Day 1 - Maths

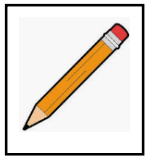
Summer Term - Week 7 (w/c 8th June)

1. We are working on:

2. Then find the lesson you are on - Lesson 1 - Find a rule

3. Watch the video on:

https://vimeo.com/425603587

4. You will need a pencil  and paper to help work out the answers

. Watch the video and practice as you go along

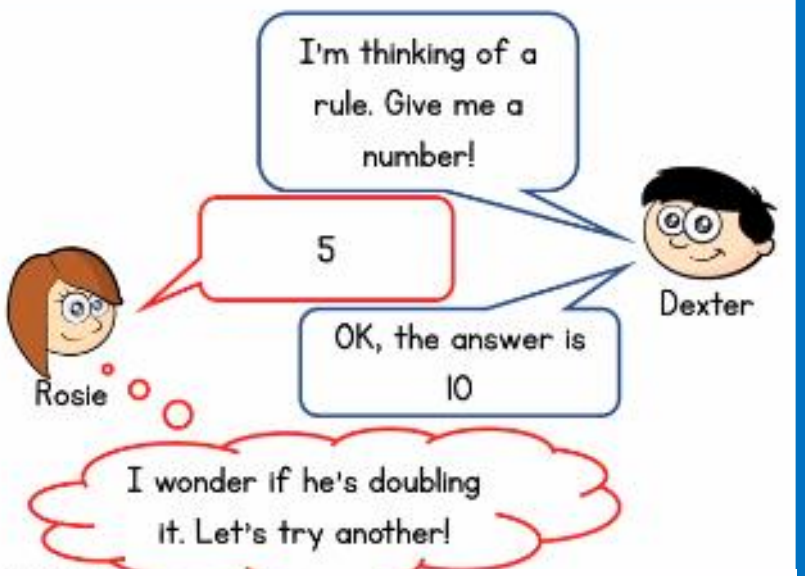
(read through the slides practice as you go along)

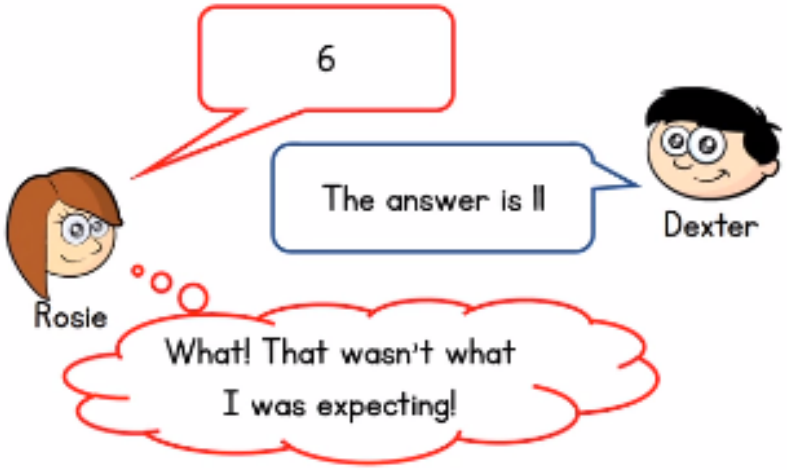
6. Have a go At the end of the video or slides, answer the questions that are in your pack

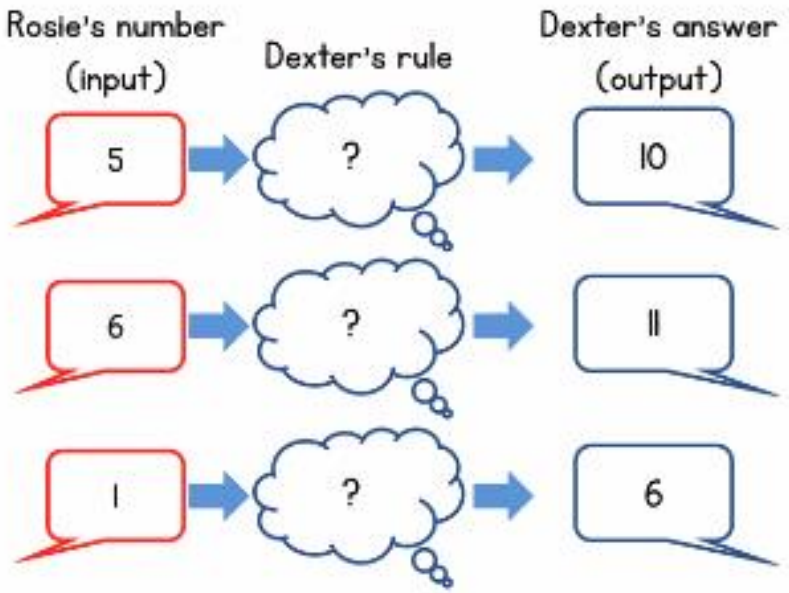
Day 1 - Maths

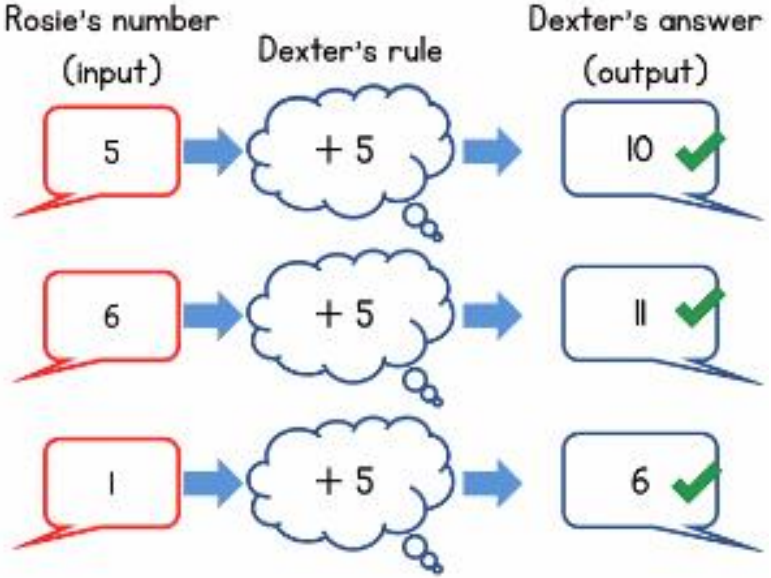
Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425603587

