

Written Maths



Addition – adding 2-digit numbers, no regrouping

Writing problems vertically \updownarrow helps us work with the tens and ones separately. We add the ones first in case we end up with more than 9 ones.

$$3 \text{ ones} + 1 \text{ one} = 4 \text{ ones}$$

$$2 \text{ tens} + 3 \text{ tens} = 5 \text{ tens}$$

5 tens and 4 ones is **54**.

$$23 + 31 = 54$$

	Tens	Ones
	2	3
+	3	1
	5	4

1 Finish these addition problems. Remember to start with the ones and then add the tens

a

	T	O
	4	2
+	2	6
	<input type="text"/>	<input type="text"/>

b

	T	O
	3	1
+	5	2
	<input type="text"/>	<input type="text"/>

c

	T	O
	4	3
+	3	3
	<input type="text"/>	<input type="text"/>

2 Set up these problems vertically and solve.

a $23 + 16 = \square$

	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

b $42 + 13 = \square$

	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

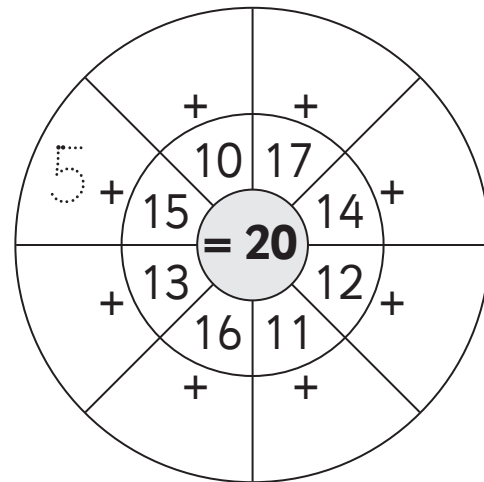
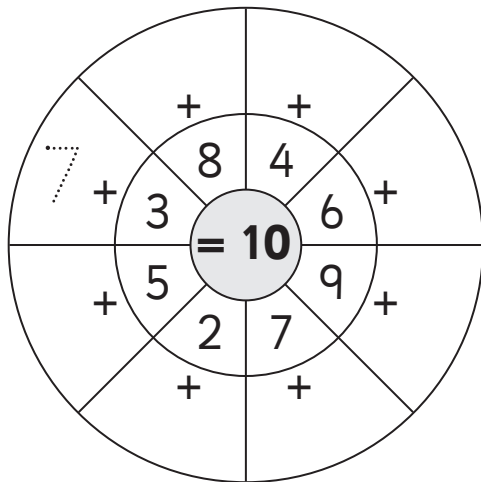
c $12 + 51 = \square$

	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

Addition – revising basic number facts

Knowing your basic addition facts is handy. It means you don't have to keep on working out the same answers all the time!

1 Finish the addition number wheels.



2 Fill in the missing numbers in these facts.

a $5 + 2 = \square$

b $7 + 3 = \square$

c $\square + 5 = 9$

d $6 + 7 = \square$

e $3 + 9 = \square$

f $7 + \square = 15$

3 Write 4 addition facts for each number.

a

10

<input type="text"/>	+	<input type="text"/>	=	10
<input type="text"/>	+	<input type="text"/>	=	10
<input type="text"/>	+	<input type="text"/>	=	10
<input type="text"/>	+	<input type="text"/>	=	10

b

20

<input type="text"/>	+	<input type="text"/>	=	20
<input type="text"/>	+	<input type="text"/>	=	20
<input type="text"/>	+	<input type="text"/>	=	20
<input type="text"/>	+	<input type="text"/>	=	20

Addition – revising basic number facts

1 Finish these number facts.

a $10 + 3 = \square$

b $10 + 6 = \square$

c $20 + 8 = \square$

d $20 + 7 = \square$

e $30 + 9 = \square$

f $30 + 2 = \square$

2 Put in the missing numbers or signs to make these facts true.

a $10 + \square = 15$

b $7 \square 3 = 10$

c $\square + 6 = 12$

d $\square + 10 = 17$

e $10 + \square = 18$

f $5 + 11 \square 16$

3 Solve these problems. Write the number facts.

a Zahra had **13** goldfish. Her cousin gave her **7** more. How many goldfish did she have altogether?

b Omar had **\$5** before his birthday. After his birthday, he had **\$20**. How much money was he given? (**Hint:** which part of the problem is missing?)

Addition – adding more than 2 numbers

We can add more than 2 numbers at a time and we can add them in any order. Look at $(3) + 5 + (7) = \boxed{?}$

We know that 3 and 7 makes 10 so we can add them together first. Then we add 5 to 10.

$$3 + 7 + 5 = 15 \quad \text{is the same as} \quad 3 + 5 + 7 = 15$$

1 Warm up by practising these make 10 problems.

a $0 + \boxed{10} = 10$

b $3 + \boxed{} = 10$

c $1 + \boxed{} = 10$

d $9 + \boxed{} = 10$

e $5 + \boxed{} = 10$

f $4 + \boxed{} = 10$

g $8 + \boxed{} = 10$

h $6 + \boxed{} = 10$

i $2 + \boxed{} = 10$

2 Practise turning these addition facts around.

a $2 + 5 = \boxed{}$

b $1 + 7 = \boxed{}$

$\boxed{5} + \boxed{2} = \boxed{}$

$\boxed{} + \boxed{} = \boxed{}$

3 Loop pairs of numbers that add to 10 first, then add what is left.

a $\boxed{6} \quad 3 \quad \boxed{4} = \boxed{13}$

b $\boxed{1} \quad \boxed{5} \quad \boxed{5} = \boxed{}$





c $\boxed{9} \quad \boxed{5} \quad \boxed{1} = \boxed{}$

d $\boxed{7} \quad \boxed{6} \quad \boxed{3} = \boxed{}$

e $\boxed{5} \quad \boxed{6} \quad \boxed{4} = \boxed{}$

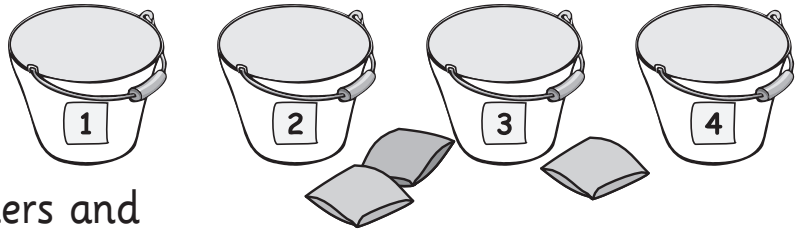
f $\boxed{2} \quad \boxed{1} \quad \boxed{8} = \boxed{}$

Addition – adding more than 2 numbers

You will need:  a partner  4 containers  3 bean bags
 sticky notes

What to do:

Label the sticky notes, 1, 2, 3 and 4 and stick them on the



containers. Line up the containers and

stand at least two (2) big steps back from them. Take turns throwing the 3 bean bags into the containers. The number on the container is the amount of points you get. You can throw more than one bean bag into a container. If you miss, you may throw again. If the bean bag goes into a container, it must stay there.

Your aim is to score 6 points. If you don't score 6, try again when it's your turn. You must find a different way to your partner. Record your number fact here.

Your aim is to score 9 points. You must find a different way to your partner. Record your number fact here.

What to do next:

How many different scores can you make? Record them below. Circle the highest score you can make.

Addition – counting on

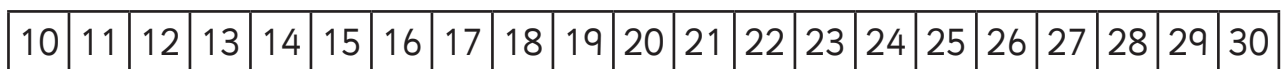
Counting on is a good strategy to choose when adding 1, 2 or 3.

$$17 + 2 = 19$$

We start at 17 and count on 2 more.



1 Use the number track to help you count on. Finish the facts.



a $14 + 2 =$

b $23 + 3 =$

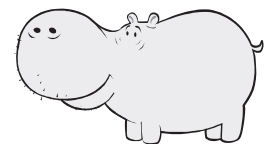
c $19 + 1 =$

d $17 + 3 =$

e $15 + 1 =$

f $24 + 2 =$

2 How quickly can you finish these? Perhaps ask someone to time you using '1 hippopotamus, 2 hippopotamus' as the (quiet) count.




+ 1
$12 + 1 =$
$16 + 1 =$
$13 + 1 =$
$20 + 1 =$
$22 + 1 =$
Time

+ 2
$14 + 2 =$
$21 + 2 =$
$17 + 2 =$
$23 + 2 =$
$15 + 2 =$
Time

+ 3
$15 + 3 =$
$11 + 3 =$
$23 + 3 =$
$17 + 3 =$
$21 + 3 =$
Time

Addition – counting on

You will need:  a partner  counters in 2 different colours
 a die marked 1, 2, 3 only

What to do:

This game is like tic tac toe. Choose a starting number on the grid and tell your partner what it is. Roll the die and add the number you roll to your chosen number. Say the addition fact and cover the answer with a counter.

The first person to cover 3 numbers in a row wins! Your row can go up, down, across or diagonally.

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

Addition – counting on

If we can count on by 1, 2 or 3, then we can count on by 10, 20 and 30.

Look at $17 + 20 = \square$?

We start at 17 and jump down ↓ the grid by 10s.

20 is 2 tens so we make 2 jumps.

$$17 + 20 = 37$$

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

- 1 Practise counting by 10s by reading **down** the columns on the grid out loud to a partner. Now try doing it without looking at the grid. Give yourself a tick for each column you can do.

- 2 Use the number grid to help you count on. Finish the facts.

a $14 + 10 = \square$

b $34 + 20 = \square$

c $27 + 10 = \square$

d $25 + 30 = \square$

e $46 + 20 = \square$

f $35 + 30 = \square$

- 3 Create your own addition facts by writing a number on the left for each fact. Swap with a partner and answer each other's facts.

a $\square + 20 = \square$

b $\square + 10 = \square$

c $\square + 10 = \square$

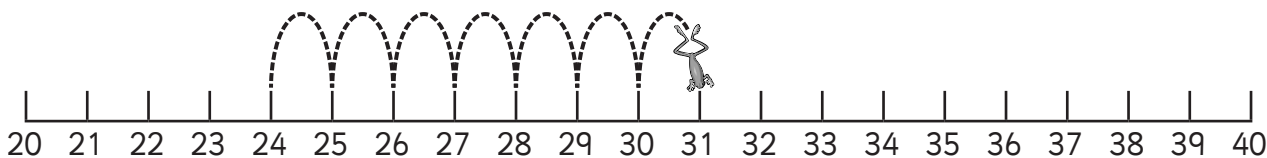
d $\square + 30 = \square$

Addition – using number lines

Number lines are handy tools to use when adding.

