

Mathematics Games Booklet

Year 4





MATHS AT HOME

Mathematics is an important part of everyday life and there are lots of ways you can make it fun for your child. The way your child is learning to solve mathematics problems may be different to when you were at school. Get them to show you how they do it and support them in their learning.

As parents, family and whānau you play a big part in your child's learning, and you can support and build on what they learn at school too.



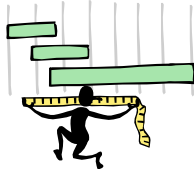
Shopping Activity- helping at the supermarket

- Ⓢ How many apples/bananas weigh a kilo?
- Ⓢ We need a kilo of cheese. Which cheese block is the best deal this week?
- Ⓢ Which package is more expensive: \$2.45 or \$2.75? How do you know?



Encourage estimating skills, such as predicting how long a journey will take; how long it takes to set the table; how long it takes to walk the length of your street.

- Ⓢ Can you draw a map and show me how we can get to the shop?
- Ⓢ How long do you think it will take to walk from home to the end of our street?



Measure things around the home: the difference between a towel, a hand-towel and a face cloth; the size of your dining table; the amount of food for your pet each day and calculate how much it eats in a week.



Let your child work out how much time it takes to do things or go somewhere using a timetable will give your child opportunities to calculate.



Using Times

Living with schedules and routines

- 🕒 Set and say times for when things will happen. (i.e. You can help me make dinner at 5 o'clock. You can have a shower at half past 7). Draw your child's attention to a clock when it's time to do things so they get used to seeing the time and hearing the time together.

Noticing Time

- 🕒 Draw your child's attention to the clocks and times around them. *Look, it's 7 o'clock. Can you see a clock in this place (such as a shop, library, train station)?*
- 🕒 Ask your child to find all the things that tell the time and count the time in your house.
- 🕒 Note all the names we have for time: the day, the month, morning, night, evening, afternoon, tea-time, summer, midnight etc.

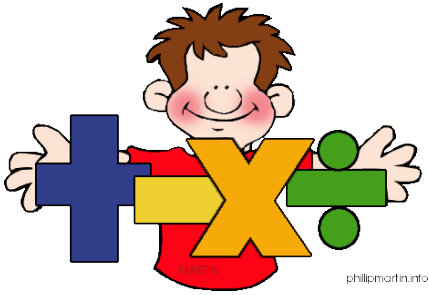


Telling Time

- 🕒 Support your child with learning to tell time.
- 🕒 Ask what time it is often and support them in reading the time. If it's a digital ask them to describe what that would look like on the clock face. This skill takes a lot of practice and you can add to practice they get at school by encouraging them to look at clocks and read them for you.
 - Is it **PAST** the hour or coming up **TO** the hour?
 - How many minutes to what hour? Or how many minutes past what hour?
- 🕒 Encourage them to move back and forth between digital and traditional clocks. For example: *It's quarter to 9. That's the same as 8:45*

Reference:

www.minedu.govt.nz/Parents



Make 100



What you will need:













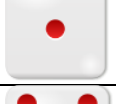
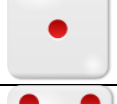
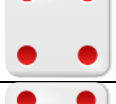
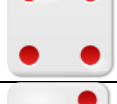


- Two six-faced dice
- Paper and pencil
- Two players

Rules:

- ✚ The aim is to achieve a total of 100 or as close to 100 as possible.
- ✚ Players take turn to roll the two dice and may combine them with any operation to produce a score.
- ✚ Play continues until one player reaches 100 or decides to stop close to 100. Players finish the round to see if any player ends up closer to 100 or makes 100.
- ✚ The player who reaches 100 or is closest to 100 is declared the winner.
- ✚ Players should be encouraged to keep a record of their own choices and calculations.

Variations: Vary the type and number of dice used.

For example:

Dice Show			Calculation	Running Total
	and		$3 \times 5 = 15$	15
	and		$6 \times 3 = 18$	33 (15+18)
	and		$1 + 5 = 5$	38 (15+18+5)
	and		$2 \times 6 = 12$	50 (15+18+5+12)
	and		$2 \times 4 = 8$	58 (15+18+5+12+8)
	and		$6 \times 5 = 30$	88 (15+18+5+12+8+30)
	and		$1 + 1 = 2$	90 (15+18+5+12+8+30+2)
	and		$4 + 3 = 7$	97 (15+18+5+12+8+30+2+7)
	and		$5 - 2 = 3$	100 (15+18+5+12+8+30+2+7+3)

BEETLE



What you need:

- Six-faced dice
- Pencil and paper
- Two to four players

Rules:

- ✚ Each number on the dice corresponds to a part of the beetle.













