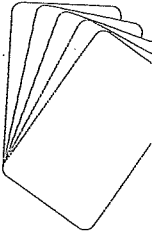


Practice Pack



Purpose

- Recall basic multiplication facts.
- Use known multiplication facts to work out unknown table facts.

Materials

- Deck of playing cards (picture cards removed)
- Split the deck into 2 packs.
Pack (1) - 3 sets of cards. Ace to 10.
Pack (2) - 1 set of cards. Ace to 10.
- Ace = one.

Organisation

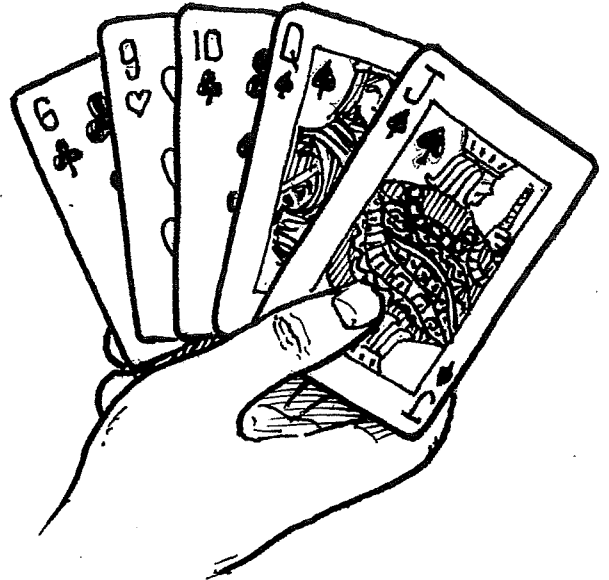
A game for one to three players.

Aim

To recall multiplication facts and win the most cards.

Rules

- The player(s) place the two packs (one containing thirty cards and one containing ten cards) side by side.
- One card from the ten card pack is flipped over. The value shown on the card indicates the table to be practised for the round.
- Cards are then flipped over from the pack of thirty and the product of the two cards is calculated.
- Players keep the cards for the table fact they correctly answer.
- Play continues until the pack of thirty is exhausted.
- The pack of thirty is then shuffled and placed face down on the table.
- Another card is flipped over from the pack of ten to set the table to be practised for the second round.



Variation

- Add the values on the card instead of multiplying them.
- Give each player a set of ten cards instead of using one pile of thirty.

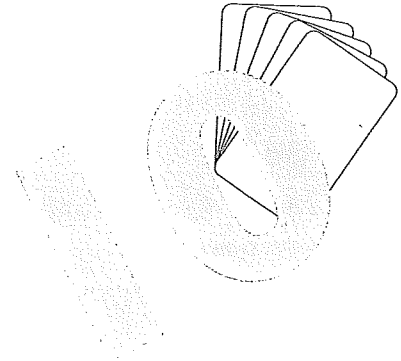
Teacher notes

Students need to understand and use the language associated with multiplication such as product, multiple, factors, divisible

Allow those students who are less confident with table facts use a table fact grid as support.



Ten 10s



Purpose

Children will make pairs of numbers that add to ten.

Materials

A pack of playing cards with the picture cards and tens removed. Ace = 1.

Organisation

Two or more players.

Aim

To collect ten 10s.

Rules

1. Each player is dealt five cards.
2. The remainder of the pack is placed face down in the centre of the table.
3. Prior to starting the game, players may pair up any cards in their hand that add to ten and lay these on the table. They will then have to replenish their hand from the pack in the centre of the table.
4. Player A, chooses a card from his/her hand and asks player B (the player to the left) for a card that when added to the chosen card will produce a total of ten. This game is played along similar lines to the game 'fish', so the player must ask:
Please may I have a ...
5. If Player B has the requested card, it is passed to player A. Player A pairs the two cards and places them on the table for all to see. Other players check that the two cards add to ten. If correct the cards are added to that player's winning pile.
6. If the sum is not ten, the cards are separated and left in the centre of the table. Player B (the player who was asked to provide a card) is given the opportunity to make ten with either card or both cards. If player B can't do this the cards are placed at the bottom of the pack. If Player B can make 10, the cards are placed in front of him/her.
7. If player B did not have the card requested by Player A, then Player A takes a card from the pack (ie fish).
8. Play continues until one player manages to make ten 10s or the pack is depleted, in which case the player with the most pairs that add to ten is the winner.