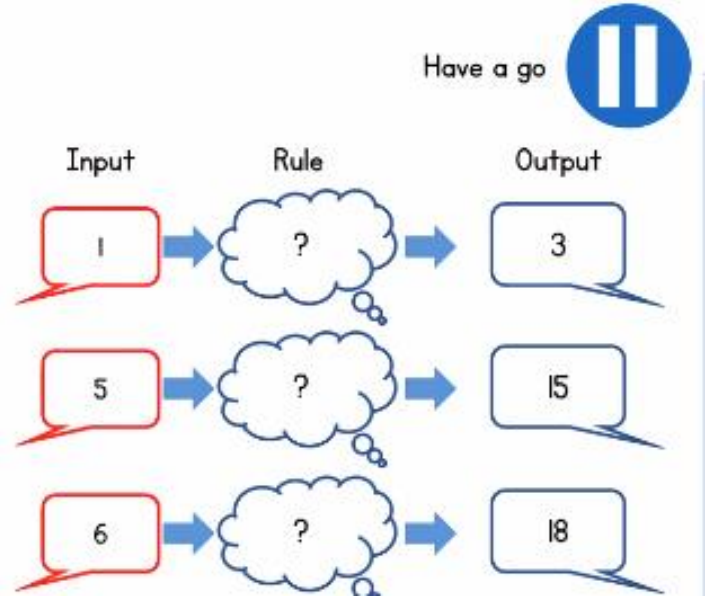
Find a rule

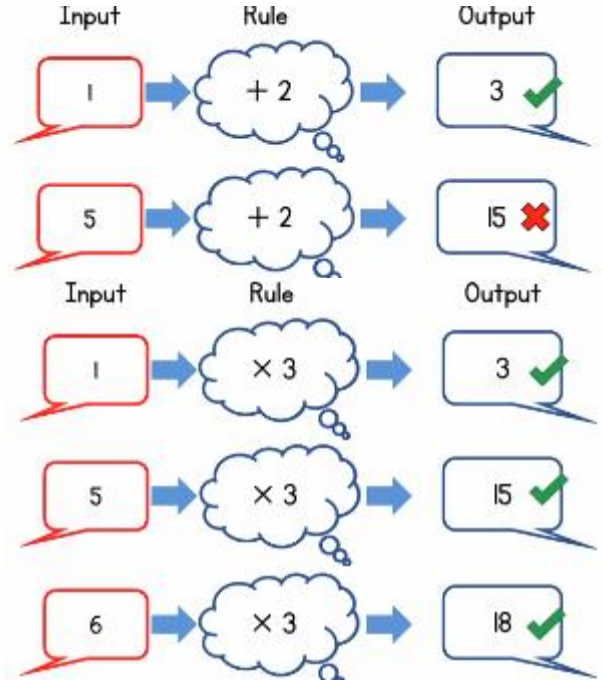












Day 1 - Maths

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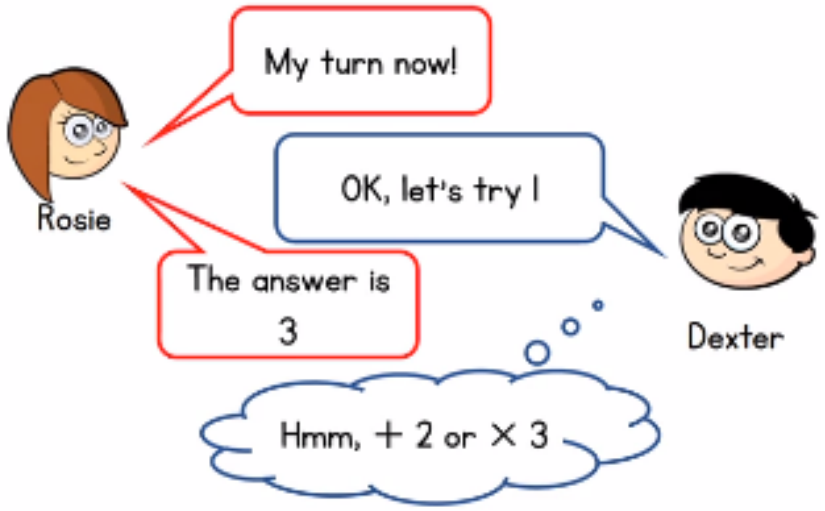
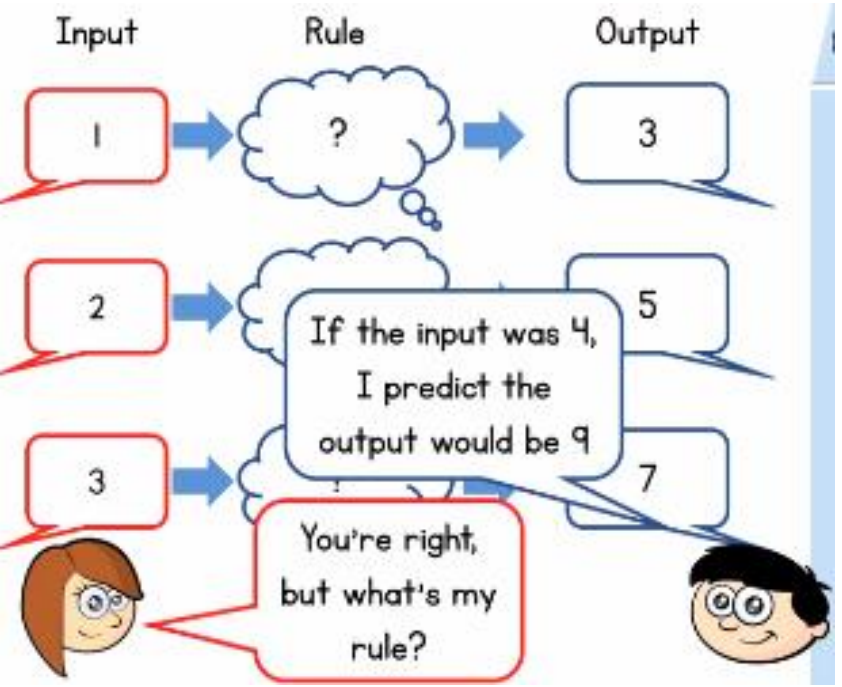
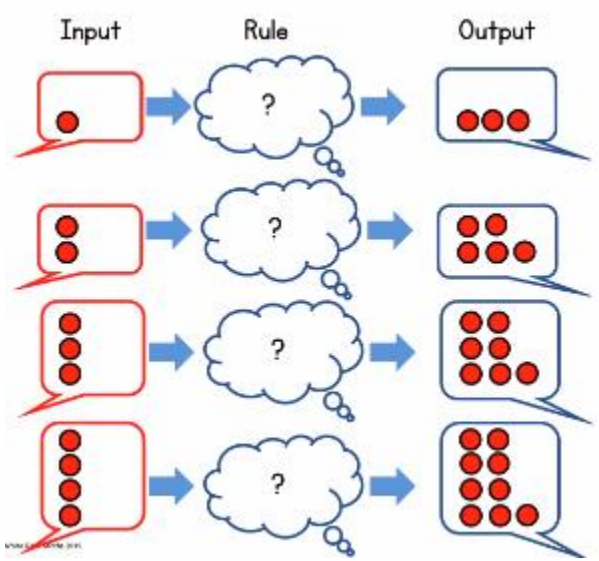
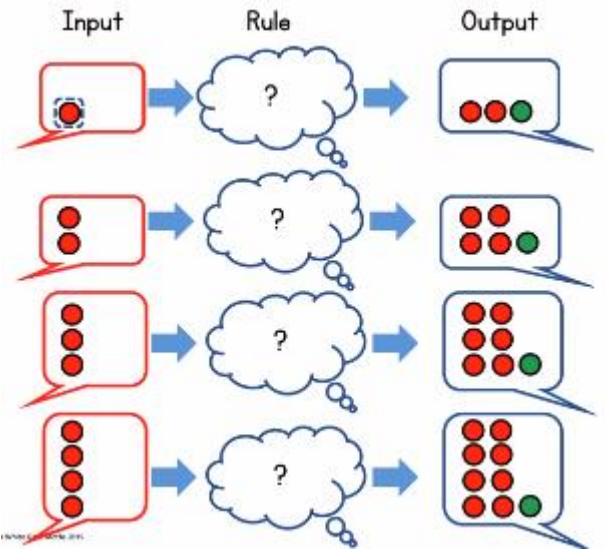
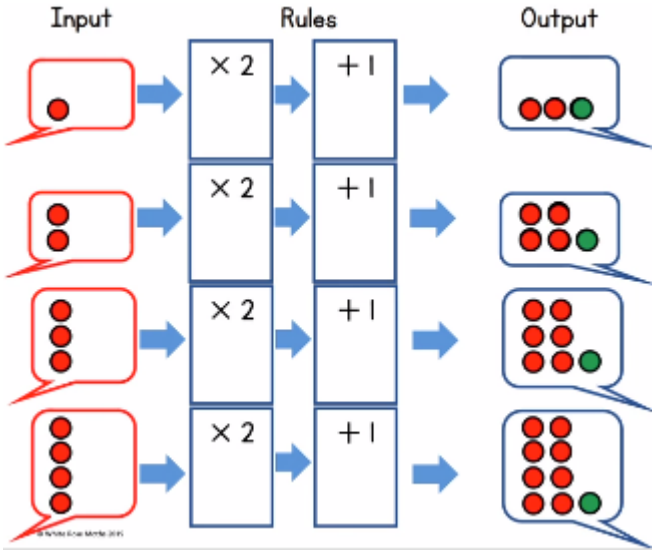