1	Body
2	Head
3	Eye (two eyes)
4	Feeler (two feelers)
5	Leg (six legs)
6	Wing (two wings)

- ✚ Players take turns to roll the dice.
- ✚ Each player rolls once per round.
- ✚ After each roll the player draws the appropriate body part to match the number shown on the dice. If the player had already drawn that part or parts, she/he simply passes the dice to the next player.
- ✚ The first player to complete drawing the beetle is the winner.

Variations:

- Your child could be encouraged to design his/her own game based on this game as a model.
- introduce the rule that you must roll a one for the body before you can draw the legs or wings and two for the head before you can draw eyes or feelers.

For example:

Player 1		Player 2	
 head		 body	
 feeler		 head	
	Pass	 wing	
<p>The first player to complete drawing the beetle is the winner</p>			

Reference

Swan, P. (2003). *Dice dazzlers-short and simple dice games to promote numeracy*. A-Z Type: Bunbury.

1, 2, 3!



This is a game for two players to practice quick basic recall (+, -, x).

Rules of the game

Version: One Hand Addition













1. This game is played like “Paper, scissors, rock” where each player shakes one fist “1,2,3” and shows a selection of fingers (choose between 0-5).
2. Winner of the round is the first to say the sum/total of two hands.

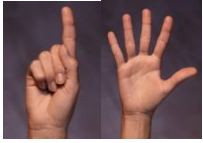
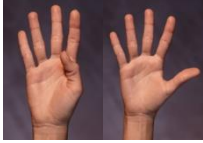

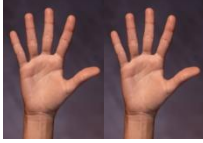
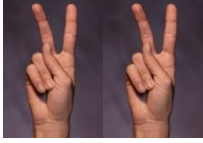
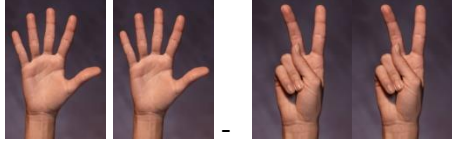
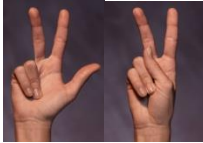
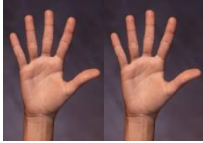
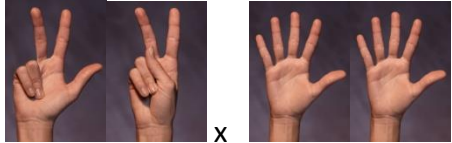
Variations

- ◆ One Hand Multiplication-multiply each players hands
- ◆ Two Hand Addition- add the total of both hands to practice basic facts to 20
- ◆ Two Hand Subtraction- work out the difference between the total of each players hands
- ◆ Two Hand Multiplication- multiply the total of each players hands to practice multiplication facts

Note: Encourage players to shake their fist with fingers down to the floor/knuckles up then it is easier to see the fingers when opened out.

For example:

One hand				
	Player A	Player B	Player A & Player B	Answers
Addition (+)			 +  (1 + 4)	5
Subtration (-)			 -  (5 - 2)	3
Multiplication (x)			 x  (3 x 2)	6

Two hands				
	Player 1	Player 2	Player 1 & Player 2	Answers
Addition (+)			 (6 + 9)	15
Subtraction (-)			 (10 - 4)	6
Multiplication (x)			 (5 x 10)	50



Card Activities

Snap + /- 1

What you will need: A deck of cards with the picture cards removed. Ace may equal to one or eleven.

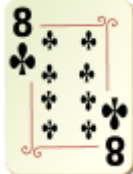

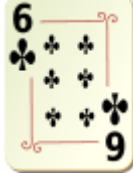
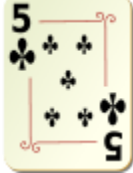
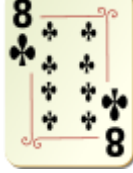

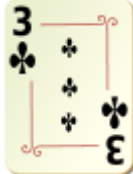



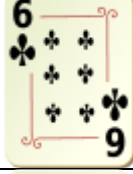


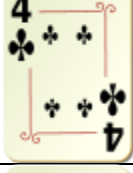


Rules

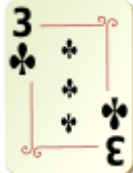

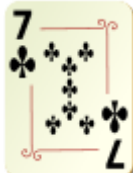

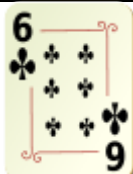
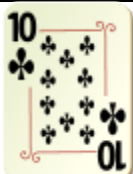
- ♣ The game is played along similar lines to "snap".
- ♣ The game is for two players.
- ♣ One player deals all the cards face down to the players
- ♣ Each player turns over their top card. Instead of slapping the pile of cards when the values on the two cards match, the pile of cards should be slapped when the values differ by one (+ 1 or -1). For example if a 7 is placed on the pile and then an 8 is discarded on top, a player may slap the pile and pick up all the cards. If an 8 was on the pile and a 7 was discarded then the pile of cards could also be slapped (more examples on p.8-9).
- ♣ The winner is the player with the most cards after a period of time or the player who ends up with all the cards.

