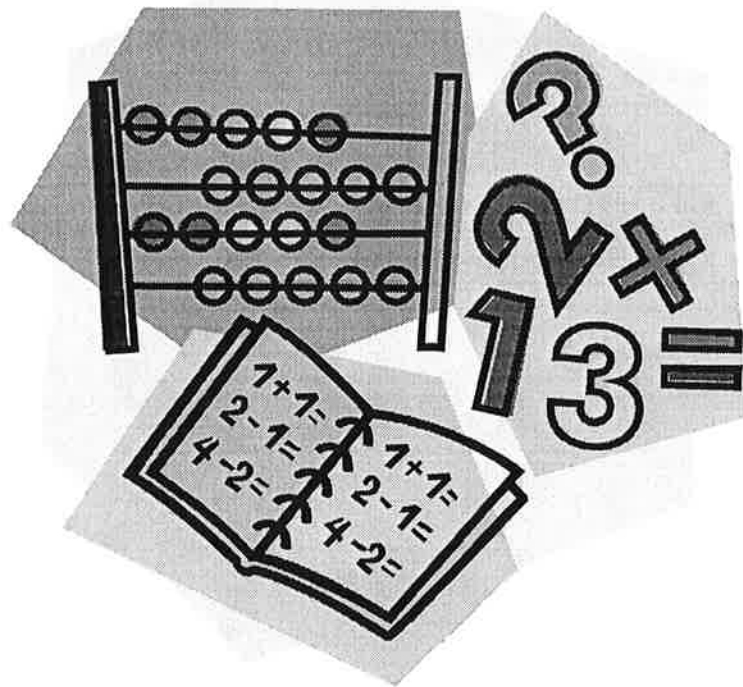


A guide to help with Primary School Mathematics





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

ADDITION

add
altogether
and
sum
plus
in all
total

+

SUBTRACTION

how many more
how much more
minus
less
subtract
difference

-

MULTIPLICATION

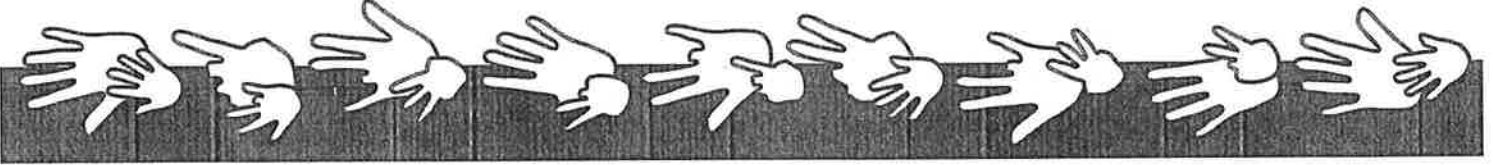
times
multiply
product
factors
groups of
rows
lots of
teams

X

DIVISION

divide
share into
how many
quotient
groups

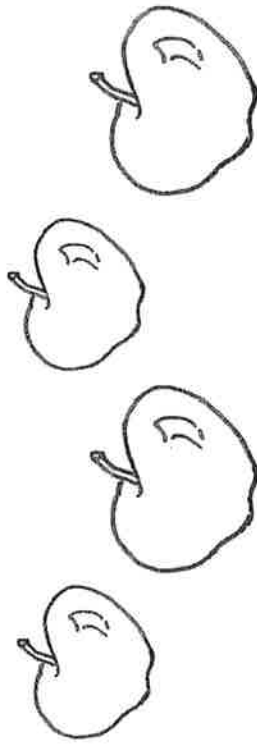
÷



Parents Count Too

What can you do at home?

- Play board games such as *Snakes and Ladders* with two dice and encourage your child to add the two numbers rolled. Show them how to count from the larger number.
- Play card games such as *21* or *bust*. In this game, two cards are dealt to each player who adds the numbers together. Each player may ask for more cards from the "kitty" with the aim of being the person with the highest score that does not go over 21.
- Share fruit such as mandarins with your child and add the number of pips you both have.
- Ask your child to help you work out how many more items are needed when you are shopping. *I have six apples here, how many more will I get to make ten?*



- Look at house numbers when going for a walk. Ask your child to guess what the next number will be.
- Set the table for one person and ask your child to put out enough plates for everyone. Ask them how many more were needed.
- Count the number of eggs in a carton, and again after some have been removed. Ask your child, *How many were taken away?*
- Read a book to your child that has a contents page. Look for a story or chapter on a certain page and work out how many pages until the next story.

Parents Count Too

Helping your child with – **Arithmetic: addition, subtraction, multiplication and division**

Through everyday activities and play situations children will naturally use numbers. Young children are very capable of sharing out things such as lollies so that each person has a fair share or adding a friends' collection to his or her own and finding the total. We need to help children discover quick and easy ways of using numbers.



