Year 5/6
Maths
Week 1

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

1) 7 x 2 = _____
2) 3 x 8 = _____
3) 4 x 6 = _____
4) 2 x 9 = _____
5) 6 x 4 = _____
6) 8 x 4 = _____
7) 7 x 5 = _____
8) 9 x 10 = _____
9) 6 x 6 = _____
21) 8 x 6 = _____
22) 7 x 9 = _____
23) 6 x 7 = _____
24) 8 x 8 = _____
25) 6 x 3 = _____
26) 9 x 6 = _____
27) 7 x 5 = _____
28) 8 x 9 = _____
29) 10 x 7 = _____

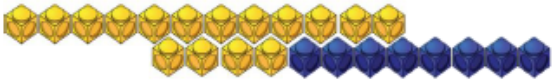
1) 6 x _____ = 18
2) 8 x _____ = 16
3) _____ x 7 = 7
4) _____ x 9 = 45
5) 7 x _____ = 21
6) _____ x 6 = 36
7) _____ x 8 = 40
8) 9 x _____ = 90
9) _____ x 8 = 32
10) _____ x 6 = 24
11) 7 x _____ = 63
12) _____ x 6 = 0
13) _____ x 8 = 80
14) 9 x _____ = 54
15) 6 x _____ = 42
16) _____ x 8 = 56
17) _____ x 9 = 81
18) 6 x _____ = 30
19) 8 x _____ = 48
20) _____ x 9 = 18
21) _____ x 7 = 49
22) 8 x _____ = 72
23) _____ x 6 = 48
24) 9 x _____ = 45
25) _____ x 7 = 63
26) 6 x _____ = 36
27) 8 x _____ = 64
28) _____ x 6 = 42
29) _____ x 9 = 72
30) 7 x _____ = 56
31) _____ x 8 = 48
32) 6 x _____ = 60
33) 9 x _____ = 45
34) _____ x 8 = 72
35) _____ x 7 = 28
36) 9 x _____ = 81
37) _____ x 6 = 6
38) _____ x 8 = 64
39) 7 x _____ = 49
40) _____ x 9 = 54

Date	
Subject/s	**Maths**
Learning Objective	To simplify ratio

		SA	TA
Success Criteria	I know ratio compares two or more objects that increase together _____ for every _____		
	I know simplifying ratio doesn't change the amount		
	I can link ratios to fractions		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

Rearrange the same number of cubes as there are in the diagram to help you complete the sentences.

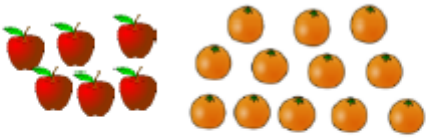


For every ____ , there are ____ .

For every 8 , there are ____ .

For every 1 , there are ____ .

Complete the sentences to compare the apples and oranges.



For every 6 apples there are …… oranges.

$\frac{\square}{\square}$ of the fruit are apples, $\frac{\square}{\square}$ of the fruit are oranges.

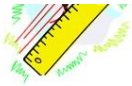
Teacher Led

What is ratio? https://www.schoolsofkingedwardvi.co.uk/ks2-maths-year-6-6a-ratio-proportions-ratio/

Example video of simplifying ratios: https://www.youtube.com/watch?v=cbjQWf41108 , https://www.bbc.co.uk/bitesize/topics/zsq7hyc/articles/z8kfnbk

If I have a ratio of 6 boys to every 8 girls, it could be written like 6:8. But I could simplify it further by dividing both sides by 2 (like fractions!). This will give me the ratio 3:4. The ratio has not changed. It has just been simplified.

Simplifying a ratio ?



Ratios can be simplified like fractions by dividing each part by the same highest number.

Highest Common Factor

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

Ratio : 6 : 8 (÷ 2) → 3 : 4 (÷ 2)

Simplify the following ratios

15:20 (÷5) → 3:4

18:30 (÷2) → 9:15 (÷3) → 3:5

12:40 (÷2) → 6:20 (÷2) → 3:10

Your turn:

You must show your working out like the ones above!

