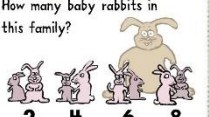



SKIP-COUNTING


Sometimes you don't have to count all. You can count in 2s or 3s, even 5s or 10s! Try skip-counting - it's fun!

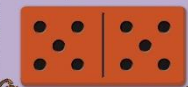
How many baby rabbits in this family?

2 4 6 8
 It's easy when you skip-count.

How many penguins in this group?

 Did you use skip-counting?

DOUBLE

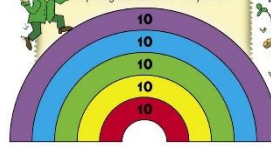
Sometimes you do not need to count. Knowing your doubles can help you to add. Try doubling - it's fun!

How many dots on this domino?

 Did you know that double 3 is 6?

How many dots on this domino?

 Did you use a double?


RAINBOW FACTS

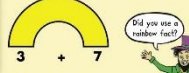
Sometimes you do not need to count. Using rainbow facts can help you add. Try using rainbow facts - they're fun!



10
10
10
10
10

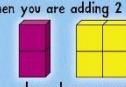
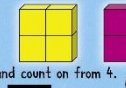
0 1 2 3 4 5 6 7 8 9 10


Add these two numbers.

 Did you use a rainbow fact?
 $2 + 8 = 10$

Add these two numbers.

 Did you use a rainbow fact?
 $3 + 7 = 10$

TURNAROUNDS

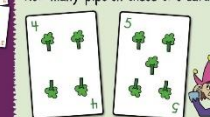
Sometimes you do not need to add on from the first number. A turnaround can make the addition much easier.

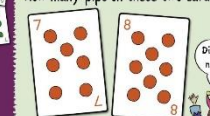
When you are adding 2 and 4,

 do a turnaround

 and count on from 4.
4 5 6
 The answer is 6.

How many blocks altogether?

 Did you use a turnaround?

NEAR DOUBLE

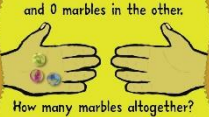
Sometimes you do not need to count. Knowing near doubles can help.


How many pips on these two cards?

 $4 + 5 = 9$ is near to double 4.
 Just say 'double 4 is 8 and 1 more is 9'.
 Double 5 is near to $4 + 5$ as well.
 Just say 'double 5 is 10 and take away 1 is 9'.

How many pips on these two cards?

 Did you use a near double?

ADDING ZERO


Adding zero is really easy. Do you know why?

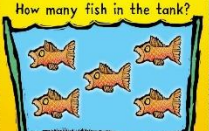
There are 3 marbles in one hand and 0 marbles in the other.

 How many marbles altogether?
 $3 + 0 = 3$

How many marbles are there in these two hands?

 It's easy when you are adding zero

SUBITISE


Sometimes you do not need to count. You just suddenly know how many in a group. Try subitising - it's fun!

How many fish in the tank?

 Did you just know without counting?

How many fish in the tank?

 Did you just know without counting?

SECRET CODE

Now you know so many strategies, you can use the secret code to show how you work things out.

$3 + 4 = 7$


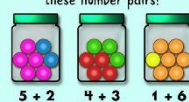
Now you know so many strategies, you can use the secret code to show how you work things out.

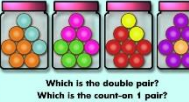
- s** - subitise
- co** - count on
- d** - double
- ta** - turnaround
- rf** - rainbow fact
- nd** - near double
- fn** - friendly number

Which secret code would you use for the additions around the edge?
 $7 + 2 = 9$
 $6 + 6 = 12$
 $2 + 9 = 11$
 $3 + 7 = 10$
 $6 + 7 = 13$
 $10 + 6 = 16$

FACT FAMILIES


There are many ways of making the same total. Two numbers that make the same total belong to a fact family.

What is the fact family of these number pairs?

 $5 + 2$ $4 + 3$ $1 + 6$
 Count on 2 Near double and count on 1

What is the fact family of these number pairs?

 Which is the double pair?
 Which is the count-on 1 pair?
 Which is the count-on 2 pair?