How do children learn to use numbers?

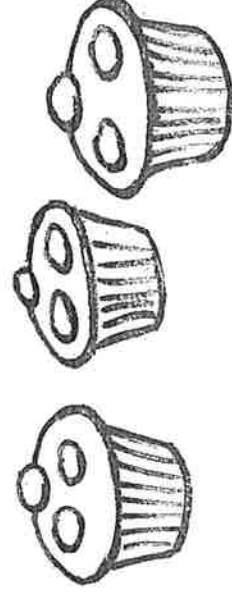
When first learning to use numbers, children will need to have the objects with them in order to add, subtract, multiply or share equally (divide). They will go through a process of needing to see and count each thing, one at a time.

We need to help children learn to start counting from a larger number and add or subtract a second number. We also need to help children build mental images of a group or quantity so they do not always have to rely on seeing the objects. Helping children to mentally “see” groups of things will also help them with understanding multiplication and division before they learn the “tables”.



Parents Count Too

- Use empty toilet rolls or empty plastic bottles and a ball to make a game of skittles. Encourage your child to tell you how many were knocked down and how many are still standing after bowling. Keep a score of how many are knocked down to see who is the winner.
- Sing songs that include numbers. Ask your child to tell you the next number in the song before you sing the next verse.
- Go for a drive and point out the signs that indicate the distance to the next town. In the country the numbers on the kilometre signs go down by 5. Ask your child to work out what number will be on the next sign.
- Have your child help share out food to the family. *How many slices will I need to cut the pizza into so that everyone has two slices?*
- Ask your child to share out items fairly with others.
- Count the number of things in a collection such as shells in a bag or a large jar of buttons. Ask your child if there is a quick and easy way of counting, say counting by fives.
- Decorate patty cakes with sultanas or smarties. Place the same number of sultanas or smarties on each cake and ask your child to find out how many you will need altogether.
- Count the number of ice cubes in a tray. If your child counts by ones suggest counting by the number in each row of the tray. (This will usually be counting by twos.)



301 – A family game of darts

Equipment

Dart board, darts, pencil and paper

How to play

- The object of the game is to count down from 301 to exactly zero with each player finishing the game with a double.
- In turn, each player throws three darts and deducts the total of the three darts from 301. Encourage mental computation to work out the score.
- To record the score, write 301 on a piece of paper or on the dart blackboard and draw a line down the middle. For each turn, the total of the three darts can be recorded and progressively subtracted from each player's total.



Stage	Why play this game?	Game
K - 2	Addition	<p>Make 10</p> <p>A pack of cards 1-10 One player deals out ten cards and places them face up in a row. The first player then looks across the row of cards for combinations that add up to 10 (any number of cards is fine). Only one combination can be removed.</p> <p>The aim of the game is to collect as many cards as possible, so combinations that require more cards are favoured.</p> <p>Once a combination of cards has been removed the cards are replaced with new ones from the pack.</p> <p>Play continues until there are no more cards or combinations to 10. The winner is the player with the most cards.</p> <p>Variation</p> <ul style="list-style-type: none"> Choose a different target number for the combinations.
Year 2 -10	Multiplication Number facts	<p>Fast Facts</p> <p>A pack of cards 1 – 10. A game for two players. Deal out half the cards to each player. Both players lay out a card face up. The first to multiply the two numbers together wins the cards. Play continues and the winner is the one with the most cards at the end.</p> <p>Variation</p> <ul style="list-style-type: none"> Remove cards which are beyond children's ability, e.g. 8, 9 Use addition or subtraction
All ages	Addition Subtraction Multiplication Division	<p>Card Calculations</p> <p>A pack of cards 1 - 9 Each player is dealt 4 cards face up. Each player then tries to make a number sentence which gives a single digit answer using their four cards. The answer becomes the score for that player. e.g. If the four cards were 2, 6, 3 and 7 Answers could be: $7 + 3 + 2 - 6 = 6$ 6 points $6 + 7 - 3 - 2 = 8$ 8 points $36 - 27 = 9$ 9 points The winner is the player with the largest score after five rounds.</p> <p>Variations</p> <ul style="list-style-type: none"> Aim to produce the lowest score Deal out more or less cards

