Maths for week beginning 18th January

Please complete the daily work and send a copy/picture to your teacher.

5L Miss Langoo at elangoo@kingsavenue.lambeth.sch.uk

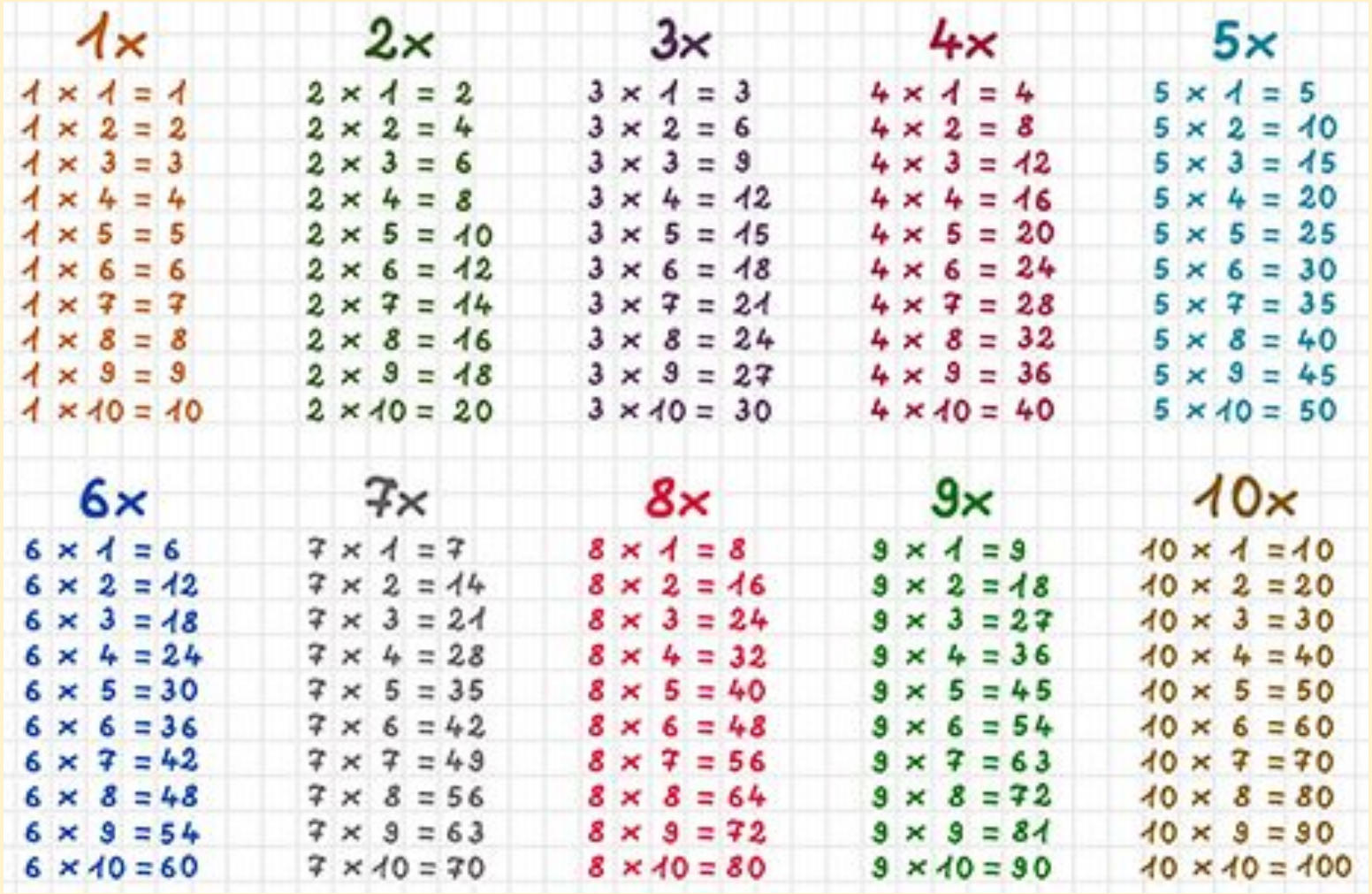
4/5/W Mrs Williams (formally Duke) at jduke@kingsavenue.lambeth.sch.uk

Answers are now at the end of the lesson. Please use these after you have completed the work.

If you are struggling with any of the questions, please email your teacher and they will help you. If very difficult, please inform your teacher and it will be addressed in the weekly zooms.

Monday 18th January 2020

LO: To divide with remainders using short division


1x
1 × 1 = 1
1 × 2 = 2
1 × 3 = 3
1 × 4 = 4
1 × 5 = 5
1 × 6 = 6
1 × 7 = 7
1 × 8 = 8
1 × 9 = 9
1 × 10 = 10
2x
2 × 1 = 2
2 × 2 = 4
2 × 3 = 6
2 × 4 = 8
2 × 5 = 10
2 × 6 = 12
2 × 7 = 14
2 × 8 = 16
2 × 9 = 18
2 × 10 = 20
3x
3 × 1 = 3
3 × 2 = 6
3 × 3 = 9
3 × 4 = 12
3 × 5 = 15
3 × 6 = 18
3 × 7 = 21
3 × 8 = 24
3 × 9 = 27
3 × 10 = 30
4x
4 × 1 = 4
4 × 2 = 8
4 × 3 = 12
4 × 4 = 16
4 × 5 = 20
4 × 6 = 24
4 × 7 = 28
4 × 8 = 32
4 × 9 = 36
4 × 10 = 40
5x
5 × 1 = 5
5 × 2 = 10
5 × 3 = 15
5 × 4 = 20
5 × 5 = 25
5 × 6 = 30
5 × 7 = 35
5 × 8 = 40
5 × 9 = 45
5 × 10 = 50
6x
6 × 1 = 6
6 × 2 = 12
6 × 3 = 18
6 × 4 = 24
6 × 5 = 30
6 × 6 = 36
6 × 7 = 42
6 × 8 = 48
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6 × 10 = 60
7x
7 × 1 = 7
7 × 2 = 14
7 × 3 = 21
7 × 4 = 28
7 × 5 = 35
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7 × 8 = 56
7 × 9 = 63
7 × 10 = 70
8x
8 × 1 = 8
8 × 2 = 16
8 × 3 = 24
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8 × 7 = 56
8 × 8 = 64
8 × 9 = 72
8 × 10 = 80
9x
9 × 1 = 9
9 × 2 = 18
9 × 3 = 27
9 × 4 = 36
9 × 5 = 45
9 × 6 = 54
9 × 7 = 63
9 × 8 = 72
9 × 9 = 81
9 × 10 = 90
10x
10 × 1 = 10
10 × 2 = 20
10 × 3 = 30
10 × 4 = 40
10 × 5 = 50
10 × 6 = 60
10 × 7 = 70
10 × 8 = 80
10 × 9 = 90
10 × 10 = 100

January

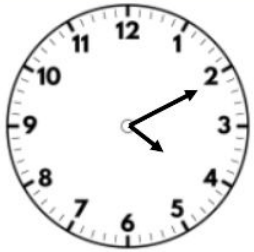
12 Times tables

12 x 0	=	0
12 x 1	=	12
12 x 2	=	24
12 x 3	=	36
12 x 4	=	48
12 x 5	=	60
12 x 6	=	72
12 x 7	=	84
12 x 8	=	96
12 x 9	=	108
12 x 10	=	120
12 x 11	=	132
12 x 12	=	144

Arithmetic

1) Use the diagram to work out 15 × 19

×	10	5
10		
9		



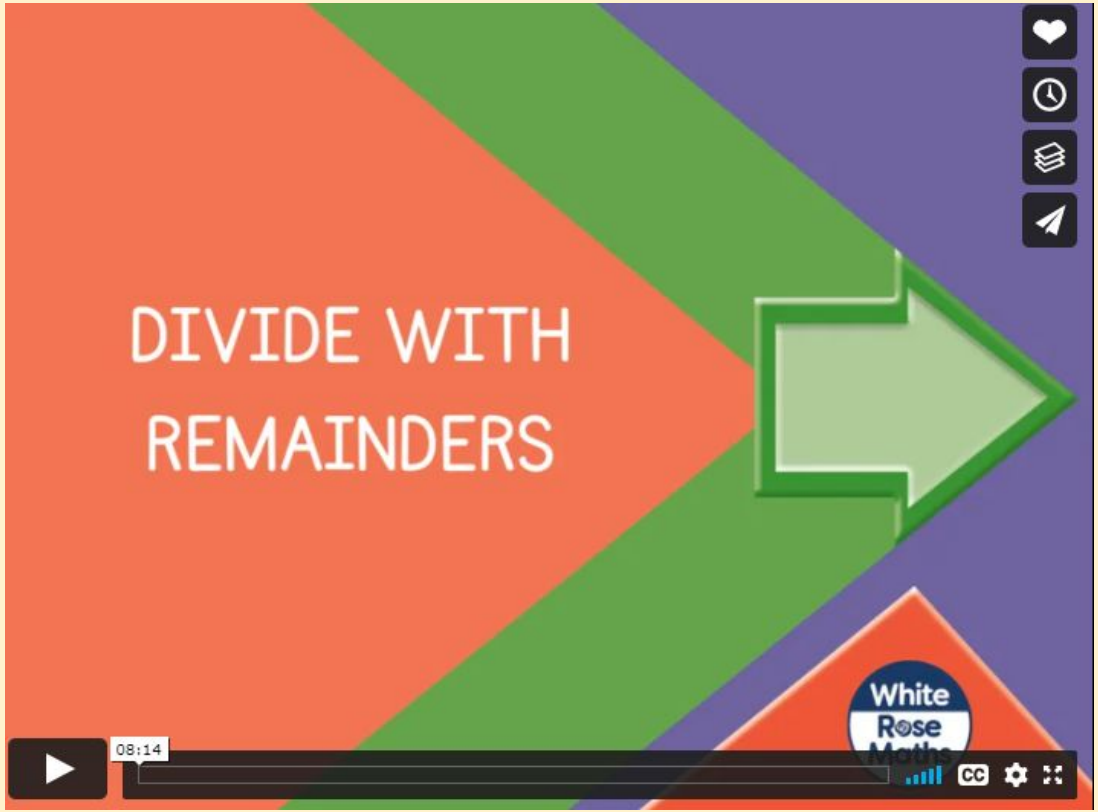
2) Multiply 32 by 5

3) What is the perimeter of a rectangle that has length 8 cm and width 3 cm?

4) What is the value of 6 in the number 16,412?

White Rose

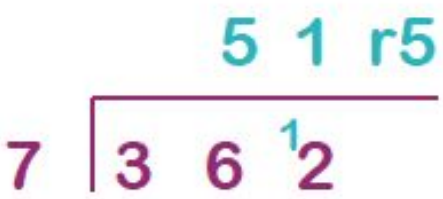
Please watch the below clip for support with this lesson
https://vimeo.com/492054148



Here's a step-by-step guide to the bus stop method:

Strategy

$362 \div 7 =$



$362 \div 7 = 51\ r5$

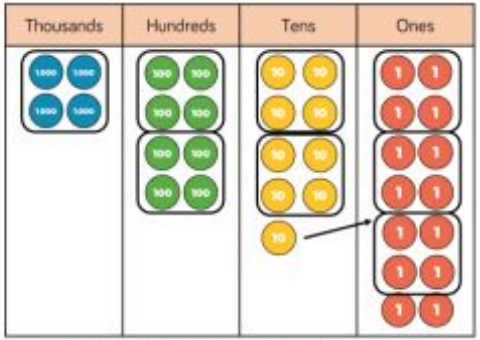
- I start by thinking about whether 7 will go into 3.
- It doesn't, so I think about whether 7 will go into 36. It goes 5 times to make 35. I put the 5 over the 6.
- There is a remainder of 1, so this 1 goes next to the 2 to make 12.
- I know that 7 goes into 12 once and there is a remainder of 5, so I write 1 over the 2 and put 'R 5' at the end.

Task 1

Give this a try

Check your answers with a calculator

Here is a method to solve 4,894 divided by 4 using place value counters and short division.



	1	2	2	3		
4	4	8	9	$^{1}4$		r2

Use this method to calculate:

6,613 ÷ 5 2,471 ÷ 3 9,363 ÷ 4

Mathematical Talk

If we can't make a group in this column, what do we do?

What happens if we can't group the ones equally?

In this number story, what does the remainder mean?

When would we round the remainder up or down?

