

# Games to play using **COMBO** Cards



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David Dunstan



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### Games to Play Using COMBO Cards

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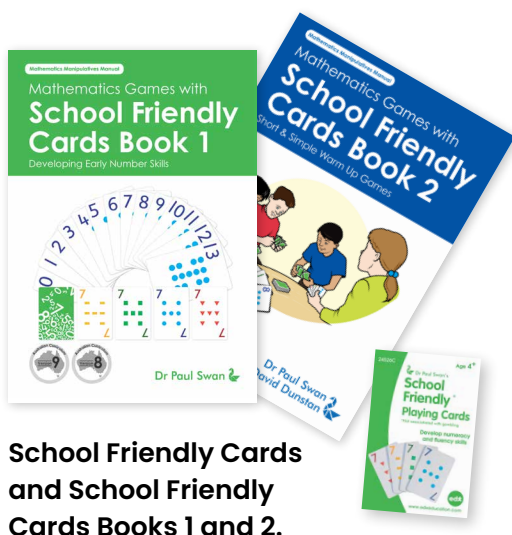
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**Play every game with one deck of COMBO.**

COMBO involves adding, subtracting, multiplying and dividing.  
Ideal for all basic number facts.



# INTRODUCTION

The deck of cards used to play COMBO may be used as the basis of several different card games. This booklet shows a progression from simple card games involving a single operation, addition through to COMBO that involves all four operations: addition, subtraction, multiplication and division.

## CARD GAMES AND THE CURRICULUM

The new Australian Curriculum version 9 makes specific mention of *“playing instructive card games that involve recall ... of the multiplication facts and related division facts”* This reference may be found in the elaborations for AC9M4A02 which state:

*“Recall and demonstrate proficiency with all multiplication facts up to  $10 \times 10$  and the related division facts.”*

One such game is COMBO.

## PLAYING COMBO

Ideally the game COMBO would be played once students have learned their basic number facts, that is, late in year 4. Some schools let their year six students teach the year 4 students how to play COMBO in term 4 so they are familiar with the rules and game play and then may maintain their fluency with the basic by playing throughout Year 5 and 6 and beyond.

## USING COMBO CARDS

The same deck of cards may be used to play a series of games all designed to build on learning basic addition and subtraction facts, developing part-part whole thinking and then multiplication and division facts. The rules for these various games are outlined in this booklet.

## STRATEGY AND PRACTICE

While this series of games is designed to develop basic fact fluency, the games also help students to develop strategies. Playing the games with cards shown face-up on the table, as opposed to players holding the cards in their hand means students will be practising more mathematical actions and strategic thinking.

## PRODUCTIVE DISPOSITION

The authors believe that the social nature of card games will encourage positive feelings toward mathematics. However, we appreciate sometimes solo, or patience type games also assist in developing positive attitudes toward mathematics. For this reason, some of the games in this booklet may be played by a single player. For example, the games ‘Total Ten’ and ‘Total Twenty’. Single player games can also be played by a pair of players to promote mathematical dialogue.



# CURRICULUM LINKS

| AUSTRALIAN CURRICULUM LINKS v9                                 |   |
|--|---|
| GAME   | LINK  |
| One More One Less  | AC9M2A02: Recall and demonstrate proficiency with addition facts to 20...<br>AC9M3A02: Extend and apply knowledge of addition and subtraction facts to 20...  |
| Total Ten<br>Total Twenty                                      | AC9M2N04: Add and subtract one and two-digit numbers... and solve using part-part-whole reasoning.<br>AC9M2A02: Recall and demonstrate proficiency with addition facts to 20...<br>AC9M3A02: Extend and apply knowledge of addition and subtraction facts to 20...  |
| COMBO Concentration<br>COMBO Sums and Differences              | AC9M2A02: Recall and demonstrate proficiency with addition facts to 20...<br>AC9M3A02: Extend and apply knowledge of addition and subtraction facts to 20...<br>AC9M4A02: Recall and demonstrate proficiency up to $10 \times 10$ and related division facts...   |
| COMBO POP<br>COMBO SNAP<br>COMBO Bingo<br>COMBO<br>COMBO Pairs | AC9M3A02: Extend and apply knowledge of addition and subtraction facts to 20...<br>AC9M4A02: Recall and demonstrate proficiency up to $10 \times 10$ and related division facts...<br>AC9M5A01: Recognise and explain the connection between multiplication and division as inverse operations and use this to develop families of number facts.<br><br>Note, students need to be proficient with the basic number facts. So we would recommend playing these games late in year 4 and then year 5 onwards. |

| AUSTRALIAN CURRICULUM LINKS v8.4  |  |
|---|--|
| GAME  | LINK   |
| One More One Less<br>Total Ten<br>Total Twenty  | Year 2 - ACMNA029: Explore the connection between addition and subtraction.<br>Year 3 - ACMNA055: Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation.  |
| COMBO Concentration<br>COMBO Sums and Differences<br>COMBO POP<br>COMBO SNAP<br>COMBO Bingo<br>COMBO<br>COMBO Pairs | Year 3 - ACMNA055: Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation.<br>Year 4 - ACMNA075: Recall multiplication facts up to $10 \times 10$ and related division facts.<br><br>Note, students need to be proficient with the basic number facts. So we would recommend playing these games late in year 4 and then year 5 onwards. |

# ONE MORE ONE LESS



2 TO 4 PLAYERS



10 - 15 MINUTES



ADDITION & SUBTRACTION (YEAR 2/3)

## PURPOSE

To review addition and subtraction.

## AIM

To be the first player to play all of their cards or to have the fewest cards in their hand at the end of the game.