Stage	Why play this game?	Game
Year 2-8 and adults can have fun with this.	<p>Addition and subtraction</p> <p>Multiplication and division</p>	<p>Salute</p> <p>Short deck, cards 2-10 (3 players)</p> <p>Deal one card each, face down. When the dealer says "salute", each player raises the card to his or her forehead. The dealer states the total of the cards. Each player has to determine the value of the card being held to his or her forehead by looking at the other person's card and subtracting this amount from the total. This can also be played with multiplication</p> <p>Variation</p> <p>The dealer looks at the colour of the cards. If the colours are the same the dealer adds and if the colours are different, the dealer multiplies. This time, the player has to state both the colour and the value of the card being held.</p> <p>Flip 4 and add</p> <p>The first player flips 4 cards to make two 2-digit numbers and adds these together. The next player also flips 4 cards and adds the two 2-digit numbers together. The player with the largest number gets a point. The player with the most points wins.</p> <p>Variations</p> <ul style="list-style-type: none"> • Flip 6 cards and make two 3-digit numbers to add together. • Begin with 50 and flip 2 cards to make a 2-digit number. Subtract the number from 50. The next player flips 2 cards and subtracts their 2-digit number. Play continues by subtracting a number when it is your turn. The person closest to zero is the winner.
Year 2 - 8	Addition and subtraction	<p>Make 20</p> <p>Players are given 4 cards each. Using any of the four operations, (+, x, -, /) the player tries to make a total of 20. If the player makes exactly 20, they score 10 bonus points for making 20 plus their score of 20 (30 altogether).</p> <p>The next player has his or her turn. If they are unable to make 20, their score is the number they have made that is less than 20. Play continues with players trying to make 20 with another four cards. After each turn the scores are added to the player's total. The first player to reach 200 is the winner</p> <p>Variation</p> <ul style="list-style-type: none"> • Select another number to begin the game <p>Add or subtract</p> <p>Start with a selected two digit number such as 35. Players take turns to turn over a card. If the card is black it is added to the number (35). If the card is red, the number of the card is subtracted from the number.</p> <p>Play continues by adding or subtracting the card turned over from your total.</p> <p>The player with the highest number at the end of the game is the winner.</p>
Year 4 - 8	Addition, subtraction, multiplication and division.	<p>Players are given 4 cards each. Using any of the four operations, (+, x, -, /) the player tries to make a total of 20. If the player makes exactly 20, they score 10 bonus points for making 20 plus their score of 20 (30 altogether).</p> <p>The next player has his or her turn. If they are unable to make 20, their score is the number they have made that is less than 20. Play continues with players trying to make 20 with another four cards. After each turn the scores are added to the player's total. The first player to reach 200 is the winner</p> <p>Variation</p> <ul style="list-style-type: none"> • Select another number to begin the game <p>Add or subtract</p> <p>Start with a selected two digit number such as 35. Players take turns to turn over a card. If the card is black it is added to the number (35). If the card is red, the number of the card is subtracted from the number.</p> <p>Play continues by adding or subtracting the card turned over from your total.</p> <p>The player with the highest number at the end of the game is the winner.</p>
Year 2 - 6	Addition and subtraction	<p>Players are given 4 cards each. Using any of the four operations, (+, x, -, /) the player tries to make a total of 20. If the player makes exactly 20, they score 10 bonus points for making 20 plus their score of 20 (30 altogether).</p> <p>The next player has his or her turn. If they are unable to make 20, their score is the number they have made that is less than 20. Play continues with players trying to make 20 with another four cards. After each turn the scores are added to the player's total. The first player to reach 200 is the winner</p> <p>Variation</p> <ul style="list-style-type: none"> • Select another number to begin the game <p>Add or subtract</p> <p>Start with a selected two digit number such as 35. Players take turns to turn over a card. If the card is black it is added to the number (35). If the card is red, the number of the card is subtracted from the number.</p> <p>Play continues by adding or subtracting the card turned over from your total.</p> <p>The player with the highest number at the end of the game is the winner.</p>