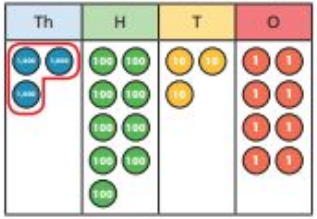
In which context would we just focus on the remainder?

Muffins are packed in trays of 6 in a factory.
In one day, the factory makes 5,623 muffins.
How many trays do they need?
How many trays will be full?
Why are your answers different?

Task 2

1 **a)** Circle the groups of 3 to help complete the sentences and calculation.

The first step has been done for you.



			1			
	3	3	9	3	8	

There is [1] group of 3 thousands.

There are [ ] groups of 3 hundreds.

There is [ ] group of 3 tens.

There are [ ] groups of 3 ones.

There are [ ] ones left over.

3,938 ÷ 3 = [ ] remainder [ ]

b) Use place value counters to work out 8,407 ÷ 4

Th	H	T	O

	4	8	4	0	7	

8,407 ÷ 4 = [ ] remainder [ ]

2 **a)** Complete the divisions.

Use place value counters to help you.

	3	7	5	9	5	

	4	8	5	6	7	

	5	6	5	6	2	

	3	3	9	3	5	

b) Write <, > or = to complete the statements.

7,595 ÷ 3 ◯ 8,567 ÷ 4

6,562 ÷ 5 ◯ 3,935 ÷ 3

Task 3

3 Write the calculations in the correct column of the table.

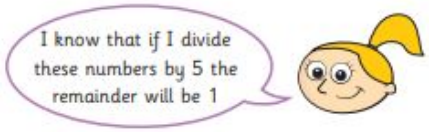
5,066 ÷ 4	9,513 ÷ 4	1,234 ÷ 4
6,562 ÷ 4	6,563 ÷ 4	9,515 ÷ 4

Remainder of 1	Remainder of 2	Remainder of 3	Remainder of 4

Are any columns empty? Talk to a partner about why this has happened.

4

7,816	7,861	6,781	1,786



Is Eva correct? _____

How do you know?

5 There are 459 children in a school.

They are sitting at tables in groups of 7

Do you agree with Mo? _____

Explain your answer.

6 Bags of crisps are put into multipacks of 6

The multipacks are then packed into boxes of 8

Yesterday, 6,500 bags of crisps were packed.

How many boxes of crisps were packed?

7

2	3	4	5	
				÷

a) How many ways can you complete the calculation using all the digit cards so that there is a remainder of 1?

b) What do you notice?

8 Dora is thinking of a number between 500 and 600

When she divides it by a 1-digit number it has a remainder of 4

What could Dora's number be?

Reasoning and Problem Solving

Task 4

I am thinking of a 3-digit number.

When it is divided by 9, the remainder is 3

When it is divided by 2, the remainder is 1

When it is divided by 5, the remainder is 4

What is my number?

Always, Sometimes, Never?

A three-digit number made of consecutive descending digits divided by the next descending digit always has a remainder of 1

$765 \div 4 = 191$ remainder 1

How many possible examples can you find?

Arithmetic Answers

1) Use the diagram to work out 15 × 19

×	10	5
10		
9		

285

2) Multiply 32 by 5 160

3) What is the perimeter of a rectangle that has length 8 cm and width 3 cm? 22 cm

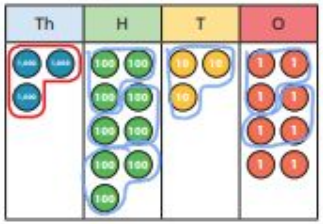
4) What is the value of 6 in the number 16,412? 6,000

White

Task 2 Answers

1 **a)** Circle the groups of 3 to help complete the sentences and calculation.

The first step has been done for you.



		1	3	1	2	r2
	3	3	9	3	8	

There is [1] group of 3 thousands.

There are [3] groups of 3 hundreds.

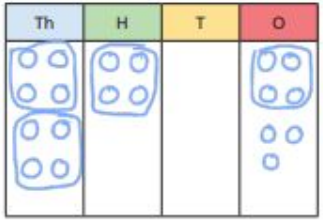
There is [1] group of 3 tens.

There are [2] groups of 3 ones.

There are [2] ones left over.

3,938 ÷ 3 = [1,312] remainder [2]

b) Use place value counters to work out 8,407 ÷ 4



		2	1	0	1 r3
4	8	4	0	7	

8,407 ÷ 4 = [2,101] remainder [3]

2 **a)** Complete the divisions.

Use place value counters to help you.

		2	5	3	1	r2
3	7	1 5	9	5		

		2	1	4	1	r3
4	8	5	1 6	7		

		1	3	1	2	r2
5	6	1 5	6	1 2		

		1	3	1	1	r2
3	3	9	3	5		

b) Write <, > or = to complete the statements.

7,595 ÷ 3 [>] 8,567 ÷ 4

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Task 3 Answers

3 Write the calculations in the correct column of the table.

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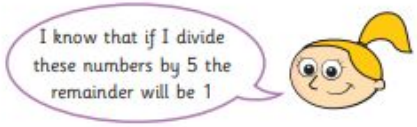
Remainder of 1	Remainder of 2	Remainder of 3	Remainder of 4
9,513 ÷ 4	5066 ÷ 4 6562 ÷ 4 1,234 ÷ 4	6563 ÷ 4 9,515 ÷ 4	

Are any columns empty? Talk to a partner about why this has happened.

4

7,816	7,861	6,781	1,786



Is Eva correct? Yes

How do you know?

5 There are 459 children in a school.

They are sitting at tables in groups of 7

Do you agree with Mo? NO

Explain your answer.

6 Bags of crisps are put into multipacks of 6

The multipacks are then packed into boxes of 8

Yesterday, 6,500 bags of crisps were packed.

How many boxes of crisps were packed?

135

7

2	3	4	5				÷	

a) How many ways can you complete the calculation using all the digit cards so that there is a remainder of 1?

Eg. 325 ÷ 4 = 81 r 1

b) What do you notice?

8 Dora is thinking of a number between 500 and 600

When she divides it by a 1-digit number it has a remainder of 4

What could Dora's number be?

Reasoning and Problem Solving

Task 4 ANSWERS

I am thinking of a 3-digit number.

When it is divided by 9, the remainder is 3

When it is divided by 2, the remainder is 1

When it is divided by 5, the remainder is 4

What is my number?

Possible answers:

129	219
309	399
489	579
669	759
849	939

Encourage children to think about the properties of numbers that work for each individual statement. This will help decide the best starting point.

Always, Sometimes, Never?

A three-digit number made of consecutive descending digits divided by the next descending digit always has a remainder of 1

$765 \div 4 = 191$ remainder 1

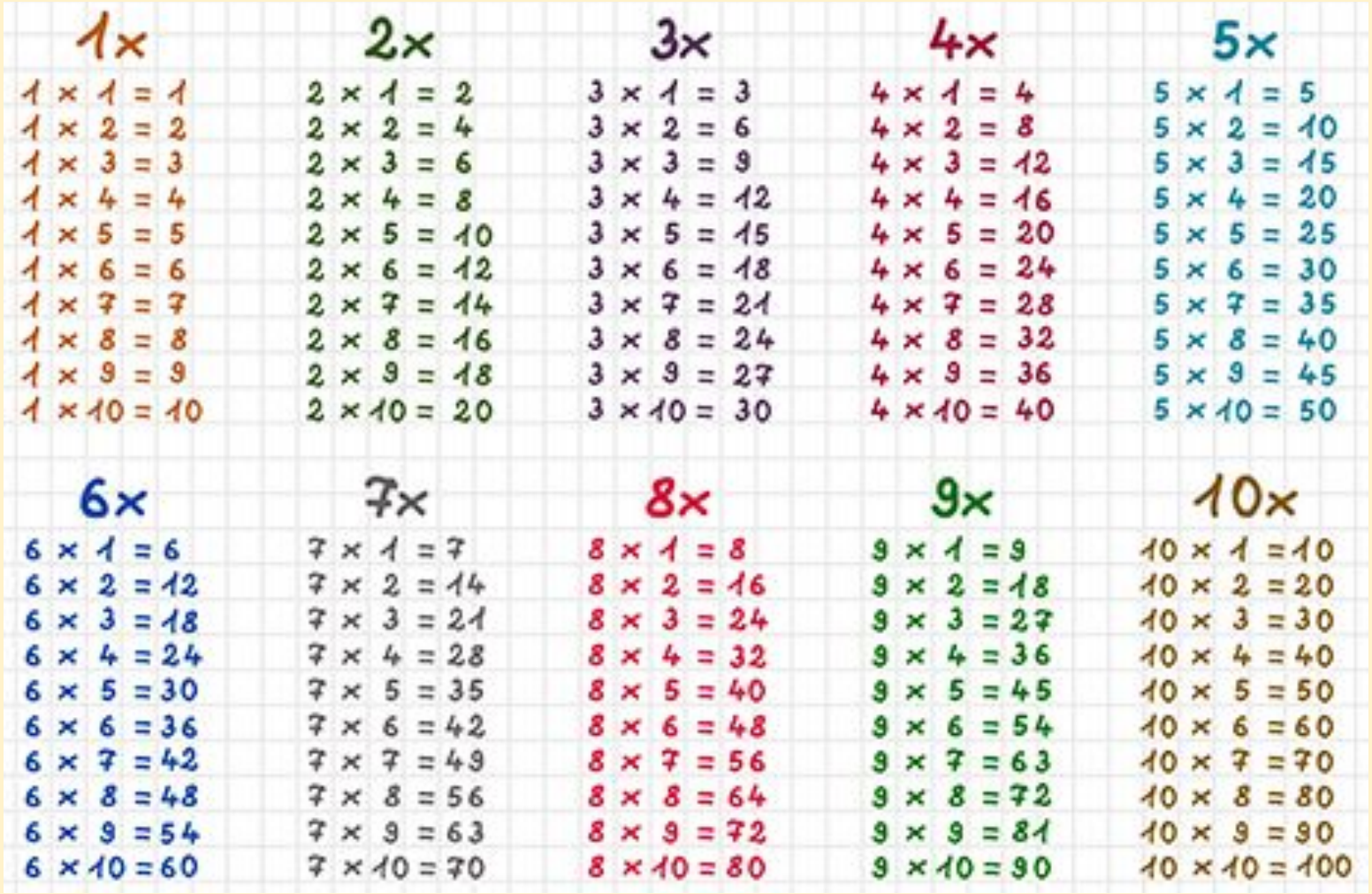
How many possible examples can you find?

Sometimes

Possible answers:

$432 \div 1 = 432$ r 0
$543 \div 2 = 271$ r 1
$654 \div 3 = 218$ r 0
$765 \div 4 = 191$ r 1
$876 \div 5 = 175$ r 1
$987 \div 6 = 164$ r 3

Tuesday 19th January 2020
LO: To understand fractions (RECAP)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4 × 6 = 24
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4 × 9 = 36
4 × 10 = 40
5x
5 × 1 = 5
5 × 2 = 10
5 × 3 = 15
5 × 4 = 20
5 × 5 = 25
5 × 6 = 30
5 × 7 = 35
5 × 8 = 40
5 × 9 = 45
5 × 10 = 50
6x
6 × 1 = 6
6 × 2 = 12
6 × 3 = 18
6 × 4 = 24
6 × 5 = 30
6 × 6 = 36
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January

12 Times tables

12 x 0	=	0
12 x 1	=	12
12 x 2	=	24
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12 x 4	=	48
12 x 5	=	60
12 x 6	=	72
12 x 7	=	84
12 x 8	=	96
12 x 9	=	108
12 x 10	=	120
12 x 11	=	132
12 x 12	=	144