The input has doubled.



Day 1 - Maths

Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425603587

Using any of two of the three cards **once**, can you create a machine that gives:

- The greatest output
- The smallest output

+ 2	− 2	× 2

Input	Functions		Output
5			

Input	Functions		Output
5	+ 2	− 2	5
5	+ 2	× 2	14
5	× 2	− 2	8
5	× 2	+ 2	12
5	− 2	× 2	6
5	− 2	+ 2	5

The greatest.

The smallest.

If you swap the functions around, you can get different outputs each time.

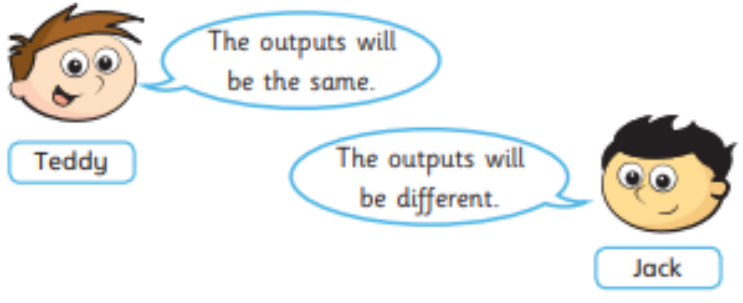
Day 1 - Maths Questions

Find a rule – two step

1 Use the function machine to complete the table.

Input	1	2	3	5	10	50
Output						

2 Here is the same function machine with the steps in the reverse order.



Explain to a partner who you think is correct.

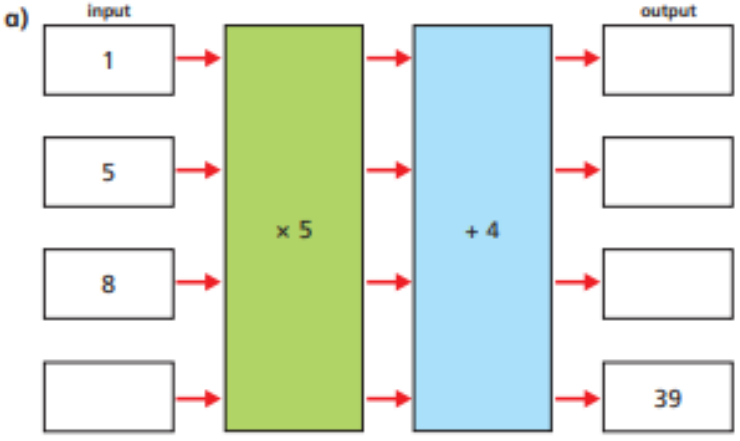
Use the function machine to complete the table.

Input	1	2	3	5	10	50
Output						

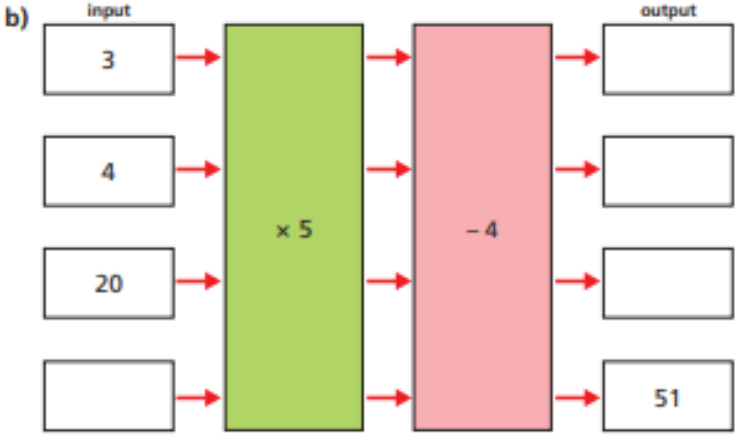
Who is correct?

3 Work out the missing outputs and inputs.

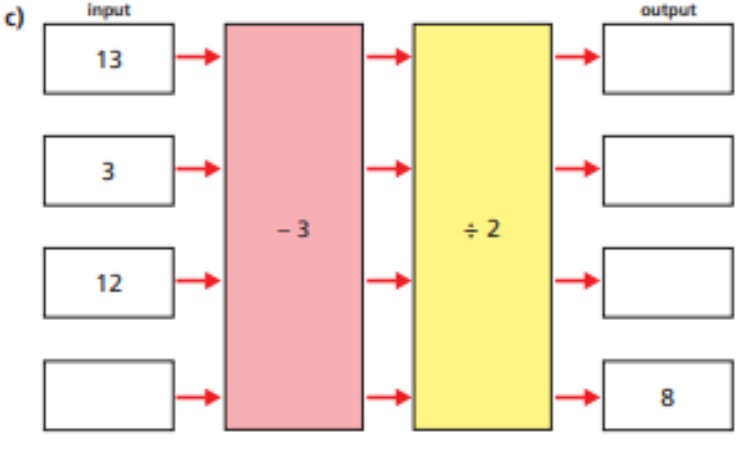
a)



b)



c)

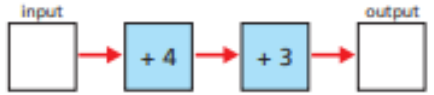


Day 1 - Maths Questions

4 Tick the pairs of function machines that will give the same outputs for a given input.

a)

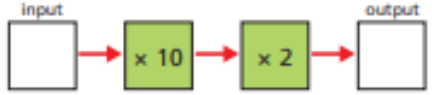
☐



b)

☐

c)



☐

Explain your reasoning to a partner.

5 Here are some 2-step function machines.

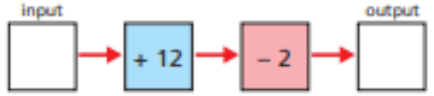
For each machine, write a single step that would give the same output.

Check your answers by inputting values.

a)

_____

b)



_____

c)

_____

Can all 2-step function machines be written as a 1-step function machine?

Talk about it with a partner.

6 Here is a function machine.

a) Complete the table.

Input	10	3		
Output			40	280

b) Rosie puts a number into the machine and she gets out the same number.

Work out Rosie's number.

☐

7 Mr Hall and Mrs Rose order some photos online.

a) Mr Hall orders 16 photos.

How much does he pay?

☐

b) Mrs Rose pays £6.05

How many photos did she order?

