

# Addition mental strategies – look for a ten

- 1 Let's warm up with some addition grids. Write these answers as fast as you can by counting on:

a

+	2	3	0
6			
17			
13			
12			

b

+	3	0	2
9			
16			
11			
14			

Addition is finding a total, or sum, combining two or more.



REMEMBER

- 2 Adding more than two numbers together is easier if we look for a ten. Circle the numbers that add to 10 first, then add what is left:

a 

6	3	4
---	---	---

 =

b 

1	5	5
---	---	---

 =

c 

9	5	1
---	---	---

 =

d 

7	6	3
---	---	---

 =

e 

5	6	4
---	---	---

 =

f 

2	1	8
---	---	---

 =

- 3 Circle the numbers that make 10. Look for sets going across and down. One set has been circled for you. How many more can you find?

6	3	1	6	9	2	8	5
4	1	3	3	3	8	3	5
3	7	1	4	6	2	5	3
3	3	9	6	3	1	2	7

Some numbers may be in more than one set.



DISCOVER

- 4 Look for a ten and change the order of the numbers in each addition problem to make it faster to add.

a  $4 + 5 + 3 + 5 + 6$   
\_\_\_\_\_ =

b  $9 + 3 + 7 + 1 + 5$   
\_\_\_\_\_ =

# Addition mental strategies – look for patterns

Number patterns are useful. You can build on basic addition facts.

## 1 Add 10 each time:

a 

10			
----	--	--	--

b 

15			
----	--	--	--

c 

7			
---	--	--	--

## 2 Add 100 each time:

a 

10			
----	--	--	--

b 

15			
----	--	--	--

c 

7			
---	--	--	--

## 3 Use patterns to complete this addition table:

a 

$3 + 5 =$	$30 + 50 =$	$300 + 500 =$
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b 

$6 + 2 =$	$60 + 20 =$	$600 + 200 =$
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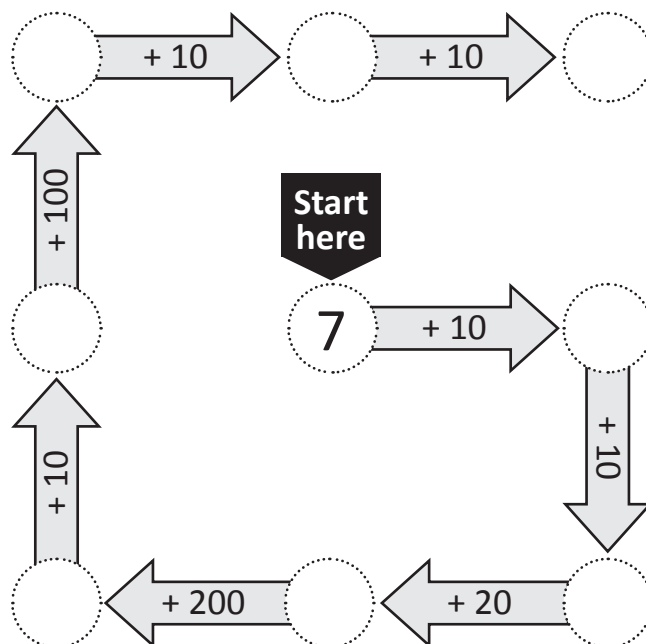
c 

$4 + 1 =$	$40 + 10 =$	$400 + 100 =$
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d 

$7 + 3 =$	$70 + 30 =$	$700 + 300 =$
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## 4 Complete this addition trail:



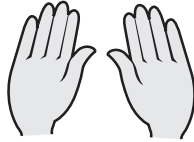
# Addition mental strategies – doubles and near doubles

Doubles facts are the same number added together.

$3 + 3 = 6$  is the same as saying double 3 is 6.

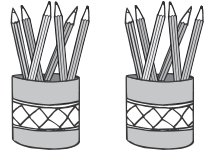
## 1 Write a doubles fact to match each picture:

a Double the fingers:



If I double  I will get

b Double the pencils:



If I double  I will get

c Double the spots:



If I double  I will get

d Double the lace holes:



If I double  I will get

## 2 Use these addition frames to double each of these numbers as quickly as you can:

(5) (7) (9) (2) (12) (8)

<input type="text"/> + <input type="text"/> = <input type="text"/>	<input type="text"/> + <input type="text"/> = <input type="text"/>	<input type="text"/> + <input type="text"/> = <input type="text"/>
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## 3 Complete the grid below so that the question in the top row matches the answer in the bottom row. The first one has been done for you.