RAINBOW FACT SUBTRACTION


Sometimes you do not need to count back. Using rainbow facts can help you subtract.



10
10
10
10
10

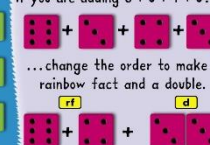
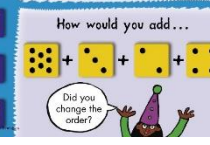
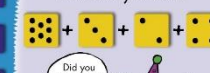
0 1 2 3 4 5 6 7 8 9 10

To subtract 3 from 10...

 $10 - 3 = 7$
 ...use a rainbow fact subtraction!

Subtract 8 from 10:

 $10 - 8 = ?$
 Did you use a rainbow fact subtraction?

CHANGE THE ORDER

If you have more than two numbers to add, it can sometimes help if you change the order.

If you are adding $6 + 3 + 4 + 3$...

 ...change the order to make a rainbow fact and a double.

 How would you add...

 Did you change the order?

SUBTRACTION UNDOES ADDITION

$4 + 2 = 6$
 $6 - 2 = 4$

ADDITION UNDOES SUBTRACTION

$3 + 7 = 10$
 $10 - 7 = 3$
 $7 + 2 = 9$
 $9 - 2 = 7$
 $3 + 7 = 10$
 $10 - 7 = 3$
 $9 + 2 = 11$
 $11 - 2 = 9$

COUNT ON

Sometimes you do not need to count all. You can count on from the first number.

How many dinosaurs altogether?


 Start at 4 and count on:
4 5 6 7


How many dinosaurs altogether?

 Start at 6 and count on:
6 7 8

NUMBER SPLITTING

Sometimes it helps to split one of two numbers before you add them. This is called number splitting - it's fun!

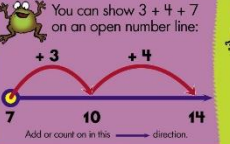
You can use number splitting to add 5 and 8.
 FOR $5 + 8$

 $5 + 5 + 3$
 ...which makes 13 altogether.

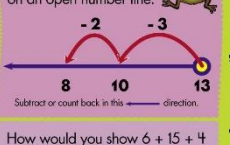
How would you add 7 and 4?


Did you use number splitting?

OPEN NUMBER LINE

Now that you know lots of strategies for addition and subtraction, you can show your thinking on an open number line.

You can show $3 + 4 + 7$ on an open number line:

 Add or count on in this direction.

You can also show $13 - 5$ on an open number line:

 Subtract or count back in this direction.

How would you show $6 + 15 + 4$ using an open number line?

FRIENDLY NUMBERS


It is easy to add on to a 10, because 10 is a friendly number! So are 20, 30, 40 and so on.


Adding 10 and 6 is easy, because 10 is a friendly number.
 $10 + 6 = 16$

How do friendly numbers make this addition easy?
 $40 + 6 = 46$

COUNT BACK


Counting back is a great way to do subtraction.



How many pins were left standing after this game?

 Start on 6 and count back 2.
6 5 4
 The answer is 4.


How many pins were left standing after this game?

 Did you start on 10 and count back?

HALVE

If you know your doubles, it is easy to halve. Try halving - it's fun!

If you know that double 3 makes 6...

 ...then it helps you to know that half of 6 is 3.

Half of  makes 

What is half of 12?


Did you use a double to find the answer?

BRIDGE BACK THROUGH 10

Sometimes it helps to split a number to make a subtraction into a bridge back through 10.

Use 'bridge back through 10' to subtract 4 from 13.

Split 4 into 3 and 1.

13 - 3 = 10. 10 - 1 = 9.

Use 'bridge back through 100' to subtract 60 from 140.

Split 60 into 40 and 20.

140 - 40 = 100. 100 - 20 = 80.

RAINBOW FACTS

To add 30 and 70, think of rainbow facts.

30 + 70 = 100

If you know your rainbow facts to 10, you can use them with the friendly numbers.

28 + 65 + 83 + 47

NUMBER SPLITTING

Splitting a number into two parts can make addition much easier!