☐

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Day 1 - Maths

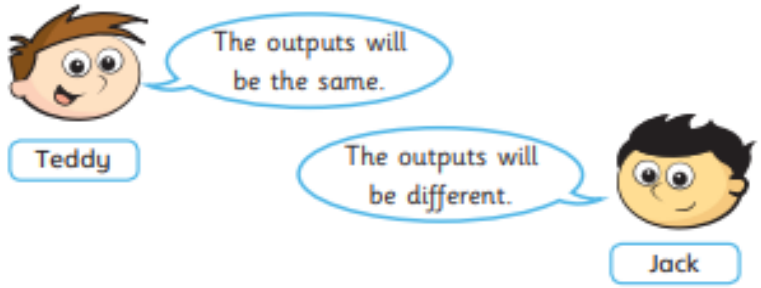
ANSWERS

Find a rule – two step

1 Use the function machine to complete the table.

Input	1	2	3	5	10	50
Output	7	12	17	27	52	252

2 Here is the same function machine with the steps in the reverse order.



Explain to a partner who you think is correct.

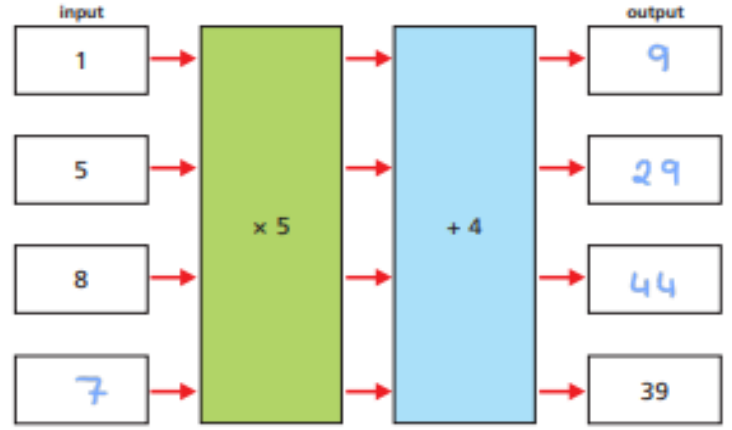
Use the function machine to complete the table.

Input	1	2	3	5	10	50
Output	15	20	25	35	60	260

Who is correct? Jack

3 Work out the missing outputs and inputs.

a)



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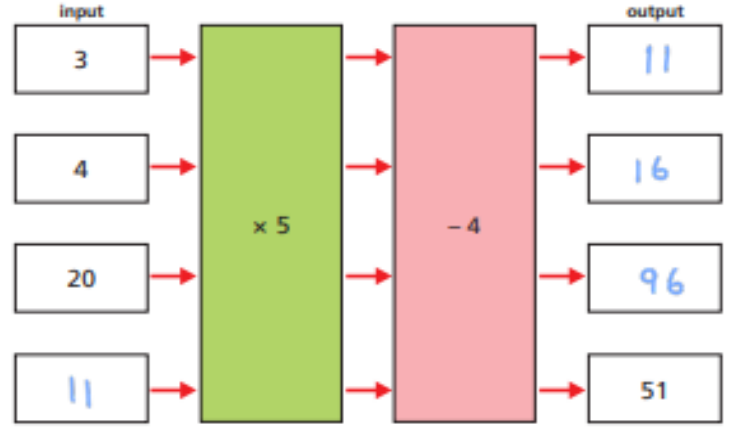
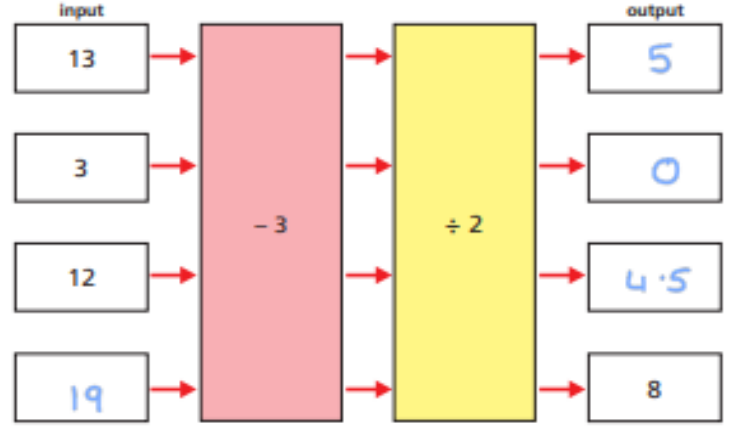


c)



Day 1 - Maths
ANSWERS

4 Tick the pairs of function machines that will give the same outputs for a given input.

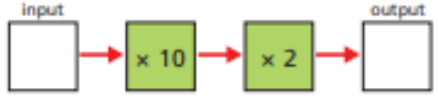
a)

☑

b)

☐

c)



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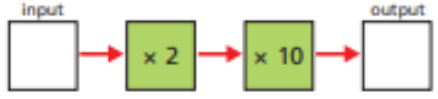


Explain your reasoning to a partner.

5 Here are some 2-step function machines.

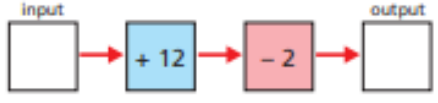
For each machine, write a single step that would give the same output.

Check your answers by inputting values.

a)

× 10

b)



+ 10

c)

× 4

Can all 2-step function machines be written as a 1-step function machine?

Talk about it with a partner.

6 Here is a function machine.

a) Complete the table.

Input	10	3	13	73
Output	28	0	40	280

b) Rosie puts a number into the machine and she gets out the same number.

Work out Rosie's number.

4

7 Mr Hall and Mrs Rose order some photos online.

a) Mr Hall orders 16 photos.

How much does he pay?

£4.45

b) Mrs Rose pays £6.05

How many photos did she order?

24

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Day 2 - Maths

1. We are working on:

Summer Term - Week 7 (w/c 8th June)

2. Then find the lesson you are on -

Lesson 2 - Forming expressions

3. Watch the video on:

https://vimeo.com/425603866

4. You will need a pencil and paper to help work out the answers

. Watch the video and practice as you go along

(read through the slides practice as you go along)

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Day 2 - Maths

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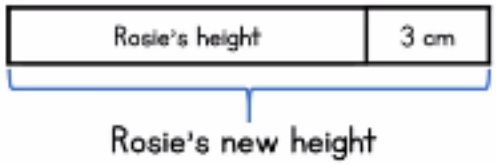
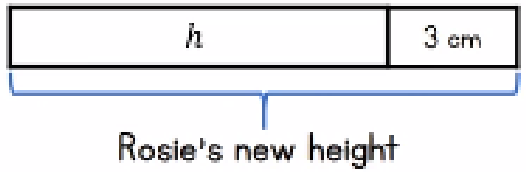
Rosie grows 3 cm

How could we represent what has just happened?



Lets change the word 'height' to the letter 'h'.
We could change it to another letter if we wanted to.
Or we could change it to a symbol.
It doesn't matter what we use.



$h + 3$

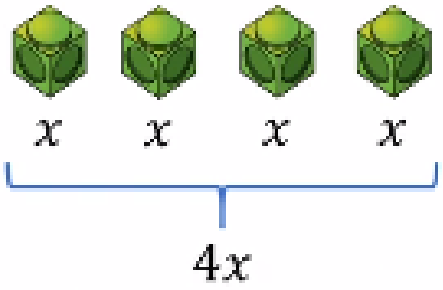
Billy has some frogs (f)
He catches 2 more.