Variations

1. Change the total to another number, eg Make 15.
2. Allow students to use two cards from their hand (eg 2 and 3 to make 5) and request a third card (5) from another player.

Fact Face-off

Purpose

Children will add (multiply – see variation) two numbers.

Materials

A pack of playing cards with the picture cards removed.

Organisation

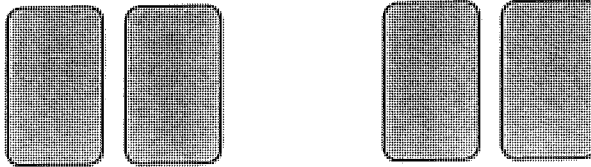
Two or more players.

Aim

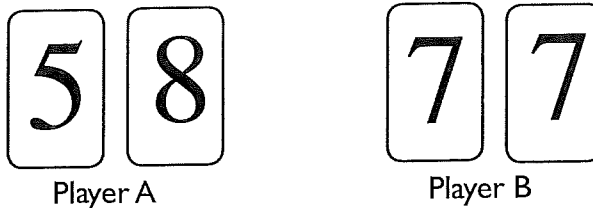
To win the most cards.

Rules

1. Each player is dealt five cards.
2. Each player places two cards face-down on the table.



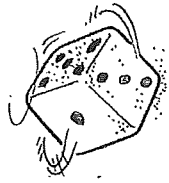
3. Then the cards are turned over.



4. Each pair of numbers is added. The player with the greatest total wins all of the cards (all 4 in this case) and places them in a separate pile.
5. In the case of a tie, the cards are left in the centre and jackpot to the next round.
6. Players pick up two more cards from the pack, to make their hands up to 5 cards. Play continues until the pack is depleted.
7. The winner is the player with the most cards at the end of the game.

Variations

1. Change the rules so that at the end of the game players have to add all of their cards. The player with the largest total is deemed the winner.
2. The picture cards may be added back into the pack. The Jack represents 11, the Queen, 12 and the King 13.
3. Include the jokers. Joker = 0
4. Change from addition to multiplication.
5. Use some blank cards to create a set of cards that involve larger numbers, eg teen numbers, two-digit numbers.



Double-Double

From $2x \gg 4x$ using 1 - 6 dice

Purpose

This game is a simpler version of double-double game that only involves the multiples, 1 - 6. The purpose of the game is to **link the two** and **four times tables** for the first six multiples using a doubling strategy.

Materials

Playing board, counters in two different colours, one six-faced dice. In the classroom trials of this game some students made up doubling charts to which they could refer.

Organisation

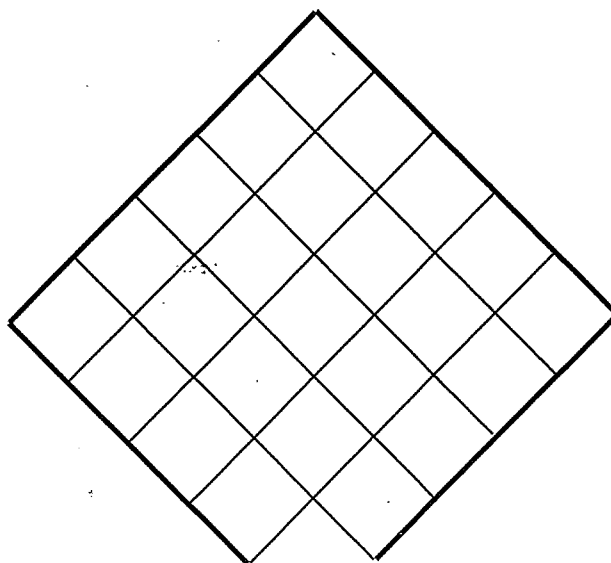
Two players.

Rules

As per Double-Double.