To add 26 + 37, you could split 37 into 2 parts to find the partner that makes 26 into a friendly number.

26 + 37 = ?

26 + 4 + 33 = ?

30 + 33 = 63

Or you could find the partner that makes 37 into a friendly number.

26 + 37 = ?

23 + 3 + 37 = ?

23 + 40 = 63

Remember: Split one number to make the other number into a friendly number.

ZIGZAG FOR ADDITION

You can show the strategies you used for an addition with a zigzag.

What different ways can you show 36 + 58?

I'll add on a friendly number first.

36 + 50 = 86. 86 + 8 = 94.

I know that 6 + 8 = 14 so I can add that onto a friendly number.

30 + 50 = 80. 80 + 14 = 94.

I'll do a turnaround and then add on a friendly number. Then I'll use a rainbow fact.

58 + 30 = 88. 88 + 6 = 94.

CHUNKING FOR SUBTRACTION (1)

When you break subtraction into chunks, it is easy to subtract the parts and put them back together.

Use chunking to subtract 24 from 57.

Start with the 10s. 50 - 20 = 30.

Next, subtract 4 from 7.

30 - 4 = 26.

Finish off by adding 30 and 3.

26 + 3 = 29.

What do you do when there are 3 digits? It's easy!

Start with the 100s. 300 - 200 = 100.

Then subtract the 10s and the 1s separately.

100 - 30 = 70. 70 - 2 = 68.

Finish off by adding 100, 30 and 2.

100 + 30 + 2 = 132.

CHUNKING FOR SUBTRACTION (2)

When you use chunking for subtraction, be careful when negative numbers are involved.

Use chunking to subtract 35 from 72.

Start with the 10s. 70 - 30 = 40.

I have to do 2 minus 5. When I do that I am 3 short which is -3.

40 - 3 = 37.

Finish off by subtracting 3 from 40.

40 - 3 = 37.

What do you do when there are 3 digits? It's easy!

200 - 100 = 100.

0 - 30 = short 30.

100 - 30 = 70.

100 - 30 = 70.

6 - 8 = short 2.

Combine 70 and -2 for the answer.

70 - 2 = 68.

BRIDGE THROUGH 10

Sometimes it helps to split a number to turn an addition into a bridge through 10.

Use 'bridge through 10' to add 9 and 4.

Split 4 into 1 and 3.

9 + 1 = 10. And 3 more is 13.

Use 'bridge through 100' to add 80 and 60.

Split 60 into 20 and 40.

80 + 20 = 100. And 40 more is 140.

CHUNKING FOR ADDITION

When you break an addition into chunks, it is easy to add the parts and then put them back together again.

Use chunking for addition to add 46 and 35.

Start with the 10s. 40 + 30 = 70.

Next, add 5 and 6.

70 + 11 = 81.

Finish off by adding 70 and 11.

There are other ways of chunking 46 + 35.

It's easy to add 46 to the friendly number, 30 = 76.

Split 35 into 30 + 5.

76 + 5 = 81.

This one has one less step - it saves brain space!

CHUNKING AND DIVISION

Sometimes, a division problem can be made much easier by chunking (or number splitting).

To divide 36 by 4, first chunk the number 36 into two parts that are familiar:

36 ÷ 4 = 9

20 ÷ 4 = 5. 16 ÷ 4 = 4. 5 + 4 = 9.

Chunk the 36 into two parts that you know how to divide by 4.

Add the results of the two divisions to get your answer.

The number to be divided can be chunked in different ways:

72 ÷ 6 = 12

60 ÷ 6 = 10. 12 ÷ 6 = 2. 10 + 2 = 12.

OPEN NUMBER LINE FOR ADDITION

Start the number line at 36.

You can show 36 + 43 on an open number line as two jumps.

Then split 43 into 40 + 3 and add the 40 first.

36 + 40 = 76. 76 + 3 = 79.

The open number line is also a great way to show different addition strategies.

What strategies were used for these different ways of finding 27 + 53 + 29?

I could use rainbow facts...

27 + 20 = 47. 47 + 30 = 77. 77 + 9 = 86.

and friendly numbers, or I could change the order.