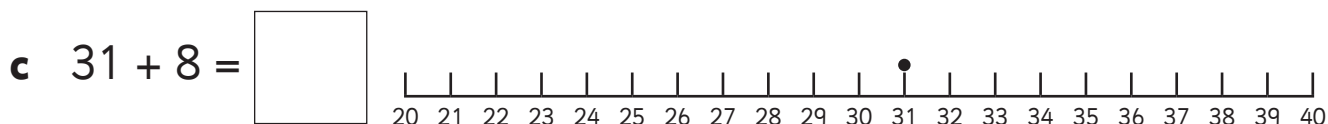
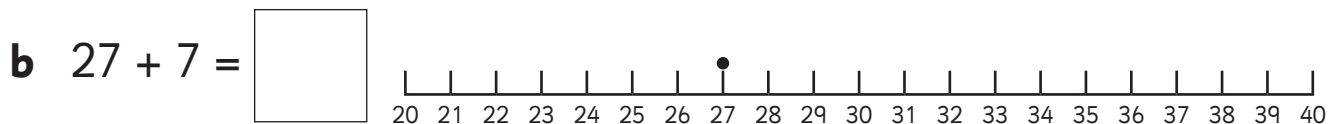
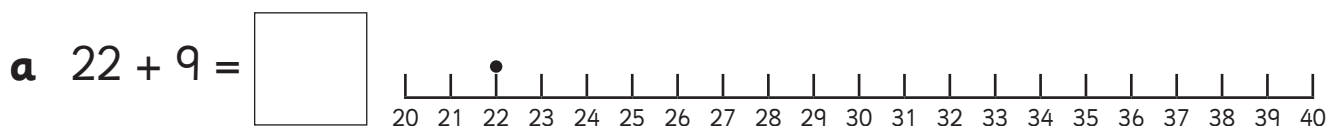
Look at $24 + 7 = \boxed{?}$

We start at 24 and jump 7 spaces. It's important to remember to count the jumps or spaces, not the numbers!

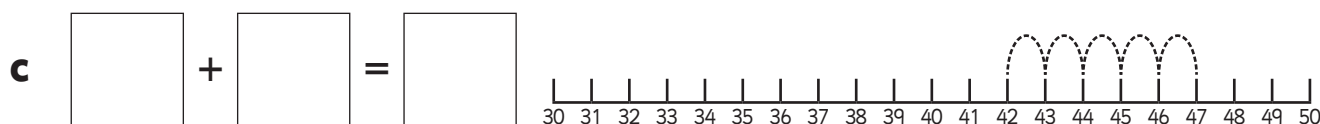
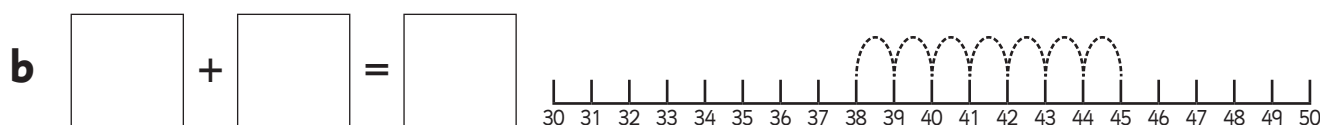
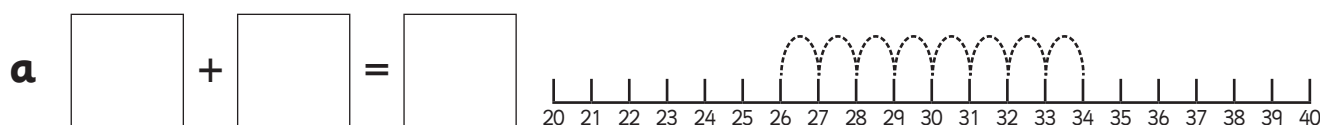


$24 + 7 = 31$

1 Jump along the number lines and finish each number fact.



2 Trace the jumps and finish the facts.



Addition – doubling

1 Finish these doubles. Can you find patterns to help you?

a	Double	1	10	100
		2	20	200

b	Double	2	20	200
				400

c	Double	3	30	300
		6		

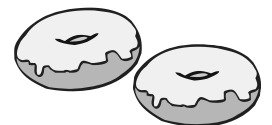
d	Double	4	40	400
			80	

e	Double	5	50	500
				1000

2 Solve these doubles problems.

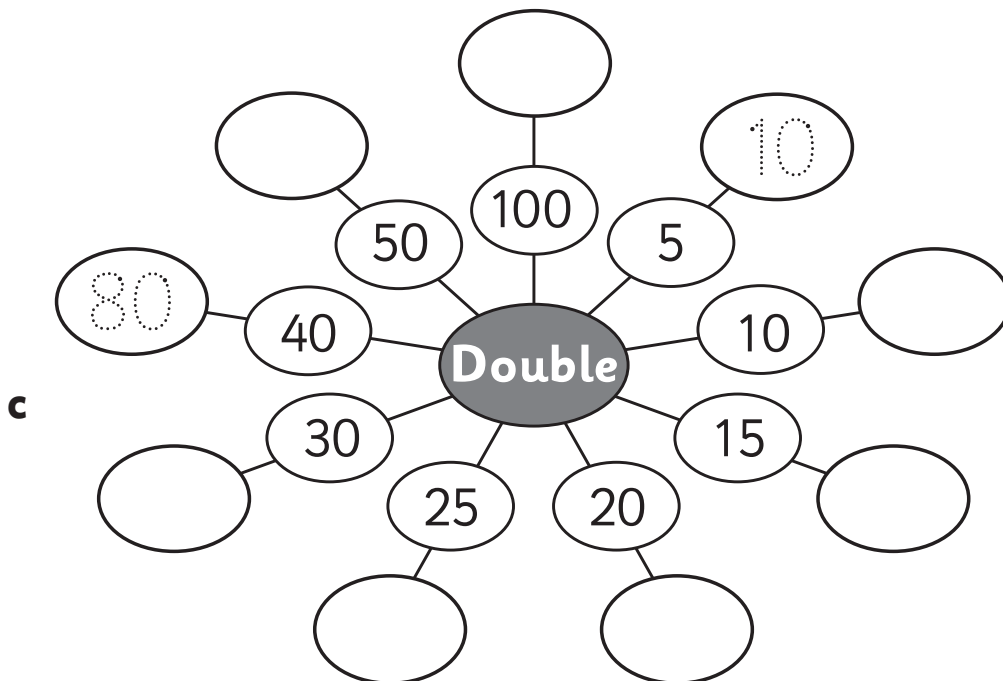
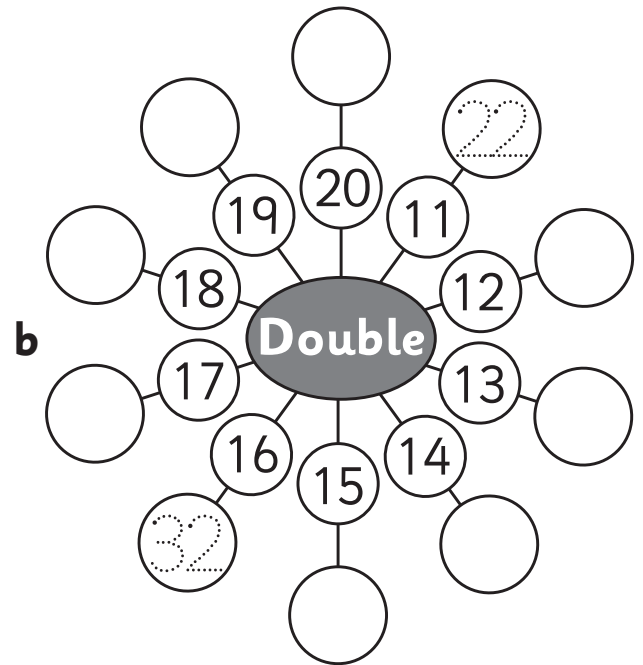
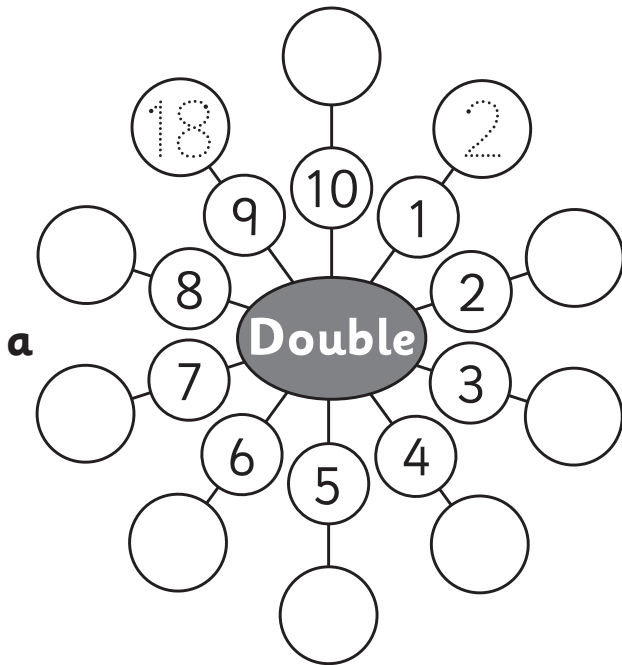
a Mia saved \$20 towards the show. Her dad said he would double that if she kept her room clean. She did. How much money did she have for the show?

b Liam ate 5 donuts. Mark ate **double-double** that amount. How many donuts did Mark eat?



Addition – doubling

1 Finish these doubles facts.



Addition – near doubles

Once we know our doubles we can learn the near-doubles strategy.

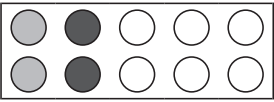
$$6 + 7 = \boxed{?}$$

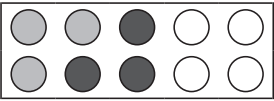
We know that $6 + 6 = 12$

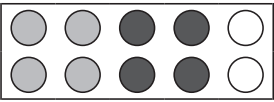
7 is 1 more than 6 so we count on 1 more.

$$6 + 7 = 13$$

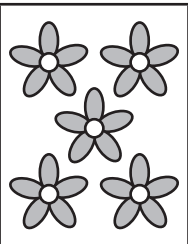
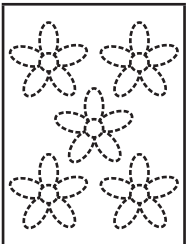

1 Colour 1 more counter on each tens frame. Complete the number facts.

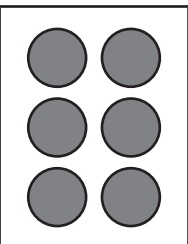
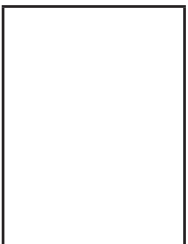

a  $2 + 3 = \square$ $\boxed{2} + \boxed{2} + \boxed{1} = \square$

b  $3 + 4 = \square$ $\square + \square + \square = \square$

c  $4 + 5 = \square$ $\square + \square + \square = \square$

2 Complete the double plus 1 pictures and number facts.

a  +  +  $5 + 6 = \square$
 $\boxed{5} + \boxed{5} + \boxed{1} = \square$

b  +  +  $6 + 7 = \square$
 $\square + \square + \square = \square$

Addition – near doubles

We can also subtract from our doubles to find a near double.

$$\text{Look at } 7 + 8 = \boxed{?}$$

We know that $8 + 8 = 16$

8 is 1 more than 7 so we have added 1 too many. We take 1 back.

$$16 - 1 = 15$$

$$7 + 8 = 15$$

- 1 Draw lines to match the facts (on the left) with their strategies (on the right). Finish them.

$$4 + 5 = \boxed{}$$

$$4 + 4 - 1 = \boxed{}$$

$$3 + 4 = \boxed{}$$

$$6 + 6 - 1 = \boxed{}$$

$$6 + 5 = \boxed{}$$

$$7 + 7 - 1 = \boxed{}$$

$$7 + 6 = \boxed{}$$

$$5 + 5 - 1 = \boxed{}$$

- 2 Use near doubles to solve these.

a Maria has **\$7**. She earns **\$6** more. How much money does she have now?

b Cameron buys **4** books. Then he buys **5** more books. How many books does Cameron have now?