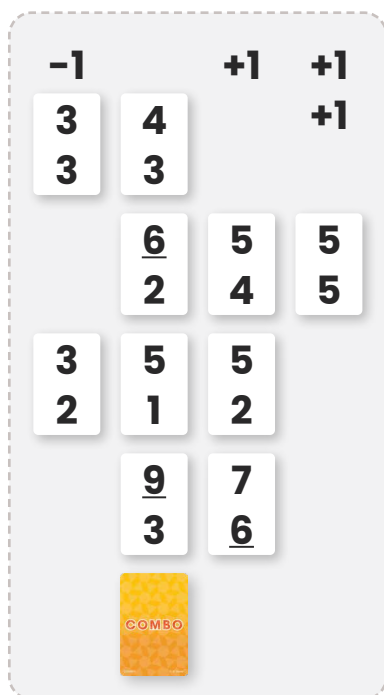
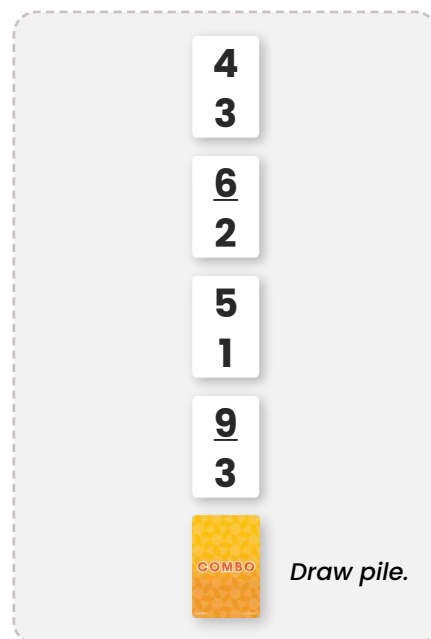
## MATERIALS

- A deck of COMBO cards.



## RULES

- Shuffle the deck of cards.
- Deal **five cards face down** to each player.
- The dealer places **four cards face up in a column** in the middle of the table.
- The remaining cards are placed face down on the table at the base of the 'column'. This is called the 'draw pile'.



- Players **take turns** to lay a card down from their hand on the table next to any face up cards on the table, such that the sum is one more or one less than the card that it is placed next to.
- If a player cannot play a card, they pick up a card from the draw pile and that completes their turn.
- If there are three cards to the right or left of the 'column' card, then these cards are placed in a single pile next to the column card. This will keep the table space to a manageable area.

- The winner is the first player to play all of their cards or have the fewest number of cards in their hand when no more 'draw pile' cards remain.



# TOTAL TEN

1 PLAYER   10 - 15 MINUTES   BASIC ADDITION FACTS (YEAR 2/3)

## PURPOSE

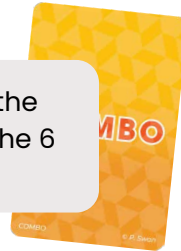
To review basic addition facts.  
To develop part-part-whole thinking (missing part).

## AIM

To correctly group cards that total ten and be left with a single remaining card at the end that totals five.

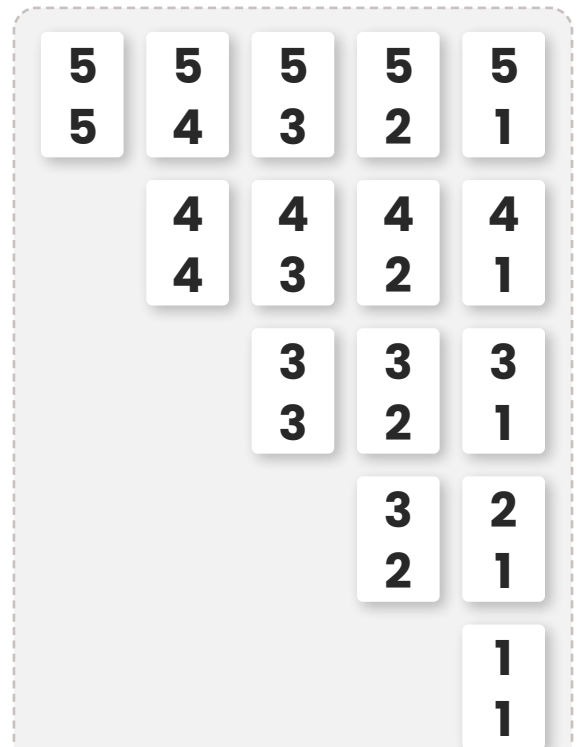
## MATERIALS

- A deck of COMBO cards. Separate out the 15 cards shown on the right and write the 6 new cards as shown.

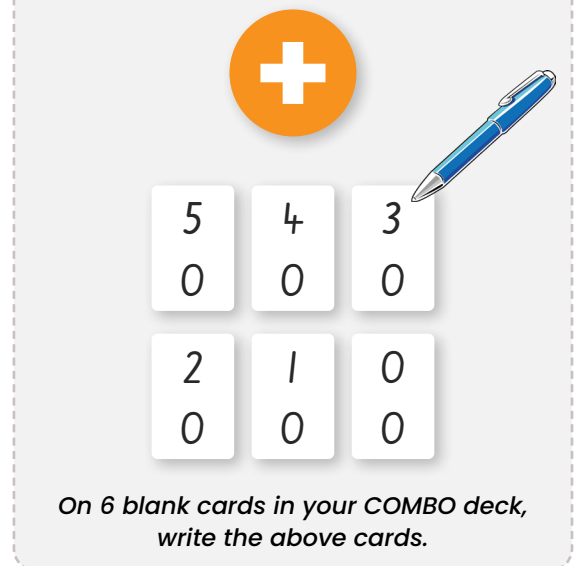
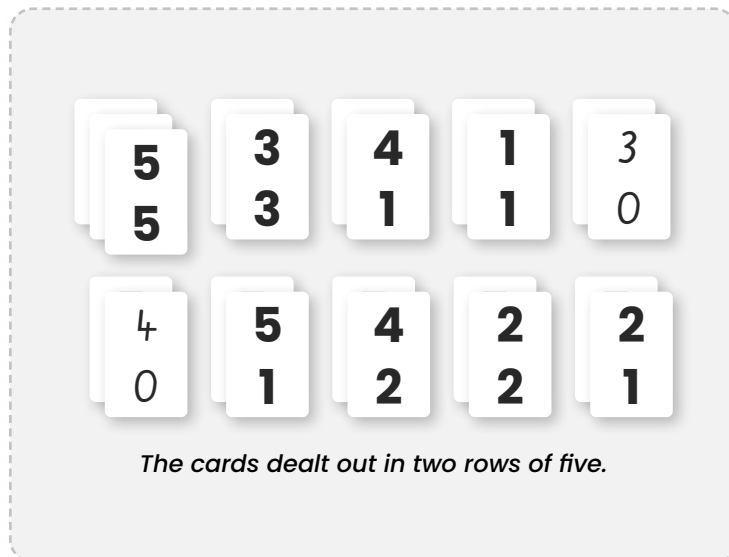


## RULES

- Deal the 21 COMBO cards face up in two rows of five, beginning in the top left and dealing across the first row and then the second row. Continue dealing until all the cards have been dealt.
- This means that there will be two cards in each pile and one extra in the top left.