Stage	Why play this game?	Game
Kinder Year 1 - 2	<p>Numerical recognition</p> <p>Numbers before and numbers after a given number</p>	<p>Place in order</p> <p>Place all the cards 1 (ace) -10 face down in rows of ten so that there are four rows with ten cards in each row.</p> <p>The aim of the game is to have the cards in order in each row. (cards places 1 – 10)</p> <p>The game begins when player 1 turns over the first card and tries to work out where it should be in the row and places the card down. The next player picks up the card where player 1 placed their card and then works out where to put that card.</p> <p>Play continues in this way until all the rows are from 1 – 10.</p> <p>Addition snap</p> <p>Cards 1 (ace) – 9, two players</p> <p>Players divide the cards evenly between themselves. At the same time each player turns over one card.</p> <p>Players add the two numbers together as quickly as possible and say the answer aloud. The player who says the correct answer first, keeps the two cards.</p> <p>Play continues until one player collects all the cards.</p> <p>Addition and subtraction</p> <p>Cards 1 (ace) – 10</p> <p>Players divide the cards evenly between themselves and place one card face up in the middle.</p> <p>The first player places their card next to the card in the middle. If it is a black card the cards are added together.</p> <p>If it is a red card subtract the number from the previous total.</p>
Year 1 - 3	Addition of number facts	<p>Up and Down</p> <p>A deck of cards 1 -10</p> <p>Each player is dealt four cards face up. The remaining cards are placed in a pack in the centre.</p> <p>The aim of the game is to be the first player to arrange the cards in ascending or descending order.</p> <p>Starting with play to the dealer's left, each player takes turns to exchange cards from the pack or discard pile to arrange their four cards in order.</p> <p>The first player to arrange his/her cards in order is the winner of that round and receives a point.</p> <p>The first player to accumulate five points is the winner of the game.</p>
Year 1 - 6	Addition and subtraction facts	<p>Up and Down</p> <p>A deck of cards 1 -10</p> <p>Each player is dealt four cards face up. The remaining cards are placed in a pack in the centre.</p> <p>The aim of the game is to be the first player to arrange the cards in ascending or descending order.</p> <p>Starting with play to the dealer's left, each player takes turns to exchange cards from the pack or discard pile to arrange their four cards in order.</p> <p>The first player to arrange his/her cards in order is the winner of that round and receives a point.</p> <p>The first player to accumulate five points is the winner of the game.</p>
All ages	Sequencing in ascending or descending order.	<p>Up and Down</p> <p>A deck of cards 1 -10</p> <p>Each player is dealt four cards face up. The remaining cards are placed in a pack in the centre.</p> <p>The aim of the game is to be the first player to arrange the cards in ascending or descending order.</p> <p>Starting with play to the dealer's left, each player takes turns to exchange cards from the pack or discard pile to arrange their four cards in order.</p> <p>The first player to arrange his/her cards in order is the winner of that round and receives a point.</p> <p>The first player to accumulate five points is the winner of the game.</p>

Multiplication Chart

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

<http://math.about.com>



Dice games



Stage	Why play this game?	Game
Kindergarten	Recognising numbers and counting	<p>Collect 10</p> <p>A game for pairs of students, with each student having a regular dice (the dice used for this game can be varied according to the needs of the students). Counters are also required. The players roll the dice and the player with the higher number showing scores a counter; if both throw the same number they both score a counter. The first player to collect 10 counters is the winner.</p> <p>Variations</p> <ul style="list-style-type: none"> The player with the lower number scores the counter each time. Start with ten counters and the player with the higher number on the roll of the dice takes away this number of counters. The first player to have no counters is the winner.
Kindergarten Year 1	Addition	Same as Collect 10 above, but each student has 2 regular dice and the total is obtained by adding the numbers rolled.
Year 1 - 2	Addition	<p>Same as Collect 10 above, but the total is obtained by adding three regular dice.</p> <p>Note: Encourage the students to find quicker ways of adding the numbers.</p> <ol style="list-style-type: none"> Doubles, eg 4 + 4 Doubles plus one, eg 4 + 5 (4 + 4 + 1) Doubles less one, eg 4 + 3 (4 + 4 - 1) Combinations to 5, eg 1 + 4 Combinations to 10, eg 6 + 4

Stage Why play this game?

Game

- add the two numbers shown on the dice
- find the difference between the two numbers
- multiply the two numbers
- add the three numbers to produce the score for that round

For example



$$6 + 3 = 9$$

$$6 - 3 = 3$$

$$6 \times 3 = 18$$

$$\text{Score} = 9 + 3 + 18 = 30$$

After 10 rounds the player with the highest total is the winner.

To make the activity more challenging change the type of dice used to 8, 10, 12 or 20 sided.



Year 2 - 6

Addition Strategy

Cross out 9

An activity for two to four players.

Equipment: two regular dice, paper and pencil

Each player writes the numbers 1 to 9 on a piece of paper. The first player rolls the two dice then crosses out the numbers shown on the dice or the sum of the two numbers.

For example

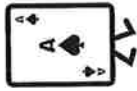


On this roll, the player may

cross out 2, 3 or 5 (2 + 3).

When six numbers or less are left only a single dice is used. The player's turn continues until they cannot cross off any more numbers. The remaining numbers are totaled and this is the score for that round. After five rounds the player with the smallest total wins.

