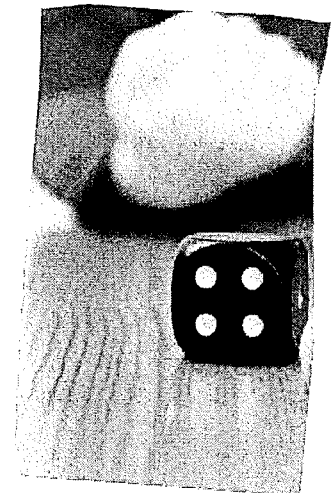
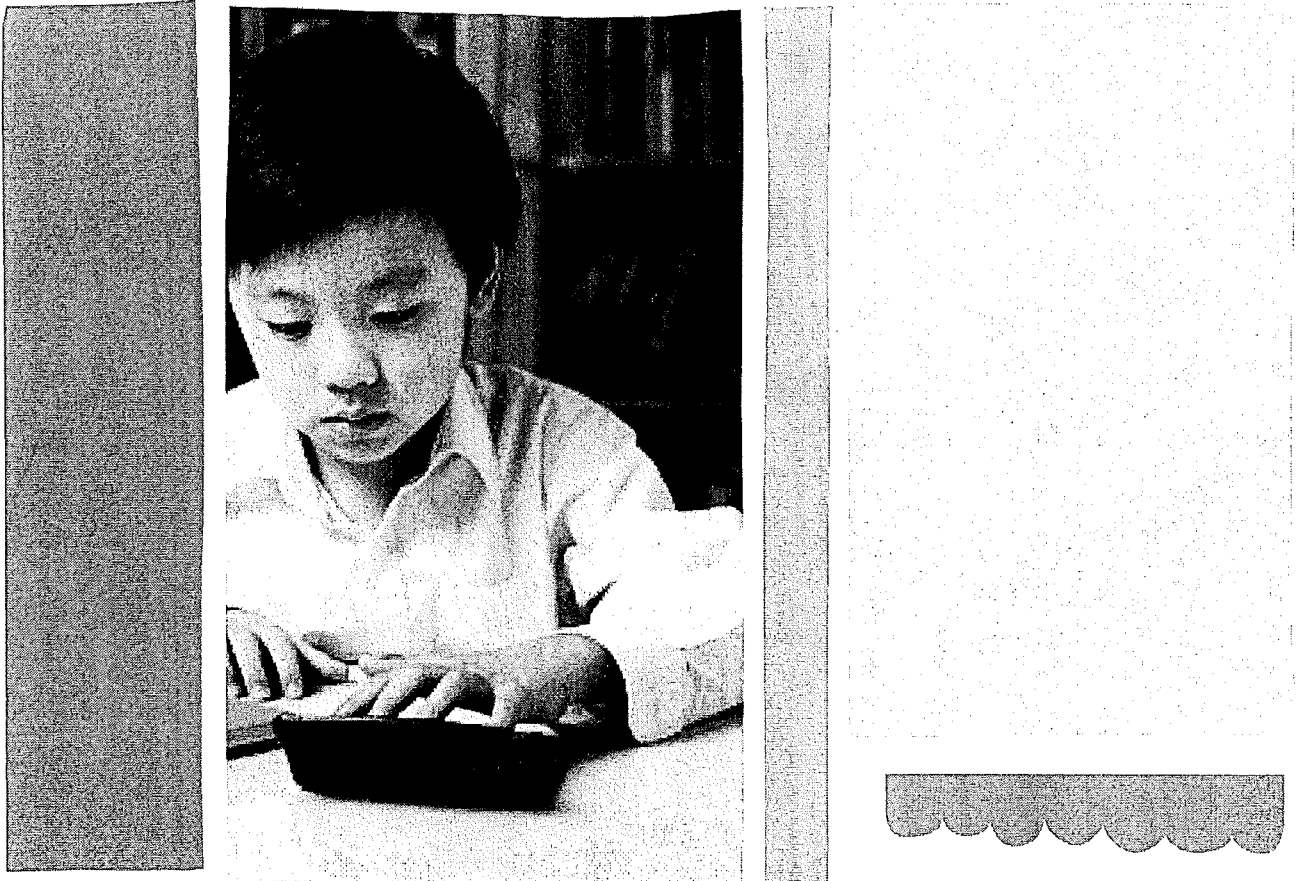


St Anthony's Family Numeracy Pack

Activity Booklet

K-6



Items included in your Family Numeracy Pack:

- 1 x pack of playing cards
- 2 x ten-sided dice
- 2 x six-sided dice
- 20 counters



Contents:

Card Games pp. 1-4

Dice Games pp. 5-6

Calculator Games p. 7

How to Use a Number Line and Multiplication

Grid pp.8-9

100 Chart Activities pp. 10

Card Games

These card games use the cards 1 (Ace) to 10.