Separate out the 15 cards above to use in the game.



- The player selects two cards whose four digits **total ten**. For example and . The cards may be in the same row or different rows.
- If a space opens up because a pile has been depleted a card from another pile may be moved to fill the space.
- If play stops because the player can't find any combinations that make ten, then cards within a single pile may be swapped around. At the end of the game a single card will remain. The single remaining card should total **five**. If not, then a mistake has been made and the player will need to check card pairings to determine where the error occurred.

# TOTAL TWENTY

1 PLAYER    10 - 15 MINUTES    + - ADDITION & SUBTRACTION (YEAR 3)

## PURPOSE

To review basic addition facts.  
To develop part-part-whole thinking (missing part).

## AIM

To correctly group cards that total twenty and be left with a single remaining card at the end that totals ten.

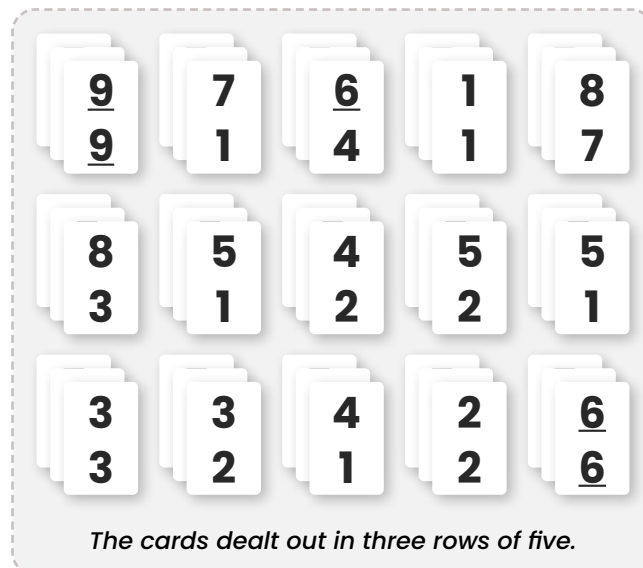
## MATERIALS

- A deck of COMBO cards.



## RULES

- Deal the 45 COMBO cards face-up in three rows of five, beginning in the top left and dealing across the rows. Continue dealing until all of the cards have been dealt. This means that each pile will have three cards.



- The player picks up two cards whose numbers total twenty, for example  $\begin{matrix} 8 \\ 7 \end{matrix}$  and  $\begin{matrix} 4 \\ 1 \end{matrix}$ . The cards may be in the same row or different rows.
- If a space opens up because a pile has been depleted a card from another pile may be moved to fill the space.
- If play stops because the player can't find any combinations that make twenty, cards within a single pile may be swapped around. At the end a single card will remain. This card should total ten. If not, then a mistake has been made and the player will need to check card pairings to determine where the error occurred.

## RECOMMENDATION

- Have students verbalise the combinations to 20. For example, "7 and 4 is 11 plus 5 and 4 is 20".

## VARIATION

- (Harder) Remove the "9 and ..." cards and look for totals of 18 instead of 20.





# COMBO CONCENTRATION

2 PLAYERS OR 2 PAIRS    10 - 15 MINUTES    BASIC NUMBER FACTS (YEAR 4+)

## PURPOSE

To select matching pairs of card totals using any mathematical operations.

## AIM

To collect the most cards.

## MATERIALS

- A deck of COMBO cards minus any cards with an eight (8) or nine (9) showing. There should be 28 cards.



## RULES

- Deal the cards face-down in an array showing four rows of seven.

The  $\frac{6}{5}$  and  $\frac{7}{7}$  cards  
can be a matching pair.

$$6 - 5 = 1$$

and

$$7 \div 7 = 1.$$

- Players take turns to flip two cards over. If there is a matching representation pair made, the player keeps these cards. If not, the cards are turned back over.
- The next player takes their turn.
- Play continues until all cards have been matched, if possible. The player with the most cards at the end of the game is the winner.

## VARIATIONS

- If there is a match, the player keeps the cards, and their turn continues until they fail to turn over a matching pair of cards.
- Vary the number of cards used to make the array. Add in cards with an eight (8) showing and deal a  $6 \times 6$  array.

## TEACHING NOTES

- Encourage students to verbalise their moves by saying the number sentences.
- Encourage students to be systematic with their selections.

# COMBO SUMS AND DIFFERENCES

 2 TO 4 PLAYERS OR 2 TEAMS OF 2     15 - 20 MINUTES     ADDITION AND SUBTRACTION FACTS (YEAR 4+)

## PURPOSE

To build fluency for sum totals (addition) and difference totals (subtraction).  
To develop reasoning strategies for valuing certain cards compared to others.

## AIM

To win the most rounds.