Addition – introducing the vertical format

1 Finish these addition facts in two ways.

a

	T	O
	1	2
+		2
	<input type="text"/>	<input type="text"/>

$$12 + 2 = \square$$

b

	T	O
	1	5
+		4
	<input type="text"/>	<input type="text"/>

$$15 + 4 = \square$$

c

	T	O
	1	0
+		6
	<input type="text"/>	<input type="text"/>

$$10 + 6 = \square$$

d

	T	O
		2
+	1	4
	<input type="text"/>	<input type="text"/>

$$2 + 14 = \square$$

e

	T	O
	2	1
+		4
	2	<input type="text"/>

$$21 + 4 = \square$$

f

	T	O
	3	2
+		3
	3	<input type="text"/>

$$32 + 3 = \square$$

Addition – adding 2-digit numbers, no regrouping

Writing problems vertically \updownarrow helps us work with the tens and ones separately. We add the ones first in case we end up with more than 9 ones.

$$3 \text{ ones} + 1 \text{ one} = 4 \text{ ones}$$

$$2 \text{ tens} + 3 \text{ tens} = 5 \text{ tens}$$

5 tens and 4 ones is **54**.

$$23 + 31 = 54$$

	Tens	Ones
	2	3
+	3	1
	5	4

1 Finish these addition problems. Remember to start with the ones and then add the tens

a

	T	O
	4	2
+	2	6
	<input type="text"/>	<input type="text"/>

b

	T	O
	3	1
+	5	2
	<input type="text"/>	<input type="text"/>

c

	T	O
	4	3
+	3	3
	<input type="text"/>	<input type="text"/>

2 Set up these problems vertically and solve.

a $23 + 16 = \square$

	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

b $42 + 13 = \square$

	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

c $12 + 51 = \square$


	T	O
	<input type="text"/>	<input type="text"/>
+	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

Addition – doubling


1 Warm up by colour matching these doubles facts. How quickly can you do it? The first one has been done for you.

$2 + 2$	6	double 4	$5 + 5$	4
double 3	$4 + 4$	$6 + 6$	10	12
8	double 5	double 2	double 6	$3 + 3$

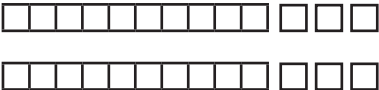
2 Count the base-ten blocks to help you finish the doubles facts.

a 

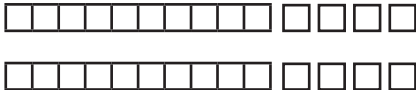
$11 + 11 = \square$

b 


$12 + 12 = \square$

c 


$13 + 13 = \square$

d 

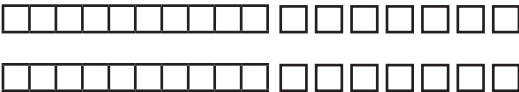
$14 + 14 = \square$

e 


$15 + 15 = \square$

f 

$16 + 16 = \square$

g 

$17 + 17 = \square$

h 

$18 + 18 = \square$

Subtraction – facts to 10 revision

1 Finish these number facts.

a $5 - 2 = \square$

b $10 - 3 = \square$

c $7 - 3 = \square$

$5 - 4 = \square$

$10 - 6 = \square$

$8 - 5 = \square$

$5 - 1 = \square$

$10 - 9 = \square$

$3 - 2 = \square$

$5 - 0 = \square$

$10 - 8 = \square$

$9 - 6 = \square$

2 Add the missing numbers to make these number facts true.

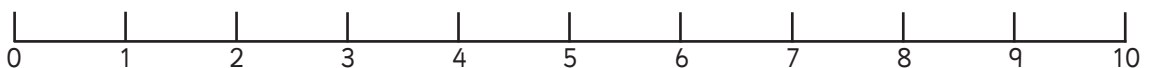
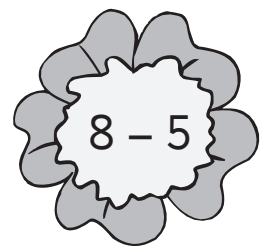
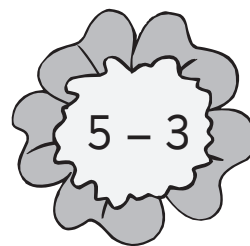
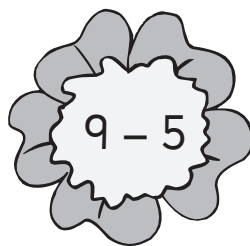
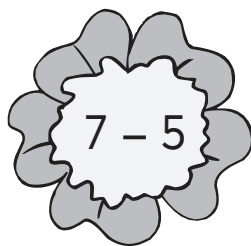
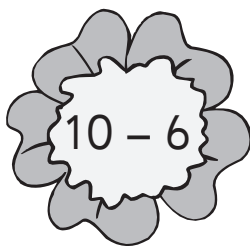
a $8 - \square = 4$

b $10 - \square = 6$

c $\square - 3 = 5$

d $\square - 9 = 1$

3 Draw stems to match the flowers to the correct pots.



Subtraction – counting on and counting back

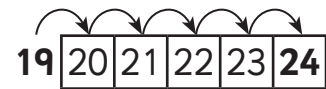
We know that addition and subtraction do up and undo each other. This means we can use the addition strategy of **counting on** to solve subtraction problems.

We use counting on when the difference between the numbers is small.

We count on from the smaller number of **19** until we get to **24**.

We counted 5 more numbers.

$$24 - 19 = \boxed{?}$$



$$24 - 19 = 5$$

1 Solve these problems. Circle the smaller number. Count on until you get to the bigger number. How many numbers did you count?

a $28 - 23 = \square$

b $19 - 14 = \square$

c $23 - 20 = \square$

d $30 - 26 = \square$

e $18 - 14 = \square$

f $31 - 28 = \square$

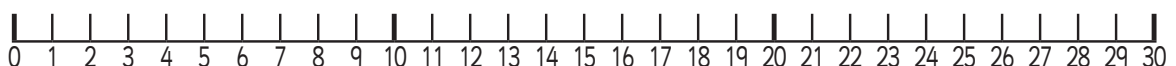
2 Use counting on to solve these problems. Write the number facts.

a Jackson saved \$27. He spent \$22 during a trip to the mall. How much money does he have left?

$$\square - \square = \square$$

b Lara caught 28 fish. She put 26 back. How many did she keep?

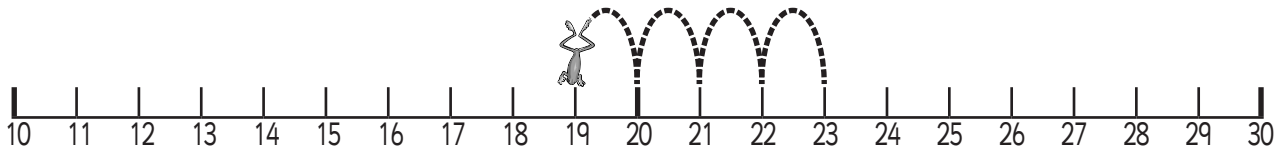
$$\square - \square = \square$$



Subtraction – counting on and counting back

Counting back is a handy strategy to use when we only have to subtract a small number. Number lines can help us do this.

Look at $23 - 4 = \boxed{?}$



We start at 23. We jump back 4 spaces to 19.

$$23 - 4 = 19$$

- 1 Use the number line above and count back to solve these subtraction problems.

a $17 - 4 = \boxed{}$

b $18 - 2 = \boxed{}$

c $19 - 5 = \boxed{}$

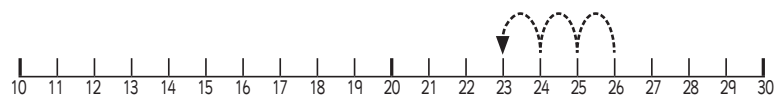
d $25 - 2 = \boxed{}$

e $30 - 4 = \boxed{}$

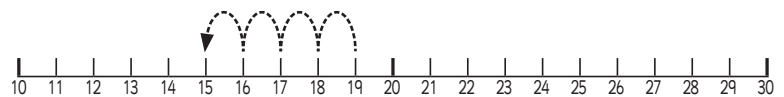
f $21 - 2 = \boxed{}$

- 2 Look at these number lines. What subtraction fact does each show?

a $\boxed{} - \boxed{} = \boxed{}$



b $\boxed{} - \boxed{} = \boxed{}$



- 3 Would you use the counting back strategy to solve this problem? Why or why not?

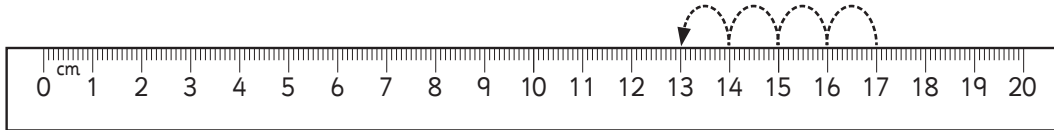
$$25 - 22 = \boxed{}$$

Subtraction – counting on and counting back

Rulers can help us count on and back.

We count the jumps or the spaces between the two numbers.

$$17 - 13 = \boxed{?}$$



$$17 - 13 = 4$$

- 1 Use your ruler to help solve these problems. Decide if it is easier to use counting on or counting back.

a $30 - 3 = \boxed{}$

b $25 - 4 = \boxed{}$

c $27 - 2 = \boxed{}$

d $24 - 20 = \boxed{}$

e $18 - 16 = \boxed{}$

f $12 - 9 = \boxed{}$

- 2 You will need a partner and your ruler. Each choose a different number on the ruler. Write the numbers in a fact box below, and put the bigger number first. Decide if you want to use counting on or back and count the jumps to finish the fact.

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

$\boxed{}$	-	$\boxed{}$	=	$\boxed{}$
------------------------	---	------------------------	---	------------------------

Subtraction – counting on and counting back

If we can count back by 1, 2 or 3, then we can count back by 10, 20 and 30.

Look at $65 - 20 = \boxed{?}$

We start at 65 and count back \uparrow by 10s.

