number.

Play continues by adding or subtracting the card turned over from your total. The player with the highest number at the end of the game is the winner.

All ages

Up and Down – sequencing in ascending or descending order

You need a deck of cards 1 -10

Each player is dealt four cards face up. The remaining cards are placed in a pack in the centre. The aim of the game is to be the first player to arrange the cards in ascending or descending order. Starting with play to the dealer's left, each player takes turns to exchange cards from the pack or discard pile to arrange their four cards in order. The first player to arrange his/her cards in order is the winner of that round and receives a point. The first player to accumulate five points is the winner of the game.

Card Calculations – addition, subtraction, multiplication, division

You need a pack of cards 1 -9

Each player is dealt 4 cards face up. Each player then tries to make a number sentence which gives a single digit answer using their four cards. The answer becomes the score for that player.

For example If the four cards were 2, 6, 3 and 7

Answers could be:

$$7 + 3 + 2 - 6 = 6 \quad 6 \text{ points}$$

$$6 + 7 - 3 - 2 = 8 \quad 8 \text{ points}$$

$$36 - 27 = 9 \quad 9 \text{ points}$$

The winner is the player with the largest score after five rounds.

Variations:

Aim to produce the lowest score

Deal out more or less cards

Domino games

Activity 1

Work in pairs. Each student takes a domino. Count the number of dots to determine the total. Write the number after the total and the number before. Partner checks the recording. Change roles.

Recording sheet

Activity 2

Work in pairs or small group. Dominoes are placed face down. The first player selects a domino to place on the “Follow the Leader” mat. Students take turns picking up dominoes one by one and placing them on the mat in the appropriate columns. Each student explains why they have put their domino in that space. Another student has their turn.

Recording sheet

Activity 3 Parking lot

Choose 6 number cards and place them on a table. Find dominoes that total the number on the card. Record the number sentences.

Activity 4

Work in pairs. Each pair of students is given a number between 15 and 30. Each student finds 4 dominoes that altogether have a total matching the number on the card. Students record number sentences. Use a calculator to verify partner's total.

Useful websites

- Learning Potential Australian Government to support learning at home – Includes resources activities and online games: <https://www.learningpotential.edu.au/>
- NSW Department of Education: Practical Help for Parents: Formerly <http://www.schoolatoz.nsw.edu.au>
- <https://education.nsw.gov.au/public-schools/practical-help-for-parents-and-carers/maths>
- <https://education.nsw.gov.au/public-schools/practical-help-for-parents-and-carers/maths/maths-a-to-z>

Handouts

- Card games
- Dice games
- Domino games

The only way
to learn
mathematics
is to do
mathematics.

PAUL HALMOS