## MATERIALS

- A deck of COMBO cards minus four specific cards, being




## RULES

- The dealer deals seven cards to each player, so seven rounds are played.
- Using addition, the players sort their cards with the highest total as the leftmost card and the lowest total as the rightmost card in their hand.
- The remaining part of the deck is placed to one side of the table and this is called the 'Draw Pile'.
- The top card from the 'Draw Pile' is turned over. This determines if the player will use addition or subtraction for the first round. This process is repeated for each of the seven rounds.
  - If the turned over 'Draw Pile' card total is EVEN, players will aim to total a 'Sum of 10'.

| 'Draw Pile'   | Player 1             | Player 2            |  |
|---|----------------------|---------------------|--|
| <br>4<br>2<br>Total is EVEN.<br>Players aim to make a 'Sum of 10'. | 7<br>3<br>Sum of 10. | 5<br>3<br>Sum of 8. | Player 1 wins. They got the 'Sum of 10' exactly. Player 2 was 2 away from the 'Sum of 10'. |

- If the turned over 'Draw Pile' card total is ODD, players will aim to total a 'Difference of 4'.

| 'Draw Pile'  | Player 1                   | Player 2                   |   |
|--|----------------------------|----------------------------|---|
| <br>6<br>3<br>Total is ODD.<br>Players aim to make a 'Difference of 4'. | 7<br>4<br>Difference of 3. | 8<br>3<br>Difference of 5. | Both players are 1 away from the 'Difference of 4' target, so no-one wins this round. |

- The players, at the same time, play their selected card face-up on the table.
  - If the players have the same sum or difference, no-one wins this round.
  - The player wins the round if they are closer to the target sum or difference when compared to the other players.
- The player or team who wins the most rounds is the winner.

### POSSIBLE COMBO SUM TOTALS

| SUM       | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 |
|-----------|----|----|----|----|----|----|----|---|---|---|---|---|---|
| FREQUENCY | 2  | 2  | 3  | 3  | 4  | 4  | 5  | 4 | 4 | 3 | 3 | 2 | 2 |

### POSSIBLE COMBO DIFFERENCE TOTALS

| DIFFERENCE | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------|---|---|---|---|---|---|---|---|---|
| FREQUENCY  | 7 | 6 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

**Note:** Remember that the  $\frac{9}{9}$ ,  $\frac{9}{8}$ ,  $\frac{2}{1}$  and  $\frac{1}{1}$  cards are removed.

Removing these four cards eliminates one total of 18, 17, 3 and 2 for the possible COMBO SUM totals. This also removes two differences of 0 and 1.

### STRATEGY NOTES

- Each card has two values to be considered. The card's 'SUM' and 'DIFFERENCE'.
- Does a player play their 'Sum of 10' or 'Difference of 4' card totals in the initial rounds? There are five (5) each of these cards. Players have to decide when to play these cards.
- The  $\frac{7}{3}$  card is the most valuable card, as it has both a sum of 10 and difference of 4.
- What card may a player play, if they cannot win the round?

For example a player has a  $\frac{9}{7}$  and  $\frac{5}{3}$  card to choose from.

| CARD          | SUM | DIFFERENCE |
|---------------|-----|------------|
| $\frac{9}{7}$ | 16  | 2          |
| $\frac{5}{3}$ | 8   | 2          |

The  $\frac{5}{3}$  card should be kept for another round as it is closer to the 'Sum of 10' target when compared to the  $\frac{9}{7}$  card.

# COMBO POP



4 TO 6 PLAYERS



15 - 20 MINUTES



OPERATIONS WITH BASIC NUMBER FACTS (YEAR 5+)

## PURPOSE

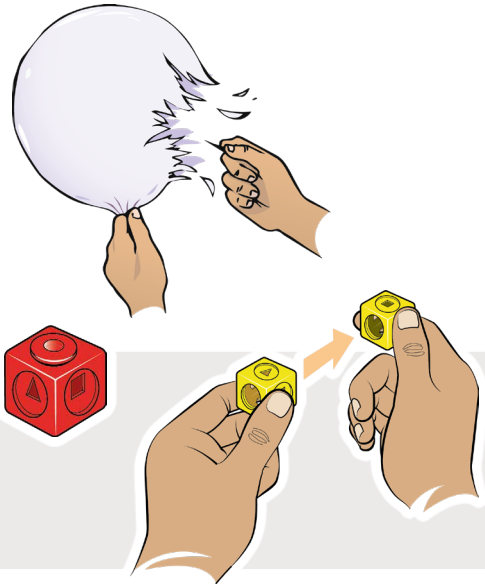
To review basic number facts (+, -, ×, ÷).

## AIM

To match the preceding person's card (POP) and collect the most cubes.

## MATERIALS

- A deck of COMBO cards.
- 40 - 60 cubes (or counters).  
Cubes that connect work well for COMBO POP.
- Use a blank COMBO card as a 'Wildcard'.



## RULES

- POP is a slower form of SNAP.
- The golden rule is, if you can match (POP) the player immediately to your right, you must always match (POP) them. Students verbalise how their cards match.
- Deal 6 cards face down in a clockwise direction to each player.
- Any spare cards are placed to one side.
- The player to the left of the dealer plays a card face-up on the table.
- The next player, if possible, must match the card total using any operation and say "POP". This player collects a cube from a central pile of cubes. (If the player is unable to match, they play any card face up.)
- If the following player also matches the 'popped' cards, that player calls out "POP POP" and collects two cubes of the same colour if possible. This is useful to keep track of the number of 'POPS'.
- When multiple "POP's" occur, the Wildcard is generally played. The Wildcard takes on the preceding card's value.
- Play continues with each player laying the cards face up on their table space for all to see until the last card is played by the dealer.
- The player to the left of the dealer becomes the new dealer.
- The game ends when all players have dealt or if a specified number of cubes have been collected by a player.



"3 and 3 is 6; 3 twos are 6."

## VARIATIONS

- Deal less cards to each player for a shorter round.
- Use a reduced number of cubes in the central pile. The last cube taken ends the game, or designate the winner.

## TEACHER NOTES

- Multiple 'POPS', such as a 'Triple POP' is common in COMBO POP. Have students use different cube colours to designate their sequence of POP collections. That is, a player may get a 'Double POP', 'Single POP' and a 'Triple POP' for 3 consecutive turns. This could be shown as 2 yellow, 1 blue and 3 red cubes joined together.

# COMBO SNAP

2 PLAYERS

10 - 15 MINUTES

OPERATIONS WITH BASIC NUMBER FACTS (YEAR 5+)

## PURPOSE

To review basic number facts operations (+, -, ×, ÷).

## AIM

To win the most cards or all cards.

## MATERIALS

- A deck of COMBO cards.