Card games



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

Stage	Why play this game?	Game
Kinder Year 1 - 2	Recognising numbers. Numbers before and after a given number. Combinations to 10	Snap Divide the cards amongst the players. Snap the cards that are the same. Snap the cards that come after the one played. Snap the cards that come before the one played. Snap the cards that add up to 10.
Kinder Year 1 - 2	Recognising numbers	Fish Deal out seven cards to each player. Each player finds pairs of numbers from their hand and places them down in front of them. The game begins when player 1 asks the player sitting to their left if they have a card that matches one of theirs so that they can make a pair. If they do have the card, they give it to player 1. If they do not have the card they say "fish" and player 1 picks a card from the pack. Play continues in this way. After all the deck has been used, players count the number of pairs they made. The winner is the one with the most number of pairs. Variation • Players collect cards that add to 10 instead of pairs
Year 1 - 4	Addition and subtraction using mental strategies	24 Deal out all the cards, an equal number to each player. The person to the dealer's left goes first and the game continues clockwise. The first person turns over a card and places it face up in the centre of the play area. The next player turns over a card and adds it to the card already played, says the sum out loud, and places the card on top of the previously played card. The next player turns over a card and adds the card to the sum of the first two cards. Play continues in this way until someone adds a card that makes 24 or more. If the sum is exactly 24 that player wins. If the sum is over 24 the value of the card is taken away from the previous total. Play continues until someone gets a total of exactly 24.
Year 4 - 6	Numerical recognition	Make the largest number Short deck, cards 1-9 Players take turns drawing one card at a time until they have 5 cards. Each player makes the largest number they can and says the number. The person with the largest number receives a point. Play continues in this way. After using all the cards in the pack, the player with the most points is the winner.

What is a fraction?

Fractions name parts of a whole.

3
—

We call the top number the **NUMERATOR**; it is the number of parts you have.



5

We call the bottom number the **DENOMINATOR**; it is the number of parts the whole is divided into.

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What is an Improper Fraction?



An improper fraction is when the numerator is greater than (or equal to) the denominator.

5
—
4

8
—
8

12
—
6

7
—
2

9
—
3

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What is a Proper Fraction?

A proper fraction is when the numerator is less than the denominator.

$$\frac{3}{4}$$

$$\frac{2}{3}$$

$$\frac{15}{20}$$

$$\frac{1}{5}$$

$$\frac{1}{2}$$

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What is a Mixed Fraction?

A mixed fraction is a whole number and a proper fraction together.

$$1\frac{1}{2}$$

$$3\frac{2}{3}$$

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What is an Equivalent Fraction?

Equivalent fractions have the same value even though they may look different.

$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

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Split Strategy

Add the hundreds, tens and ones separately.

STEP 1

$$42 + 35 =$$

Tens	Ones

Tens	Ones



STEP 2

Add the tens column first.

$$4 \text{ tens} + 3 \text{ tens} = 7 \text{ tens}$$

$$40 + 30 = 70$$

Tens	Ones

Tens	Ones

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STEP 3

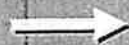
Add the ones column.

$$2 \text{ ones} + 5 \text{ ones} = 7 \text{ ones}$$

$$2 + 5 = 7$$

Tens	Ones

Tens	Ones



STEP 4

$$42 + 35 = 77$$

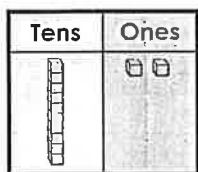
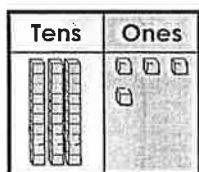
Tens	Ones

Split Strategy

Subtract the hundreds, tens and ones separately.

STEP 1

$$34 - 12 =$$

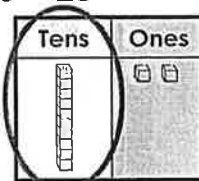
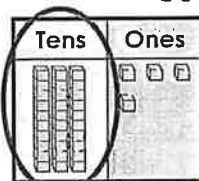


STEP 2

Subtract the tens column first.

$$3 \text{ tens} - 1 \text{ ten} = 2 \text{ tens}$$

$$30 - 10 = 20$$



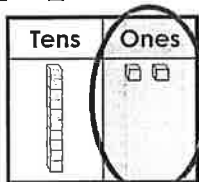
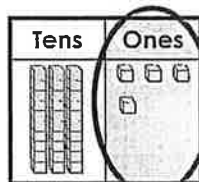
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STEP 3

Subtract the ones column.

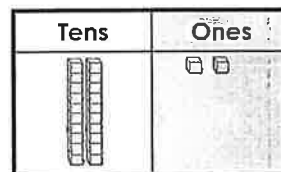
$$4 \text{ ones} - 2 \text{ ones} = 2 \text{ ones}$$

$$4 - 2 = 2$$



STEP 4

$$34 - 12 = 22$$

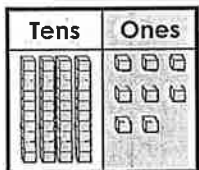
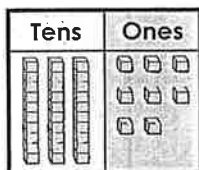


Compensation Strategy

You must round UP the SECOND number.