Variations

- Try different configurations of the playing board. Two different configurations of the playing boards are provided. Encourage students to play the game using both boards and then compare the game play. This leads to the opportunity for students to design their own board. A simple re-configuration of the playing board would simply involve changing the placement of the numbers on the standard twenty-four cell board. Encourage discussion of the way the numbers are placed on the board.
- More adventurous students could re-design the entire playing board structure.
- The game is more interesting if you use a *bump off rule* as it encourages strategic thinking. Changing the game to 'four in a row' requires more playing time.





D-D From 2x » 4x 1 - 6 Board A



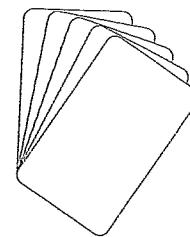
8	2	20	10	8
24	12	4	12	16
6	4	•	4	6
16	12	4	12	20
8	10	2	24	8

D-D From 2x » 4x 1 - 6 Board B



4	2	12	10	16	4
12	24	8	8	20	12
20	6	8	8	2	10
4	12	24	6	16	4

Card Count



Purpose

- Identify multiples of ten.
- Use appropriate mental strategies to add numbers to make a multiple of ten.

Materials

- Pack of playing cards (picture cards removed).

Organisation

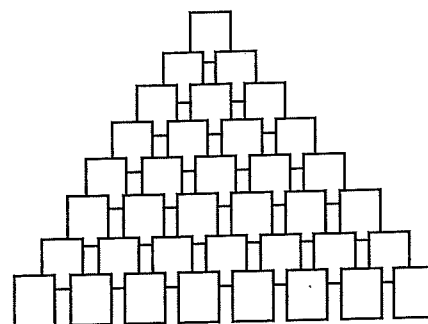
A game for two players.

Aim

To create the largest total.

Rules

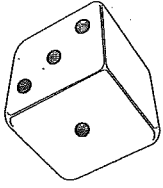
- The players arrange thirty-six cards face up to form a pyramid (as shown) with eight horizontal rows, each one overlapping the one above it.
- The rest of the pack (four cards) is placed on the table face down. This is called the leftovers pile.
- A player begins by removing, from the bottom row, up to five cards, which when totalled form a multiple of ten. These cards are set aside for scoring at the end of the game. Player number two may then remove any uncovered cards to form a multiple of ten.
- A card may not be removed if it is covered by another card.
- Should a player be unable to find uncovered cards to total a multiple of ten, the top card in the leftovers pile is turned over. The card from the leftovers pile may be used in combination with any uncovered cards to form a multiple of ten.
- If this card cannot be used in this way the next card is also turned; this and other uncovered cards may now be combined to form a multiple of ten.
- This process is repeated, if necessary, until all four cards in the leftover pile have been used.
- The game ends when all of the cards in the pyramid have been used, or when no combinations of up to five cards will give a multiple of ten.
- The winner is the player with the larger total when the cards are added up.



Teacher notes

A multiple of a given counting number is any number into which it will divide without a remainder. The multiples of 10 are 0, 10, 20, 30, 40 ...

Odd & Even II



x1

Purpose

- Identify odd and even numbers to 100
- Use appropriate mental strategies to + and – numbers.

Materials

Six-faced dice.
Playing board.

Organisation

Two-four players.

Aim

To be the first player to reach 100.

Rules

- Players take turns to roll the dice and progress along the game board.
- After the first roll of the dice, players move either forward or backwards depending on whether their counter is situated on an even number or an odd number.

For example, if a player was situated on 16 (an even number) and rolled a three, then the player would move forward three spaces to 19. When this player next rolled he/she would move back according to the number shown on the dice. For example, if a two was rolled the player on 19 (an odd number) would move back two places to 17.

- A player cannot step back any further than the start.
- The winner is the player to reach or pass 100.

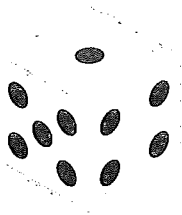
Teacher notes

- To determine whether a two-digit number is odd or even, students simply look at the last digit.
- This game will give students the opportunity to look at the patterns when they add or subtract even and odd numbers.
E.g. O + E = Odd ($43 + 2 = 45$).
- Students could be asked to create a table to show the patterns.

Variations

- Use an eight, ten, twelve or twenty-faced dice for a faster game.
- Reverse the rules for odd and even numbers so that landing on odd numbers means that the player moves forward rather than back.