Arithmetic

hback 4

Year 5 | Week 2 | Day 2

1) Work out 24×13

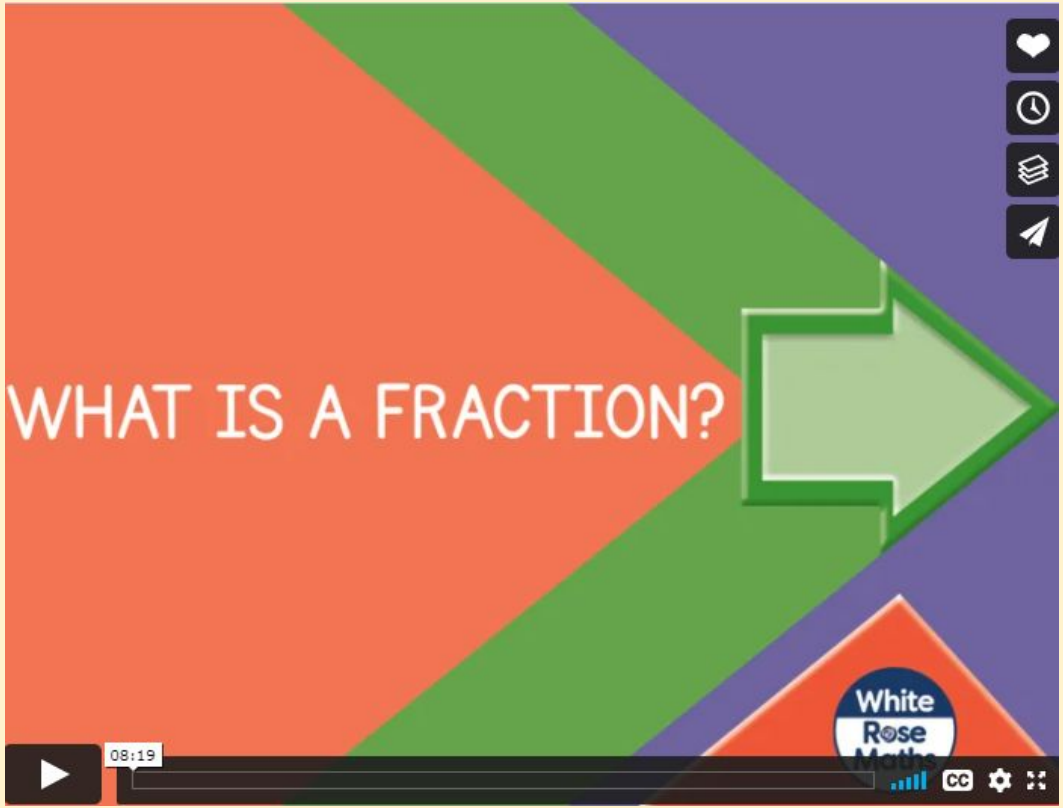
2) A bus carries 46 passengers.
There are 3 full buses.
How many passengers in total?

3) What is $150 \div 3$?

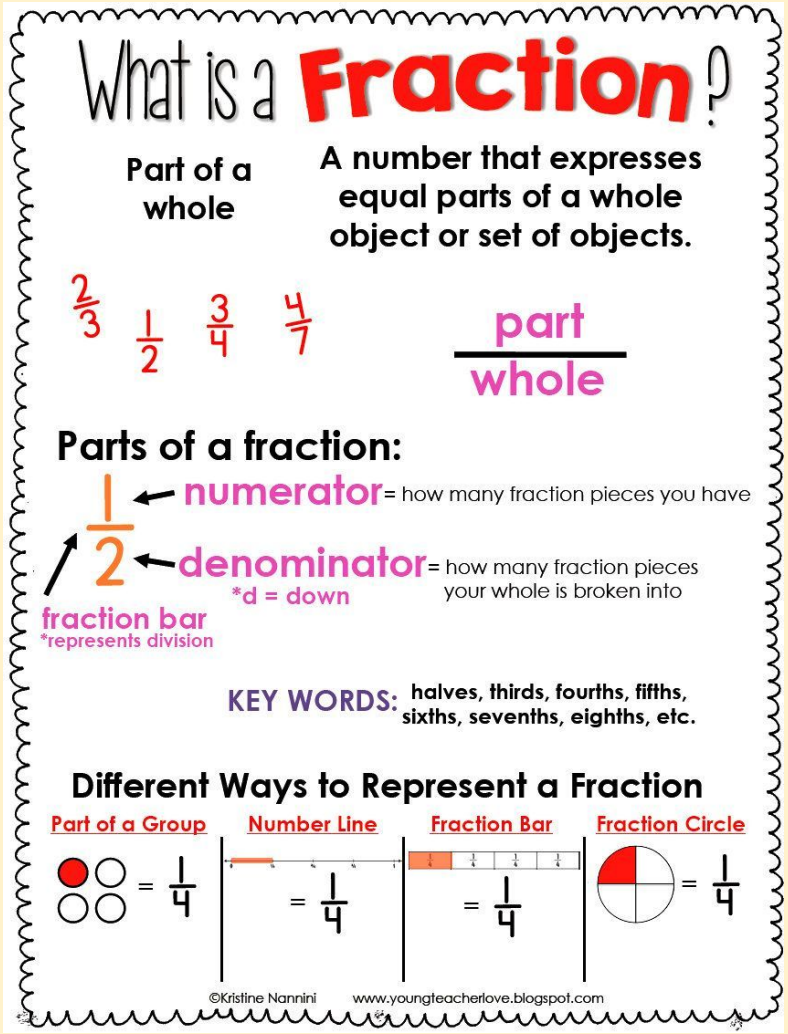
4) What is $1{,}500 \div 3$?

White Rose Maths

Please watch video to support lesson
https://vimeo.com/498327271



Strategy


What is a Fraction?
Part of a whole
A number that expresses equal parts of a whole object or set of objects.
2/3 1/2 3/4 4/7
part / whole
Parts of a fraction:
1/2
numerator = how many fraction pieces you have
denominator = how many fraction pieces your whole is broken into
*d = down
fraction bar
*represents division
KEY WORDS: halves, thirds, fourths, fifths, sixths, sevenths, eighths, etc.
Different Ways to Represent a Fraction
Part of a Group
Number Line
Fraction Bar
Fraction Circle
= 1/4
= 1/4
= 1/4
= 1/4
©Kristine Nannini
www.youngteacherlove.blogspot.com

Task 1

Here are 9 cards.
Sort the cards into different groups.
Can you explain how you made your decision?
Can you sort the cards in a different way?

$\frac{3}{5}$		$\frac{3}{4}$
Three fifths		
		

Mathematical Talk

How can we sort the fraction cards?
What fraction does each one represent?
Could some cards represent more than one fraction?
Is $\frac{1.5}{3}$ an example of a non-unit fraction? Why?
Using Cuisenaire, how many white rods are equal to an orange rod? How does this help us work out what fraction the white rod represents?

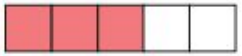
Task 2

White Rose Maths

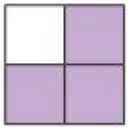
1 What fraction of each shape is shaded?

a)

b)



c)



d)

2 Shade each diagram to represent the fractions.

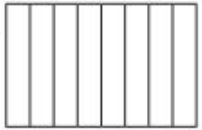
a)

$\frac{1}{6}$

b)

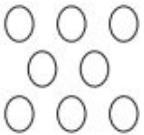
$\frac{5}{6}$

c)



$\frac{5}{8}$

d)



$\frac{5}{8}$

3 Circle the unit fractions.

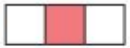
$\frac{1}{3}$ $\frac{1}{5}$ $\frac{3}{5}$ $\frac{1}{8}$ $\frac{2}{3}$ $\frac{10}{11}$

How do you know which are unit fractions?

4 a) Tick the shapes with one third shaded.

A

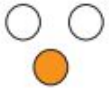
D



F

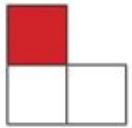
B

E



G

C



b) Complete the sentences to describe the shapes with one third shaded.

There are ☐ equal parts altogether.

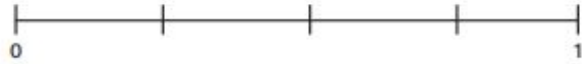
☐ out of ☐ equal parts is shaded.

☐ of the shape is shaded.

Task 3

5 Draw an arrow to show the position of the fraction on the number line.

a) $\frac{1}{4}$



b) $\frac{3}{5}$

c) $\frac{1}{2}$

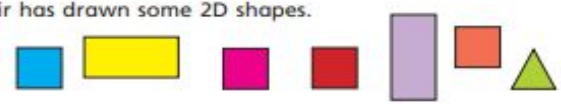
d) $\frac{1}{3}$

6 Draw an arrow to show the position of $\frac{5}{5}$ on the number line.

What do you notice?

7 Draw four different representations of $\frac{3}{4}$

8 Amir has drawn some 2D shapes.



a) What fraction of the shapes are triangles?

b) What fraction of the shapes are squares?

c) What fraction of the shapes have four sides?

d) Draw 2D shapes to match the description.

$\frac{1}{5}$ are squares, $\frac{2}{5}$ are triangles, $\frac{3}{5}$ have more than 3 sides.

Compare shapes with a partner.

What is the same about your shapes? Is anything different?

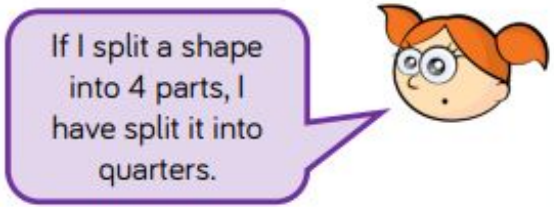
Task 4

Reasoning and Problem Solving

R

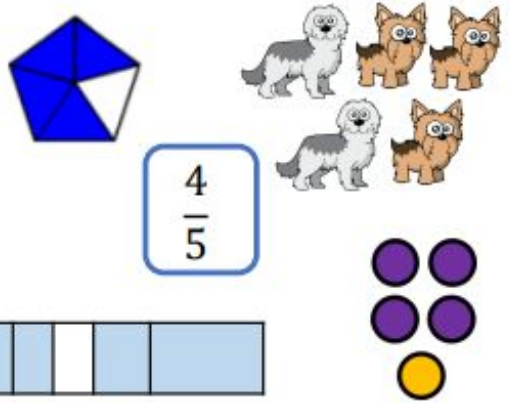
Always, Sometimes, Never?

Alex says,



Explain your answer.

Which representations of $\frac{4}{5}$ are incorrect?



Explain how you know.

Arithmetic answers

1) Work out 24 × 13 312

2) A bus carries 46 passengers.
There are 3 full buses. 138
How many passengers in total?

3) What is 150 ÷ 3? 50

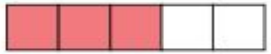
4) What is 1,500 ÷ 3? 500

Task 2 answers

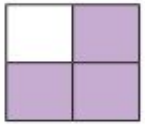
1 What fraction of each shape is shaded?

a) 

$\frac{1}{5}$

b) 

$\frac{3}{5}$

c) 

$\frac{3}{4}$

d) 

$\frac{4}{7}$

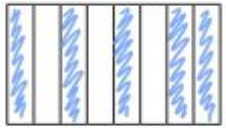
2 Shade each diagram to represent the fractions.

a) 

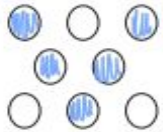
$\frac{1}{6}$

b) 

$\frac{5}{6}$

c) 

$\frac{5}{8}$

d) 

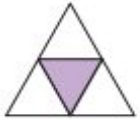
$\frac{5}{8}$

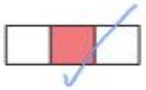
3 Circle the unit fractions.

$\frac{1}{3}$ $\frac{1}{5}$ $\frac{3}{5}$ $\frac{1}{8}$ $\frac{2}{3}$ $\frac{10}{11}$

How do you know which are unit fractions?

4 a) Tick the shapes with one third shaded.

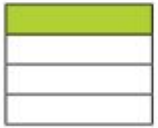
A 

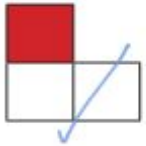
D 

F 

B 

E 

G 

C 

b) Complete the sentences to describe the shapes with one third shaded.

There are 3 equal parts altogether.

1 out of 3 equal parts is shaded.

$\frac{1}{3}$ of the shape is shaded.

Task 3 answers

raction on the

a) $\frac{1}{4}$

b) $\frac{3}{5}$

c) $\frac{1}{2}$

d) $\frac{1}{3}$

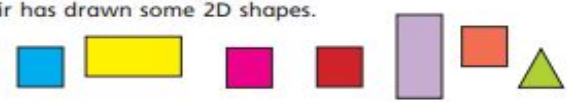
6 Draw an arrow to show the position of $\frac{5}{5}$ on the number line.

What do you notice?

7 Draw four different representations of $\frac{3}{4}$

Various answers e.g.

8 Amir has drawn some 2D shapes.



a) What fraction of the shapes are triangles? $\frac{1}{7}$

b) What fraction of the shapes are squares? $\frac{2}{7}$

c) What fraction of the shapes have four sides? $\frac{4}{7}$

d) Draw 2D shapes to match the description.