20 is 2 tens.

$$65 - 20 = 45$$

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

1 Use the number grid to help solve these problems.

a $46 - 20 = \boxed{}$

b $61 - 10 = \boxed{}$

c $70 - 30 = \boxed{}$

d $24 - 10 = \boxed{}$

e $34 - 10 = \boxed{}$

f $55 - 20 = \boxed{}$

2 Can you find patterns to help you complete these sets of facts?

a $4 - 1 = \boxed{}$

$40 - 10 = \boxed{}$

$400 - 100 = \boxed{}$

b $5 - 3 = \boxed{}$

$50 - 30 = \boxed{}$

$500 - 300 = \boxed{}$

c $9 - 2 = \boxed{}$

$90 - 20 = \boxed{}$

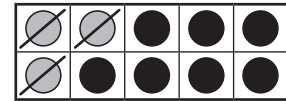
$900 - 200 = \boxed{}$

Subtraction – relating addition and subtraction

We know that addition and subtraction do up and undo each other. This means we can use our known addition facts to help us solve subtraction facts.

$$10 - 7 = \boxed{?}$$

We know $3 + 7 = 10$ so $10 - 3 = 7$



1 Finish the addition facts and use these to help solve the subtraction facts.

a $4 + \boxed{} = 12$
 $12 - 4 = \boxed{}$

b $7 + \boxed{} = 19$
 $19 - 7 = \boxed{}$

c $14 + \boxed{} = 20$
 $20 - 14 = \boxed{}$

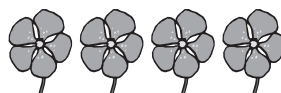
d $9 + \boxed{} = 18$
 $18 - 9 = \boxed{}$

2 Write addition facts that would 'do up' these subtraction facts.

a $23 - 4 = 19$
 $\boxed{} + \boxed{} = 23$

b $19 - 7 = 12$
 $\boxed{} + \boxed{} = \boxed{}$

3 Write some addition and subtraction facts to match this picture.



Subtraction – relating addition and subtraction

Because addition and subtraction are related, we can use our addition strategies to help us solve subtraction problems.

Look at $16 - 8 = \boxed{?}$

We know the doubles fact $8 + 8 = 16$, so we can use it to quickly work out that $16 - 8 = 8$

1 Use your doubles addition strategies to solve these subtraction problems.

a $10 - 5 = \boxed{}$

b $18 - 9 = \boxed{}$

c $22 - 11 = \boxed{}$

$20 - 10 = \boxed{}$

$16 - 8 = \boxed{}$

$40 - 20 = \boxed{}$

$50 - 25 = \boxed{}$

$12 - 6 = \boxed{}$

$30 - 15 = \boxed{}$

$100 - 50 = \boxed{}$

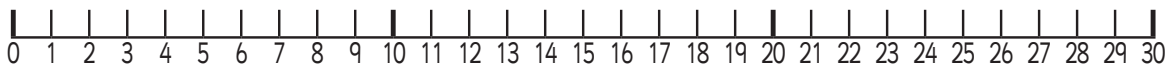
$14 - 7 = \boxed{}$

$32 - 16 = \boxed{}$

2 Solve these.

a Lucy is **4** years older than Marcus. Marcus is **4**. How old is Lucy?

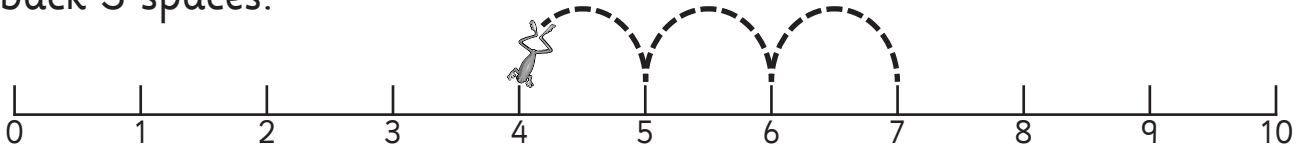
b Mohammed ate **14** strawberries. Sara ate **double** that amount. How many more strawberries did Sara eat than Mohammed?



Subtraction – difference

‘I am thinking of 2 numbers. They have a difference of 3. The **bigger** number is 7.’

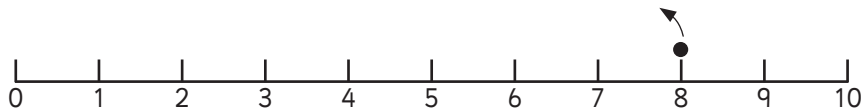
We know the bigger number is 7. To find the difference we jump back 3 spaces.



$$7 - 3 = 4$$

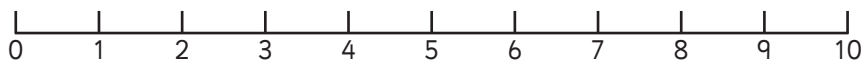
1 Show the jumps and solve the problem.

a I am thinking of 2 numbers. They have a difference of 5.
The **bigger** number is 8.



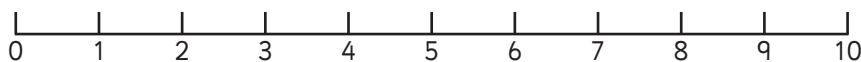
I start on . I jump back . $8 - 5 = \square$

b I am thinking of 2 numbers. They have a difference of 2.
The **bigger** number is 4.



I start on . I jump back . - =

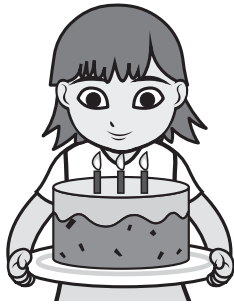
c I am thinking of 2 numbers. They have a difference of 3.
The **bigger** number is 7.



I start on . I jump back . - =

Subtraction – difference

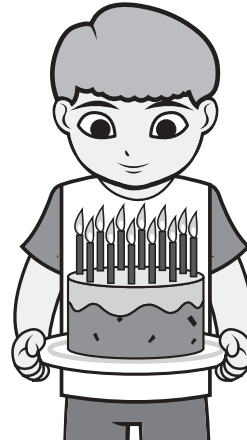
- 1 These children each have a cake with candles to match their age.



Li

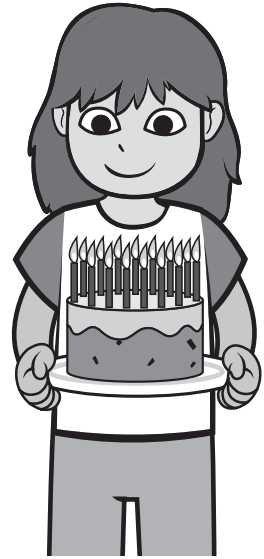


Lucy



12 candles

Liam



15 candles

Lou

What is the difference in age between:

- a Lou and Liam? _____ years
- b Liam and Lucy? _____ years
- c Lou and Li? _____ years

- 2 How old are you? Draw a cake with candles to match your age.

What is the difference in age between:

- a you and Lou? _____ years
- b you and Li? _____ years
- c you and Liam? _____ years

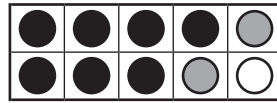


- 3 How old is your teacher or mum or dad? Find the difference between your age and their age. Write the number fact to match.

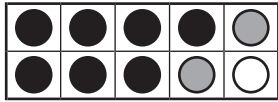
Subtraction – relating addition and subtraction

Here we have 7 black counters
and 2 grey counters.

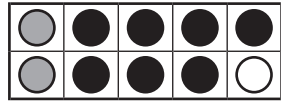
That's 9 counters altogether.



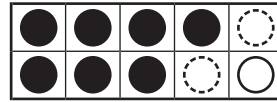
What addition and subtraction facts can we make using 7, 2 and 9?



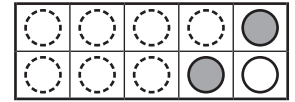
$$7 + 2 = 9$$



$$2 + 7 = 9$$



$$9 - 2 = 7$$



$$9 - 7 = 2$$

We can make 4 facts. This is a fact family.

1 Look at these coloured cubes. Write the fact family.

a



$$\boxed{3} + \boxed{2} = \boxed{}$$

$$\boxed{5} - \boxed{2} = \boxed{}$$

$$\boxed{2} + \boxed{3} = \boxed{}$$

$$\boxed{5} - \boxed{3} = \boxed{}$$

b



$$\boxed{4} + \boxed{1} = \boxed{}$$

$$\boxed{5} - \boxed{} = \boxed{}$$

$$\boxed{1} + \boxed{} = \boxed{}$$

$$\boxed{} - \boxed{} = \boxed{}$$

2 Colour the cubes to match. Finish the fact family.



$$4 + 3 = 7$$

$$7 - 4 = 3$$

$$\boxed{} + \boxed{} = \boxed{}$$

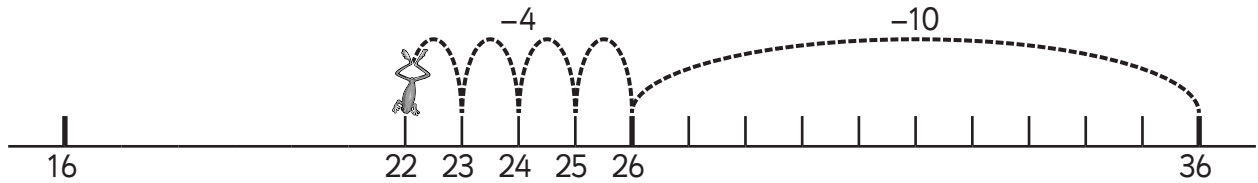
$$\boxed{} - \boxed{} = \boxed{}$$

Subtraction – jump strategy

We can also use number lines to help us subtract 2-digit numbers.

$$36 - 14 = \boxed{?}$$

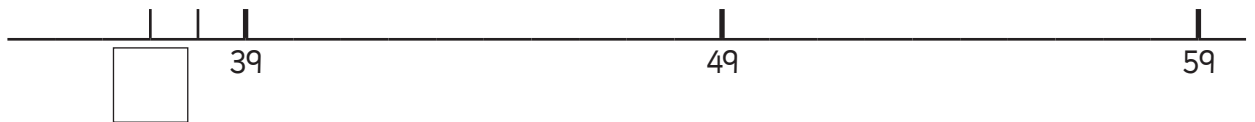
14 is 1 ten and 4 ones. We jump back 1 ten, then 4 ones.



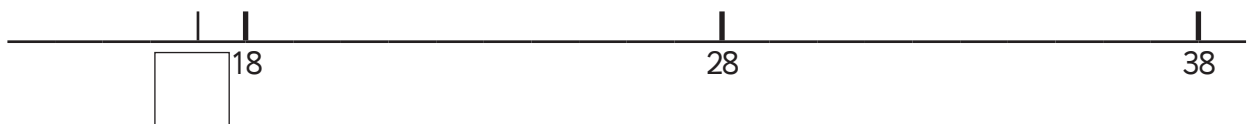
$$36 - 14 = 22$$

1 Use the jump strategy to solve these problems. Show the jumps and fill in the missing numbers on the number lines.

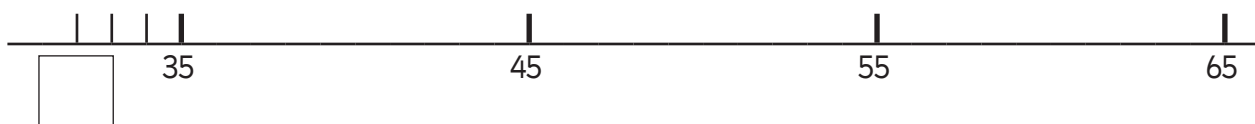
a $59 - 22 = \boxed{}$ 22 is _____ tens and _____ ones



b $38 - 21 = \boxed{}$ 21 is _____ tens and _____ one



c $65 - 33 = \boxed{}$ 33 is _____ tens and _____ ones

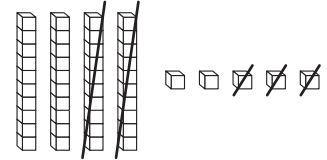


Subtraction – subtracting 2-digit numbers

Look at $45 - 23 = \boxed{?}$

How do we solve this? It helps to think of the numbers as tens and ones.