$2 + 2$		$3 + 3$	$4 + 4$			$7 + 7$	$8 + 8$	
$= 4$	$= 10$			$= 2$	$= 12$			$= 18$

Once you know your basic double facts, you can use them to double bigger numbers e.g.  $12 + 12 = 20 + 4 = 24$



## 4 Double these:

a  $10 \rightarrow$

b  $12 \rightarrow$

c  $16 \rightarrow$

d  $14 \rightarrow$

THINK

# Addition mental strategies – doubles and near doubles

Near doubles strategy is when you double a number and adjust.

See:  $5 + 6$

Think: double 5 + 1 = 11

See:  $7 + 6$

Think: double 7 – 1 = 13

**5** Complete the near double strategy for these. The first one has been done for you.

a  $2 + 3 = \text{double } 2 + 1 = \boxed{5}$

b  $4 + 5 = \text{double } 4 + 1 = \boxed{\phantom{00}}$

c  $6 + 7 = \text{double } 6 + 1 = \boxed{\phantom{00}}$

d  $3 + 4 = \text{double } 3 + 1 = \boxed{\phantom{00}}$

e  $8 + 9 = \text{double } 8 + 1 = \boxed{\phantom{00}}$

f  $7 + 8 = \text{double } 7 + 1 = \boxed{\phantom{00}}$

**6** Complete the near double strategy for these. This time you are calculating a near double that is 1 less.

a  $8 + 7 = \text{double } 8 - 1 = \boxed{\phantom{00}}$

b  $6 + 5 = \text{double } 6 - 1 = \boxed{\phantom{00}}$

c  $5 + 4 = \text{double } 5 - 1 = \boxed{\phantom{00}}$

d  $12 + 11 = \text{double } 12 - 1 = \boxed{\phantom{00}}$

e  $15 + 14 = \text{double } 15 - 1 = \boxed{\phantom{00}}$

f  $16 + 15 = \text{double } 16 - 1 = \boxed{\phantom{00}}$

**7** Complete these near double tables based on the double fact in the top row:

a

$12 + 12 = 24$
$12 + 13 =$
$12 + 11 =$
$12 + 14 =$

b

$15 + 15 = 30$
$15 + 14 =$
$15 + 16 =$
$15 + 18 =$

c

$16 + 16 = 32$
$16 + 19 =$
$16 + 12 =$
$16 + 17 =$

**8** Who said what? Write the initials after each statement:

**7**

Sweet Seven (SS)

**10**

Terrific Ten (TT)

**15**

Famous Fifteen (FF)

**9**

Nifty Nine (NN)

a 'Double me and – 4 you get 10.'

b 'Double me and + 2 you get 22.'

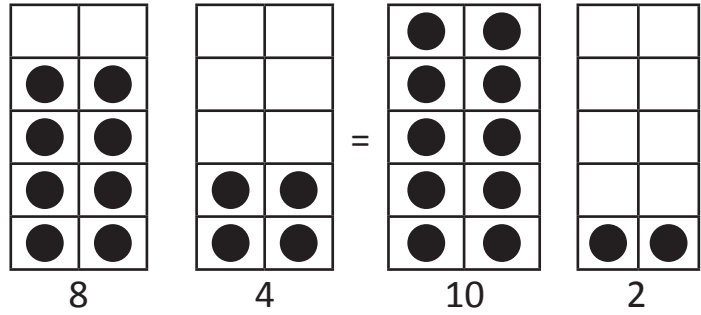
c 'Double me and – 1 you get 17.'

d 'Double me and – 3 you get 27.'

# Addition mental strategies – bridge to ten

Bridge to ten is when we make the first number up to 10 and then add what is left.

Let's start by using ten frames:



$$8 + 4 = 10 + 2 = 12$$

- 1 Look carefully at the first set of ten frames. Bridge to ten on the second set and complete the addition.