$\frac{1}{5}$ are squares, $\frac{2}{5}$ are triangles, $\frac{3}{5}$ have more than 3 sides.

Compare shapes with a partner.

What is the same about your shapes? Is anything different?

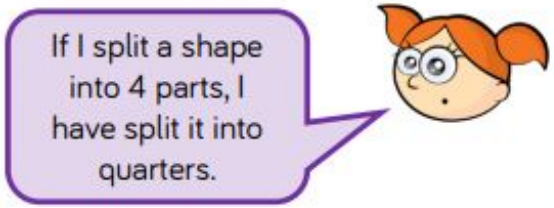
Reasoning and Problem Solving

Task 4 answers

R

Always, Sometimes, Never?

Alex says,

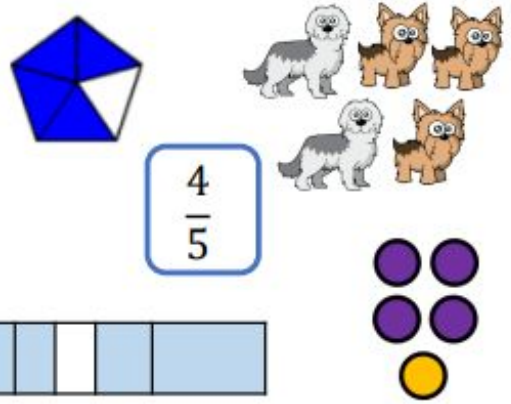


Explain your answer.

Sometimes

If the shape is not split equally, it will not be in quarters.

Which representations of $\frac{4}{5}$ are incorrect?

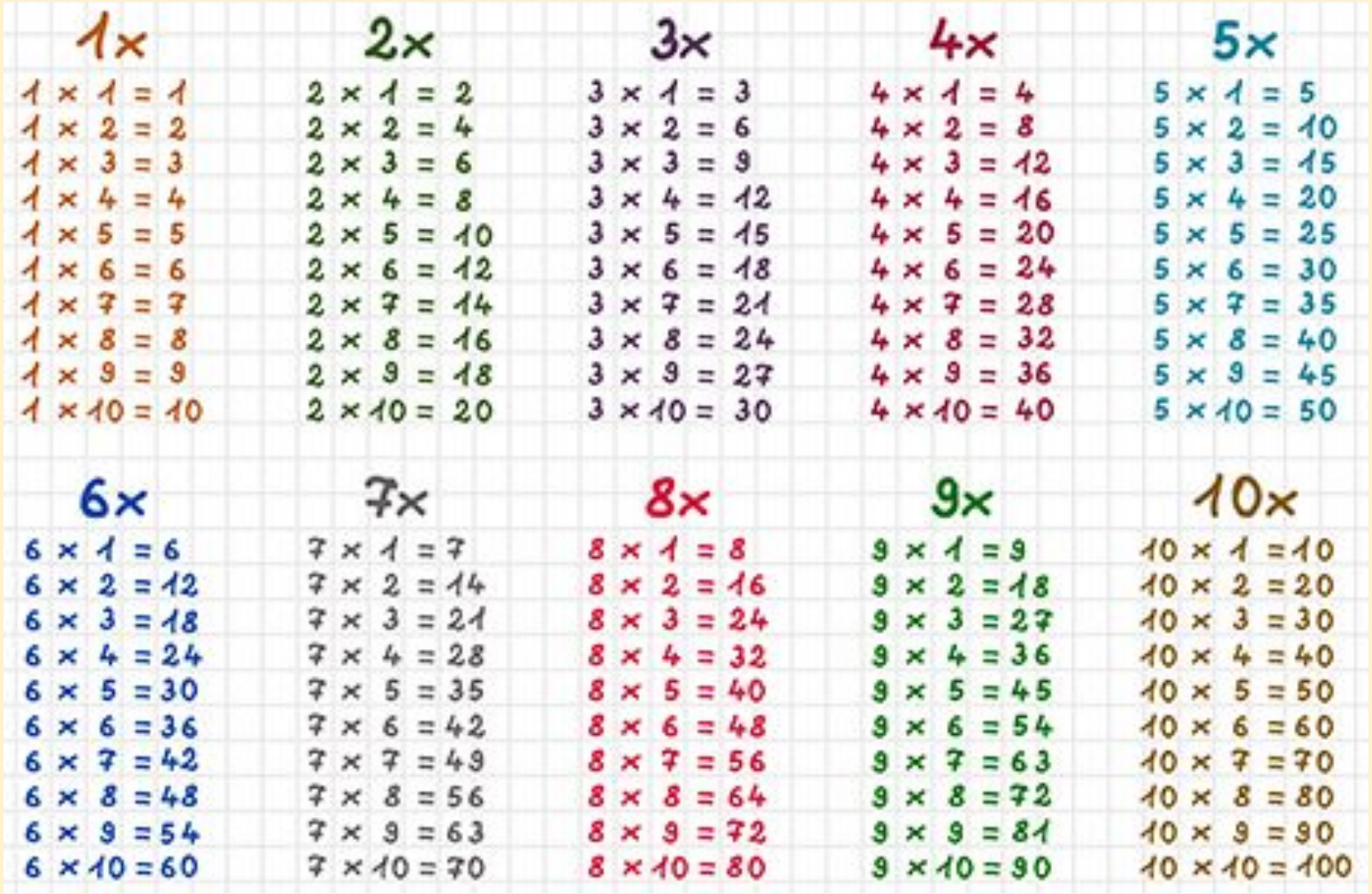


Explain how you know.

The image of the dogs could represent $\frac{2}{5}$ or $\frac{3}{5}$

The bar model is not divided into equal parts so this does not represent $\frac{4}{5}$

Wednesday 20th January 2020
LO: Understanding equivalent fractions (recap)


1x
1 × 1 = 1
1 × 2 = 2
1 × 3 = 3
1 × 4 = 4
1 × 5 = 5
1 × 6 = 6
1 × 7 = 7
1 × 8 = 8
1 × 9 = 9
1 × 10 = 10
2x
2 × 1 = 2
2 × 2 = 4
2 × 3 = 6
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9 × 2 = 18
9 × 3 = 27
9 × 4 = 36
9 × 5 = 45
9 × 6 = 54
9 × 7 = 63
9 × 8 = 72
9 × 9 = 81
9 × 10 = 90
10x
10 × 1 = 10
10 × 2 = 20
10 × 3 = 30
10 × 4 = 40
10 × 5 = 50
10 × 6 = 60
10 × 7 = 70
10 × 8 = 80
10 × 9 = 90
10 × 10 = 100

January

12 Times tables

12 x 0	=	0
12 x 1	=	12
12 x 2	=	24
12 x 3	=	36
12 x 4	=	48
12 x 5	=	60
12 x 6	=	72
12 x 7	=	84
12 x 8	=	96
12 x 9	=	108
12 x 10	=	120
12 x 11	=	132
12 x 12	=	144

Arithmetic

hback 4

Year 5 | Week 2 | Day 3

1) Multiply 34 by 27

2) A book costs £19
How much do 9 books cost?

3) Complete the sentence.
8 is a factor of .....

4) What is 48 ÷ 3?

White Rose Maths

Please watch video for support with lesson
https://vimeo.com/498327458

Strategy

Equivalent Fractions *have the same value, even though they may look different.*

These fractions are really the same:

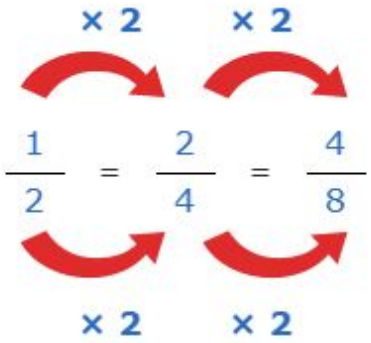
$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

Why are they the same? Because when you multiply or divide **both** the top and bottom by the same number, the fraction keeps it's value.

The rule to remember is:

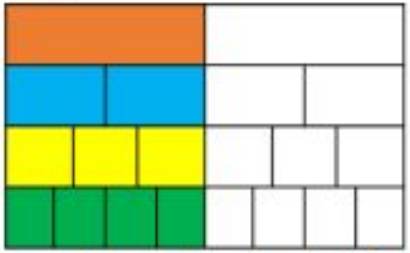
"Change the bottom using multiply or divide,
And the same to the top must be applied"

Here is why those fractions are really the same:



TASK 1

How many fractions that are equivalent to one half can you see on the fraction wall?



Draw extra rows to show other equivalent fractions.

Mathematical Talk

Look at the equivalent fractions you have found.
What relationship can you see between the numerators and denominators? Are there any patterns?

Can a fraction have more than one equivalent fraction?

Use two strips of equal sized paper.
Fold one strip into quarters and the other into eighths.
Place the quarters on top of the eighths and lift up one quarter; how many eighths can you see?
How many eighths are equivalent to one quarter?
Which other equivalent fractions can you find?

TASK 2

1)

1 Shade the bar models to represent the equivalent fractions.

a)

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

$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

$\frac{1}{2} = \frac{3}{6}$

b)

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

$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

$\frac{1}{2} = \frac{5}{10}$

c)

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

$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

$\frac{4}{5} = \frac{8}{10}$

d)

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

$\frac{6}{8} = \frac{3}{4}$

2 Use the fraction wall to complete the equivalent fractions.

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

a) $\frac{1}{2} = \frac{\square}{4}$

b) $\frac{1}{2} = \frac{\square}{8}$

c) $\frac{2}{4} = \frac{4}{\square}$

d) $\frac{2}{8} = \frac{\square}{4}$

e) $\frac{\square}{8} = \frac{3}{4}$

f) $\frac{2}{2} = \frac{\square}{4} = \frac{\square}{8}$

3 a) Label the fractions on the fraction wall.

1		

b) Use the fraction wall to complete the equivalent fractions.

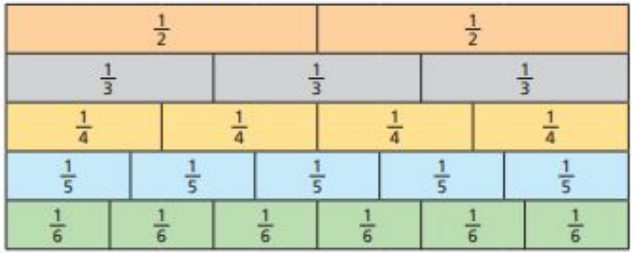
$\frac{1}{3} = \frac{\square}{6} = \frac{3}{\square}$

$\frac{\square}{3} = \frac{4}{\square} = \frac{6}{9}$

$\frac{3}{\square} = \frac{6}{\square} = \frac{9}{\square} = 1$

TASK 3

4 Here is a fraction wall.



Is each statement true or false? Tick your answers.

	True	False
a) $\frac{1}{2}$ is equivalent to $\frac{3}{6}$	☐	☐
b) $\frac{2}{3}$ is equivalent to $\frac{3}{4}$	☐	☐
c) $\frac{2}{4}$ is equivalent to $\frac{3}{6}$	☐	☐
d) $\frac{2}{3}$ is equivalent to $\frac{4}{5}$	☐	☐
e) $\frac{2}{3}$ is equivalent to $\frac{4}{6}$	☐	☐
f) $\frac{3}{5}$ is equivalent to $\frac{4}{6}$	☐	☐

Write your own equivalent fractions statements.

Ask a partner to say if they are true or false.

5 Are the statements always, sometimes or never true?

Circle your answer.

Draw a diagram to support your answer.

a) The greater the numerator, the greater the fraction.

always sometimes never

b) Fractions equivalent to one half have even numerators.

always sometimes never

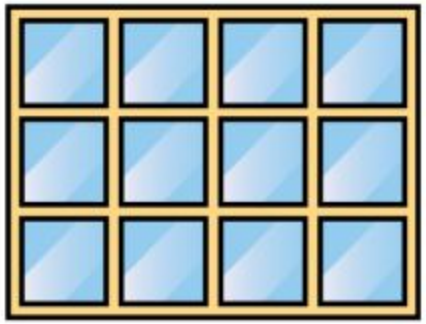
c) If a fraction is equivalent to one half, the denominator will be double the numerator.

always sometimes never

Reasoning and Problem Solving

TASK 4

How many equivalent fractions can you see in this picture?



Eva says,

I know that $\frac{3}{4}$ is equivalent to $\frac{3}{8}$ because the numerators are the same.

Is Eva correct?
Explain why.