A1 Simplify the ratio 4:8	**A2** Simplify the ratio 2:10	**A3** Simplify the ratio 10:15	**A4** Simplify the ratio 9:15
B1 Simplify the ratio 14:7	**B2** Simplify the ratio 12:3	**B3** Simplify the ratio 20:8	**B4** Simplify the ratio 20:15

A1 Simplify the ratio 4:8 1:2	**A2** Simplify the ratio 2:10 1:5	**A3** Simplify the ratio 10:15 2:3	**A4** Simplify the ratio 9:15 3:5
B1 Simplify the ratio 14:7 2:1	**B2** Simplify the ratio 12:3 4:1	**B3** Simplify the ratio 20:8 5:2	**B4** Simplify the ratio 20:15 4:3

Fluency

Bronze	Silver	Gold
Simplify: 2 : 8 3 : 15 4 : 10 8 : 4 20 : 30 28 : 21 100 : 60 15 : 40	Simplify: 32 : 40 45 : 36 222 : 4 33 : 36 2 : 1242 17 : 34 48 : 102 2 : 4 : 10	Simplify: 4 : 10 : 18 3 : 6 : 9 10 : 15 : 25 28 : 35 : 49 30 : 15 : 60 22 : 33 : 110 13 : 65 : 26 40 : 30 : 45 : 70

25 : 150	30 : 75	
34 : 102	148 : 111	97 : 194
52 : 130	112 : 320	2.4 : 5.6
32 : 480	7.8 : 9.1	128 : 160
2.5 : 3.5	42 : 280	66 : 30
84 : 156	378 : 105	250 : 750
32 : 28.8	2.4 : 1.8	25 : 45

Explain it!

Tariq lays tiles in the following pattern:

If he has 16 blue tiles and 20 purple tiles can he continue his pattern without there being any tiles left over?

Explain why.

Prove it!

True or False?

- For every red cube there are 8 blue cubes.
- For every 4 blue cubes there is 1 red cube.
- For every 3 red cubes there would b 12 blue cubes.
- For every 16 cubes, 4 would be red and 12 would be blue.
- For every 20 cubes, 4 would be red and 16 would be blue.

Explain it!

Fabio plants flowers in a flower bed.
For every 2 red roses he plants 5 white roses.

He says,

$\frac{2}{5}$ of the roses are red.

Is Fabio correct?

Prove it!

There are some red and green cubes in a bag. $\frac{2}{5}$ of the cubes are red.

True or False?

- For every 2 red cubes there are 3 green cubes.
- For every 2 red cubes there are 5 green cubes.
- For every 3 green cubes there are 2 red cubes.
- For every 3 green cubes there are 5 red cubes.

Bronze	Silver	Gold
Simplify: 2 : 8 = 1:4 3 : 15 = 1:5 4 : 10 = 2:5 8 : 4 =2:1 20 : 30 = 2:3 28 : 21 = 7:3 100 : 60 = 5: 3 15 : 40 = 3: 8	Simplify: 32 : 40 = 4:5 45 : 36 = 5:4 222 : 4 = 111:2 33 : 36 = 11:12 2 : 1242 = 1:621 17 : 34 = 7:34 48 : 102 = 8:17 2 : 4 : 10 = 1:2:5	Simplify: 4 : 10 : 18 = 2:5:9 3 : 6 : 9 = 1:2:3 10 : 15 : 25 = 2:3:5 28 : 35 : 49 = 4:5:7 30 : 15 : 60 = 5:3:12 22 : 33 : 110 = 22:33:110 13 : 65 : 26 = 13:65:26 40 : 30 : 45 : 70 = 8:6:9:14

25 : 150 1 : 6	30 : 75 2 : 5	
34 : 102 1 : 3	148 : 111 4 : 3	97 : 194 1 : 2
52 : 130 2 : 5	112 : 320 7 : 20	2.4 : 5.6 3 : 7
32 : 480 1 : 15	7.8 : 9.1 6 : 7	128 : 160 4 : 5
2.5 : 3.5 5 : 7	42 : 280 3 : 20	66 : 30 11 : 5
84 : 156 7 : 13	378 : 105 18 : 5	250 : 750 1 : 3
32 : 28.8 10 : 9	2.4 : 1.8 4 : 3	25 : 45 5 : 9

Problem solving and reasoning answers

Possible response: For every two blue tiles there are three purple tiles. If Tariq continues the pattern he will need 16 blue tiles and 24 purple tiles. He cannot continue the pattern without there being tiles left over.