29 + 50 = 79. 79 + 7 = 86. 86 + 3 = 89.

OPEN NUMBER LINE FOR SUBTRACTION

You can show 72 - 48 on an open number line in three ways.

Start at 48 and work up to 72.

The difference is 2 + 20 + 2 = 24.

Start at 72 and work back to 48.

The difference is 2 + 20 + 2 = 24.

Start at 72 and work back -8 to the answer.

The answer is 24.

ESTIMATING

You often need to know roughly how much the answer should be. Estimating is a quick way of finding out.

53 + 26 + 72 + 19 + 22 = ?

First, round these numbers to the nearest friendly number.

53 + 26 + 72 + 19 + 22 = ?

50 + 30 + 70 + 20 + 20 = ?

50 + 100 + 40 = ?

The estimate is 190. The actual answer is 192, so the estimate was close.

Rounding and estimating also work well with money amounts.

\$3.65 + \$1.25 + \$7.40 = ?

Round these to the nearest 50 cents before adding. You'll never be far out!

LANDMARK NUMBERS

Landmark numbers make adding much easier. All you need to know is that:

25 + 25 = 50. 25 + 50 = 75. 25 + 75 = 100. 50 + 50 = 100. 25 + 25 + 25 + 25 = 100.

Use landmark numbers to add 26 and 76.

The two nearest landmark numbers are 25 and 75.

We know that 25 + 75 = 100. So 26 + 76 is 102.

Landmark numbers can be used with larger numbers too...

250 + 250 = 500. 500 + 250 = 750. 750 + 250 = 1000.

ZIGZAG FOR SUBTRACTION

You can show the strategies you used for a subtraction with a zigzag.

What different ways can you show 75 - 38?

I'll round 38 up to 40 and then adjust.

75 - 40 = 35. 35 + 2 = 37.

I'll subtract 30, so get to a friendly number, then I'll just have 3 to subtract.

75 - 30 = 45. 45 - 8 = 37.

I'll subtract 35, then I'll split 8 into 3 and 5.

75 - 35 = 40. 40 - 5 = 35. 35 - 3 = 32.

ROUNDING

Adding with friendly numbers is easy. That is why it is a good strategy to round up or down to the nearest 10.

2 is less than 5, so round down to 30.

32 - 30 = 2. 2 + 30 = 32.

7 is more than 5, so round up to 80.

77 - 80 = -3. -3 + 80 = 77.

Here are some more examples.

20 - 24 = -4. -4 + 26 = 22.

26 - 30 = -4. -4 + 30 = 26.

50 - 53 = -3. -3 + 55 = 52.

55 - 60 = -5. -5 + 60 = 55.

When the number ends in a 5, round up to the friendly number above.

COMPENSATING

When you see that a number is near to a friendly number, you can add by compensating.

51 rounds to 50, a friendly number, so add 50 instead.

50 + 17 = 67.

50 + 17 + 1 = 68.

Now compensate by adding the missing 1.

Compensating works really well for subtraction too!

29 rounds to 30, a friendly number, so subtract 30 instead.

72 - 29 = ?

72 - 30 = 42.

72 - 30 + 1 = 43.

This time, compensate by adding the extra 1.

CHUNKING AND MULTIPLICATION

You can use chunking for multiplication - just remember to multiply the 10s and the 1s separately.

To multiply 54 by 6, split the 54 into 50 + 4:

50 x 6 = 300. 4 x 6 = 24. 300 + 24 = 324.

Add the two parts of the multiplication.

To multiply 36 by 7, split the 36 into 30 + 6:

30 x 7 = 210. 6 x 7 = 42. 210 + 42 = 252.

You only need to show the answers for the two parts of the multiplication.

Then add the parts for the final answer.

SECRET CODE

Now you know so many strategies, you can use the secret code to show how you work things out.

36 + 77 = 113

co - count on
da - double
ta - turnaround
rf - rainbow fact
nd - near double
fn - friendly number
brt - bridge through 10
ns - number splitting
cmp - compensating

I like to use number splitting to turn an addition into a rainbow fact.

I like to round to a friendly number and I always remember to compensate.