Ron has two strips of the same sized paper.
He folds the strips into different sized fractions.
He shades in three equal parts on one strip and six equal parts on the other strip.
The shaded areas are equal.

What fractions could he have folded his strips into?

Arithmetic answers

1) Multiply 34 by 27 — 918

2) A book costs £19
How much do 9 books cost? — £171

3) Complete the sentence.
8 is a factor of ..... — e.g 16, 24...

4) What is 48 ÷ 3? — 16

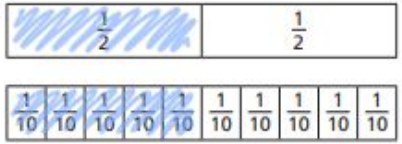
Task 2 answers

1 Shade the bar models to represent the equivalent fractions.

a)

$\frac{1}{2} = \frac{3}{6}$

b)



$\frac{1}{2} = \frac{5}{10}$

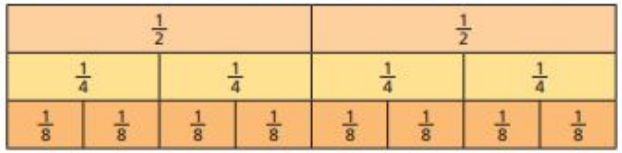
c)

$\frac{4}{5} = \frac{8}{10}$

d)

$\frac{6}{8} = \frac{3}{4}$

2 Use the fraction wall to complete the equivalent fractions.



a) $\frac{1}{2} = \frac{2}{4}$

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

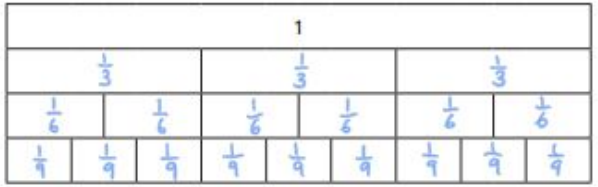
c) $\frac{2}{4} = \frac{4}{8}$

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

e) $\frac{6}{8} = \frac{3}{4}$

f) $\frac{2}{2} = \frac{4}{4} = \frac{8}{8}$

3 a) Label the fractions on the fraction wall.



b) Use the fraction wall to complete the equivalent fractions.

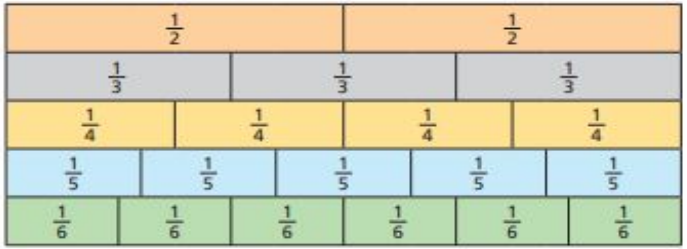
$\frac{1}{3} = \frac{2}{6} = \frac{3}{9}$

$\frac{2}{3} = \frac{4}{6} = \frac{6}{9}$

$\frac{3}{3} = \frac{6}{6} = \frac{9}{9} = 1$

Task 3 answers

4 Here is a fraction wall.



Is each statement true or false? Tick your answers.

	True	False
a) $\frac{1}{2}$ is equivalent to $\frac{3}{6}$	☑	☐
b) $\frac{2}{3}$ is equivalent to $\frac{3}{4}$	☐	☑
c) $\frac{2}{4}$ is equivalent to $\frac{3}{6}$	☑	☐
d) $\frac{2}{3}$ is equivalent to $\frac{4}{5}$	☐	☑
e) $\frac{2}{3}$ is equivalent to $\frac{4}{6}$	☑	☐
f) $\frac{3}{5}$ is equivalent to $\frac{4}{6}$	☐	☑

Write your own equivalent fractions statements.

Ask a partner to say if they are true or false.

5 Are the statements always, sometimes or never true?

Circle your answer.

Draw a diagram to support your answer.

a) The greater the numerator, the greater the fraction.

always **sometimes** never

e.g. $\frac{4}{5} > \frac{1}{5}$ BUT $\frac{1}{2} > \frac{2}{5}$

b) Fractions equivalent to one half have even numerators.

always **sometimes** never

e.g. $\frac{1}{2}$ (odd numerator) $\frac{2}{4}$ (even numerator)

c) If a fraction is equivalent to one half, the denominator will be double the numerator.

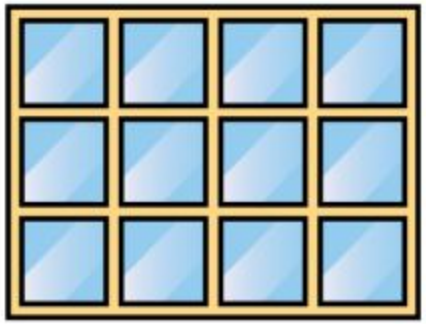
always sometimes never

No matter how many parts it's split into, the number shaded (numerator) will be half the total parts (denominator)

Reasoning and Problem Solving

TASK 4 Answers

How many equivalent fractions can you see in this picture?



Children can give a variety of possibilities.
Examples:

$$\frac{1}{2} = \frac{6}{12} = \frac{3}{6}$$

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

Eva says,

I know that $\frac{3}{4}$ is equivalent to $\frac{3}{8}$ because the numerators are the same.

Is Eva correct?
Explain why.

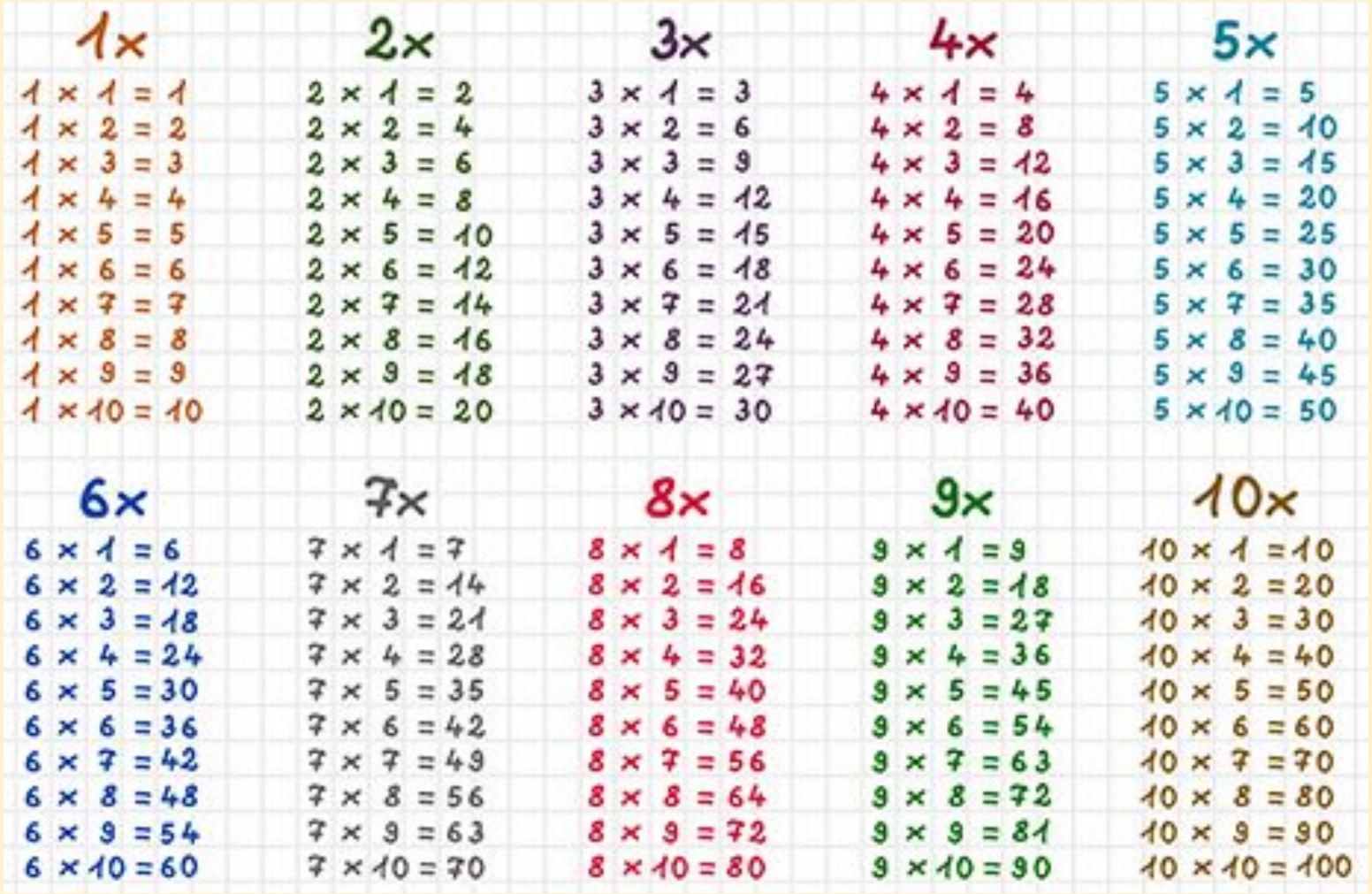
Eva is not correct.
$\frac{3}{4}$ is equivalent to $\frac{6}{8}$
When the numerators are the same, the larger the denominator, the smaller the fraction.

Ron has two strips of the same sized paper.
He folds the strips into different sized fractions.
He shades in three equal parts on one strip and six equal parts on the other strip.
The shaded areas are equal.

What fractions could he have folded his strips into?

Ron could have folded his strips into sixths and twelfths, quarters and eighths or any other fractions where one of the denominators is double the other.

Thursday 21st January 2020
LO: To find equivalent fractions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9 × 4 = 36
9 × 5 = 45
9 × 6 = 54
9 × 7 = 63
9 × 8 = 72
9 × 9 = 81
9 × 10 = 90
10x
10 × 1 = 10
10 × 2 = 20
10 × 3 = 30
10 × 4 = 40
10 × 5 = 50
10 × 6 = 60
10 × 7 = 70
10 × 8 = 80
10 × 9 = 90
10 × 10 = 100

January

12 Times tables

12 x 0	=	0
12 x 1	=	12
12 x 2	=	24
12 x 3	=	36
12 x 4	=	48
12 x 5	=	60
12 x 6	=	72
12 x 7	=	84
12 x 8	=	96
12 x 9	=	108
12 x 10	=	120
12 x 11	=	132
12 x 12	=	144

Arithmetic

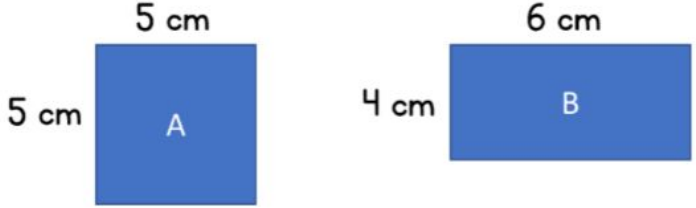
hback 4

Year 5 | Week 2 | Day 4

1) Work out 26^2

2) What is £5 × 13?

3) Which has the greater area?



4) Put these lengths in ascending order.

350 metres $\frac{1}{2}$ metre 3 km

White Rose Maths

Strategy

Equivalent Fractions *have the same value, even though they may look different.*

These fractions are really the same:

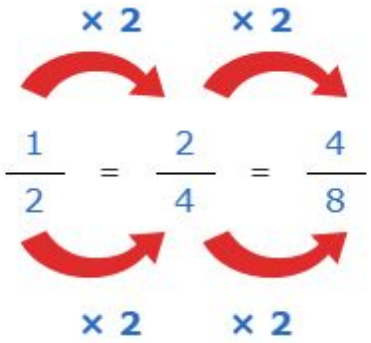
$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

Why are they the same? Because when you multiply or divide **both** the top and bottom by the same number, the fraction keeps it's value.