Grade(s)	Skill Addressed	Game
1-3	Addition Facts	<p style="text-align: center;">Addition Facts Go Fish</p> <ol style="list-style-type: none"> 1. Determine a feature number: For children in Year 1, this should be a number from 5 to 10. For children in Years 2 and 3, choose a number up to 20. 2. Sort through the deck to remove all cards that are higher than that featured number. For example, if the goal is to learn addition facts for the number seven, the game will be played with ones (aces) through sevens. 3. Deal out five cards to each player and place the remaining cards in a draw pile. 4. Have each player look through his or her hand of cards to find any pairs that add up to the featured number and place them face up in their discard pile. For example, if learning addition acts for the number seven, appropriate pairs would be 6+1, 5+2 or 4+3. The 7 card would also be laid aside as a correct solution that doesn't require a pair. 5. The person to the left of the dealer may now ask any other player for a card that will help create the sum required. If the person asked has the card in his hand, he must give it up to the player that made the request. A player can keep asking for cards until no further matches are able to be made, at which point he is told to Go Fish! from the draw pile and the next player takes a turn trying to make a match. 6. If a player runs out of cards he can choose five more cards from the draw pile to stay in the game. 7. Continue playing until all the cards in the deck have been matched into pairs. The player with the highest number of pairs at the end of the game is the winner.
1-3	Addition Facts	<p style="text-align: center;">Addition Facts Memory</p> <ol style="list-style-type: none"> 1. Follow steps 1-2 of the Addition Facts Go Fish game (above). 2. Place all cards face down in a grid pattern. 3. Taking turns, have each player flip two cards to look for a matching pair to make the feature number. For example, if learning addition facts for the number six, appropriate pairs would be 5+1, 4+2 or 3+3. The 6 card would also be laid aside as a correct solution that doesn't require a pair. 4. Continue playing until all the cards in the deck have been matched into pairs. The player with the highest number of pairs at the end of the game is the winner.

Grade(s)	Skill Addressed	Game
1-3	Addition Facts	<p style="text-align: center;">Addition Facts Snap</p> <ol style="list-style-type: none"> 1. Follow steps 1-2 of the Addition Facts Go Fish game (above). 2. Divide cards amongst the players. 3. Players take turns placing a card on the playing pile. 4. If the top two cards make the feature number, players race to 'Snap' the pile. 5. The first player to 'Snap' the pile (with the correct pair), gets to take the whole pile. 6. Once a player runs out of cards, he/ she is out. The winner is the last person left with a pile of cards to play with.
1-6	Addition Facts	<p style="text-align: center;">Subtraction Duel</p> <ol style="list-style-type: none"> 1. Shuffle the deck of cards and place them face down in the middle of the players. 2. Players take turns taking two cards from the pile and placing them face up. They then read the number sentence and supply the answer. For example, if your child draws a 5 and a 4, he says $5 - 4 = 1$. If you draw a 7 and a 2, then your number sentence is $7 - 2 = 5$. Because your answer is larger, you win the four cards and you put them at the bottom of your pile. 3. If each of you has a number sentence with the same answer, each player must take two more cards and try again. The winner keeps the entire set of cards from both rounds. 4. Keep playing until one person gets all of the cards. If you're short of time, you could set up a timer and play the game for 10 to 15 minutes. When the bell goes off, each player counts his cards. The player with the most cards wins. <p>For players in Years 3+, this game can be made more complex by getting players to take the top 3 cards from their pile and making two of them a 2-digit number (subtracting the third).</p>
1-6	Addition Facts	<p style="text-align: center;">Addition Duel</p> <p>Follow the same steps as above (for Subtraction Duel), but this time, players need to add their two cards together and find the total. In the same way as Subtraction Duel, the player with the highest answer wins and keeps all of the cards used for that round.</p> <p>This game can be made more difficult by getting players to take 3 or 4 cards from their pile and adding them together.</p>
4-6	Multiplication	<p style="text-align: center;">Multiplication Duel</p> <p>Follow the same steps as for Subtraction Duel, but this time, players need to multiply their two cards and find the product. In the same way as Subtraction Duel, the player with the highest answer wins and keeps all of the cards used for that round.</p>
Kindy- PP	Counting to 10	<p style="text-align: center;">Counting Snap</p> <ol style="list-style-type: none"> 1. Shuffle the deck of cards and deal them evenly (face down) to all players. 2. This game is played in the same way as 'Snap', but instead of snapping numbers that are the same, players snap cards that come after the one played (e.g. if the top two cards are 9 and 10).