$f + 2$

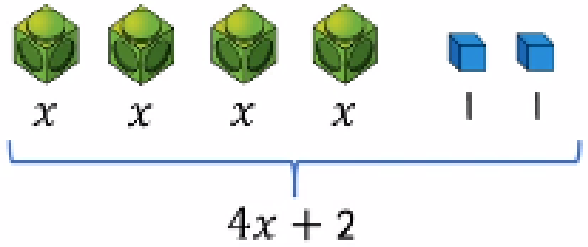
Sally has some sweets (s)
She buys 5 more.

$s + 5$

Lets call this cube 'x'



Now we are adding 2 individual small cubes.



Day 2 - Maths

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How could you represent these expressions?

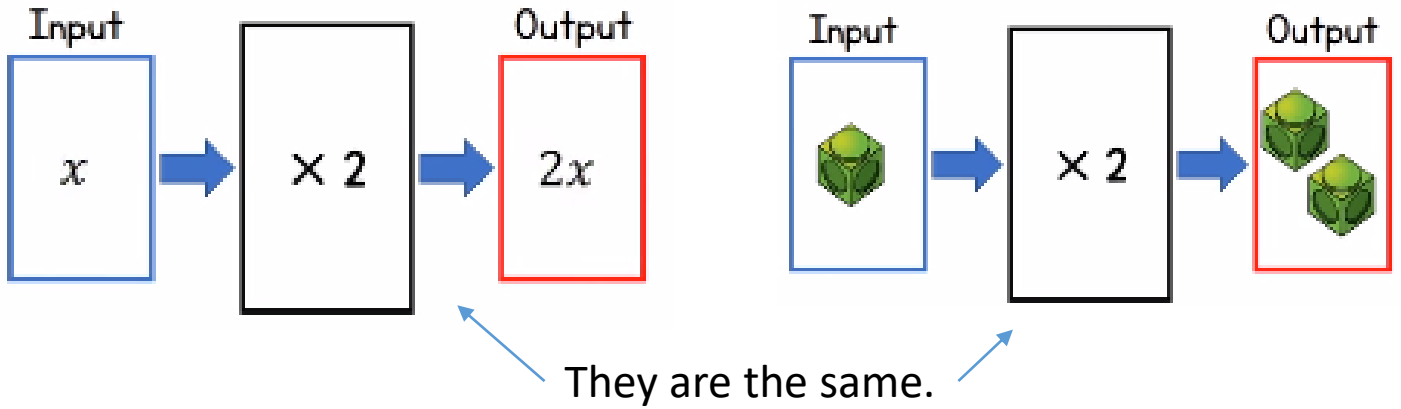
$3x + 3$

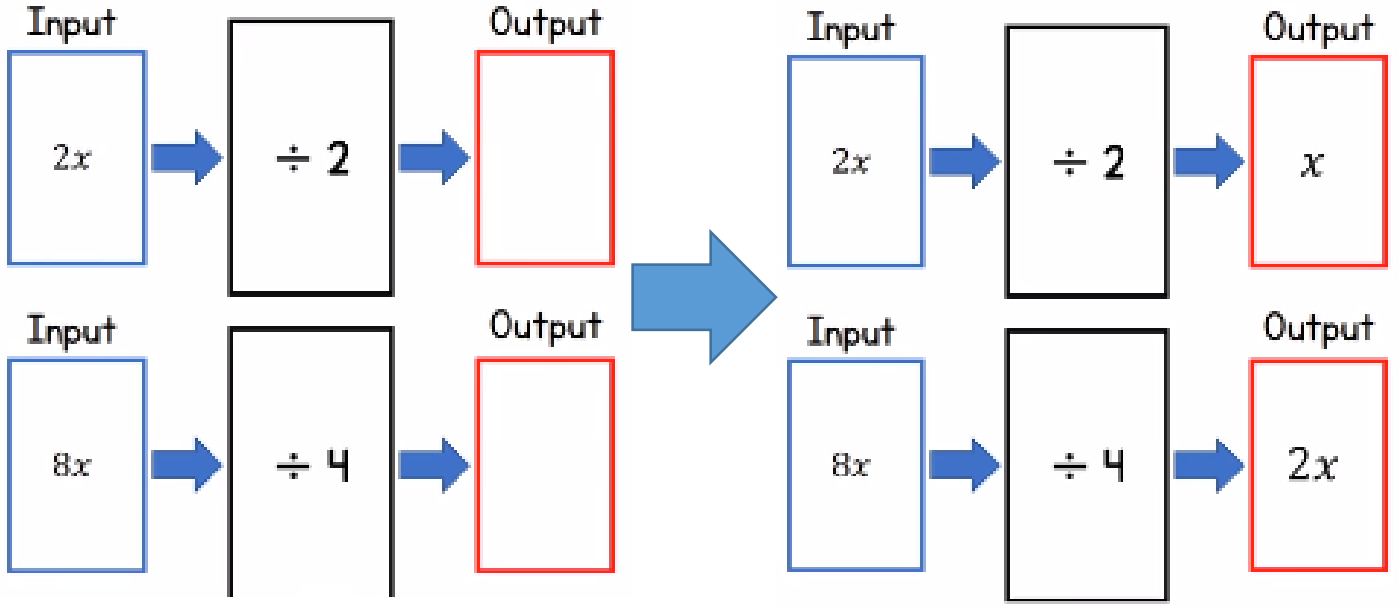
$4 + x$

How could you write these as expressions?

$2x + 3$

$4x + 5$





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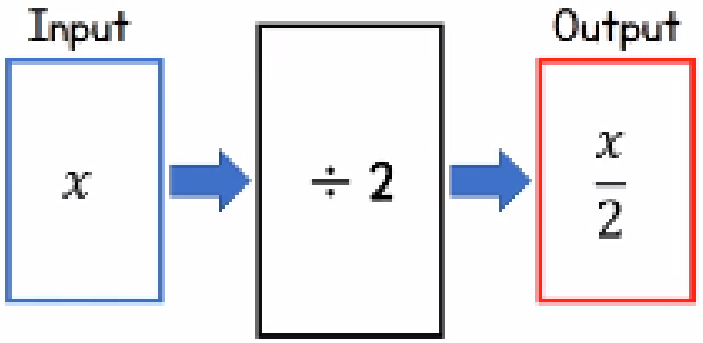
For example…

If we are dividing, we can write it as X out of 2.



$$\frac{y}{4} = y \div 4$$

$$\frac{p}{7} = p \div 7$$

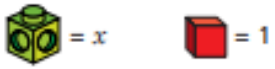
$$\frac{2r}{6} = 2r \div 6$$

Day 2 - Maths Questions

Forming expressions

Maths

1 Tommy uses multilink cubes to represent an unknown number and base ten ones to represent 1

 = x = 1

Write algebraic expressions to describe the sets of cubes.

The first one has been done for you.

a) $2x + 3$

b)

c)

d)

e)

f)

g)

h)

2 Use Tommy's method to represent these expressions.

a) $x + 2$

b) $2x$

c) $3x + 1$

d) $x + 6$

Compare answers with a partner.