Variations

- ♣ The players can change it to *Snap +2 or -2* (snap when the values differ by two).

For example:

	Player A	Player B	
Snap + 1			SNAP
Snap - 1			SNAP
Snap + 1			<u>DO NOT SNAP</u>
Snap + 1 or - 1 (variations)			SNAP
			SNAP
Snap + 2			SNAP
Snap - 2			SNAP
Snap - 2			<u>DO NOT SNAP</u>

Snap +2 or - 2 (variations)			SNAP
			SNAP
			<u>DO NOT SNAP</u>

Reference

Swan, P. (1998). *Card Capers. Developing mathematics from playing cards.* A-Z Type: Bunbury.





Salute- What number is my card?

- ♣ 3 players
- ♣ A pack of playing cards. (Take out all the colour cards and 10s)
- ♣ Two players collect one card each and without looking at the card and put them on their forehead.
- ♣ The third player calls out the sum of the two cards.
- ♣ The two players then call out what card they hold on their forehead by looking at the other player's cards.
- ♣ The player who calls out first wins those cards.
- ♣ Continue playing till the cards are over.



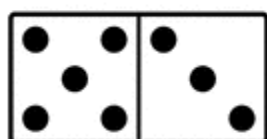
For example:

Step	Player A	Player B	Player C
1			Calls out the total is 10
2	5 and 5?	9 and 1?	No
3	2 and 8?	3 and 7?	No
4	4 and 6?		Yes- Player A is the winner and gets the two cards

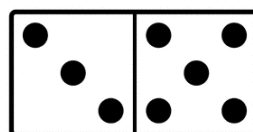


Domino

- A domino may be used to represent two different numbers.
For example:

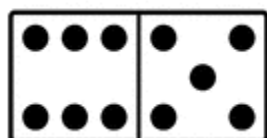


53 Or

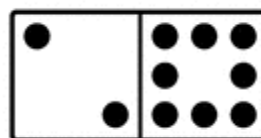


35

- The dominoes are placed face down in a pile.
- Each player takes two dominoes from the pile and tries to make the largest difference.



65

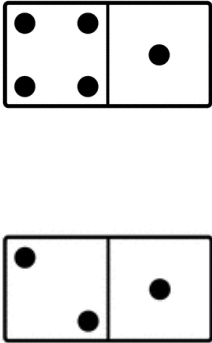
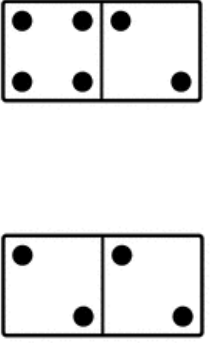


26

65 - 26 produces the largest difference

- The player who produces the largest difference wins the round and receives a point.
- Play continues until all the dominoes have been used. The winner is the player with the most points.

For example:

Player A	Player B	The winner is...
 <p>41 or 14</p> <p>21 or 12</p>	 <p>42 or 24</p> <p>22</p>	
<p>Three options:</p> <ol style="list-style-type: none"> 1. $41-21=20$ 2. $41-12=29$ (the largest difference) 3. $14-12=2$ 	<p>Two options:</p> <ol style="list-style-type: none"> 1. $42-22=20$ (the largest difference) 2. $24-22=2$ 	<p>Player A (1 point)</p>

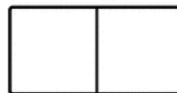
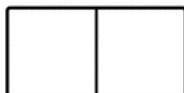
Variations

- Keep a **cumulative total** (running total) of the differences. The winner is the player with the largest total at the end of the game.
- Try to produce the smallest difference.
- Allow players to choose three dominoes from the face down pile. Players then select two of these to work with. All the dominoes are discarded at the end of the round and another three chosen.

Reference

Swan, P. (2001). *Domino Deductions. Developing mathematics from dominoes. A-Z* Type: Bunbury.

The Three Dominoes



- The dots on these three dominoes add up to 14
- Which dominoes could they represent?

*Remember dominoes which join must be match.

	$6 + 5 + 3 = 14$
--	------------------

*A domino which is place vertically, like the one above represents a double.

- There is more than one answer.

	$4 + 3 + 7 = 14$
	$8 + 4 + 2 = 14$

Reference

Swan, P. (2001). *Domino Deductions. Developing mathematics from dominoes.* A-Z Type: Bunbury.