Grade(s)	Skill Addressed	Game
1-6	Number Place Value	<p style="text-align: center;">Make the Largest Number</p> <ol style="list-style-type: none"> 1. Shuffle the deck of cards and deal out two (Year 1), three (Year 2), four (Year 3), or five (Years 5 and 6) cards to each player. 2. Players arrange their cards to make the largest number. Once players have made their number, they must say their number. 3. The person with the largest number receives a counter. 4. Another lot of cards is dealt to each player and the game continues in the same way as above. 5. Once all of the cards in the pack have been used, players count their counters. The player with the most counters is the winner.
K-1	Number recognition, order and sequencing	<p style="text-align: center;">Higher or Lower</p> <p>This game is played in pairs.</p> <ol style="list-style-type: none"> 1. Shuffle the deck of cards and deal all of the cards evenly amongst players. 2. The first player takes the card at the top of the pile, looks at it (without showing the other player!) and places it face down on the floor (between the players). 3. The second player tries to guess what the number on the card is by selecting a card from his/ her hand (the player guessing the mystery number can look at his/ her deal of cards) and placing it face up next to the mystery card. 4. The first player tells whether the mystery card is higher or lower than the face-up card. The second player continues to make educated guesses by selecting and showing different cards until he/she discovers the value of the mystery card. Points are given for every guess made. 5. The cards from the middle are removed and are no longer used. Players switch roles and repeat the same steps as above. The game ends when there are no cards left to play with. The person with the lowest number of points wins.
5-6	Operations	<p style="text-align: center;">24</p> <ol style="list-style-type: none"> 1. Shuffle the deck of cards and deal out four cards to each player. 2. Players must arrange their cards into a formula that makes 24 (players must think of the symbols that will go between each card, or each pair of cards if applicable). For example, if a player is dealt a 9, 6, 7 and 1 (Ace), he or she might make 24 as follows: $(9-6) \times (7+1)$ 3. The first player to make 24 takes each players' 4 cards. If everyone gives up, the cards are shuffled back into the deck. 4. Continue playing in the same way as above. The game ends when the deck runs out and the player with the most cards wins.
4-6	Fractions	<p style="text-align: center;">Fraction Number Battle</p> <p>This game is played in pairs.</p> <ol style="list-style-type: none"> 1. The deck of cards is dealt evenly between both players. 2. Players simultaneously turn over their top two cards, using the smaller card as the numerator (top number), and their larger card as the denominator (bottom number). 3. The player with the greatest fraction wins all four cards. 4. Continue playing in the same way as above. The game ends when one player runs out of cards. The player left with all of the cards wins.

Grade(s)	Skill Addressed	Game
1-3	Addition	<p style="text-align: center;">I Spy Sums</p> <ol style="list-style-type: none"> 1. Arrange the cards in a grid, face up (like in a game of memory). 2. The first player starts by saying, "I spy two cards with a sum of [<i>a number from 2 to 20</i>]". For example, he/ she might say, "I spy two cards with a sum of 9." 3. Players must then find two cards next to each other (vertically or horizontally) that add to make the stated sum. Players pick up any pairs that make the stated sum. 4. If players miss any pair(s), the person who stated the sum can claim them. 5. Players swap roles and continue until the table is cleared. 6. The winner is the player with most cards at the end of the game.
4-6	Multiplication	<p style="text-align: center;">I Spy Products</p> <p>This game is played in the same way as 'I Spy Sums' (above), but this time, players challenge each other to find two cards that, when multiplied together, make a particular product. Players begin the search by saying, "I spy to cards with a product of [<i>number from 1 to 100</i>]".</p>