3 Use cubes to help you simplify the following expressions.

The first one has been done for you.

a) $2y + 5 + y$

$3y + 5$

b) $3a + 2 + a + a$

c) $6p + 2 - 2p$

d) $m + 4 + 3m - 3$

4 Complete the function machines.

a)

input		output
2	→	6
7	→	11
y	→	

b)

input		output
2	→	4
5	→	10
y	→	

Day 2 - Maths Questions

c)

input	output
6	3
12	9
y	

d)

input	output
30	3
50	5
y	

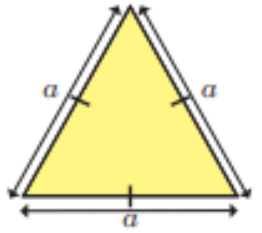
5 Match each statement to the equivalent algebraic expression.

Write the missing statements.

5 more than y	$2y$
y less than 5	$y - 5$
y multiplied by 5	$5 - y$
y divided by 5	$y + 5$
double y	$5y$
	y^2
	$\frac{y}{5}$

6 Write an algebraic expression to represent the perimeter of each shape.

a)



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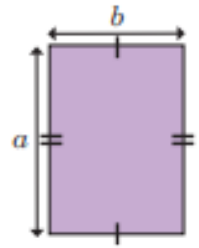
d)



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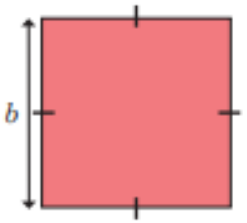
b)



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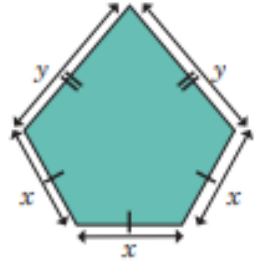
e)



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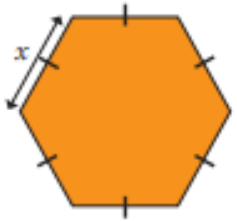
c)



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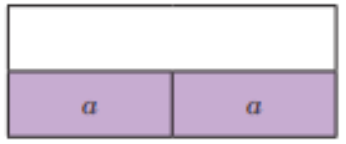
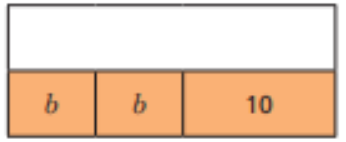
7 Complete the bar models.

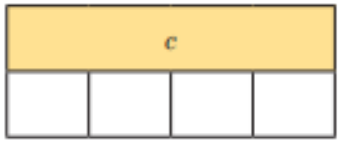
a)



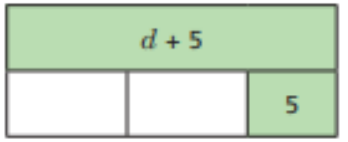
b)



c)



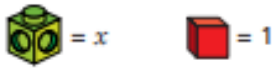
d)



Day 2 - Maths
ANSWERS

Forming expressions

1 Tommy uses multilink cubes to represent an unknown number and base ten ones to represent 1

 = x = 1

Write algebraic expressions to describe the sets of cubes.

The first one has been done for you.

a) $2x + 3$

b) $3x + 5$

c) $3x$

d) $x + 3$

e) $2x + 5$

f) $5x + 2$

g) $2x + 6$

h) $4x + 9$

2 Use Tommy's method to represent these expressions.

a) $x + 2$

b) $2x$

c) $3x + 1$

d) $x + 6$

Compare answers with a partner.

3 Use cubes to help you simplify the following expressions.

The first one has been done for you.

a) $2y + 5 + y$ $3y + 5$

b) $3a + 2 + a + a$ $5a + 2$

c) $6p + 2 - 2p$ $4p + 2$

d) $m + 4 + 3m - 3$ $4m + 1$

4 Complete the function machines.

a)

input		output
2	+4	6
7		11
y		$y+4$

b)

input		output
2	×2	4
5		10
y		$2y$

Day 2 – Maths
ANSWERS

c)

input		output
6	→ −3 →	3
12	→ −3 →	9
y	→ −3 →	$y-3$

d)

input		output
30	→ ÷10 →	3
50	→ ÷10 →	5
y	→ ÷10 →	$\frac{y}{10}$

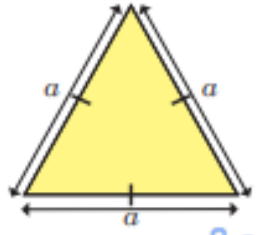
5 Match each statement to the equivalent algebraic expression.

Write the missing statements.

5 more than y	$2y$
y less than 5	$y-5$
y multiplied by 5	$5-y$
y divided by 5	$y+5$
double y	$5y$
5 less than y	y^2
y multiplied by y	$\frac{y}{5}$

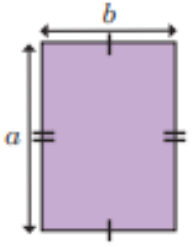
6 Write an algebraic expression to represent the perimeter of each shape.

a)



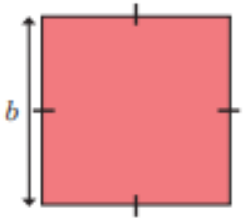
$3a$

d)



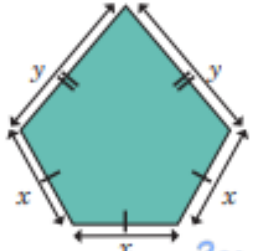
$2a + 2b$

b)



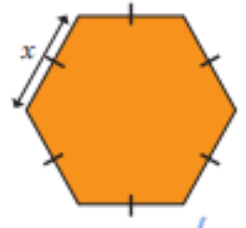
$4b$

e)



$3x + 2y$

c)



$6x$

7 Complete the bar models.

a)

$2a$	
a	a

c)

c			
$\frac{c}{4}$	$\frac{c}{4}$	$\frac{c}{4}$	$\frac{c}{4}$

b)

$2b+10$		
b	b	10

d)

$d+5$		
$\frac{d}{2}$	$\frac{d}{2}$	5

Day 3 - Maths

1. We are working on:

Summer Term - Week 7 (w/c 8th June)

2. Then find the lesson you are on - Lesson 3 - Substitution

3. Watch the video on:

https://vimeo.com/425603939

4. You will need a pencil and paper to help work out the answers

. Watch the video and practice as you go along

(read through the slides practice as you go along)

6. Have a go At the end of the video or slides, answer the questions that are in your pack

Day 3 - Maths

Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425603939

Substitution is like 'swapping something in'.
We do this in football with football players.
Or
In money a **£10** note can be substituted for **2 £5** notes.
They are the same value.

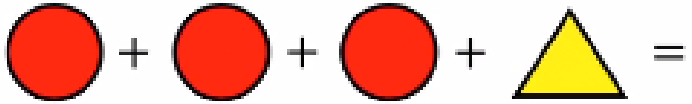
How much is there?

Substitution

50 p + 20 p + 20 p = 90 p

Substitution here is working out the Value of the coin. What it is worth.

What would be the totals of?



What would be the totals of?

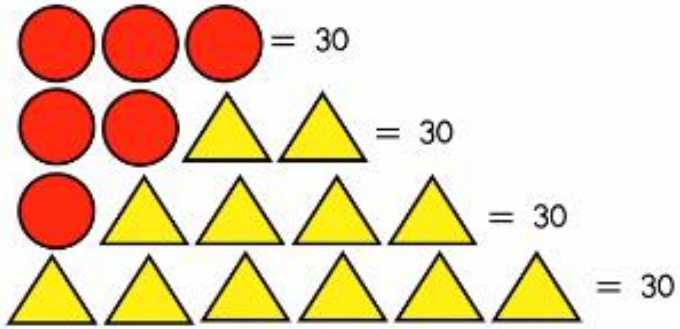
10 + 5 + 5 = 20

10 + 10 + 10 + 5 = 35

Day 3 - Maths

Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425603939

How many different ways could we total 30?