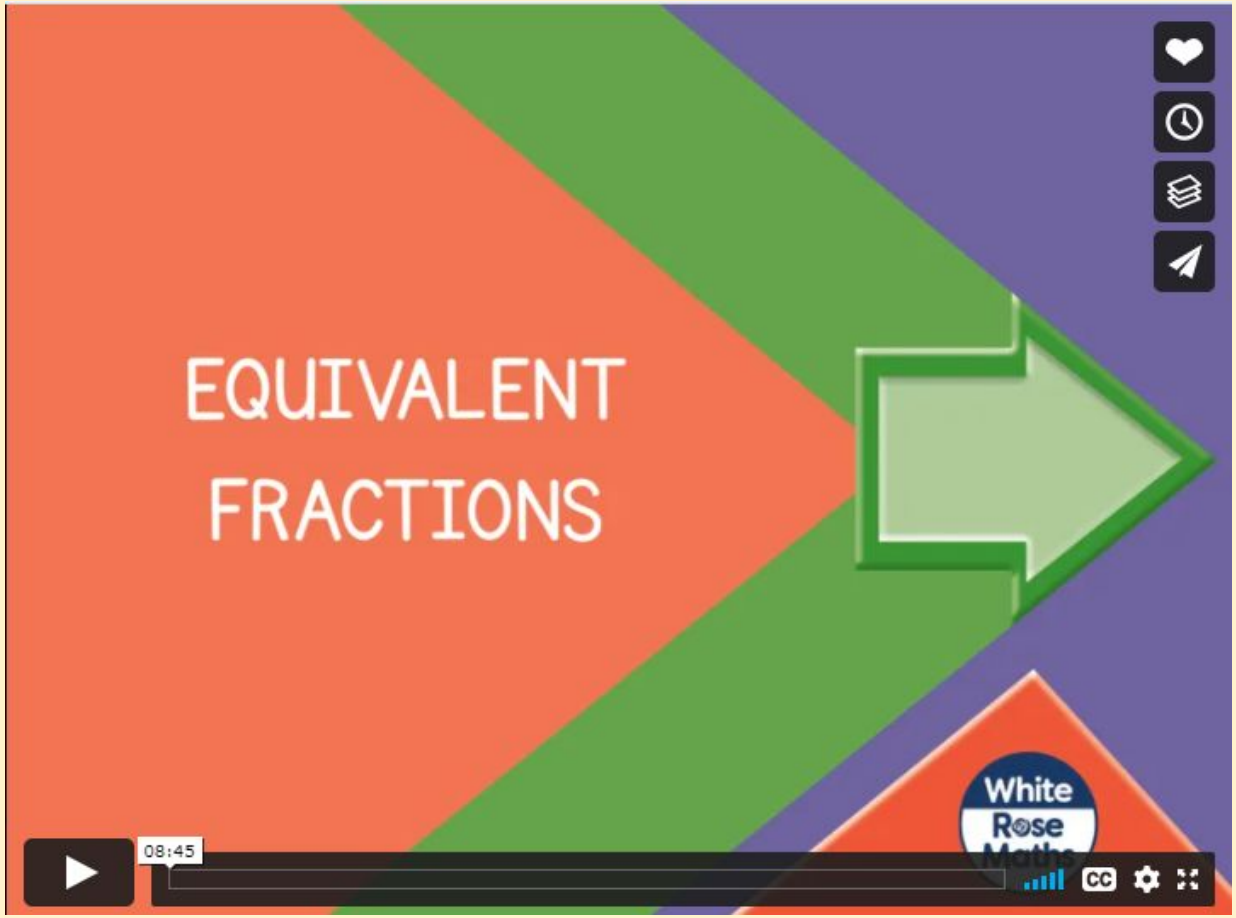
The rule to remember is:

"Change the bottom using multiply or divide,
And the same to the top must be applied"

Here is why those fractions are really the same:



Please watch video for support https://vimeo.com/498327611



Task 1

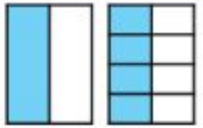
Mathematical Talk

What equivalent fractions can we find by folding the paper? How can we record these?

What is the same and what is different about the numerators and denominators in the equivalent fractions?

How does multiplication and division help us find equivalent fractions? Where can we see this in our model?

Take two pieces of paper the same size.
Fold one piece into two equal pieces.
Fold the other into eight equal pieces.
What equivalent fractions can you find?

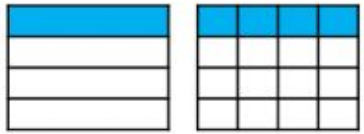


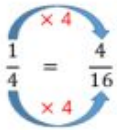
$\frac{1}{2} = \frac{4}{8}$

Use the models to write equivalent fractions.

$\frac{3}{9} =$

Eva uses the models and her multiplication and division skills to find equivalent fractions.





Use this method to find equivalent fractions to $\frac{2}{4}$, $\frac{3}{4}$ and $\frac{4}{4}$ where the denominator is 16

Eva uses the same approach to find equivalent fractions for these fractions. How will her method change?

$\frac{4}{12} = \frac{\square}{3}$ $\quad \frac{6}{12} = \frac{\square}{4}$ $\quad \frac{6}{12} = \frac{\square}{2}$

Task 2

Equivalent fractions

White Rose Maths

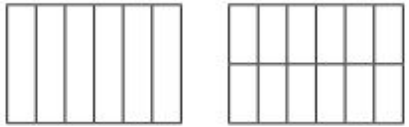
1 Shade the shapes to show the equivalent fractions.

a) 

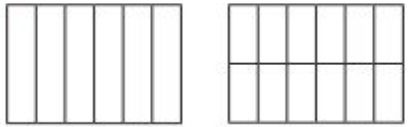
$\frac{1}{4} = \frac{\square}{12}$

b) 

$\frac{3}{4} = \frac{\square}{12}$

c) 

$\frac{1}{6} = \frac{\square}{\square}$

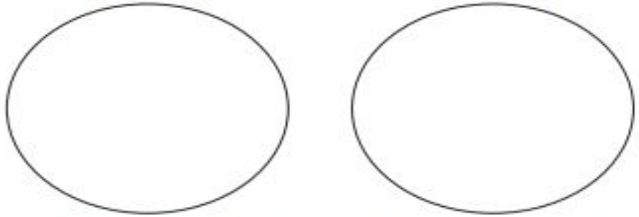
d) 

$\frac{5}{6} = \frac{\square}{\square}$

2 Draw two rectangles to show that $\frac{1}{3} = \frac{4}{12}$

3 a) Sort the fractions into the groups.

Equivalent to $\frac{1}{4}$ | Equivalent to $\frac{1}{3}$



$\frac{5}{15}$ $\frac{2}{6}$ $\frac{3}{12}$ $\frac{6}{24}$ $\frac{8}{24}$ $\frac{5}{20}$ $\frac{4}{12}$ $\frac{2}{8}$

b) Write one more fraction in each group.

4 Complete the equivalent fractions.

a) $\frac{1}{7} = \frac{\square}{14}$

b) $\frac{5}{7} = \frac{\square}{14}$

c) $\frac{7}{8} = \frac{14}{\square}$

d) $\frac{3}{4} = \frac{6}{\square}$

e) $\frac{3}{4} = \frac{12}{\square}$

f) $\frac{3}{4} = \frac{\square}{12}$

g) $\frac{2}{\square} = \frac{10}{15}$

h) $\frac{2}{\square} = \frac{10}{25}$

i) $\frac{2}{7} = \frac{10}{\square}$

j) Describe the pattern in part g), h) and i) to a partner.

Task 3

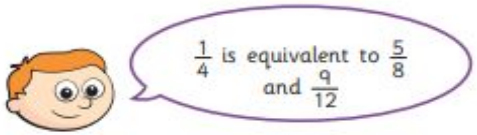
5 Find three ways to make the fractions equivalent.

a) $\frac{1}{\square} = \frac{7}{\square}$ $\frac{1}{\square} = \frac{7}{\square}$ $\frac{1}{\square} = \frac{7}{\square}$

b) $\frac{7}{\square} = \frac{14}{\square}$ $\frac{7}{\square} = \frac{14}{\square}$ $\frac{7}{\square} = \frac{14}{\square}$

c) $\frac{\square}{7} = \frac{\square}{14}$ $\frac{\square}{7} = \frac{\square}{14}$ $\frac{\square}{7} = \frac{\square}{14}$

6 Ron is finding equivalent fractions to $\frac{1}{4}$



Do you agree with Ron? _____

Draw a diagram to support your answer.

Compare answers with a partner.

7 Here are some equivalent fractions.

Find the values of A, B and C.

$\frac{A}{9}$	$\frac{3}{B}$	$\frac{2}{18}$	$\frac{C}{90}$

A = ☐ B = ☐ C = ☐

8 Here are three fraction cards.

All the fractions are equivalent.

$\frac{3}{A}$	$\frac{B}{14}$	$\frac{12}{C}$

A + B = 13

Work out the value of C.

C = ☐

9 $\frac{1}{5} = \frac{3}{1 + ●}$

Find the value of ●

● = ☐

Reasoning and Problem Solving

Task 4

Rosie says,

To find equivalent fractions, whatever you do to the numerator, you do to the denominator.

Using her method, here are the equivalent fractions Rosie has found for $\frac{4}{8}$

$\frac{4}{8} = \frac{8}{16}$ $\frac{4}{8} = \frac{6}{10}$

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

Are all Rosie's fractions equivalent?
Does Rosie's method work?
Explain your reasons.

Ron thinks you can only simplify even numbered fractions because you keep on halving the numerator and denominator until you get an odd number.

Do you agree?
Explain your answer.

Here are some fraction cards.
All of the fractions are equivalent.

$\frac{4}{A}$ $\frac{B}{C}$ $\frac{20}{50}$

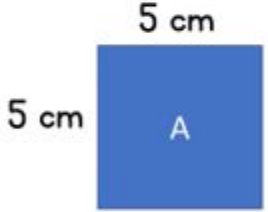
A + B = 16
Calculate the value of C.

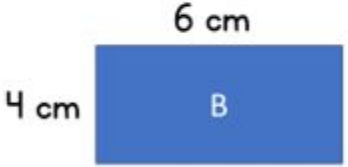
Arithmetic answers

1) Work out 26^2 676

2) What is £5 × 13? £65

3) Which has the greater area?





A

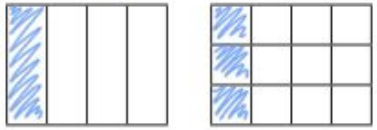
4) Put these lengths in ascending order.

350 metres $\frac{1}{2}$ metre 3 km

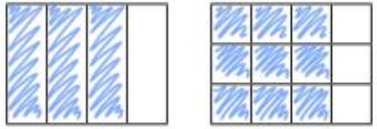
$\frac{1}{2}$ metre, 350 metres, 3 km

Task 2 Answers

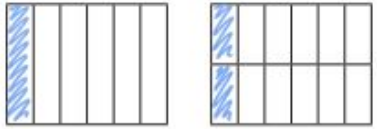
1 Shade the shapes to show the equivalent fractions.

a) 

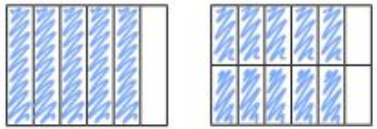
$\frac{1}{4} = \frac{3}{12}$

b) 

$\frac{3}{4} = \frac{9}{12}$

c) 

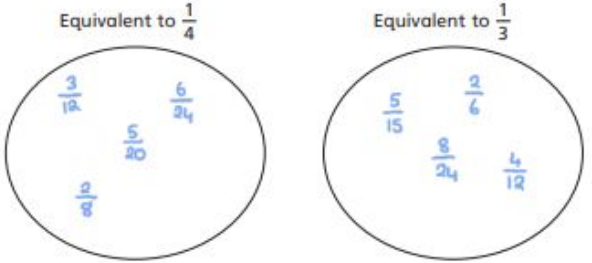
$\frac{1}{6} = \frac{2}{12}$

d) 

$\frac{5}{6} = \frac{10}{12}$

2 Draw two rectangles to show that $\frac{1}{3} = \frac{4}{12}$

3 a) Sort the fractions into the groups.



$\frac{5}{15}$ $\frac{2}{6}$ $\frac{3}{12}$ $\frac{6}{24}$ $\frac{8}{24}$ $\frac{5}{20}$ $\frac{4}{12}$ $\frac{2}{8}$

b) Write one more fraction in each group.

4 Complete the equivalent fractions.

a) $\frac{1}{7} = \frac{2}{14}$

b) $\frac{5}{7} = \frac{10}{14}$

c) $\frac{7}{8} = \frac{14}{16}$

d) $\frac{3}{4} = \frac{6}{8}$

e) $\frac{3}{4} = \frac{12}{16}$

f) $\frac{3}{4} = \frac{9}{12}$

g) $\frac{2}{3} = \frac{10}{15}$

h) $\frac{2}{5} = \frac{10}{25}$

i) $\frac{2}{7} = \frac{10}{35}$

j) Describe the pattern in part g), h) and i) to a partner.