Dice Games

Grade(s)	Skill Addressed	Game
K- PP	Number Recognition	<p style="text-align: center;">Highest Number</p> <p>This game is played in pairs with counters and two 10-sided dice. Each player gets a die (make sure players remember which colour is theirs!).</p> <ol style="list-style-type: none"> 1. Players simultaneously roll their die. 2. The player with the highest number scores one counter. If both players roll the same number, they both score a counter. 3. The first player to score 10 counters wins.
PP-2	Addition	<p style="text-align: center;">Addition War</p> <p>This game is played in pairs with counters and four 10-sided dice. Each player gets two dice.</p> <ol style="list-style-type: none"> 1. Players simultaneously roll their dice and add the total of the numbers rolled. 2. The player with the highest total scores one counter. If both players roll the same sum, they both score a counter. 3. The first player to score 10 counters wins.
1-2	Subtraction	<p style="text-align: center;">Subtraction War</p> <p>This game is played in pairs with counters and four 10-sided dice. Each player gets two dice.</p> <ol style="list-style-type: none"> 1. Players simultaneously roll their dice and subtract the smallest number rolled from the largest number rolled. 2. The player with the highest answer scores one counter. If both players get the same answer, they both score a counter. 3. The first player to score 10 counters wins.
4-6	Multiplication	<p style="text-align: center;">Multiplication War</p> <p>This game is played in pairs with counters and four 10-sided dice. Each player gets two dice.</p> <ol style="list-style-type: none"> 1. Players simultaneously roll their dice and multiply the two numbers. 2. The player with the highest answer scores one counter. If both players get the same answer, they both score a counter. 3. The first player to score 10 counters wins.
1-2	Subtraction	<p style="text-align: center;">Bouncer</p> <p>This game is played in pairs with counters and two 10-sided dice (Years 1-2), Each player gets a die and 10 counters.</p> <ol style="list-style-type: none"> 1. Players simultaneously roll their die/dice. Players determine the difference between the numbers (e.g. if one player rolls 7 and another rolls 3, the difference is 4). 2. The player who rolled the lowest number must give the player who rolled the highest number the difference of both numbers in counters (e.g. In the example above, the player who rolled 3 would have to give the other player 4 counters). If players roll the same number and there is no difference, no counters are exchanged. 3. The game continues in the same way. Once a player is unable to pay the amount of counters he/she owes, the game ends and the player with all of the counters wins the game.

Grade(s)	Skill Addressed	Game
1-6	Addition Subtraction Multiplication Division	<p style="text-align: center;">Make 100</p> <p>This game is played in pairs with two 10-sided dice. Players will also need a piece of paper to record their running total. The aim of this game is to make 100.</p> <ol style="list-style-type: none"> 1. Players take turns rolling the two dice. They can choose to add, subtract, multiply (Grade 4+), or divide (Grade 4+) the two numbers. Players record the answer to their operation on their recording sheet. After the first round of rolling, players will need to add their answers to create a running total, e.g. Rolls Problem Running Total 8 $4 \times 4 = 12$ 12 6 $5 \times 6 = 30$ 42 2. The winner is the first person to reach 100. <p>Variations: For children in lower grades, this game can be played with just one 10-sided die. Players take turns rolling one die, and they record and add their rolls until they reach 100.</p>
1-6	Number Place Value	<p style="text-align: center;">Beat it!</p> <p>This game is played with counters and two (Year 1), three (Year 2), four (Year 3+) 10-sided dice.</p> <ol style="list-style-type: none"> 1. The first player rolls the two/ three/ four dice. He/she must arrange the dice so that he/she makes the greatest number. The player records the number he/she made. 2. The next player(s) rolls the dice and arrange them to make the greatest number. The player(s) record the number they made. 3. The winner of the round is the player who made the greatest number. The winner of the round takes a counter. 4. Players continue to play in this way until one player has a total of ten counters. This player is the winner.
4-6	Multiplication and Addition	<p style="text-align: center;">Race to 500</p> <p>This game is played in pairs with one 10-sided die. Players will also need a piece of paper to record their running total. The aim of this game is to make 500.</p> <ol style="list-style-type: none"> 1. Players take turns rolling the die. They multiply the number on the die by 10 and record the answer and keep a running total on their recording sheet. Rolls Problem Running Total 4 $4 \times 10 = 40$ 40 10 $10 \times 10 = 100$ 140 2. The winner is the first person to reach 500.
1-2	Addition	<p style="text-align: center;">Cross it Out</p> <p>This game is played with two 6-sided dice. Each player will also need a pencil and a piece of paper on which they write the numbers 1-12.</p> <ol style="list-style-type: none"> 1. The first player rolls the two dice and adds the sum. He or she then crosses out any one number combination on their number line that adds to that sum. For example, if player 1 rolled a 7, he or she could cross out 6 & 1 or 5 & 2 or 4 & 3. 2. The next player(s) does the same with their own dice roll. 3. The winner is the player who has managed to cross out all of their numbers first.