If $x = 10$

$x + 4 =$ ☐ $3x =$ ☐

$\frac{x}{2} =$ ☐ $2x + 1 =$ ☐

If $x = 10$

$10 + 4 = 14$ $(3 \times 10) = 30$

$10 \div 2 = 5$ $2x + 1 = 21$

20

If $t = 5$ $g = 6$

$g - t = 1$ $3t + 4g + 6g + 7t = 110$

$10g + 10t = 110$

$\frac{50}{10} = 5$ $4(g - t) = 4$

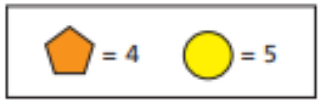
$6 - 5 = 1$

Day 3 - Maths Questions

Substitution

Rose Maths

1



Use the given facts to work out the calculations.

a)

b)

c)

2

Use the given facts to work out the calculations.

a)

b)

c) Create your own calculation that will be equal to 22

3 If $x = 5$, write the values of the expressions in the corresponding grid.

The first one has been done for you.

$3x$	x^2	$2x - 5$
$4x + 2$	$\frac{x}{2}$	$2(x + 1)$
$7x$	$x + 9$	$x - 7$

15		

4 If $a = 10$ and $b = 6$, work out the values of the expressions.

a) $a + b =$ ☐

b) $a - b =$ ☐

c) $2a =$ ☐

d) $2a + b =$ ☐

e) $3a - 17 =$ ☐

f) $2(a - b) =$ ☐

5 If $m = \frac{4}{5}$ and $k = 0.1$, work out the value of $m + 2k$

Day 3 – Maths Questions

6

Mo

It does not matter what p and q are, $p + q$ and $q + p$ will always give the same answer.

Do you agree with Mo? _____

Explain your answer.

_____

_____

_____

7

$m = 7 \quad n = 5$

Write >, < or = to compare the expressions.

a) $2m$ ◯ 10

b) $n - 1$ ◯ 5

c) $2n + m$ ◯ $2m + n$

d) $7n$ ◯ $5m$

8

$a = 10$

Write the expressions in order, starting with the smallest value.

$5a$	$a + 5$	$\frac{a}{5}$	a^2

9

$a = 15$

Write three different algebraic expressions that give a value of 40

_____ _____ _____

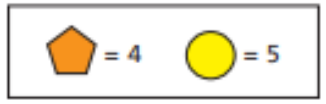
10 Complete the table.

x	$5x$	$5x - 1$
2		
10		
12		
	25	
		34
		99

Day 3 - Maths
ANSWERS

Substitution

1



Use the given facts to work out the calculations.

a) 13

b) 3

c) 23

2

Use the given facts to work out the calculations.

a) 7

b) 60

c) Create your own calculation that will be equal to 22

e.g.

The first one has been done for you.

$3x$	x^2	$2x - 5$
$4x + 2$	$\frac{x}{2}$	$2(x + 1)$
$7x$	$x + 9$	$x - 7$

15	25	5
22	2.5	12
35	14	−2

4 If $a = 10$ and $b = 6$, work out the values of the expressions.

a) $a + b =$ 16

b) $a - b =$ 4

c) $2a =$ 20

d) $2a + b =$ 26

e) $3a - 17 =$ 13

f) $2(a - b) =$ 8

5 If $m = \frac{4}{5}$ and $k = 0.1$, work out the value of $m + 2k$

1

Day 3 - Maths
ANSWERS

6

Mo

It does not matter what p and q are, $p + q$ and $q + p$ will always give the same answer.

Do you agree with Mo? Yes

Explain your answer.

Addition is commutative.

7

$m = 7 \quad n = 5$

Write >, < or = to compare the expressions.

a) $2m$ > 10

b) $n - 1$ < 5

c) $2n + m$ < $2m + n$

d) $7n$ = $5m$

8

$a = 10$

Write the expressions in order, starting with the smallest value.

$5a$	$a + 5$	$\frac{a}{5}$	a^2

$\frac{a}{5}$	$a+5$	$5a$	a^2

9

$a = 15$

Write three different algebraic expressions that give a value of 40

e.g.

$2a + 10$ $\quad$ $3a - 5$ $\quad$ $\frac{8a}{3}$

10 Complete the table.

x	$5x$	$5x - 1$
2	10	9
10	50	49
12	60	59
5	25	24
7	35	34
20	100	99

Day 4 - Maths

1. We are working on:

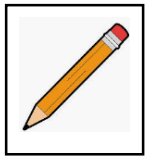
Summer Term - Week 7 (w/c 8th June)

2. Then find the lesson you are on -

Lesson 4 - Solve simple one-step equations

3. Watch the video on:

https://vimeo.com/425605040

4. You will need a pencil  and paper to help work out the answers

5. Watch the video and practice as you go along

(read through the slides practice as you go along)

6. Have a go At the end of the video or slides, answer the questions that are in your pack

Day 4 - Maths

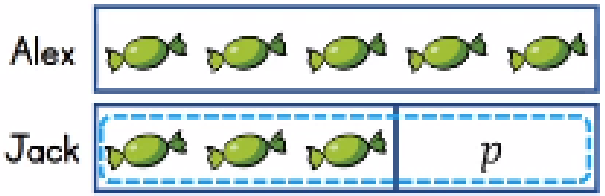
Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425605040

Alex and Jack have the same number of sweets.

This is all of Alex's sweets

This is some of Jack's sweets, the rest are in his pocket.

How many sweets are in Jack's pocket?



$3 + p = 5$

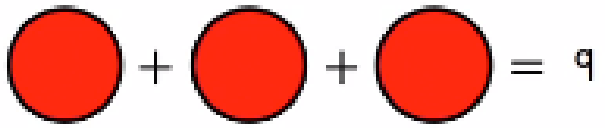
$3 + p = 5$

$5 - p = 3$

$5 - 3 = p$

$2 = p$

What is the value of ?



Lets substitute the 'Circle' For the value '**c**'.

$c + c + c = 9$

$3c = 9$

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

$c = 3$

c	c	c
3	3	3

Find the value of x in each bar model

7	
x	3

$x + 3 = 7$

$7 - 3 = x$

$4 = x$

10		
3	x	2

$3 + x + 2 = 10$

$10 - 3 - 2 = x$

$5 = x$

10		
x	x	2

$2x + 2 = 10$

$2x = 8$

$x = 8 \div 2$

$x = 4$

Day 4 - Maths

Follow these learning slides **OR** watch the video on this link: https://vimeo.com/425605040

Find the value of x in each bar model

15			
x	x	x	3

$3x + 3 = 15$

$15 - 3 = 3x$

$12 = 3x$

$4 = x$

15						
x	x	x	x	x	x	3

$6x + 3 = 15$

$15 - 3 = 6x$

$12 = 6x$

$2 = x$

Solve the equations

$18 - x = 15$

$x = 3$

$6 \times q = 18$

$18 \div q = 6$

$q = 3$

$3t = 27$ (÷3)

$t = 9$ (÷3)

$12 = p - 6$

$p = \square$

$12 = p - 6$

$p = 18$

p	
12	6

$p = 12 + 6$

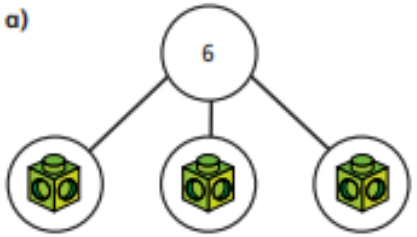
Day 4 - Maths Questions

Solve simple one-step equations

1 Write an equation for each part-whole model.

Work out the value of the multilink cube in each equation.