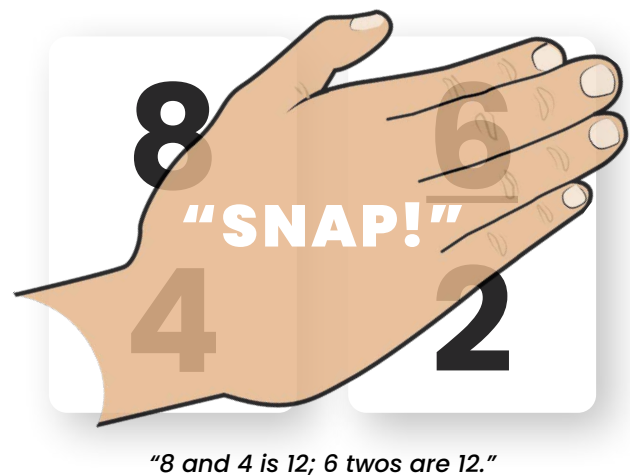
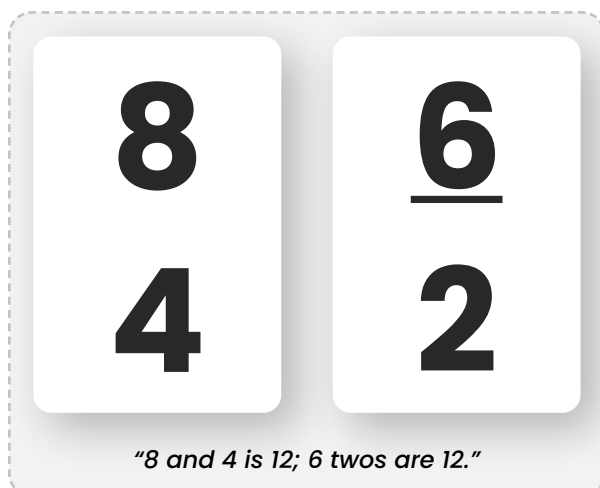


## RULES

- Each player is dealt 22 cards, face-down on the table. There will be one card left over. This will be placed to one side and will be awarded to the player who wins the first 'SNAP'.
- Players hold their cards in one hand, face-down.
- At the same time, each player will play their top card face-up on the table so that the cards are side by side.
- Mentally, players, will use any of the four operations of addition, subtraction, multiplication and division for both cards to find a matching total for both cards. The same operation does not have to be used for both cards, as shown in the example.
- If a matching total can be made, the player slaps their hand on the two card piles and calls "SNAP!" They verbalise the matching total. "8 and 4 is 12; 6 twos are 12."
- The player takes all the cards (and the bonus dealt card, if applicable) and puts them at the bottom of their cards.
- Again, at the same time, each player will play their top card face-up on the table, so that the cards are side by side.
- If there is no match ('SNAP'), together they will place another card on the top of their discard pile, face-up.
- If a 'SNAP' occurs simultaneously, the cards remain and the game continues.
- If a player plays their final card from their hand and no match ('SNAP') can be made, then the player with cards in their hand wins.

## VARIATIONS

- The player holding the most cards after a set amount of time is the winner.
- The player with cards remaining, continues to play cards face-up on their pile until a 'SNAP' is made. If the other player 'SNAPS', the game continues.



# COMBO BINGO

WHOLE CLASS (1 PLAYER OR A TEAM OF 2 PLAYERS PER BOARD) 15 - 20 MINUTES (YEAR 5+)

## PURPOSE

To practise mathematical operations with basic number facts.


## AIM


To be the first player or team to complete two lines of the 3 × 3 Bingo Board.

## MATERIALS

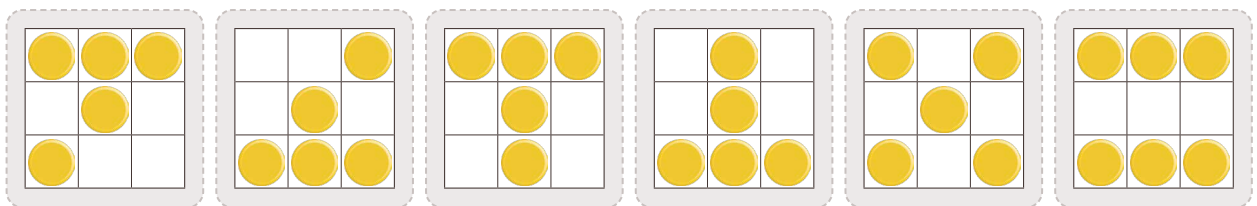
- A deck of COMBO cards for the caller.
- A COMBO Bingo Recording Sheet and Playing Board for each player or team.
- 19 millimetre transparent counters or 'write and wipe' plastic sleeves (optional).

## RULES

- Each player (team) is given a pre-made COMBO Bingo Board.
- The 'caller' selects a card, shows and calls the COMBO card. For example,  is read as "eight four".
- Players record '8, 4' as the Card Numbers in the COMBO Bingo Recording Sheet. A 'Number Sentence' is written, aiming to make a total that results in a 'Board Match'.

| CARD NUMBERS | NUMBER SENTENCE | BOARD MATCH   |
|--------------|-----------------|---|
| 8, 4         | $8 \div 4 = 2$  |  |

- This process is repeated until the first player (or team) **makes two lines of three numbers** (a minimum of 5 numbers are needed) and calls "BINGO!".
- For example, a winning board could show **2 lines of 3** in the following or similar arrangements.



## VARIATION

- Play using addition and subtraction only. (Year 3 students could play this version).
- Students make their own COMBO Bingo Boards. Each player (team) places nine different numbers that range from 0 to 18 inclusive in the 3 × 3 Bingo Board.

## TEACHING NOTES

- Sixteen (16) pre-numbered COMBO Bingo Boards will form a class set if playing in pairs.
- Playing in pairs means more mathematical dialogue will take place.
- Get students to design a 'Winning Board'.
- The 'Best COMBO Bingo Boards' problem solving and reasoning task can be used as an assessment of student understanding.