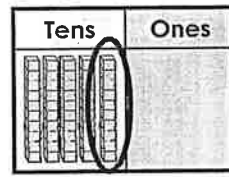
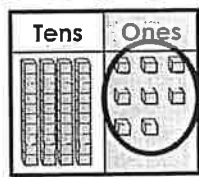
STEP 1

$$38 + 48 =$$



STEP 2

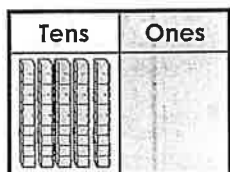
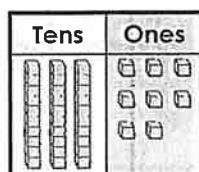
Add 2 numbers to round 48 UP to 50.



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STEP 3

$$38 + 50 = 88$$



STEP 4

Take-away 2 numbers.



$$88 - 2 = 86$$

Some times tables tricks!

Zero and One Times Tables

Check this out: if you multiply **ANYTHING** by zero, the answer is zero. Anything. $4 \times 0 = 0$ and $1,000,000 \times 0 = 0$. One times tables are almost as easy. Any number multiplied by one is always itself. "Huh," you say? Well, check it out: $10 \times 1 = 10$, $42 \times 0 = 42$, $1 \times 8726 = 8726$.

Two Times Tables :: Double Your Pleasure

When you multiply a number by two, you just double that number. So, if you want to figure out what 7×2 is, you just add $7 + 7$ (the answer is 14, by the way). Any number times two is the same as that number **PLUS** itself. Here's one more example: 5×2 is the same as $5 + 5$, which equals 10.

Four Times Tables :: Double, Double Trouble

OK, so now that you have the two's figured out, it's time to **get doubling** again. When you multiply four with anything, you have to use the **doubling-up trick** (that's the one you used for the two times table) twice. Here's an example: 7×4 is the same as $7 + 7 = 14$ and then $14 + 14 = 28$. So $7 \times 4 = 28$. Here's another **double, double** example: 4×10 is the same as $10 + 10 = 20$, so then $20 + 20 = 40$. So the answer is $4 \times 10 = 40$.

Five Times Tables :: It's Why You Have Fingers

First things first – can you **count to five**? Yeah? Then you can figure out your five times tables. So, when you want to multiply a number by five you just count up by **fives** that many times. Let's review how to count by fives: 5, 10, 15, 20, 25... and so on. Got it? So if you want to multiply 7×5 , you just count by fives, seven times. 5, 10, 15, 20, 25, 30, 35. So $7 \times 5 = 35$. If you have trouble keeping track, just your fingers.

Nine Times Tables – One Seriously Handy Tip

A fun way to remember your nine times tables. For this method you are going to need to have **two hands**. Put your hands in front of you with your palms towards you. Your fingers represent the numbers **one to ten** (one is your left thumb; ten is your right thumb). Now you're ready to do your **nine times tables**. Let's say the question is 9×4 . Count to the **fourth finger** (if you've counted right, it will be the ring finger on your left hand) and **curl** that finger under. Now you have three fingers up before that finger and 6 up after it. So the answer is **36**. Let's try 9×8 . Put down the 8th finger (middle finger on the right hand) so that you have seven fingers up before the finger you curled under, and two fingers afterward. So the answer is **72**. If you're confused, check out the diagram.

$$4 \times 9 = 36$$

Ten Times Tables:: Just Add Zero and Stir

If you want to multiply something by 10, just add a **zero** on the end. Here's an example: $10 \times 8 = 80$ or $10 \times 100 = 1,000$. Try it with any number – from one to a billion. It's just too easy.



Eleven Times Tables:: Seeing Double

Any number – up to nine – multiplied by 11 is itself written out twice. **Confused?** Just check it out: $9 \times 11 = 99$, $4 \times 11 = 44$, $3 \times 11 = 33$ and so on.

* Hint *

Times tables work both ways (5×10 is the same as 10×5) so if you have the question 3×11 , don't stress that there isn't a trick for the three times tables -- use the trick for 11 instead!

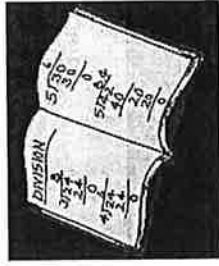
Deck 'Em!

1. Use a deck of playing cards for a game of Multiplication War.
2. Initially, children may need the grid (*below*) to become quick at the answers.
3. Flip over the cards as though you are playing Snap.
4. The first one to say the fact based on the cards turned over (a four and a five = Say "20") gets the cards.
5. The person to get all of the cards wins!
6. Children learn their facts much more quickly when playing this game on a regular basis.

Seeing the Patterns

1. Use a multiplication grid or let your children create one.
2. Look carefully at all of the patterns, especially when the numbers correspond with the facts e.g., 7×8 and $8 \times 7 = 56$
3. Let students/children practice the 'fast adding' which is what multiplication is.
4. When students can count by 3s, 4s, 5s, 6s, etc. they will automatically know their multiplication tables.