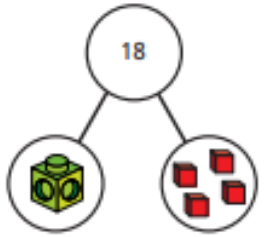
a)



_____

= ☐

b)



_____

= ☐

2 There are some counters under the cup.

There are 10 counters in total.

a) If c is the number of counters under the cup, explain why $c + 6 = 10$

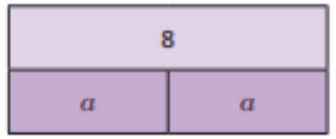
b) Work out the value of c. $c =$ ☐

c) How many counters are under the cup? ☐

3 Write algebraic equations to represent the bar models.

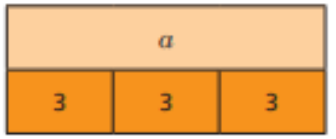
Find the value of a in each one.

a)



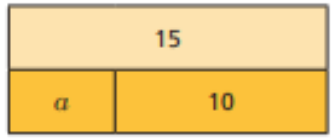
$a =$ ☐

c)



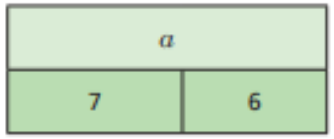
$a =$ ☐

b)



$a =$ ☐

d)



$a =$ ☐

4 Nijah is solving the equation $x - 8 = 20$

$x - 8 = 20$

$x = 20 - 8$

$x = 12$

What mistake has Nijah made?

_____

_____

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Day 4 - Maths Questions

5 Solve the equations.

a) $x + 7 = 20$

$x =$ ☐

b) $10y = 80$

$y =$ ☐

c) $4m = 22$

$m =$ ☐

d) $g - 3 = 15$

$g =$ ☐

e) $32 = t - 5$

$t =$ ☐

f) $\frac{u}{6} = 3$

$u =$ ☐

6 Filip thinks of a number.

He subtracts 5 from his number.

He ends up with 10

Write an algebraic equation to represent Filip's problem.

_____

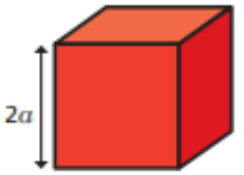
Solve the equation to work out his number.

☐

7 Dexter builds a tower.

Each block is $2a$ high.

He uses 7 blocks.



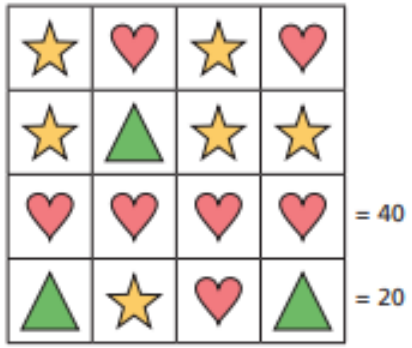
The total height of his tower is 42 cm.

Write an equation to represent the height of Dexter's tower and find the value of a.

$a =$ ☐ cm

8 Work out the value of each shape.

Write the equations that you solved to find the value of each shape.



♥ = ☐ ★ = ☐ ▲ = ☐

Work out the missing total of each row and column.

Compare answers with a partner.

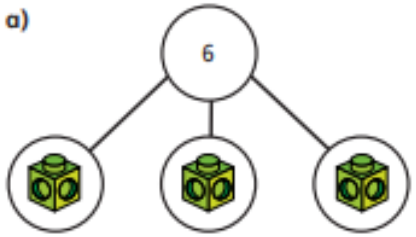
Day 4 - Maths
ANSWERS

Solve simple one-step equations

1 Write an equation for each part-whole model.

Work out the value of the multilink cube in each equation.

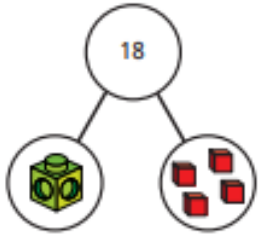
a)



$3c = 6$

= 2

b)



$x + 4 = 18$

= 14

2 There are some counters under the cup.

There are 10 counters in total.

a) If c is the number of counters under the cup, explain why $c + 6 = 10$

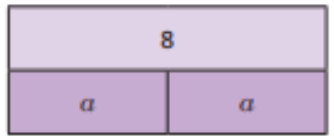
b) Work out the value of c. $c =$ 4

c) How many counters are under the cup? 4

3 Write algebraic equations to represent the bar models.

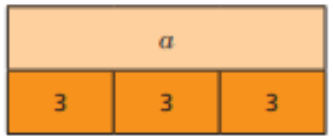
Find the value of a in each one.

a)



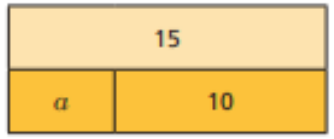
$a =$ 4

c)



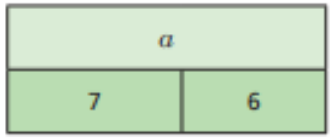
$a =$ 9

b)



$a =$ 5

d)



$a =$ 13

4 Nijah is solving the equation $x - 8 = 20$

$x - 8 = 20$
$x = 20 - 8$
$x = 12$

What mistake has Nijah made?

She should have added 8 to 20

$x = 28$

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Day 4 - Maths
ANSWERS

5 Solve the equations.

a) $x + 7 = 20$

$x =$ 13

b) $10y = 80$

$y =$ 8

c) $4m = 22$

$m =$ 5·5

d) $g - 3 = 15$

$g =$ 18

e) $32 = t - 5$

$t =$ 37

f) $\frac{u}{6} = 3$

$u =$ 18

6 Filip thinks of a number.

He subtracts 5 from his number.

He ends up with 10

Write an algebraic equation to represent Filip's problem.

$x - 5 = 10$

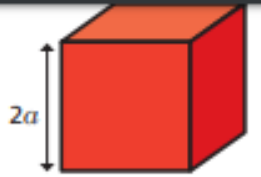
Solve the equation to work out his number.

15

7 Dexter builds a tower.

Each block is $2a$ high.

He uses 7 blocks.



The total height of his tower is 42 cm.

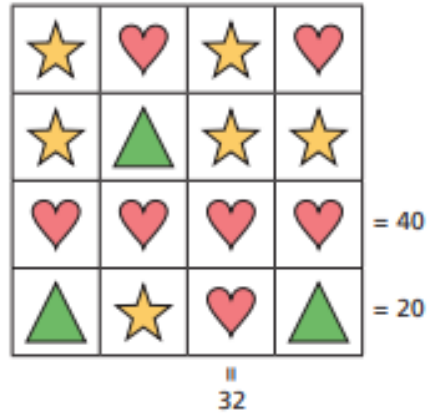
Write an equation to represent the height of Dexter's tower and find the value of a.

$14a = 42$

$a =$ 3 cm

8 Work out the value of each shape.

Write the equations that you solved to find the value of each shape.



♥ = 10 ★ = 6 ▲ = 2

Work out the missing total of each row and column.

Compare answers with a partner.

Day 5 - Maths

1. Log onto Sumdog or TT Rock Stars or download the app

If you have lost your log in details please e mail your class teacher or ask for them when they ring next.