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# COMBO BINGO RECORDING SHEET

| TURN | CARD NUMBERS | NUMBER SENTENCE | BOARD MATCH |
|------|--------------|-----------------|-------------|
| 1    |              |                 |             |
| 2    |              |                 |             |
| 3    |              |                 |             |
| 4    |              |                 |             |
| 5    |              |                 |             |
| 6    |              |                 |             |
| 7    |              |                 |             |
| 8    |              |                 |             |
| 9    |              |                 |             |



# COMBO BINGO PLAYING BOARDS

**COMBO BINGO BOARD 3**

|   |   |   |
|---|---|---|
| 0 | 1 | 2 |
| 3 | 4 | 5 |
| 6 | 7 | 8 |

**COMBO BINGO BOARD 6**

|    |    |    |
|----|----|----|
| 4  | 5  | 7  |
| 8  | 10 | 11 |
| 14 | 16 | 18 |

**COMBO BINGO BOARD 2**

|    |    |    |
|----|----|----|
| 0  | 2  | 4  |
| 6  | 8  | 10 |
| 12 | 14 | 16 |

**COMBO BINGO BOARD 5**

|    |    |    |
|----|----|----|
| 0  | 1  | 2  |
| 3  | 6  | 9  |
| 12 | 15 | 18 |

**COMBO BINGO BOARD 1**

|    |    |    |
|----|----|----|
| 1  | 3  | 5  |
| 7  | 9  | 11 |
| 13 | 15 | 17 |

**COMBO BINGO BOARD 4**

|    |    |    |
|----|----|----|
| 9  | 10 | 11 |
| 12 | 13 | 14 |
| 15 | 16 | 17 |

# COMBO BINGO PLAYING BOARDS

**COMBO BINGO BOARD 9**

|    |    |    |
|----|----|----|
| 5  | 13 | 0  |
| 17 | 8  | 14 |
| 1  | 18 | 10 |

**COMBO BINGO BOARD 12**

|    |    |    |
|----|----|----|
| 0  | 15 | 9  |
| 18 | 3  | 16 |
| 5  | 17 | 10 |

**COMBO BINGO BOARD 8**

|    |    |    |
|----|----|----|
| 6  | 7  | 8  |
| 9  | 1  | 11 |
| 15 | 17 | 16 |

**COMBO BINGO BOARD 11**

|    |    |   |
|----|----|---|
| 14 | 16 | 1 |
| 13 | 18 | 8 |
| 2  | 4  | 6 |

**COMBO BINGO BOARD 7**

|    |    |    |
|----|----|----|
| 2  | 18 | 3  |
| 10 | 0  | 12 |
| 5  | 13 | 4  |

**COMBO BINGO BOARD 10**

|    |    |   |
|----|----|---|
| 3  | 12 | 6 |
| 11 | 4  | 9 |
| 14 | 7  | 2 |

# COMBO BINGO PLAYING BOARDS

**COMBO BINGO BOARD 15**

|    |    |   |
|----|----|---|
| 7  | 9  | 1 |
| 10 | 5  | 6 |
| 4  | 11 | 0 |

**BLANK COMBO BINGO BOARD**

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

**COMBO BINGO BOARD 14**

|    |    |    |
|----|----|----|
| 3  | 18 | 4  |
| 17 | 5  | 16 |
| 6  | 15 | 8  |

**BLANK COMBO BINGO BOARD**

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

**COMBO BINGO BOARD 13**

|    |    |    |
|----|----|----|
| 7  | 11 | 12 |
| 13 | 15 | 17 |
| 0  | 1  | 2  |

**COMBO BINGO BOARD 16**

|    |    |    |
|----|----|----|
| 12 | 10 | 16 |
| 14 | 13 | 7  |
| 2  | 9  | 3  |

# BEST COMBO BINGO BOARDS

1. For the first eight (1 to 8) Bingo Boards, which board has the 'best' chance of winning? Why?

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**COMBO BINGO BOARD 1**

|    |    |    |
|----|----|----|
| 1  | 3  | 5  |
| 7  | 9  | 11 |
| 13 | 15 | 17 |

**COMBO BINGO BOARD 2**

|    |    |    |
|----|----|----|
| 0  | 2  | 4  |
| 6  | 8  | 10 |
| 12 | 14 | 16 |

**COMBO BINGO BOARD 3**

|   |   |   |
|---|---|---|
| 0 | 1 | 2 |
| 3 | 4 | 5 |
| 6 | 7 | 8 |

**COMBO BINGO BOARD 4**

|    |    |    |
|----|----|----|
| 9  | 10 | 11 |
| 12 | 13 | 14 |
| 15 | 16 | 17 |

**COMBO BINGO BOARD 5**

|    |    |    |
|----|----|----|
| 0  | 1  | 2  |
| 3  | 6  | 9  |
| 12 | 15 | 18 |

**COMBO BINGO BOARD 6**

|    |    |    |
|----|----|----|
| 4  | 5  | 7  |
| 8  | 10 | 11 |
| 14 | 16 | 18 |

**COMBO BINGO BOARD 7**

|    |    |    |
|----|----|----|
| 2  | 18 | 3  |
| 10 | 0  | 12 |
| 5  | 13 | 4  |

**COMBO BINGO BOARD 8**

|    |    |    |
|----|----|----|
| 6  | 7  | 8  |
| 9  | 1  | 11 |
| 15 | 17 | 16 |

2. For the first eight (1 to 8) Bingo Boards, which board has the 'lowest' chance of winning? Why?

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3. For boards 9 to 16, which board would you select to have the 'best' winning chance? Why?