Odd & Even II Playing Board

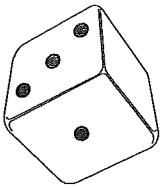


100	99	98	97	96	95	94	93	92	91
81	82	83	84	85	86	87	88	89	90
80	79	78	77	76	75	74	73	72	71
61	62	63	64	65	66	67	68	69	70
60	59	58	57	56	55	54	53	52	51
41	42	43	44	45	46	47	48	49	50
40	39	38	37	36	35	34	33	32	31
21	22	23	24	25	26	27	28	29	30
20	19	18	17	16	15	14	13	12	11
1	2	3	4	5	6	7	8	9	10

Simple Rules to Follow

- Roll the dice.
 - Move *FORWARD* if you are on an even number.
 - Move *BACKWARD* if you are on an odd number.
- A player can not go back any further than the start.
- Win by reaching or passing 100.

Trading Games



x1

Purpose

- Make groupings based on tens to make it easier to see how many there are.
- Add single digit numbers to a cumulative total.
- Develop understanding of addition.

Materials

Six-faced dice.

Bundling sticks (i.e. popsticks) and elastic bands.

Multibase Arithmetic Blocks (MAB) - Base 10

Place Value Mat.

Organisation

Whole class or two-four players.

Aim

To be the first player to reach the target.

Rules

- A target number is set, for example, 100.
- Players take turns to roll the dice and collect that many popsticks (units).
- A maximum of nine popsticks or objects may occupy a particular column of the Place Value Mat. Once ten popsticks are collected they may be traded, or bundled into one group of ten and placed in the tens' column. Once ten tens have been accumulated in the tens' column of the Place Value Mat they must be traded for one hundred and so on. Student could record a running total, or record each turn as a number sentence.
- The first player to reach the target number is the winner.

Teacher notes

Trading games focus on the development of place value. Players must trade ten ones to make one ten and ten tens to make one hundred. Bundling sticks such as pop-sticks should be used and bundled together with elastic bands before using the more formal MAB. Prior to working in base ten many mathematics educators recommend trading in smaller bases.

Variations

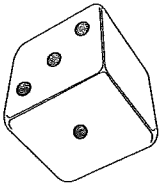
- Begin with a bundle of ten tens (100) in the hundreds' column, roll the dice and subtract and trade (exchange) until you reach zero .
- Change the dice that are used.
- Roll two different coloured dice - one to represent addition and the other subtraction.

Place Value Mat



HUNDREDS	TENS	ONES

Double Halve or Stay



x2

Purpose

- Use appropriate mental strategies to double and halve two-digit numbers.
- Compare whole numbers.

Materials

Two different coloured six-faced dice.

Organisation

A game for two – four players.

Aim

To be the first player to accumulate 10 points.

Rules

- Nominate one coloured dice to represent the tens and the other to represent the ones.
- Choose a target number between 5 and 122.
- Players then take turns to roll the dice. Once the dice are rolled, a number is formed. The player may then make one of three decisions in order to produce a number that is as close as possible to the target number.
 - *The player may double his/her number.*
 - *The player may halve his/her number.*
 - *The player may stay (keep the number as is).*
- After each player has had a turn, the player closest to the target is declared the winner for that round and scores 1 point. The winner is the first player to score 10 points.

Variations

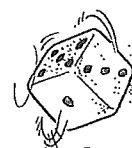
- Play may continue for a set number of rounds. After each round the players find the difference between their number and the target number. The winner is the player with the smallest total after a set number of rounds.
- Change the dice or combination of dice that are used. Note you will also need to alter the range of target numbers used. Simply halve the smallest number and double the largest number that may be formed with the two dice.
- Introduce a rule for halving odd numbers. *For example, you could suggest that when halving an odd number you simply forget the half.*

Teacher notes

Doubling and halving are important mental strategies. Students should be encouraged to note patterns when doubling and halving. *For example, what happens when you double an odd number, an even number? What happens when you try to halve an odd number? You may also need to clarify the expression 'closest to' as some students may think the closest number has to be below the target number.*



Closest to 1000



Purpose

Children will practise multiplying by 10 or 100 and adding numbers.