Task 3 Answers

5 Find three ways to make the fractions equivalent.

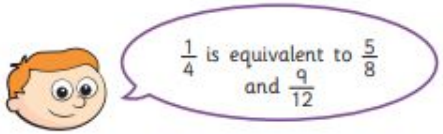
e.g.

a) $\frac{1}{2} = \frac{7}{14}$ b) $\frac{7}{7} = \frac{14}{14}$ c) $\frac{1}{7} = \frac{2}{14}$

$\frac{1}{8} = \frac{7}{56}$ $\frac{7}{1} = \frac{14}{2}$ $\frac{5}{7} = \frac{10}{14}$

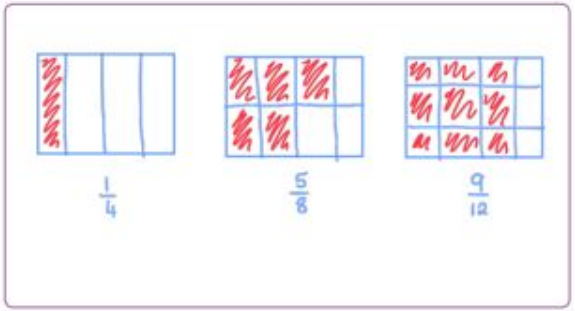
$\frac{1}{100} = \frac{7}{700}$ $\frac{7}{10} = \frac{14}{20}$ $\frac{21}{7} = \frac{42}{14}$

6 Ron is finding equivalent fractions to $\frac{1}{4}$



Do you agree with Ron? NO

Draw a diagram to support your answer.



Compare answers with a partner.

7 Here are some equivalent fractions.

Find the values of A, B and C.

$\frac{A}{9}$ $\frac{3}{B}$ $\frac{2}{18}$ $\frac{C}{90}$

A = 1 B = 27 C = 10

8 Here are three fraction cards.

All the fractions are equivalent.

$\frac{3}{A}$ $\frac{B}{14}$ $\frac{12}{C}$

A + B = 13

Work out the value of C.

C = 28

9 $\frac{1}{5} = \frac{3}{1 + \bullet}$

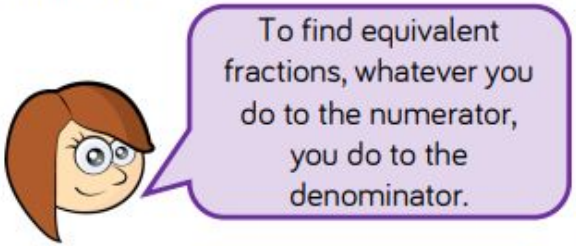
Find the value of ●

● = 14

Reasoning and Problem Solving

Task 4 Answers

Rosie says,



Using her method, here are the equivalent fractions Rosie has found for $\frac{4}{8}$

$\frac{4}{8} = \frac{8}{16}$ $\frac{4}{8} = \frac{6}{10}$

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

Are all Rosie's fractions equivalent?
Does Rosie's method work?
Explain your reasons.

$\frac{4}{8} = \frac{1}{5}$ and $\frac{4}{8} = \frac{6}{10}$ are incorrect.

Rosie's method doesn't always work. It works when multiplying or dividing both the numerator or denominator but not when adding or subtracting the same thing to both.

Ron thinks you can only simplify even numbered fractions because you keep on halving the numerator and denominator until you get an odd number.

Do you agree?
Explain your answer.

Ron is wrong. For example $\frac{3}{9}$ can be simplified to $\frac{1}{3}$ and these are all odd numbers.

Here are some fraction cards.
All of the fractions are equivalent.

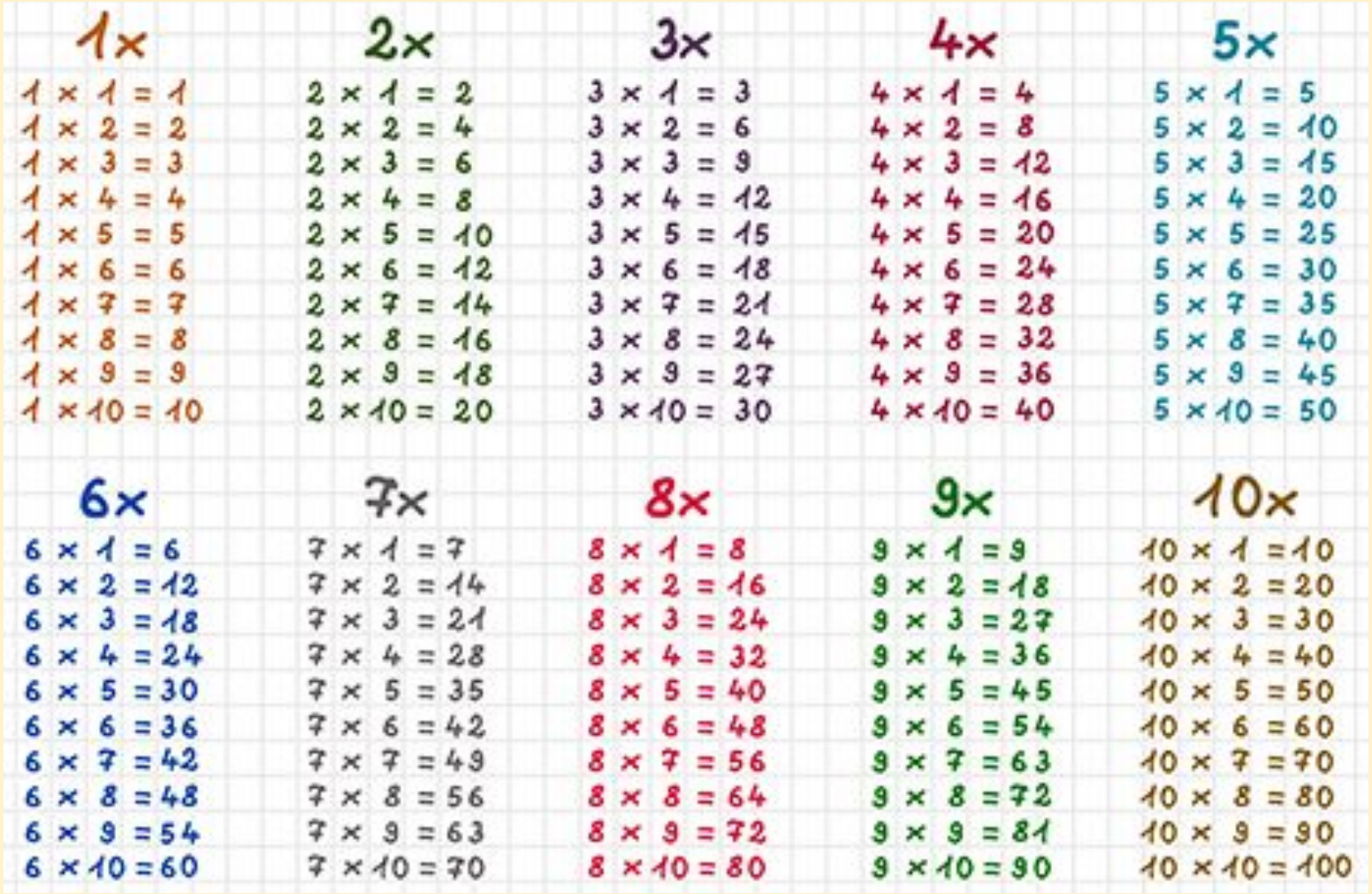
$\frac{4}{A}$ $\frac{B}{C}$ $\frac{20}{50}$

A + B = 16
Calculate the value of C.

A = 10
B = 6
C = 15

Friday 22nd January 2020

LO: To identify fractions greater than 1


1x
1 × 1 = 1
1 × 2 = 2
1 × 3 = 3
1 × 4 = 4
1 × 5 = 5
1 × 6 = 6
1 × 7 = 7
1 × 8 = 8
1 × 9 = 9
1 × 10 = 10
2x
2 × 1 = 2
2 × 2 = 4
2 × 3 = 6
2 × 4 = 8
2 × 5 = 10
2 × 6 = 12
2 × 7 = 14
2 × 8 = 16
2 × 9 = 18
2 × 10 = 20
3x
3 × 1 = 3
3 × 2 = 6
3 × 3 = 9
3 × 4 = 12
3 × 5 = 15
3 × 6 = 18
3 × 7 = 21
3 × 8 = 24
3 × 9 = 27
3 × 10 = 30
4x
4 × 1 = 4
4 × 2 = 8
4 × 3 = 12
4 × 4 = 16
4 × 5 = 20
4 × 6 = 24
4 × 7 = 28
4 × 8 = 32
4 × 9 = 36
4 × 10 = 40
5x
5 × 1 = 5
5 × 2 = 10
5 × 3 = 15
5 × 4 = 20
5 × 5 = 25
5 × 6 = 30
5 × 7 = 35
5 × 8 = 40
5 × 9 = 45
5 × 10 = 50
6x
6 × 1 = 6
6 × 2 = 12
6 × 3 = 18
6 × 4 = 24
6 × 5 = 30
6 × 6 = 36
6 × 7 = 42
6 × 8 = 48
6 × 9 = 54
6 × 10 = 60
7x
7 × 1 = 7
7 × 2 = 14
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7 × 6 = 42
7 × 7 = 49
7 × 8 = 56
7 × 9 = 63
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January

12 Times tables

12 x 0	=	0
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12 x 7	=	84
12 x 8	=	96
12 x 9	=	108
12 x 10	=	120
12 x 11	=	132
12 x 12	=	144

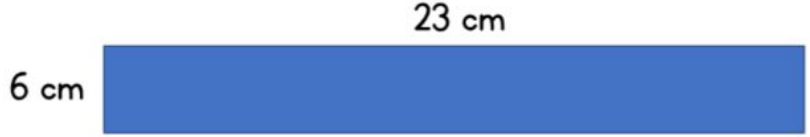
Arithmetic

hback 4

Year 5 | Week 2 | Day 5

1) Calculate 132 × 14

2) Find the area of the rectangle



3) Two factors of 14 are 1 and 14

What are the other 2 factors?

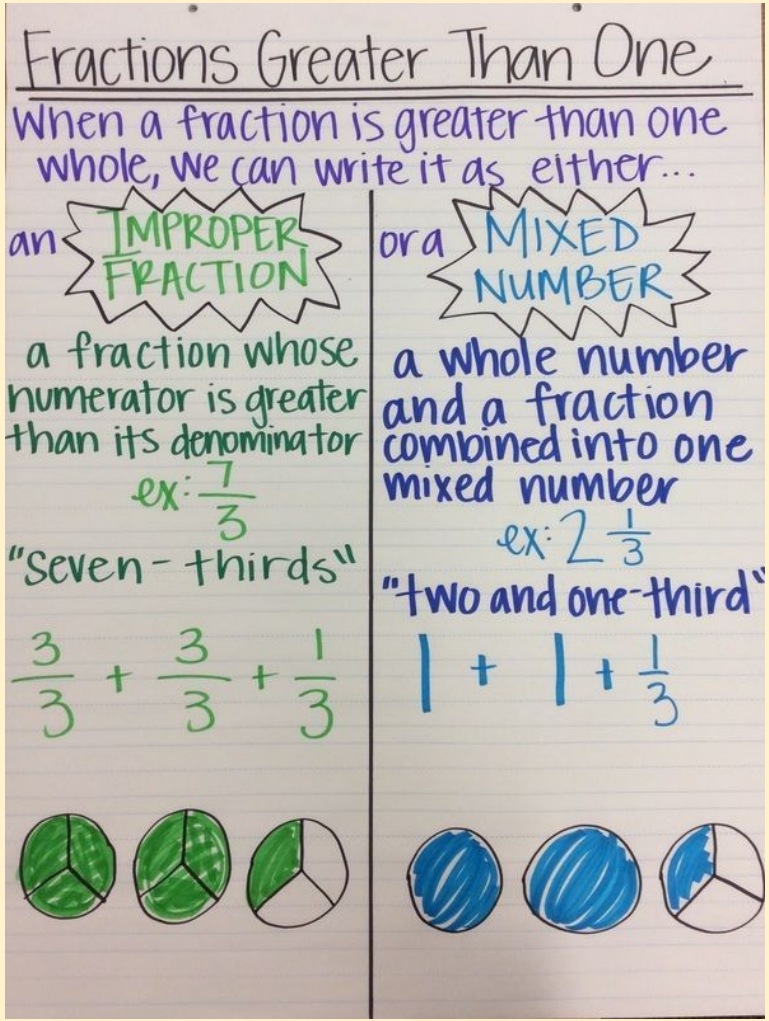
4) What is the next number?