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**COMBO BINGO BOARD 9**

|    |    |    |
|----|----|----|
| 5  | 13 | 0  |
| 17 | 8  | 14 |
| 1  | 18 | 10 |

**COMBO BINGO BOARD 10**

|    |    |   |
|----|----|---|
| 3  | 12 | 6 |
| 11 | 4  | 9 |
| 14 | 7  | 2 |

**COMBO BINGO BOARD 11**

|    |    |   |
|----|----|---|
| 14 | 16 | 1 |
| 13 | 18 | 8 |
| 2  | 4  | 6 |

**COMBO BINGO BOARD 12**

|    |    |    |
|----|----|----|
| 0  | 15 | 9  |
| 18 | 3  | 16 |
| 5  | 17 | 10 |

**COMBO BINGO BOARD 13**

|    |    |    |
|----|----|----|
| 7  | 11 | 12 |
| 13 | 15 | 17 |
| 0  | 1  | 2  |

**COMBO BINGO BOARD 14**

|    |    |    |
|----|----|----|
| 3  | 18 | 4  |
| 17 | 5  | 16 |
| 6  | 15 | 8  |

**COMBO BINGO BOARD 15**

|    |    |   |
|----|----|---|
| 7  | 9  | 1 |
| 10 | 5  | 6 |
| 4  | 11 | 0 |

**COMBO BINGO BOARD 16**

|    |    |    |
|----|----|----|
| 12 | 10 | 16 |
| 14 | 13 | 7  |
| 2  | 9  | 3  |

4. For boards 9 to 16, which board has the 'lowest' chance of winning? Why?

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# BEST COMBO BINGO BOARDS

## TABLE OF POSSIBLE ANSWERS

The 'Table of Possible Answers' for 0 to 18 inclusive, shows that an answer of '1' can occur 18 ways when using the four operations (+, -, ×, ÷) with COMBO cards.

'2' can be made in 13 ways, '3' and '4' can be made 11 ways, and so on.

## THE BEST BOARDS RATINGS TABLE

The 'Best Board Ratings Table' was made up using the answer frequencies.

Use the 'Table of Possible Answers' and 'Best Board Ratings Table' combinations to design your 'Best COMBO Bingo Boards'.

| TABLE OF POSSIBLE ANSWERS |           |
|---------------------------|-----------|
| ANSWERS                   | FREQUENCY |
| 0                         | 9         |
| 1                         | 18        |
| 2                         | 13        |
| 3                         | 11        |
| 4                         | 11        |
| 5                         | 8         |
| 6                         | 9         |
| 7                         | 7         |
| 8                         | 8         |
| 9                         | 7         |
| 10                        | 6         |
| 11                        | 4         |
| 12                        | 6         |
| 13                        | 3         |
| 14                        | 4         |
| 15                        | 3         |
| 16                        | 4         |
| 17                        | 1         |
| 18                        | 3         |

| BEST BOARD RATINGS TABLE |         |
|--------------------------|---------|
| BOARD NUMBER             | RATINGS |
| 1                        | 47      |
| 2                        | 48      |
| 3                        | 60      |
| 4                        | 26      |
| 5                        | 57      |
| 6                        | 38      |
| 7                        | 50      |
| 8                        | 46      |
| 9                        | 46      |
| 10                       | 51      |
| 11                       | 59      |
| 12                       | 41      |
| 13                       | 50      |
| 14                       | 42      |
| 15                       | 55      |
| 16                       | 42      |

## BEST COMBO BINGO BOARD 1

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

## BEST COMBO BINGO BOARD 2

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |
|  |  |  |

# COMBO

 2 TO 4 PLAYERS

 10 - 15 MINUTES

 BASIC NUMBER FACTS (+, -, ×, ÷) (YEAR 4+)

## PURPOSE

To review basic number facts (+, -, ×, ÷).

## AIM

To be the first player to run out of cards.

## MATERIALS

- A deck of COMBO cards.



## RULES

- The dealer deals five cards to each player.
- The remaining part of the deck is placed in the middle of the table and this is called the 'Draw Pile'.
- The top card from the 'Draw Pile' is turned over. This becomes the 'Centre Card'. This is the key calculation card. In turn, players use the two digits shown on this card and one operation (+, -, ×, or ÷) to make varying number totals. For example, if the card was:

**6**

The two digits, six and three may be used to create the following numbers.

**3**

**9** (6 + 3)

**3** (6 - 3)

**18** (6 × 3)

**2** (6 ÷ 3)

- The first player (the player to the left of the dealer) attempts to match a card from their hand to the value of the 'Centre Card' by combining numbers on each card of their hand, using any of the four operations (+, -, ×, or ÷), as illustrated above. If the player can match the value of the 'Centre Card' with one of their cards, they MUST explain how the cards match. The card from that player's hand is now placed on top of the 'Centre Card'.

For example, the player may match the **6**/**3** card using a **4**/**2** by stating

*"Six divided by three is two and four subtract two is two."*

- **4**/**2** This card now becomes the new 'Centre Card' that the next player attempts to match with a two, six or eight (4 + 2 = 6, 4 - 2 = 2, 4 × 2 = 8 or 4 ÷ 2 = 2).
- If a player cannot match the 'Centre Card,' they pick up a card from the 'Draw Pile' and their turn ends. This process is repeated by the other players.
- The first player to discard all of their cards is the winner.
- If the 'Draw Pile' is used before there is a winner, the player with the least number of cards in their hand is the winner.

## VARIATION

- Play with the cards face up, on the table, rather than hidden from view in your hand. This will allow for more strategies to come into play.
- If the 'Draw Pile' expires before a winner is known, set aside the top 'Centre Card' and shuffle the used cards to establish the new 'Draw Pile'.



# COMBO PAIRS



2 TO 4 PLAYERS



10 - 15 MINUTES



BASIC NUMBER FACTS (YEAR 4+)

## PURPOSE

To review basic number facts (+, -, ×, ÷) using pairs of COMBO cards.

## AIM

To be the first player to run out of cards.

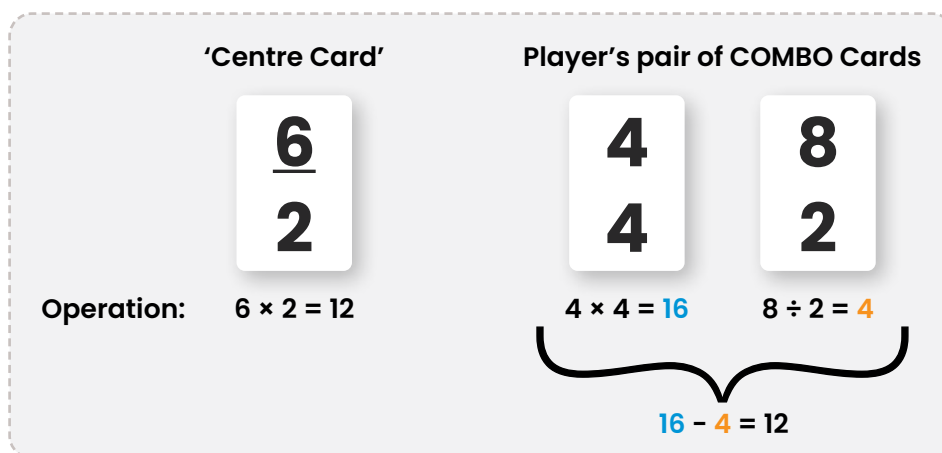
## MATERIALS

- A deck of COMBO cards.