45 is **4** tens and **5** ones. 23 is **2** tens and **3** ones.



We subtract **2** tens and **3** ones from 45.

$$45 - 23 = 22$$

1 Warm up by splitting these numbers into tens and ones.

a 27 is

	tens		ones
--	------	--	------

b 98 is

	tens		ones
--	------	--	------

c 12 is

	tens		ones
--	------	--	------

d 75 is

	tens		ones
--	------	--	------

2 Cross off the tens and ones blocks to help solve these problems.

a $28 - 17 = \boxed{}$

b $34 - 13 = \boxed{}$

c $46 - 12 = \boxed{}$

d $38 - 25 = \boxed{}$

3 Write the number fact to match.

$\boxed{} - \boxed{} = \boxed{}$

Subtraction – written methods, no regrouping

Sometimes we use a written format to help us solve subtraction problems. We set up problems vertically \updownarrow as this helps us work with the tens and ones separately.

When we work problems out this way, we subtract the ones first, then the tens.

4 ones – **1** one = **3** ones

3 tens – **2** tens = **1** ten

1 ten and **3** ones is **13**

34 – 21 = 13

	T	O	
—	3	4	
–	2	1	
—	1	3	

\updownarrow

1 Finish these subtraction problems. Remember to subtract the ones and then subtract the tens.

a

	T	O
—	4	6
–	1	5
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

b

	T	O
—	3	9
–	2	2
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

c

	T	O
—	4	8
–	3	3
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

d

	T	O
—	5	5
–	1	4
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

e

	T	O
—	6	4
–	2	1
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

f

	T	O
—	6	9
–	5	3
—	<input style="width: 30px; height: 20px;" type="text"/>	<input style="width: 30px; height: 20px;" type="text"/>

Subtraction – written methods, no regrouping

1 Solve these word problems. Show the number facts both ways.

- a 2G raised \$96 towards new sports gear. They spent \$34 on a new cricket set. How much do they have left to spend?

$$\square - \square = \square$$

	T	O
	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>
\$	<input type="text"/>	<input type="text"/>

- b Farmer Joe has 65 chickens. 52 of them lay eggs. How many don't lay eggs?

$$\square - \square = \square$$

	T	O
	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>
	<input type="text"/>	<input type="text"/>

- c Danny is given \$53 for his birthday. He spends \$31. How much does he have left?

$$\square - \square = \square$$

	T	O
	<input type="text"/>	<input type="text"/>
-	<input type="text"/>	<input type="text"/>
\$	<input type="text"/>	<input type="text"/>

Subtraction – jump strategy

Number grids can also help us subtract using the jump strategy.

$$57 - 32 = \boxed{?}$$

32 is 3 tens and 2 ones.

We make 3 tens jumps and 2 ones jumps **back**. This means we jump \uparrow for the tens jumps and \leftarrow for the ones jumps.

$$57 - 32 = 25$$

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

1 Use the number grid and the jump strategy to solve these problems.

a

$$64 - 13 = \boxed{}$$

13 is __ ten \uparrow and __ ones \leftarrow

41	42	43	44	45
51	52	53	54	55
61	62	63	64	65

b

$$67 - 34 = \boxed{}$$

34 is __ tens \uparrow and __ ones \leftarrow

21	22	23	24	25	26	27	28
31	32	33	34	35	36	37	38
41	42	43	44	45	46	47	48
51	52	53	54	55	56	57	58
61	62	63	64	65	66	67	68

c

$$58 - 26 = \boxed{}$$

26 is __ tens \uparrow and __ ones \leftarrow

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

d

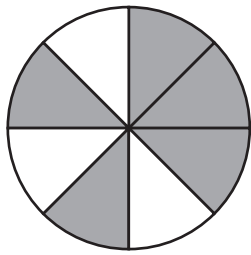
$$35 - 24 = \boxed{}$$

24 is __ tens \uparrow and __ ones \leftarrow

1	2	3	4	5	6	7
11	12	13	14	15	16	17
21	22	23	24	25	26	27
31	32	33	34	35	36	37

Working with fractions – modelling fractions

A fraction is a part of a whole. This circle had been divided into 8 pieces and has 5 pieces shaded.

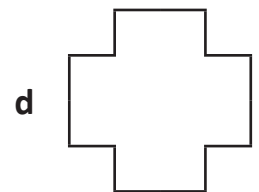
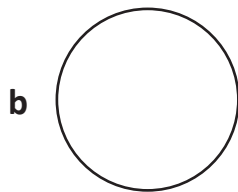
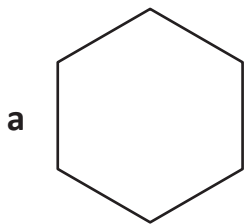


$$\frac{5}{8} = \frac{5 \text{ shaded parts}}{8 \text{ parts altogether}}$$

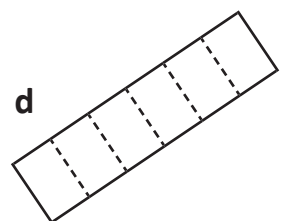
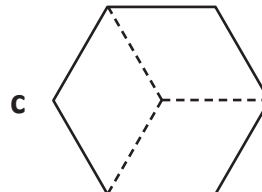
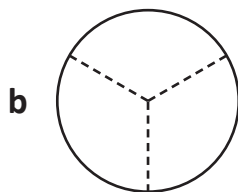
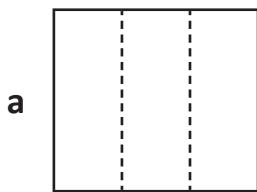


The top number is the numerator, the bottom number is the denominator.

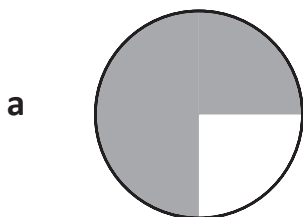
1 Divide each shape into quarters. Shade one quarter:



2 Shade one third on each shape:



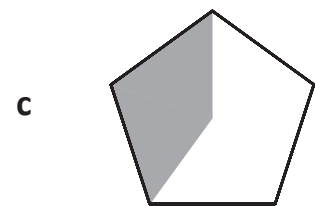
3 What fraction is shaded?



Fraction shaded $\frac{\square}{\square}$



Fraction shaded $\frac{\square}{\square}$



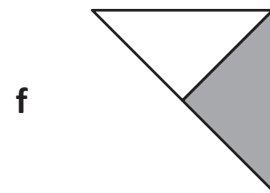
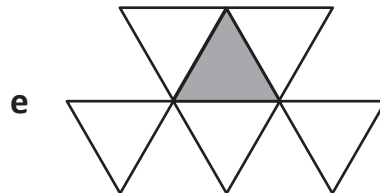
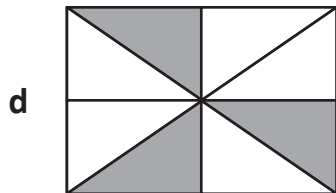
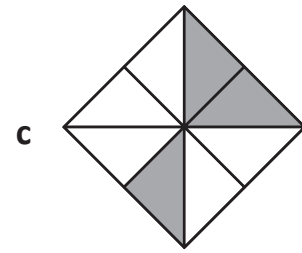
Fraction shaded $\frac{\square}{\square}$

4 If this is $\frac{1}{3}$ of a shape, what does the whole shape look like?

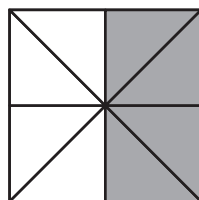


Working with fractions – modelling fractions

5 Complete the table for each shape.

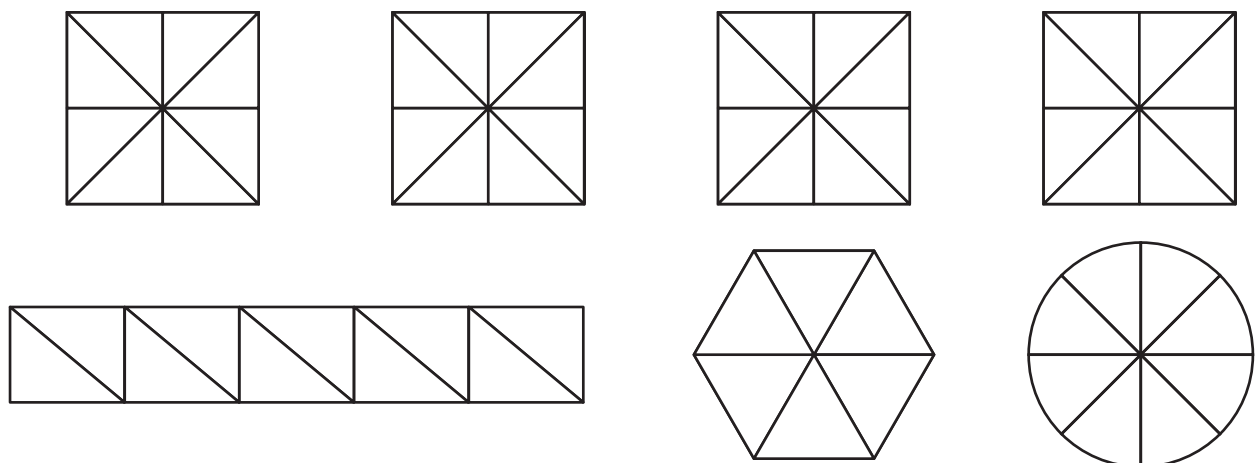


Shape	a	b	c	d	e	f
Fraction that is shaded	—	—	—	—	—	—
Fraction that is unshaded	—	—	—	—	—	—