Calculator Games

Grade(s)	Skill Addressed	Game
1-6	Addition	<p style="text-align: center;">Calculator 21</p> <p>Using only the numbers 1, 2 and 3, players take turns pressing one of these numbers followed by [=] into the calculator until someone hits 21. The player who hits 21 wins the game.</p> <p>Variations:</p> <ul style="list-style-type: none"> - Play to 31 - Play to 100 using numbers 5, 6, 7, 8 or 9
3-6	Place Value	<p style="text-align: center;">Calculator Go Fish</p> <p>This game is played in pairs. Each player needs a calculator.</p> <ol style="list-style-type: none"> 1. Each player enters a 3-digit number into their calculator. All digits must be different. Numbers are kept secret from partners. 2. Players take turns asking for a particular digit by saying, "Do you have a 9?" If the other player has that number, they need to look at the place value of that number and subtract it from their number (e.g., If their number is 394, they would need to subtract 90 from their number, as the 9 is in the tens column). The player who asked for the 9 then gets to add that amount to their number (e.g. +90). <p>If the opposing person asks for a digit that is not in your current number, answer "Go Fish", or "I don't have any."</p> <ol style="list-style-type: none"> 3. The player with the largest number after 10 turns each wins. Or instead, you might play until one person loses everything.
1-6	Number	<p style="text-align: center;">Press and Guess</p> <p>This game is played in pairs with one calculator.</p> <ol style="list-style-type: none"> 1. Player 1 enters in a constant-addition equation (e.g. [=] [6] [=][=][=]) 2. After pressing [=] 2-3 times, the Player 1 hands the calculator to Player 2. Player 2 is to keep on pressing [=] until he/she works out what the mystery rule is (e.g. +6). 3. Players swap roles. <p>Variations:</p> <p>This game can also be played starting from numbers other than 0 (e.g. [4] [=] [6] [=][=][=]).</p>

How to Use a Number Line

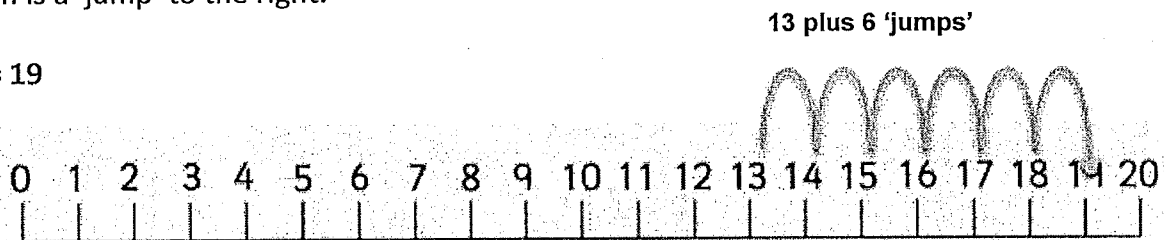
Forming a mental number line is an important task for a child to master. It may be called upon when one tries to locate a house along a street according to its street number, or read an analogue clock without numerals, or find a numeral on a game board.

A child's mental number line increases as they encounter and construct concepts of new numbers, for example millions, trillions, fractions and decimal fractions.

Number lines can also be used to support addition and subtraction.

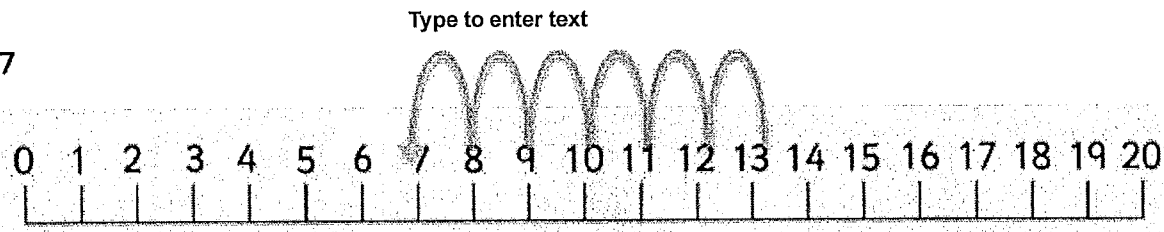
Addition is a 'jump' to the right.

$$13 + 6 = 19$$



Subtraction is a 'jump' to the left.

$$13 - 6 = 7$$



How to Use a Multiplication Table

Multiplication tables can be used to support children in solving multiplication and division problems.