a

$8 + 6 = 10 + \square = \square$

b

$7 + 4 = 10 + \square = \square$

c

$9 + 5 = 10 + \square = \square$

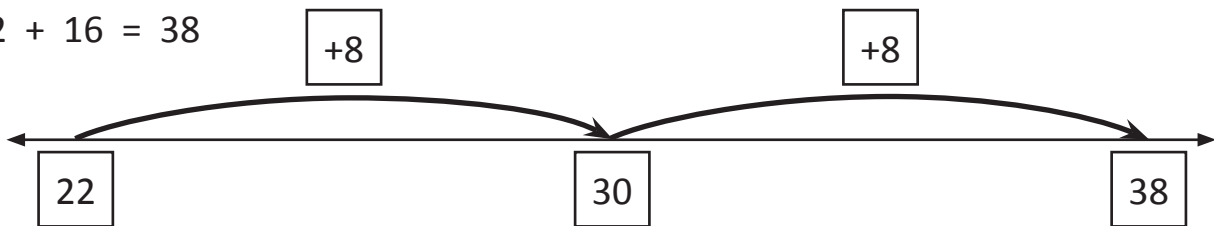
d

$9 + 8 = 10 + \square = \square$

# Addition mental strategies – bridge to ten

We can also use number lines to bridge to the next ten and then add what is left.

$$22 + 16 = 38$$



2 Practise bridging to ten with each addition set. The first one has been done for you.

Set 1:

a  $8 + 6 \rightarrow 10 + 4 = 14$

b  $7 + 5 \rightarrow \square + \square = \square$

c  $6 + 7 \rightarrow \square + \square = \square$

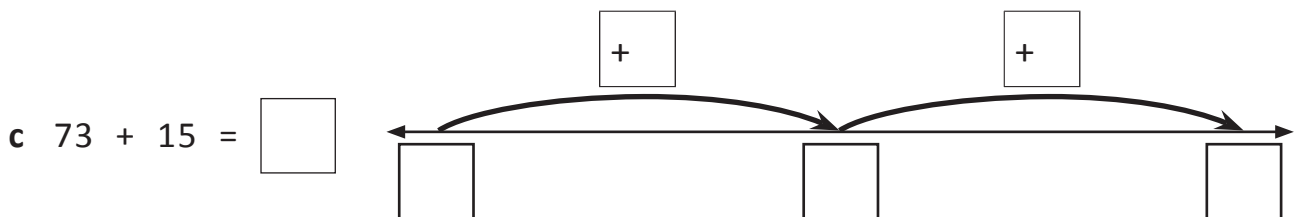
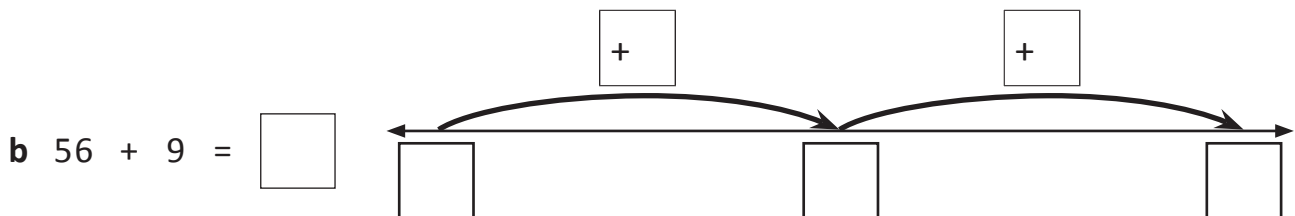
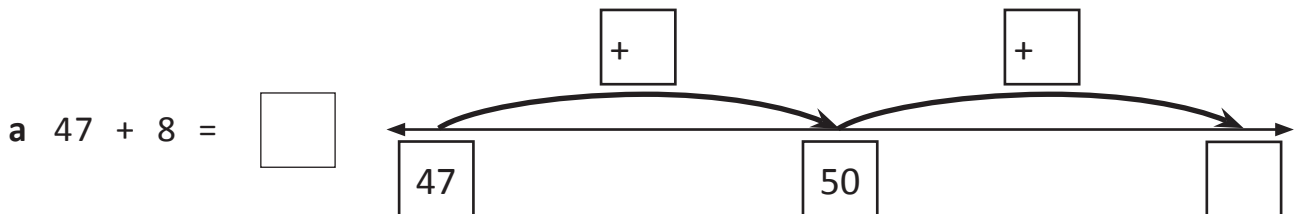
Set 2:

a  $16 + 5 \rightarrow \square + \square = \square$

b  $17 + 6 \rightarrow \square + \square = \square$

c  $19 + 6 \rightarrow \square + \square = \square$

3 Use the number lines to bridge to ten. Fill in the missing numbers each time. To help you get started, the first number line has 2 numbers filled in.



Continued on page 7.

# Addition mental strategies – bridge to ten

Continued from page 6.