## RULES

- The dealer deals six cards to each player (or pair of players in teams).
- The remaining part of the deck is placed in the middle of the table and this is called the 'Draw Pile'.
- The top card from the draw pile is turned over. This becomes the 'Centre Card'. This is the key calculation card.
- In turn, players use two cards from their hand and perform two calculations which are then used in a third calculation. The operations do not need to be the same for each calculation. For example,



- The player places their two cards on the 'Centre Card' pile and can choose to make either the

**4**  
**4** or **8**  
**2** as the top 'Centre Card'.

- The player verbalises or 'talks' their combined operations and resulting total.
- If this player was unable to make a match, they pick up a card from the 'Draw Pile'. This means that the player will have an odd number of cards in their hand and they will be unable to win the game without picking up at least one more card from the 'Draw Pile'.
- Only a pair of cards (2 cards) can be played each turn to match the 'Centre Card'.
- The first player to have no cards remaining (played all their cards to the 'Centre Card' pile wins the game.

## VARIATIONS

- Play with the cards face up, on the table, rather than hidden from view in your hand. This will allow for more strategies to come into play. Players will do additional calculations as they can see their opponents cards.
- When players are unable to make a match, draw two cards from the 'Draw Pile' instead of one.

# COMBO ANSWER POSSIBILITIES

The first nine rows show the 'Double' number.

- For subtraction, the answer is **always zero** (0).
- For division, the answer is **always one** (1).
- For multiplication, the answers are **square numbers**.

The next eight rows are 'Near Doubles' numbers.

They have a difference of one. That is, for subtraction, the answer is **always one** (1).

| CARD  | +  | - | ×  | ÷ |
|-------|----|---|----|---|
| 9   9 | 18 | 0 | 81 | 1 |
| 8   8 | 16 | 0 | 64 | 1 |
| 7   7 | 14 | 0 | 49 | 1 |
| 6   6 | 12 | 0 | 36 | 1 |
| 5   5 | 10 | 0 | 25 | 1 |
| 4   4 | 8  | 0 | 16 | 1 |
| 3   3 | 6  | 0 | 9  | 1 |
| 2   2 | 4  | 0 | 4  | 1 |
| 1   1 | 2  | 0 | 1  | 1 |
| 9   8 | 17 | 1 | 72 |   |
| 8   7 | 15 | 1 | 56 |   |
| 7   6 | 13 | 1 | 42 |   |
| 6   5 | 11 | 1 | 30 |   |
| 5   4 | 9  | 1 | 20 |   |
| 4   3 | 7  | 1 | 12 |   |
| 3   2 | 5  | 1 | 6  |   |
| 2   1 | 3  | 1 | 2  | 2 |
| 9   7 | 16 | 2 | 63 |   |
| 8   6 | 14 | 2 | 48 |   |
| 7   5 | 12 | 2 | 35 |   |
| 6   4 | 10 | 2 | 24 |   |
| 5   3 | 8  | 2 | 15 |   |
| 4   2 | 6  | 2 | 8  | 2 |
| 3   1 | 4  | 2 | 3  | 3 |

| CARD  | +  | - | ×  | ÷ |
|-------|----|---|----|---|
| 9   6 | 15 | 3 | 54 |   |
| 8   5 | 13 | 3 | 40 |   |
| 7   4 | 11 | 3 | 28 |   |
| 6   3 | 9  | 3 | 18 | 2 |
| 5   2 | 7  | 3 | 10 |   |
| 4   1 | 5  | 3 | 4  | 4 |
| 9   5 | 14 | 4 | 45 |   |
| 8   4 | 12 | 4 | 32 | 2 |
| 7   3 | 10 | 4 | 21 |   |
| 6   2 | 8  | 4 | 12 | 3 |
| 5   1 | 6  | 4 | 5  | 5 |
| 9   4 | 13 | 5 | 36 |   |
| 8   3 | 11 | 5 | 24 |   |
| 7   2 | 9  | 5 | 14 |   |
| 6   1 | 7  | 5 | 6  | 6 |
| 9   3 | 12 | 6 | 27 | 3 |
| 8   2 | 10 | 6 | 16 | 4 |
| 7   1 | 8  | 6 | 7  | 7 |
| 9   2 | 11 | 7 | 18 |   |
| 8   1 | 9  | 7 | 8  | 8 |
| 9   1 | 10 | 8 | 9  | 9 |

You will notice in this table that some answers appear more frequently than others. Here is a listing:

| ANSWER | FREQUENCY | ANSWER | FREQUENCY | ANSWER | FREQUENCY | ANSWER | FREQUENCY | ANSWER | FREQUENCY |
|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|
| 0      | 9         | 8      | 8         | 16     | 4         | 28     | 1         | 48     | 1         |
| 1      | 18        | 9      | 7         | 17     | 1         | 30     | 1         | 49     | 1         |
| 2      | 13        | 10     | 6         | 18     | 3         | 32     | 1         | 54     | 1         |
| 3      | 11        | 11     | 4         | 20     | 1         | 35     | 1         | 56     | 1         |
| 4      | 11        | 12     | 6         | 21     | 1         | 36     | 2         | 63     | 1         |
| 5      | 8         | 13     | 3         | 24     | 2         | 40     | 1         | 64     | 1         |
| 6      | 9         | 14     | 4         | 25     | 1         | 42     | 1         | 72     | 1         |
| 7      | 7         | 15     | 3         | 27     | 1         | 45     | 1         | 81     | 1         |