Using the multiplication table to divide:

$$32 \div 4 =$$

1. Find the number you are dividing by: 4
2. In that same row, find the number you are dividing, 32
3. At the top of that column, find the answer. 8

		1	2	3	4	5	6	7	8	9	10
1		1	2	3	4	5	6	7	8	9	10
2		2	4	6	8	10	12	14	16	18	20
3		3	6	9	12	15	18	21	24	27	30
4		4	8	12	16	20	24	28	32	36	40
5		5	10	15	20	25	30	35	40	45	50
6		6	12	18	24	30	36	42	48	54	60
7		7	14	21	28	35	42	49	56	63	70
8		8	16	24	32	40	48	56	64	72	80
9		9	18	27	36	45	54	63	72	81	90
10		10	20	30	40	50	60	70	80	90	100

1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Using the multiplication table to multiply:

$$4 \times 8 =$$

1. Find the row for number 4.
2. Find the column for number 8.
3. Use your index fingers to move across row 4 and down column 8. Your fingers meet at 32.

Multiplication tables can also be used to study patterns. For example, children can be supported to see that anything multiplied by 10 will have a product that ends in 0. And that anything multiplied by 5 will have a product that ends in 0 or 5.

100 Chart Activities

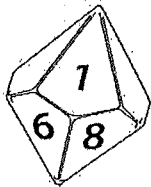
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Use the hundred chart as a **number line**.
- Look for **addition and subtraction patterns** (e.g. $4 + 8$, $14 + 8$, $24 + 8$... What do you notice?)
- Use the hundred chart for **skip counting**. Have a go at skip counting from random numbers.
- Use the hundred chart to help your child understand and **visualize percentages**. Discuss how percent means 'out of 100', so 30% of the chart would be up to the number 30.
- Use the hundred chart to help your child understand **rounding to the nearest 10**. Say a number (other than multiples of 10) and have your child put a counter on the ten that is closest to that number.
- Teach your child to **count on** (e.g. show that when you count on from a particular number, you don't include the number that you're counting on from). Have your child cover numbers with a counter as you give directions (e.g. 23 and count on 6 more).
- Teach your child to **count back** (e.g. show that when you count back from a particular number, you don't include the number that you're counting back from). Have your child cover numbers with a counter as you give directions (e.g. 23 and count back 6).
- Get your child to close his/ her eyes. Use 6 counters to cover up 6 numbers on the 100 chart. Your child needs to draw upon his/her **number knowledge** to tell you which numbers you have covered up.

EM

PV

From Here to There



x2

Purpose

- Compare two-digit whole numbers.
- Create numbers that fit within a given range.
- Use a strategy to give you the greatest chance of winning.

Materials

Two ten-faced dice.
Playing board (Number Track).
Two different coloured pens.

Organisation

Whole class, individual or two players.

Aim

To complete a sequential sequence of numbers.

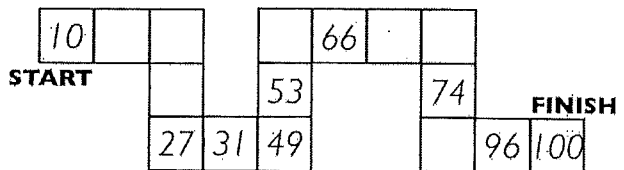
Rules

- Starting and finishing numbers are chosen at the beginning of the game e.g. 10 - 100.
- Two ten-faced dice are thrown and the digits noted.
- The first player then uses the two digits to make a number. For example, if a 3 and a 5 are thrown then the numbers 35 or 53 may be made.
- The player must make a decision as to where to place the number on the number track.
- The winner is the person who completes the sequence of numbers from the starting to the finishing number. (See also variations.)
- The second player then rolls the dice, forms a number and places it on the number track.

Teacher notes

Players need to consider their strategy when completing the path from start to finish. For example, if the dice show a 3 and a 4 then the player would miss a turn because the two numbers may only be combined to form 34 and 43 and there is no available space between 31 and 49. In hindsight, a gap should have been left between 31 and 49.

Encourage students to use of everyday language to explain the strategy they used to complete the number track.



Variations

- Change the dice. However, be careful, if you are playing with two six-faced dice the finishing number can not be larger than 66.
- Introduce a third dice so that larger numbers may be formed.
- Play a decimal version. Begin with 1. and finish on 2.
- Each player could play on their own track. If the player can't move he/she loses.



From Here to There Number Tracks