Division Tips and Tricks



So you're trying to work out a division problem in your head. Here are a few tips:

Division Tips - Dividing By One

You want to divide a number by one, do you? Easy. Take the number - say 1,372 - and that's it. **That's your answer.** $429 \div 1 = 429$. $11 \div 1 = 11$. $1,000,000 \div 1 = 1,000,000$.

Division Tips - Dividing By Two

When you divide something by two, you simply cut it in half. Half of 234 is 117, therefore $234 \div 2 = 117$. Let's try a smaller number: $20 \div 2 = 10$. Why? Because half of 20 is 10. If the number you're trying to divide is odd (like, say, 33), then you can't divide it evenly by two.

Division Tips - Dividing By Three

Do you want to know if you can divide a number evenly by three? Just add up all the digits until you have a single number. If THAT number is divisible by three, so is the original number. Case in point: 8787. If you add $8+7+8+7$ you get 30. Then add $3+0$, which equals three. Three is definitely divisible by three, so you know that 8787 is too.

Division Tips - Dividing By Four

The rule for dividing by four is **the same** as for dividing by two - only you have to do it **twice**. If you want to divide 88 by 4, you simply halve 88 (which is 44) and then halve that number (which, in this case, is 22). $12 \div 4$? Half of 12 is six and half of six is three - so your answer is three.

Division Tips - Dividing By Five

If you want to know whether a number can be **evenly divided** by five you just need to look at the number's **last digit**. If the last digit is a zero or a five, then the number is divisible by five. 1,573,740 ends in zero so it is divisible by five. Since 23 ends in three, it isn't divisible by five.

Division Tips - Dividing By Six

If a number is **BOTH** divisible by three (see the three rule) **AND** an even number (ending in 0, 2, 4, 6 or 8) then it is divisible by six too. 312 is an even number and if you **add up all the digits** they equal six, which is divisible by three. Therefore 312 is divisible by six.

Division Tips - Dividing By Seven

To find out if a number is divisible by seven, take the last digit, **double it**, and subtract it from the rest of the number. "Huh?" you may be saying. Check out this example: If you had 203, you would double the last digit (three) to get six, and subtract that from 20 (the remaining amount) to get 14. Since 14 is divisible by seven, 203 is too.

Division Tips - Dividing By Eight

This brings us back to the old halving trick we used with two and four. Try halving four times to get the answer to this one. Want an example? Okay. $64 \div 8$. Half of 64 is 32 and half of 32 is 16, then half of 16 is 8. Therefore $64 \div 8 = 8$.

Division Tips - Dividing By Nine

Use the **same trick** we used to see if a number is divisible by three - it works for any power of three (3, 6, 9, 12, etc.).

Division Tips - Dividing By Ten

If a number is evenly divisible by 10 it will end in zero. Simply remove that zero to find out what that number would be if it were divided by 10. Example: $370 \div 10 = 37$ (which is 370 with the "0" taken off the end). $50 \div 10 = 5$. See the pattern here?

Subtraction - with trading.

Vocabulary - Difference, take away, minus, subtract, leaves, left

Eg.

$$\begin{array}{r} 518 \\ - 29 \\ \hline 39 \end{array}$$

Steps. 1. Subtract - take away the units (ones) first.

(8-9) - I can't do that I need to trade.

2. Trade 1 ten for 10 units (ones)

Now I have 5 tens and 18 units (on 8-9) - I can't do that I need to trade. Cross out the 6 and write 5 above above it. The 8 becomes 18.

3. Now subtract the units (ones)

18-9=9. Write 9 in the answer under the units (ones) column.

4. Now subtract the tens.

5 tens - 2 tens = 3 tens.

Write 3 in answer under the tens column.

5. Answer is 3 tens 9 units or 39.

With Zeros

Eg.

$$\begin{array}{r} 100 \\ - 164 \\ \hline 36 \end{array}$$

As the child becomes more proficient he/she does not need to write the 10 tens and do in his/her head. more practice he/she does not need to write the 10 tens and do in his/her head.

- Steps 1. Subtract units (ones) - 0-4. I can't do this. I need to trade.
2. I have no tens to trade so I need to go to the hundreds column. I trade 100 for 10 tens. Cross out the 2 and write 1 above it. Cross out the 0 and write 10 above it.
3. Now I need to trade 1 ten for 10 ones. Cross out the 10 write 9 above it. Now I have 1 hundred, 9 tens & 10 ones. It is still 200.
4. Subtract the units (ones) 10-4=6. Sub... tens - 6

$$\begin{array}{r} -53 \\ 36 \\ \hline \end{array}$$



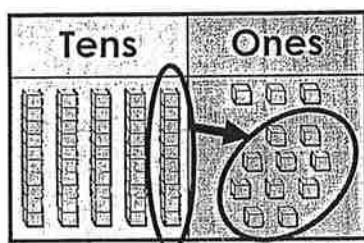
Subtracting two digit numbers

1 Subtract the ones column first.

$$3 - 6 = ?$$

You only have 3 ones.