**3** Use the number lines to bridge to ten. Fill in the missing numbers each time.

d  $44 + 12 = \square$

e  $84 + 11 = \square$

f  $132 + 15 = \square$

**4** Write a problem that matches this number line.

$\square + \square = \square$

**5** Complete these addition tables by bridging to the next ten in your head.

a

Add 12	
49	
56	
138	

b

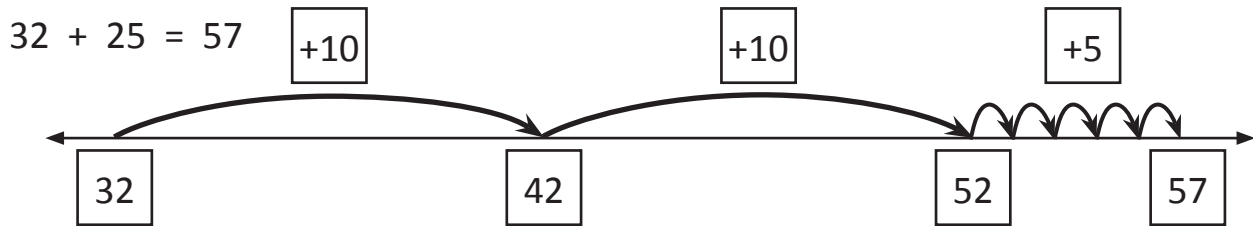
Add 17	
36	
17	
158	

c

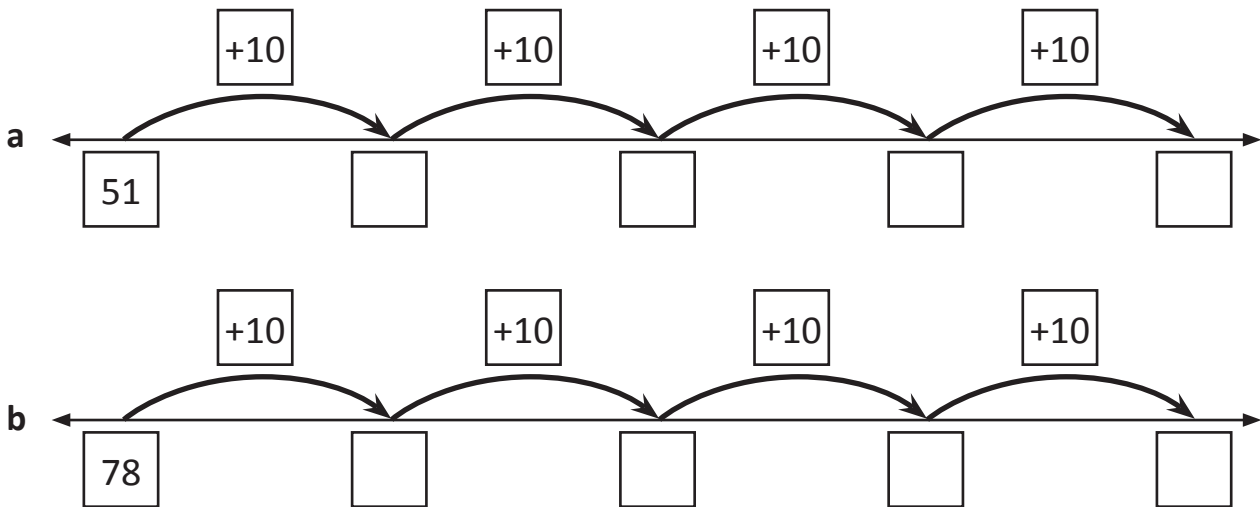
Add 13	
77	
48	
159	

# Addition mental strategies – jump strategy

The jump strategy is when you use a number line to jump in tens and then ones.



1 Practise jumping along the number line in tens:



2 Add these using the jump strategy. Show your working on each number line:

a  $57 + 35 = \square$

b  $54 + 28 = \square$

c  $162 + 35 = \square$



# Addition mental strategies – split strategy version 1

When adding large numbers in our heads, it can be easier to split one of the numbers into parts and add each part separately.

$$57 + 46 \begin{cases} 40 \\ 6 \end{cases} \longrightarrow 57 + 40 = 97 \longrightarrow 97 + 6 = 103$$