Materials

One six-faced dice per group of players.

Organisation

Two players - whole class.

Aim

To be the player with a cumulative total closest to 1000.

Rules

- The dice is rolled ten times. The dice rolling is shared by the players. After each roll the each player must decide whether to:

record the number;

multiply the number by 10; or

multiply the number by 100.

- The ten numbers are added to determine who is the *closest to 1000*. Note that it makes sense to keep a cumulative score so that players can make better judgements. It does not matter if the total goes above 1000. A total of 1016

would be better than a total of 950 as the difference between 1000 and 1016 is only 16, whereas the difference between 1000 and 950 is 50.

Roll	No	By	Total	Running Total
1	4	x 100	= 400	400
2	2	x 100	= 200	600
3	5	x 10	= 50	650
4	1	x 100	= 100	750
5	2	x 10	= 20	770
6	6	x 10	= 60	830
7	6	x 10	= 60	890
8	1	x 10	= 10	900
9	3	x 10	= 30	930
10	2	x 10	= 20	950

Variations

- In the standard game the players all use the same numbers. The only variation is whether the numbers are multiplied by 10 or 100. Players could each be given a dice to roll, so each player has a different set of numbers to work with.
- The multipliers may be changed. For example a target of ten could be set and the multipliers would be 1, 0.1 and 0.01. Alternatively a target of 500 could be set and the multipliers could be 1, 5 and 50.
- Change the number of rolls from 10 to another number such as 7 rolls or 12 rolls.
- Change the dice to six or eight-faced dice.
- Completed score sheets may be used for assessment purposes.



Closest to 1000

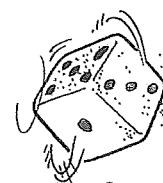
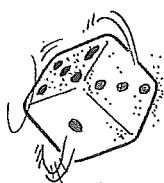


Roll	No	By	Total	Running Total
1	x	=		
2	x	=		
3	x	=		
4	x	=		
5	x	=		
6	x	=		
7	x	=		
8	x	=		
9	x	=		
10	x	=		

Roll	No	By	Total	Running Total
1	x	=		
2	x	=		
3	x	=		
4	x	=		
5	x	=		
6	x	=		
7	x	=		
8	x	=		
9	x	=		
10	x	=		

Roll	No	By	Total	Running Total
1	x	=		
2	x	=		
3	x	=		
4	x	=		
5	x	=		
6	x	=		
7	x	=		
8	x	=		
9	x	=		
10	x	=		

Roll	No	By	Total	Running Total
1	x	=		
2	x	=		
3	x	=		
4	x	=		
5	x	=		
6	x	=		
7	x	=		
8	x	=		
9	x	=		
10	x	=		



Purpose

Children will develop a better understanding of place value. Children will practise adding numbers.

Materials

One six-faced dice per pair or group of players. Two counters of the same colour for each player.

Organisation

Two - three players.

Aim

To be the first player to reach or pass 109.

Rules

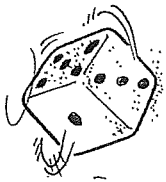
- Each of the players places a counter on start.
- The first player rolls the dice and moves his/her counter to the appropriate place on the game board. For example, if a 4 is rolled then the counter is moved to 4.
- The second player does the same.
- Play continues with players keeping a cumulative total. For example a player may be on 8 and then throw a 5 so the player would move to 13. One counter would be placed on the 10 and another counter of the same colour would be placed on the 3.
- The first player to reach 109 or more is the winner.

100	9
90	8
80	7
70	6
60	5
50	4
40	3
30	2
20	1
10	Start

100	9
90	8
80	7
70	6
60	5
50	4
40	3
30	2
20	1
10	Start

Variations

- Use a ten-faced dice for a faster game. This will provide practice adding larger single digit numbers
- Change the finishing score from 109 to 190 or more; that is one counter on 100 and another on 90. If three counters are used then a finishing score of 199 may be used.
- Play using a twelve or twenty-faced dice.