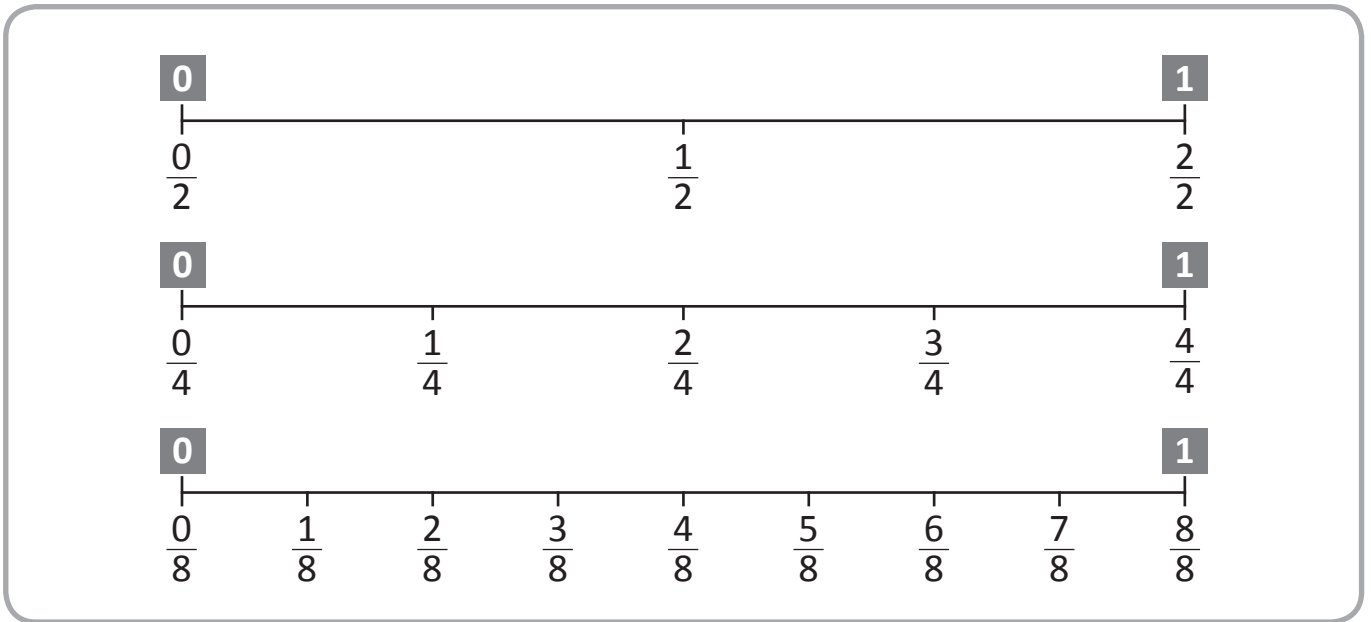


This shape has 8 pieces. To show half, I have shaded 4 pieces.

6 How many different ways can you show a half?

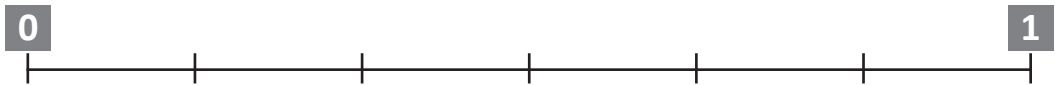


Working with fractions – comparing and ordering fractions



1 Connect the fractions to their places on the number lines.

a $\frac{1}{3}$ $\frac{1}{6}$



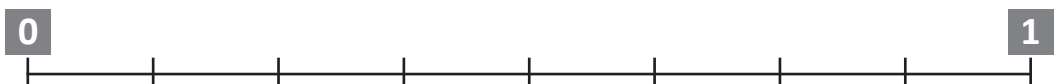
b $\frac{1}{2}$ $\frac{1}{4}$ $\frac{5}{8}$



c $\frac{1}{2}$ $\frac{3}{4}$

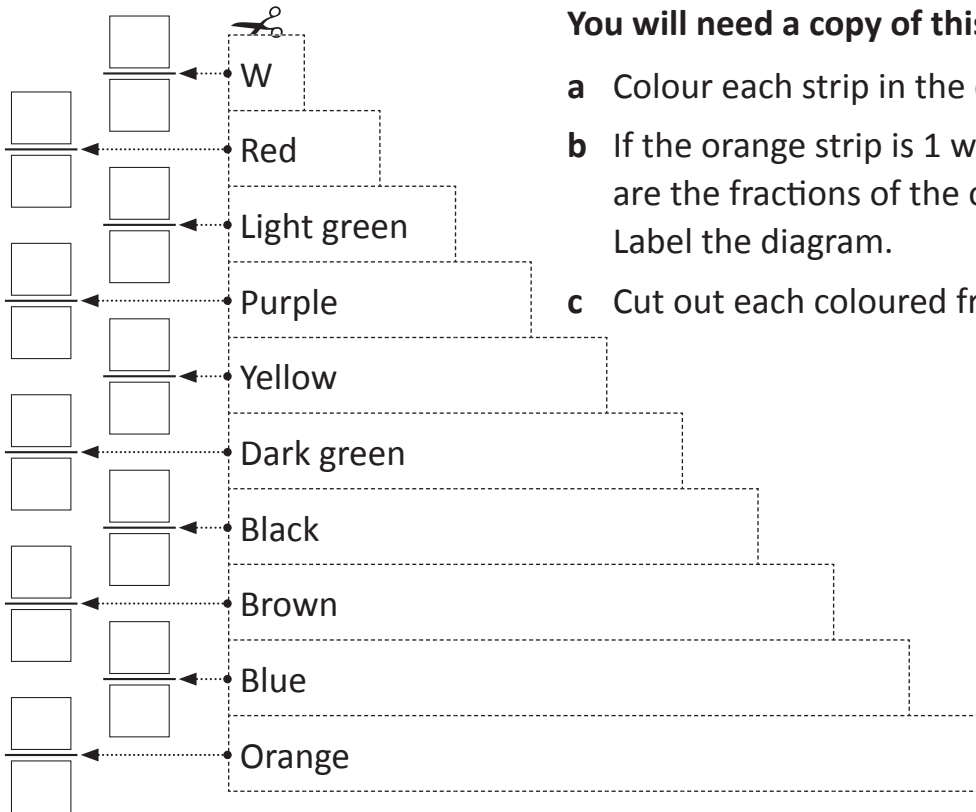


d $\frac{3}{8}$ $\frac{5}{8}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$



Working with fractions – comparing and ordering fractions

2



You will need a copy of this page.



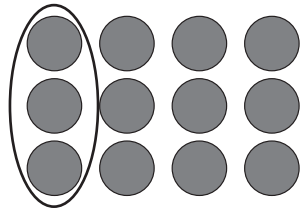
- Colour each strip in the diagram.
- If the orange strip is 1 whole, what are the fractions of the other strips? Label the diagram.
- Cut out each coloured fraction strip.

3 Use the fraction strips that you have cut and coloured to answer these:

- If purple is $\frac{1}{2}$, which colour is 1 whole? _____
- If red is $\frac{1}{4}$, which colour is 1 whole? _____
- If blue is 1 whole, which colour is $\frac{1}{3}$? _____
- If I connected purple and dark green together and they equalled 1 whole, what is the value of each?
 Purple = _____ Dark green = _____
- If I connected red, light green and purple and they equalled 1 whole, what is the value of each?
 Red = _____ Light green = _____
 Purple = _____

Working with fractions – fractions of a collection

Finding a fraction of different amounts is like division. Look at this array of dots. Finding one quarter is the same as dividing 12 by 4.

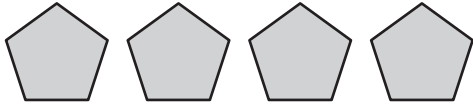


$$12 \div 4 = 3$$

$$\frac{1}{4} \text{ of } 12 = 3$$

1 Circle the fraction given for each group and complete the statements:

a $\frac{1}{2}$ of 4 pentagons



$$\square \div \square = \square$$

$$\frac{1}{2} \text{ of } \square = \square$$

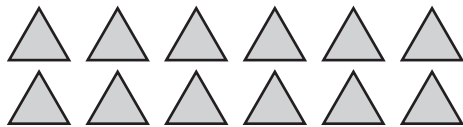
b $\frac{1}{4}$ of 8 stars



$$\square \div \square = \square$$

$$\frac{1}{4} \text{ of } \square = \square$$

c $\frac{1}{4}$ of 12 triangles



$$\square \div \square = \square$$

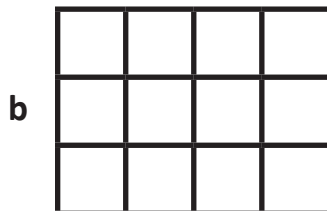
$$\frac{1}{4} \text{ of } \square = \square$$

2 Shade $\frac{1}{3}$ of these grids and complete the statements. The first one has been done for you.



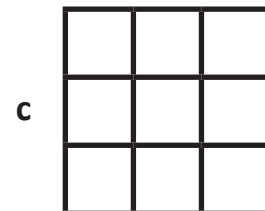
$$\square \div \square = \square$$

$$\frac{1}{3} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{3} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{3} \text{ of } \square = \square$$

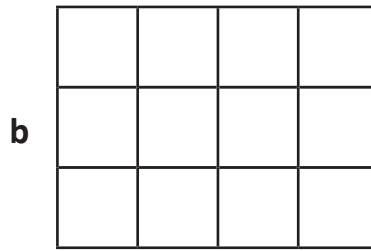
Working with fractions – fractions of a collection

3 Shade $\frac{1}{4}$ on these grids and complete the statements:



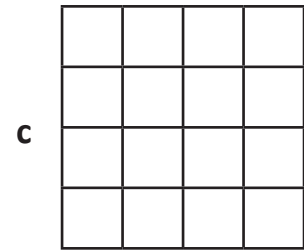
$$\square \div \square = \square$$

$$\frac{1}{4} \text{ of } \square = \square$$



$$\square \div \square = \square$$

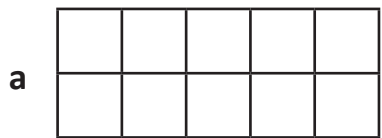
$$\frac{1}{4} \text{ of } \square = \square$$



$$\square \div \square = \square$$

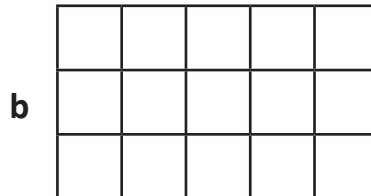
$$\frac{1}{4} \text{ of } \square = \square$$

4 Shade $\frac{1}{5}$ on these grids and complete the statements:



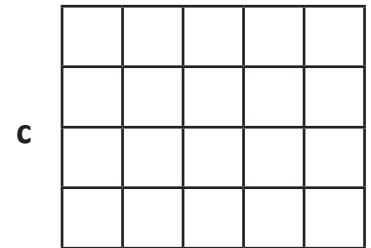
$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$



$$\square \div \square = \square$$

$$\frac{1}{5} \text{ of } \square = \square$$

5 Find the fractions of these numbers:

a $\frac{1}{2}$ of 8 =

b $\frac{1}{4}$ of 12 =

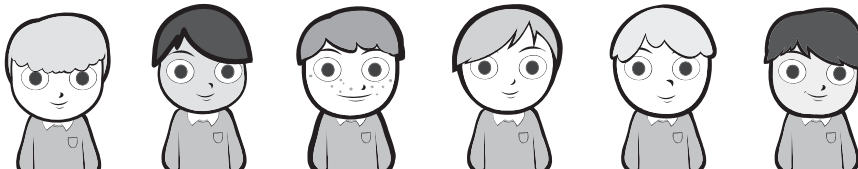
c $\frac{1}{3}$ of 9 =

d $\frac{1}{5}$ of 15 =

e $\frac{1}{8}$ of 16 =

f $\frac{1}{4}$ of 20 =

6 Complete this picture to show that $\frac{2}{3}$ of these boys are wearing hats:



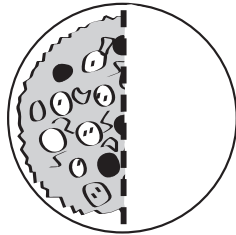
First work out what $\frac{1}{3}$ of 6 is then times by 2.