Trade a ten for ones so you can subtract 6 from 13.



$$\begin{array}{r} 1 \\ -53 \\ 136 \\ \hline 7 \end{array}$$

The number 1 written above each 3 indicates a trade has been made.

3 Subtract the tens column. Remember to subtract the ten you traded.

$$5 - 3 - 1 = 1 \text{ ten.}$$

Addition - with Trading.

Vocabulary - Sum, add, plus, altogether, trade, total units (ones), tens,

Eg. ¹

28

+ 45

73

Steps: 1. Add the units (ones) column.

$8 + 5 = 13$ Do I have a ten and more units (ones)? Yes, so I have to trade.

2. Trade 10 units (ones) for 1 ten.
*Write the 10 I have traded above the tens column and the rest of the units (ones) in the answer below the units (ones) column.

3. Now add the tens $1 + 2 + 4 = 7$ tens. Write in under the tens column.

4. Answer is 7 tens and 3 units (ones) or 73.

Parent Handout

How can I support the school program at home?

The following are examples of activities that you may choose to do with your child at home. These ideas support learning in Mathematics at school. The activities are organised under the six strands in the *Mathematics K-6 Syllabus*.

Parents/caregivers need to make a judgement about the appropriateness of particular activities for their child. Parents who are seeking additional guidance on the developmental appropriateness of particular activities may refer to the syllabus Stage Statements.

Suggested Activities To Do With Your Child

Working Mathematically

Working Mathematically includes: asking questions; using a range of strategies to solve problems; using appropriate language and symbols to describe and represent mathematical ideas; exploring relationships as well as checking and justifying solutions; and reflecting on learning and making connections between mathematical ideas. The following activities will help to encourage development of these important processes.

- Encourage your child's curiosity about the use of numbers and measurements in the world around them. Listen to their many questions and ask your own questions. Discuss with them how you might find answers to these questions.
- Play games together (eg cards, board games, computer games), and discuss how mathematical ideas can be used to play, as well as to develop successful strategies.
- Discuss how mathematics is used every day. The applications of mathematics and technology are numerous. In the kitchen, for example, ingredients are measured and digital timers and clocks are used on microwave ovens.
- Solve problems together and discuss strategies and solutions. Encourage your child to find all possible solutions, as many problems have more than one answer. They should also be encouraged to justify their solutions. Many internet sites have suitable problems and investigations for primary school students. Another source of mathematical problems is children's magazines and puzzle books.
- Encourage your child to try different strategies when solving everyday problems.
- Provide opportunities for your child to use technology to investigate mathematical ideas.
- Connect to the internet at home or at a local library, and help your child (or let your child help you) locate websites that provide information and ideas about mathematics and technology.
- Discuss the mathematics your child is learning at school. Ask them to explain what they have learnt in mathematics lessons this week, and how they can use these ideas. If they express concern about what they are doing, this gives you an opportunity to look at their work and help them if appropriate, or to encourage them to seek extra guidance from their teacher.
- Watch television programs about mathematics with your child. Discuss the contents of the programs and how it relates to the mathematics taught at school.

Students who feel confident about Working Mathematically feel confident about themselves as learners of mathematics.

Jump Strategy

Use a number line to add the tens and ones.

STEP 1

$$34 + 23 =$$

Tens	Ones

Tens	Ones



STEP 2

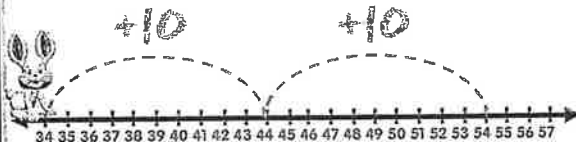
Break the number 23 into tens and ones.

Tens	Ones

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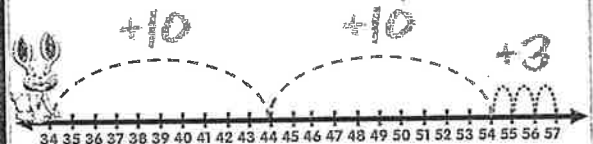
STEP 3

Add the 2 tens.



STEP 4

Then count on to add 3 ones.



$$54 + 3 = 57$$

+46

77

Adding two
digit
numbers



+46

77

123

1

Add the ones
column first.

$$6 + 7 = 13$$

Tens	Ones

2

+46

77

3

3

Add the tens
column.

Include the ten
you traded from
the ones column.

$$1 + 4 + 7 = 12 \text{ tens.}$$

Write 3 in the ones
column. Move the 10 to
the tens column.

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