Name

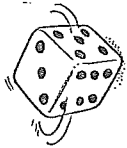
100	9
90	8
80	7
70	6
60	5
50	4
40	3
30	2
20	1
10	Start

Name

100	9
90	8
80	7
70	6
60	5
50	4
40	3
30	2
20	1
10	Start

Name

100	9
90	8
80	7
70	6
60	5
50	4
40	3
30	2
20	1
10	Start



Multiple Move On



Purpose

Children will recognise multiples. Children will develop their ability to count in multiples.

Materials

One six-faced dice per pair of players. A Multiple Move On playing board per pair of players. Sets of two different coloured counters. Less confident students could be given a multiplication chart.

Organisation

Two players.

Aim

To reach the finish 'F' first.

Rules




- This game is played in much the same way as Snakes and Ladders, where landing on a particular place on the board provides a boost, while landing on another part of the board sends you backwards.
- Two multiples are chosen at the start of the game. For example, if players require practice with the multiples of 6 and 9 these could be chosen. One multiple is chosen as the **fast forward multiple** and the other as the **rewind multiple**.
- Players take turns to roll the dice and move the counter forward the number of spaces indicated.
- *If a counter lands on one of the chosen multiples, then the player either jumps (fast forward) to the next multiple of that number or goes back (rewinds) to the previous multiple of that number. For example, if a player is on 14 and throws a four, he/she moves to 18. If 6 had been chosen as the fast forward multiple, then the player would fast forward to 24.*

- Starting point
- Moves on 4
- Fast Forward 6 places

F	98	97	96	95	94	93	92	91	90
80	81	82	83	84	85	86	87	88	89
79	78	77	76	75	74	73	72	71	70
60	61	62	63	64	65	66	67	68	69
59	58	57	56	55	54	53	52	51	50
40	41	42	43	44	45	46	47	48	49
39	38	37	36	35	34	33	32	31	30
20	21	22	23	24	25	26	27	28	29
19	18	17	16	15	14	13	12	11	10
S	1	2	3	4	5	6	7	8	9

- If a player lands on a multiple of the rewind number, then he/she would return to the previous multiple of that number. For example, if a player is on 60, throws a three and lands on 63 and the rewind multiple was 9, then the player would go back to 54. Note that 54 is both a multiple of 6 and 9, but because the player did not initially land on this number the dual multiple rule does not apply.

F	98	97	96	95	94	93	92	91	90
80	81	82	83	84	85	86	87	88	89
79	78	77	76	75	74	73	72	71	70
60	61	62	63	64	65	66	67	68	69
59	58	57	56	55	54	53	52	51	50
40	41	42	43	44	45	46	47	48	49
39	38	37	36	35	34	33	32	31	30
20	21	22	23	24	25	26	27	28	29
19	18	17	16	15	14	13	12	11	10
S	1	2	3	4	5	6	7	8	9

 Starting point
 Moves on 3
 Rewind 9 places

- If a player lands on the **first** multiple of the rewind number, then the player would have to go back to the start. For example, if the rewind multiple was 9 and a player lands on 9 then he/she would have to move their counter back to the start.
- If a player lands on a multiple of both numbers, (In the case of 6 and 9 this would be the numbers, 18, 36, 54, 72 and 90) then the player could be given an extra turn.
- The winner is the first player to make it to the end of the playing board.

Variations

- The game may be simplified by using only a single multiple and only moving forward when landing on it.
- A playing board with specific multiples marked on it may be used to support players who require it. A sample of such a board has been provided.
- Change the pairing of multiples. Children will learn a great deal by making their own Multiple Move On Boards.

Multiple Move On

Multiples of 3 & 5



F	98	97	96 ←	95 →	94	93 ←	92	91	90
↓ 80	81 →	82	83	84 →	85 ←	86	87 →	88	89
79	78 ←	77	76	75	74	73	72 ←	71	70 ↓
60	61	62	63 →	64	65 ←	66 →	67	68	69 →
59	58	57 ←	56	55 →	54 ←	53	52	51 ←	50 ↓
↓ 40	41	42 →	43	44	45	46	47	48 →	49
39 ←	38	37	36 ←	35 →	34	33 ←	32	31	30
↓ 20	21 →	22	23	24 →	25 ←	26	27 →	28	29
19	18 ←	17	16	15	14	13	12 ←	11	10 ↓
S	1	2	3 →	4	5 ←	6 →	7	8	9 →

Enlarge to A3