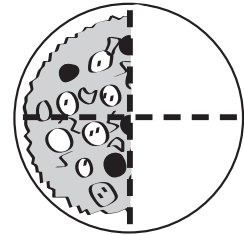
Types of fractions – equivalent fractions

Different fractions can have the same amount. They are equivalent.

This pizza has been cut into 2 parts.
 $\frac{1}{2}$ has been eaten.



This pizza has been cut into 4 parts.
 $\frac{2}{4}$ has been eaten.



Here we are going to explore equivalency. You will need a copy of these fraction strips.



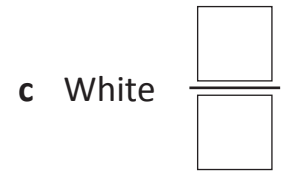
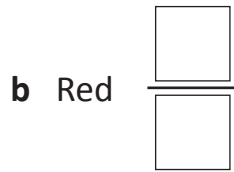
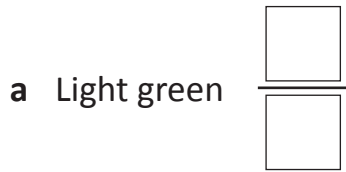
First colour in each strip a different colour, then follow these steps:

- Strip 1:** Cut out the first strip and write '1 whole'.
- Strip 2:** Cut out the second strip, fold it in half and cut the 2 equal size pieces. Label each piece $\frac{1}{2}$.
- Strip 3:** Cut it out, fold it in half and half again. Cut the 4 pieces and label each piece $\frac{1}{4}$.
- Strip 4:** Cut out the next strip and fold into eighths. How will you do this? Cut the 8 pieces and label each piece $\frac{1}{8}$.
- Strips 5 and 6:** The last 2 strips have been marked for you. Count the markings. What fractions are they?

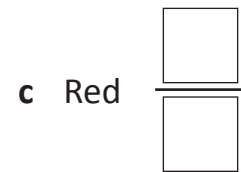
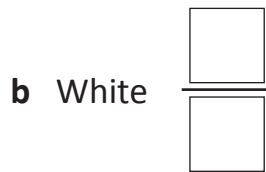
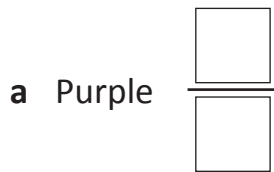
Place all of these strips into a plastic sleeve to keep them all in one place. This is your fraction kit.

Working with fractions – comparing and ordering fractions

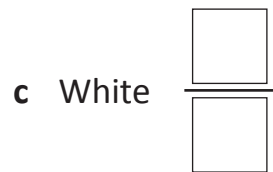
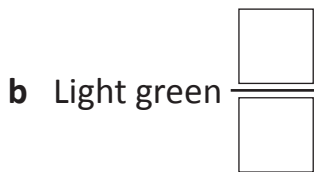
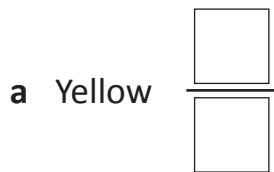
4 If the purple strip is equal to 1 whole, what fractions would these strips now be:



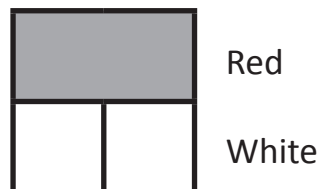
5 If the brown strip is equal to 1 whole, what fractions would these strips now be:



6 If the dark green strip is equal to 1 whole, what fractions would these strips now be:



7 This picture shows halves. The red strip is 1 and each white strip is $\frac{1}{2}$.



a Use your strips to create a picture that shows a whole, halves and quarters. First choose a strip that is equal to 1 whole, then choose different colours for the halves and the quarters. Paste your strips in the space below:

Types of fractions – equivalent fractions

1 Use the equivalent fraction strips to answer these:

- a How many quarters in one half? $\frac{\square}{\square}$
- b How many eighths in one half? $\frac{\square}{\square}$
- c How many fifths in one whole? $\frac{\square}{\square}$
- d How many tenths in one half? $\frac{\square}{\square}$

Use the equivalent fraction strips to play these games. Both games are for 2 players only.

You will need: ■ your fraction kit ■ a die



Number on die	Fraction piece from kit
1 or 2	$\frac{1}{2}$ red
3 or 4	$\frac{1}{4}$ yellow
5 or 6	$\frac{1}{8}$ orange

Game 1

The aim of this game is to be the first to reveal the whole piece of paper from your fraction kit.

Start the game with the whole covered with 2 halves.

Player 1 rolls the die and takes off that fraction. Players may need to swap pieces from their own kit first. For example, if you roll $\frac{1}{4}$ first, you need to swap $\frac{1}{2}$ for $\frac{2}{4}$, then you can take off $\frac{1}{4}$.

Player 2 rolls the die and takes off that fraction, swapping pieces if needed.

The winner is the player who is the first to reveal the whole piece of paper first.

Game 2

The aim of this game is to be the first player to complete 2 wholes.

2 players use both sets of fraction strips. Line up the 2 wholes together.

Player 1 rolls the die and places the fraction piece on top of one of the wholes.

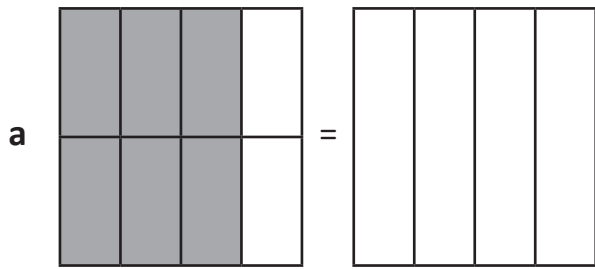
Player 2 rolls the die and places that fraction piece on top of one of the wholes. Players take turns.

The winner is first player who is the first to place the last piece that covers 2 wholes.

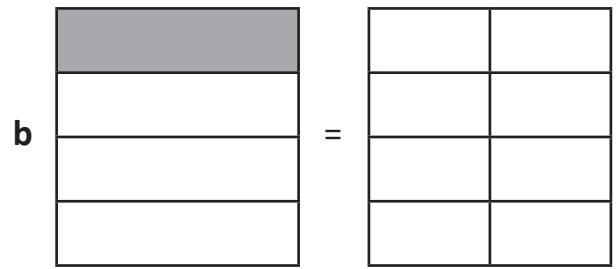
You cannot go over 2 wholes. Your last piece must fit exactly.

Types of fractions – equivalent fractions

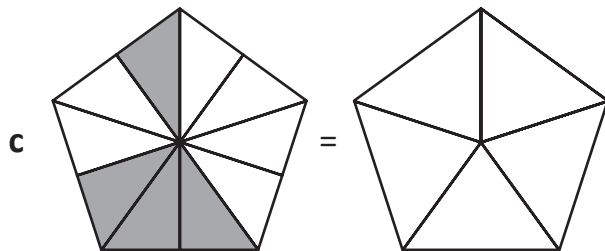
2 Shade and label these models to show equivalent fractions:



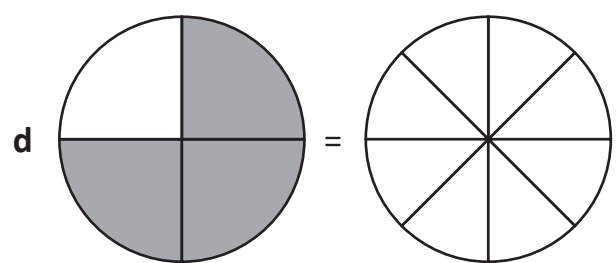
$$\frac{\square}{\square} = \frac{\square}{\square}$$



$$\frac{\square}{\square} = \frac{\square}{\square}$$



$$\frac{\square}{\square} = \frac{\square}{\square}$$



$$\frac{\square}{\square} = \frac{\square}{\square}$$

3 Write either T for true or F for false under each statement:

a $\frac{2}{8} > \frac{1}{10}$

b $\frac{3}{10} < \frac{1}{4}$

c $\frac{3}{5} < \frac{3}{10}$

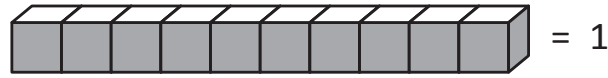
d $\frac{4}{5} > \frac{7}{10}$

e $\frac{4}{8} < \frac{3}{4}$

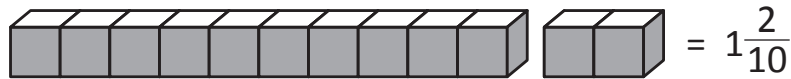
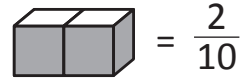
f $\frac{5}{10} < \frac{1}{5}$

Types of fractions – mixed numerals

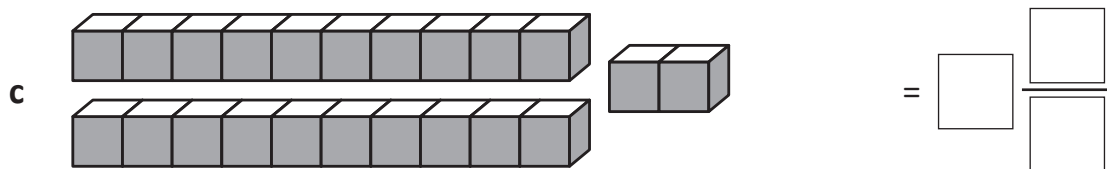
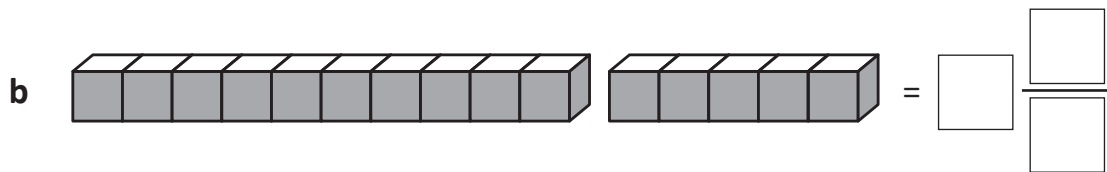
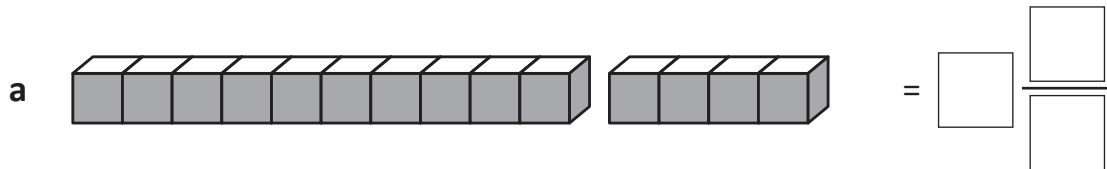
A mixed numeral is a whole number and a fraction. For example, say we connected 10 multilink cubes and named this as 1 whole.