14,300	14,200	14,100	14,000	

White Rose Maths

Please use this video for support with lesson https://vimeo.com/498362964

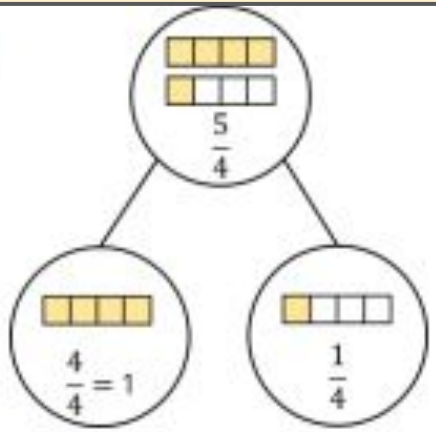
Strategy


Fractions Greater Than One
When a fraction is greater than one whole, we can write it as either...
an IMPROPER FRACTION
a fraction whose numerator is greater than its denominator
ex: 7/3
"Seven-thirds"
3/3 + 3/3 + 1/3
or a MIXED NUMBER
a whole number and a fraction combined into one mixed number
ex: 2 1/3
"two and one-third"
1 + 1 + 1/3

Complete the part-whole models and sentences.

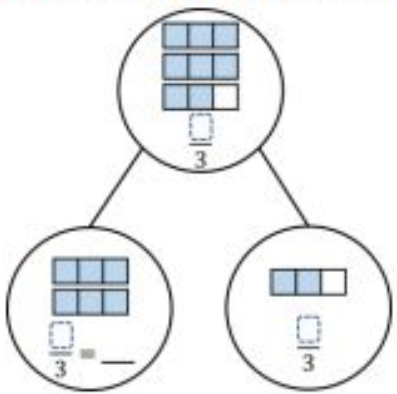
There are ____ quarters altogether.

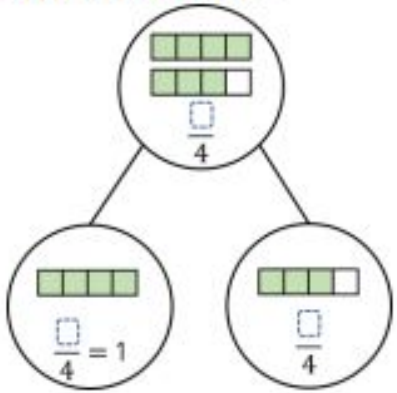
___ quarters = ____ whole and ____ quarter.



Task 1

Write sentences to describe these part-whole models.

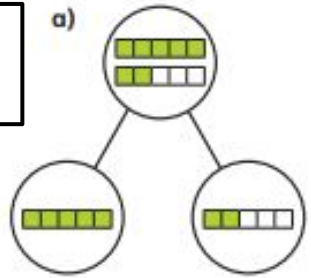




Task 2

1 Complete the sentences.

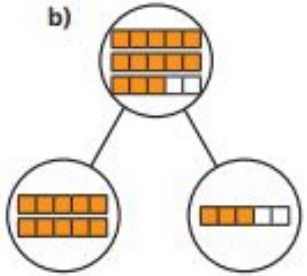
a)



There are 7 fifths altogether.

7 fifths = ☐ whole + ☐ fifths

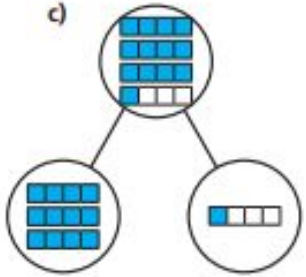
b)



There are ☐ fifths altogether.

☐ fifths = ☐ wholes + ☐ fifths

c)



There are ☐ quarters altogether

☐ quarters = ☐ wholes + ☐ quarter

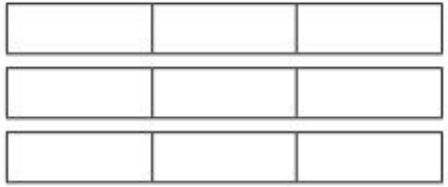
2 Shade the bar models to represent the fractions.

Complete the number sentences.

a) $\frac{5}{3}$

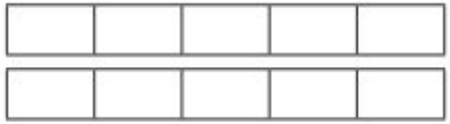
$\frac{5}{3}$ = ☐ whole + ☐ thirds = ☐

b) $\frac{8}{3}$



$\frac{8}{3}$ = ☐ wholes + ☐ thirds = ☐

c) $\frac{8}{5}$



$\frac{8}{5}$ = ☐ whole + ☐ fifths = ☐

Task 3

3 Complete the statements.

a) $\frac{12}{2} =$ ☐ wholes

b) $\frac{12}{4} =$ ☐ wholes

c) $\frac{12}{6} =$ ☐ wholes

d) $\frac{12}{3} =$ ☐ wholes

e) $\frac{15}{3} =$ ☐ wholes

f) $\frac{15}{5} =$ ☐ wholes

g) $\frac{15}{4} =$ ☐ wholes + ☐ quarters

h) $\frac{15}{2} =$ ☐ wholes + ☐ half

4 Whitney bakes 26 muffins.

Muffins are packed in boxes of 4

a) How many boxes can Whitney fill?

Whitney can fill ☐ boxes.

b) How many more muffins does Whitney need to fill another box?

Whitney needs ☐ muffins to fill another box.

Explain how you know.

How does writing $\frac{26}{4}$ help you to answer this?

5 Write <, > or = to complete the statements.

a) 2 wholes and 3 quarters ◯ 5 quarters

b) 2 wholes and 3 quarters ◯ 15 quarters

c) 2 wholes and 3 sixths ◯ 15 sixths

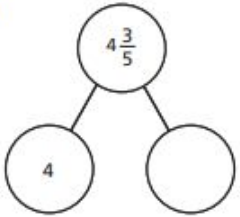
d) 2 wholes and 3 eighths ◯ 15 eighths

e) $\frac{15}{3}$ ◯ $\frac{15}{5}$

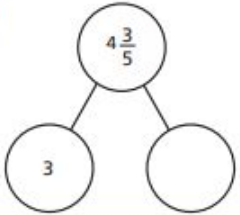
f) $\frac{15}{3}$ ◯ $\frac{20}{4}$

6 Complete the part-whole models.

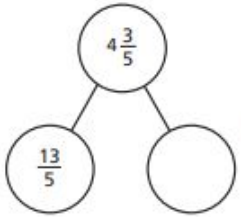
a)



b)



c)

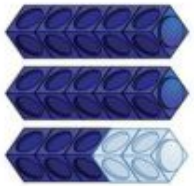


Reasoning and Problem Solving

Task 4

3 friends share some pizzas.
Each pizza is cut into 8 equal slices.
Altogether, they eat 25 slices.
How many whole pizzas do they eat?

Spot the mistake.



$\frac{13}{5}$ = 10 wholes and 3 fifths

Rosie says,

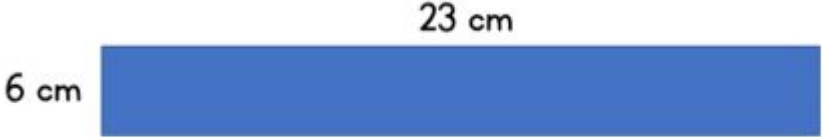
$\frac{16}{4}$ is greater than $\frac{8}{2}$ because 16 is greater than 8

Do you agree?
Explain why.

Arithmetic answers

1) Calculate 132 × 14 1,848

2) Find the area of the rectangle



138 cm^2

3) Two factors of 14 are 1 and 14

What are the other 2 factors? 2 and 7

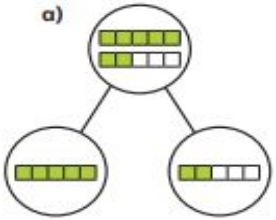
4) What is the next number?

14,300	14,200	14,100	14,000	13,900

Task 2 Answers

1 Complete the sentences.

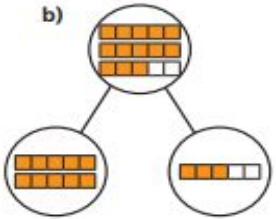
a)



There are 7 fifths altogether.

7 fifths = [1] whole + [2] fifths

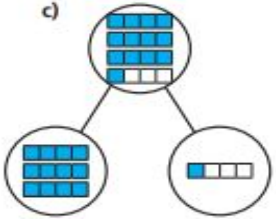
b)



There are [13] fifths altogether.

[13] fifths = [2] wholes + [3] fifths

c)



There are [13] quarters altogether.

[13] quarters = [3] wholes + [1] quarter

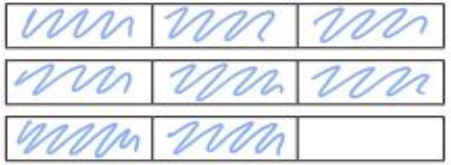
2 Shade the bar models to represent the fractions.

Complete the number sentences.

a) $\frac{5}{3}$

$\frac{5}{3}$ = [1] whole + [2] thirds = [$1\frac{2}{3}$]

b) $\frac{8}{3}$



$\frac{8}{3}$ = [2] wholes + [2] thirds = [$2\frac{2}{3}$]

c) $\frac{8}{5}$

$\frac{8}{5}$ = [1] whole + [3] fifths = [$1\frac{3}{5}$]

Task 3 Answers

3 Complete the statements.

a) $\frac{12}{2}$ = [6] wholes

b) $\frac{12}{4}$ = [3] wholes

c) $\frac{12}{6}$ = [2] wholes

d) $\frac{12}{3}$ = [4] wholes

e) $\frac{15}{3}$ = [5] wholes

f) $\frac{15}{5}$ = [3] wholes

g) $\frac{15}{4}$ = [3] wholes + [3] quarters

h) $\frac{15}{2}$ = [7] wholes + [1] half

4 Whitney bakes 26 muffins.

Muffins are packed in boxes of 4

a) How many boxes can Whitney fill?

Whitney can fill [6] boxes.

b) How many more muffins does Whitney need to fill another box?

Whitney needs [2] muffins to fill another box.

Explain how you know.

She will fill 6 boxes with 2 left over so another 2 are needed to fill the seventh box.

How does writing $\frac{26}{4}$ help you to answer this?

5 Write <, > or = to complete the statements.

a) 2 wholes and 3 quarters (>) 5 quarters

b) 2 wholes and 3 quarters (<) 15 quarters

c) 2 wholes and 3 sixths (=) 15 sixths

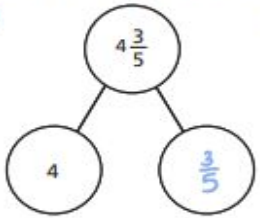
d) 2 wholes and 3 eighths (>) 15 eighths

e) $\frac{15}{3}$ (>) $\frac{15}{5}$

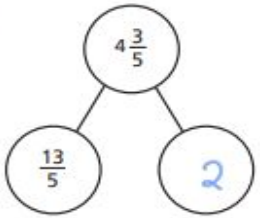
f) $\frac{15}{3}$ (=) $\frac{20}{4}$

6 Complete the part-whole models.

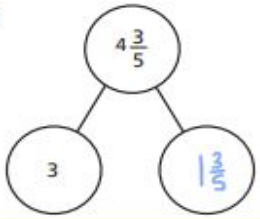
a)



c)



b)



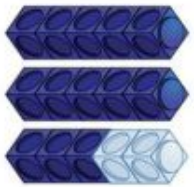
Reasoning and Problem Solving

Task 4 Answers

3 friends share some pizzas.
Each pizza is cut into 8 equal slices.
Altogether, they eat 25 slices.
How many whole pizzas do they eat?

They eat 3 whole pizzas and 1 more slice.

Spot the mistake.



$\frac{13}{5}$ = 10 wholes and 3 fifths

There are 2 wholes not 10

$\frac{10}{5}$ = 2 wholes

$\frac{13}{5}$ = 2 wholes and 3 fifths

Rosie says,

$\frac{16}{4}$ is greater than $\frac{8}{2}$ because 16 is greater than 8

Do you agree?
Explain why.

I disagree with Rosie because both fractions are equivalent to 4

Children may choose to build both fractions using cubes, or draw bar models.