**1** Practise separating these numbers into tens and ones. The first one has been done for you.

a  $22 \begin{cases} 20 \\ 2 \end{cases}$

b  $57 \begin{cases} \square \\ \square \end{cases}$

c  $65 \begin{cases} \square \\ \square \end{cases}$

d  $96 \begin{cases} \square \\ \square \end{cases}$

**2** Practise adding tens to these numbers:

+	10	50	20	30	60
21					
48					

**3** Use the split strategy with these problems:

a  $38 + 34 \begin{cases} \square \\ \square \end{cases} \longrightarrow \square \longrightarrow \square$

b  $29 + 28 \begin{cases} \square \\ \square \end{cases} \longrightarrow \square \longrightarrow \square$

c  $75 + 14 \begin{cases} \square \\ \square \end{cases} \longrightarrow \square \longrightarrow \square$

d  $94 + 17 \begin{cases} \square \\ \square \end{cases} \longrightarrow \square \longrightarrow \square$

# Addition mental strategies – split strategy version 2

Here is another way to use the split strategy.

$$\begin{aligned}42 + 32 &= (4 \text{ tens} + 3 \text{ tens}) + (2 \text{ ones} + 2 \text{ ones}) \\ &= 7 \text{ tens} + 4 \text{ ones} \\ &= 74\end{aligned}$$

**1** Use this way to add these:

**a**  $53 + 56 = (\square \text{ tens} + \square \text{ tens}) + (\square \text{ ones} + \square \text{ ones})$   
 $= \square \text{ tens} + \square \text{ ones}$   
 $= \square$

**b**  $35 + 24 = (\square \text{ tens} + \square \text{ tens}) + (\square \text{ ones} + \square \text{ ones})$   
 $= \square \text{ tens} + \square \text{ ones}$   
 $= \square$

**c**  $78 + 11 = (\square \text{ tens} + \square \text{ tens}) + (\square \text{ ones} + \square \text{ ones})$   
 $= \square \text{ tens} + \square \text{ ones}$   
 $= \square$

**d**  $45 + 24 = (\square \text{ tens} + \square \text{ tens}) + (\square \text{ ones} + \square \text{ ones})$   
 $= \square \text{ tens} + \square \text{ ones}$   
 $= \square$

**2** Use either version of the split strategy to complete this table:

<b>+</b>	<b>65</b>	<b>85</b>	<b>36</b>	<b>23</b>	<b>41</b>
<b>12</b>					
<b>34</b>					

# Addition mental strategies – word problems

- 1** Solve these word problems using either the jump or the split strategies. Show all your working.
- a** Mitch and Anna held a lemonade stall over the weekend. They sold 25 cups on Saturday and 18 cups on Sunday. How many cups did they sell altogether?
- b** I practised my guitar for 48 minutes before school and 34 minutes after school. How many minutes did I practise altogether?
- c** Charlotte received £15 for her birthday from her grandmother. She added this to her savings account which has £53. How much does Charlotte have now?

# Double or nothing

apply



Getting ready

This is a game for two players. You will each need two copies of the set of cards below. So, a total of four pages per pair. Cut out your cards, then join them so that you have a deck of 36 cards.




copy



What to do

Shuffle the cards well and place face down in the centre. Player 1 turns over two cards and calls out the total. If the cards are a double (e.g. 4 and 4) or a near double and the total they have called out is correct, Player 1 keeps the cards. (For the cards to be a near double, there needs to be a difference of 1, e.g.  $3 + 4$ ,  $6 + 5$ .) If the cards are not a double or near double they are put to one side. Player 2 repeats these steps. Continue taking turns until there are no cards left. The winner is the player with the most cards.



1	2	3
4	5	6
7	8	9

## Two card sum


apply



This is a game for two players. You will each need a copy of the set of cards below. Cut out your cards then join them so that you have a deck of 24 cards.



Shuffle the cards well and place face down in the centre. Each player turns over two cards and calls out the total. The player with the largest total wins that round and takes all four cards. If players have the same answer, they tie, no one wins the round and these cards are put aside. Continue taking turns until there are no cards left. The winner is the player who wins the most rounds.



15	12	13
14	5	16
17	18	2
10	6	8



Getting ready

This is a game for two players. You will need four dice and a copy of this page to record your totals.



copy



What to do

The aim of this game is to reach a total of 50. Each player takes a turn to roll a die four times and records the total in a row in one of the tables below. If your running score goes over 50, you strike out. You may choose to freeze after the first or second roll if you are getting close to 50. Take turns until the table is full. The player who finishes the round closest to 50, but not over 50, scores 5 points. The player who finishes the round exactly on 50, scores 10 points.

## Player 1

ROUND 1	
Rolled numbers	Running total

ROUND 2	
Rolled numbers	Running total

ROUND 3	
Rolled numbers	Running total

## Player 2

ROUND 1	
Rolled numbers	Running total

ROUND 2	
Rolled numbers	Running total

ROUND 3	
Rolled numbers	Running total