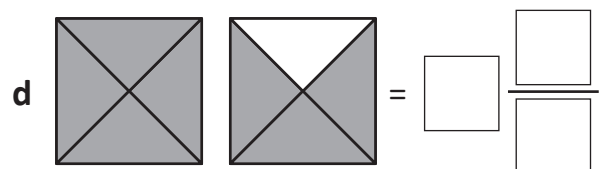
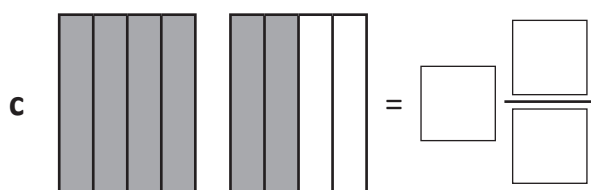
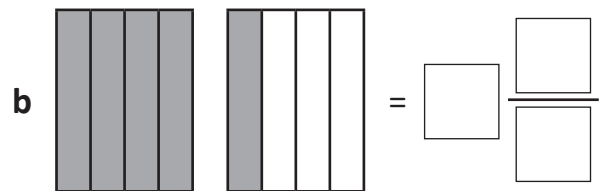
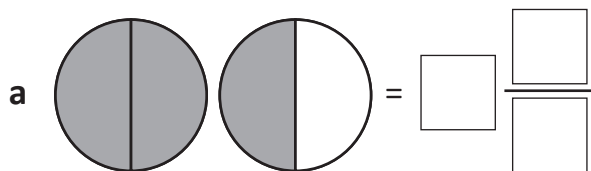
If we then picked up 2 more multilink cubes we have another 2 tenths.



- 1 In each of these problems, 10 multilink cubes represent 1 whole. Write the mixed numeral for each set of multilink cubes.



- 2 Write the mixed numerals that these fraction models are showing:



Money – writing and ordering amounts

How do we write amounts with dollars and cents?

We keep the dollar sign.

\$2.50c

We remove the c sign.

We put a decimal point between the dollars and cents.

If the amount has no cents we can write it as:

\$2 or \$2.00

If the amount has no dollars we can write it as:

50c or \$0.50

1 Write the amounts on the price tags.

a one dollar 

b 80 cents 

c 12 dollars
and 50 cents 

d 35 cents 

e 27 dollars 

f 15 cents 

2 Put these amounts in order of value from least to most.

a \$5 5c 50c   

b \$2.50 \$25.00 \$0.25   

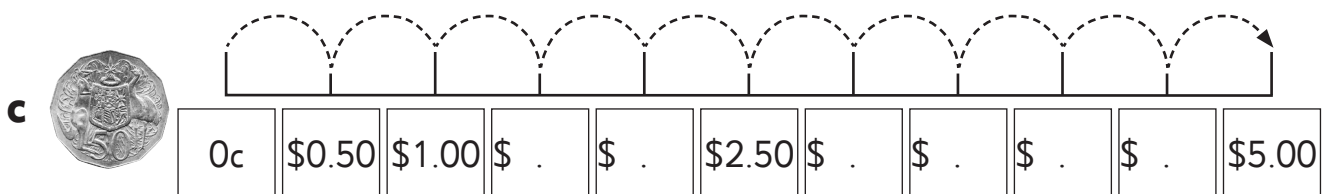
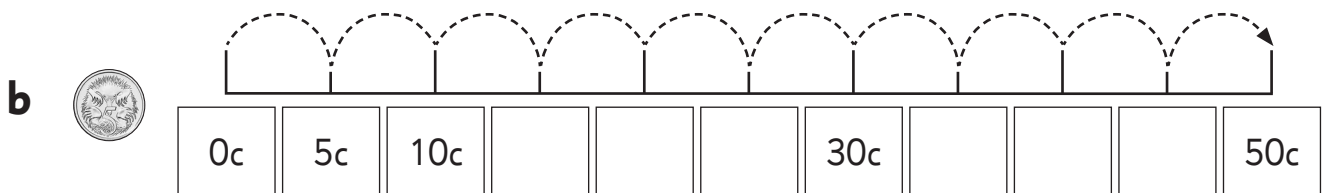
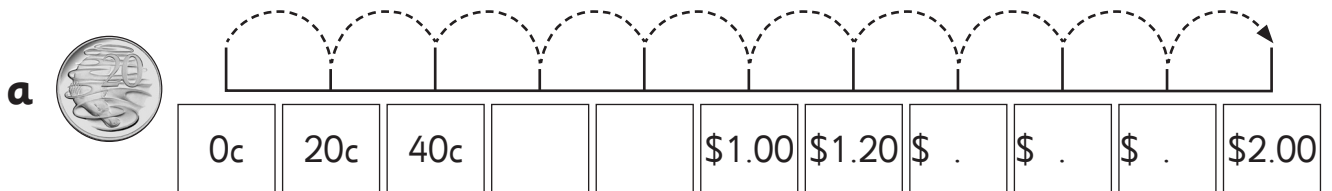
c \$80.00 \$0.80 \$8.00   

d \$11.95 \$12.95 \$10.95   

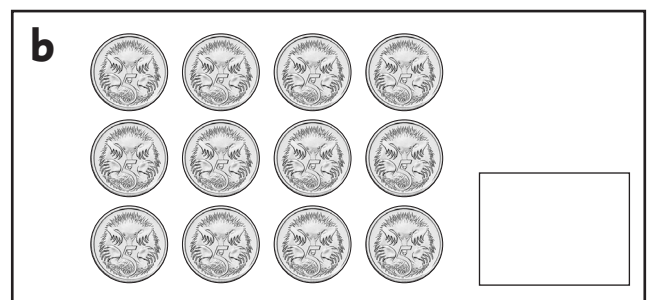
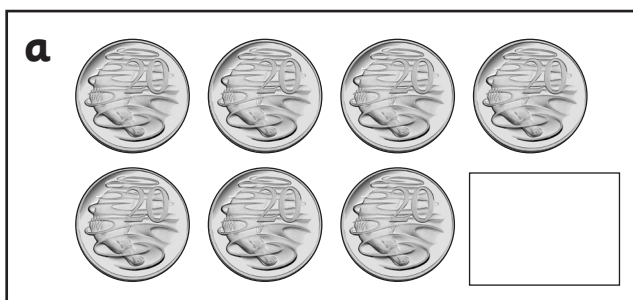
Money – skip counting

Knowing how to count by 5s, 2s and 10s is useful when we are working with money. And if we know how to count by 2s and 5s, we can count by 20s and 50s.





1 Fill in the missing amounts on the number lines.



2 How much money?



Money – skip counting





You will need:  1 to 3 partners  scissors  a die
 the next page

What to do:

Each player cuts out the notes on page 28. You'll also each need the score card below. Combine all the notes into 1 'bank', keeping the values separate (keep all the \$10 notes together etc).

Take turns rolling the die. First you will roll for \$50 notes. Take the number of notes the die shows and record how much money you make. Then roll for \$20 notes, \$10 notes and finally \$5 notes. Record the amounts as you go.

How much money does each player have at the end of the game?
You can use a calculator to help add the amounts. Who is the richest?

Altogether I have:

What to do next:

How much money do you have as a group?

Money – skip counting



✂

Money – adding coins

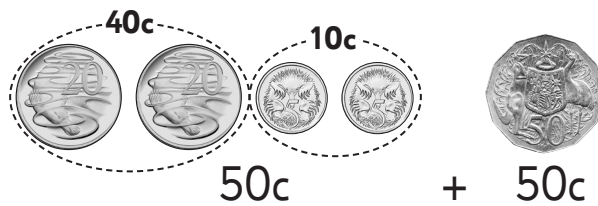
Another useful skill to have is recognising coins that add to make easy amounts. Look at these coins:



$$20c + 5c + 20c + 50c + 5c = \$1$$

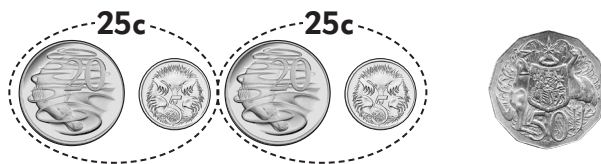
We could add them like this but there are easier ways.

We could rearrange the coins like this. Now we have:



$$50c + 50c = \$1$$

Or as we know that $25 + 25 = 50$ we could add the coins like this:



$$25c + 25c + 50c = \$1$$

1 Warm up by adding these coin combinations.

a $5c + 5c = \underline{\quad}$

$10c + 10c = \underline{\quad}$

$20c + 20c = \underline{\quad}$

$50c + 50c = \underline{\quad}$

$\$1 + \$1 = \underline{\quad}$

$\$2 + \$2 = \underline{\quad}$

$25c + 25c = \underline{\quad}$

$\$2.50 + \$2.50 = \underline{\quad}$

b $5c + 10c = \underline{15c}$

$5c + 20c = \underline{\quad}$

$5c + 30c = \underline{\quad}$

$5c + 40c = \underline{\quad}$

$5c + 50c = \underline{\quad}$

$10c + 20c = \underline{\quad}$

$10c + 30c = \underline{\quad}$

$10c + 40c = \underline{\quad}$

c $3c + 3c = \underline{\quad}$

$30c + 30c = \underline{\quad}$

$4c + 4c = \underline{\quad}$

$40c + 40c = \underline{\quad}$

$2c + 3c = \underline{\quad}$

$20c + 30c = \underline{\quad}$

$2c + 4c = \underline{\quad}$

$20c + 40c = \underline{\quad}$

Money – adding coins

1 Find a way to add these groups of coins. Write the total in each box.


a



b



c



Remember you can add them in any order. It may help to use plastic coins so you can rearrange them as you need.



d




e



f



Money – amounts to \$2

You will need:  a partner  plastic coins

What to do:

We can make amounts in many different ways. Work with your partner to find 2 ways to make these amounts. Record them.

75c

\$1.50

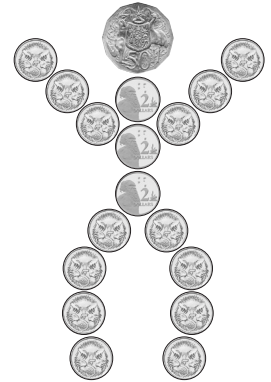
\$1.25

Money – adding coins

You will need:  plastic coins

What to do:

Use coins to make a picture such as the ideas on the right. Record your picture in the box and then add up how much it costs.




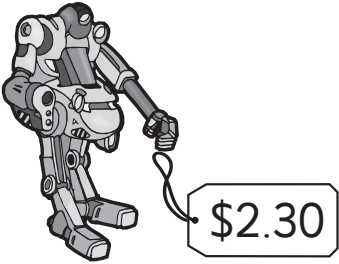


My drawing costs:

What to do next:

Compare your picture with those of your classmates. Whose picture was most expensive? Whose was cheapest?

Money – amounts to \$5

1 You are at your school fair. Show which coins you could use to buy:

At the Trash and Treasure		
		
At the rides		
		
At the food stalls	