False
True
True
False

Fabio is incorrect because 2/7 of the roses are red. He has mistaken a part with the whole.

True
False
True
False

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

1	9 X 7		30	6 x 9		59	9 X 4	
2	8 x 4		31	12 x 3		60	7 x 6	
3	7 x 10		32	3 x 8		61	4 x 8	
4	9 x 9		33	8 X 8		62	12 X 2	
5	6 x 2		34	6 x 8		63	3 x 6	
6	4 x 7		35	11 x 7		64	4 x 10	
7	9 X 2		36	10 x 1		65	9 x 11	
8	12 x 12		37	10 x 5		66	3 x 12	
9	5 X 9		38	3 x 5		67	3 x 10	
10	7 X 7		39	12 x 11		68	4 X 4	
11	11 x 6		40	6 x 6		69	4 x 9	
12	5 x 11		41	2 x 9		70	4 x 11	
13	4 x 6		42	12 x 7		71	6 x 5	
14	9 x 5		43	11 x 8		72	7 x 2	
15	8 X 12		44	2 x 6		73	5 x 12	
16	10 x 10		45	4 x 5		74	2 x 10	
17	7 x 3		46	4 x 9		75	4 x 12	
18	5 x 8		47	8 x 2		76	7 x 8	
19	3 x 3		48	7 x 9		77	6 x 10	
20	10 x 11		49	12 x 8		78	12 x 6	
21	11 x 2		50	9 X 4		79	7 x 12	
22	2 x 7		51	5 X 5		80	2 X 2	
23	6 x 12		52	10 x 12		81	11 x 0	
24	5 x 7		53	8 x 11		82	2 x 12	
25	10 x 6		54	4 x 3		83	2 X 4	
26	9 x 12		55	2 x 5		84	8 x 5	
27	5 x 4		56	5 x 10		85	7 x 11	
28	11 x 11		57	9 x 3		86	9 x 6	
29	7 x 4		58	8 x 10		87	10 x 11	

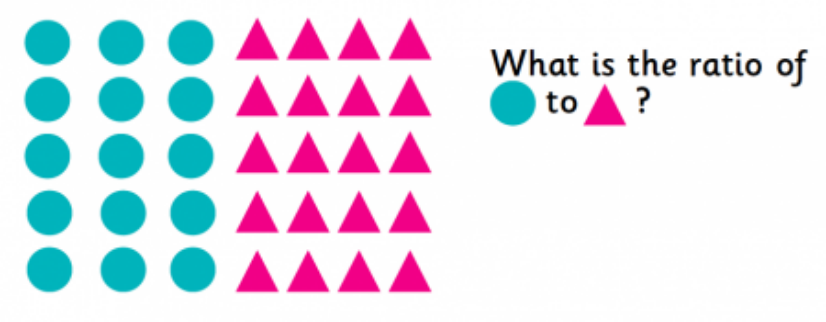
Date			
Subject/s	**Maths**		
Learning Objective 	To write ratio		
		SA 	TA 
Success Criteria 	I can identify the parts in the word problem		
	I can identify/work out the whole		
	I can write the ratio as part: part = whole		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

Emily has a packet of sweets. For every 3 red sweets there are 5 purple sweets. Write this as a ratio. How many sweets does Emily have altogether?

A farmer plants 20 crops in the field. He plants 5 potatoes. How many carrots does he plant? Write it as a ratio.

Teacher Led



It could be written as:

Circles: Triangles = Total

15: 20 = 35

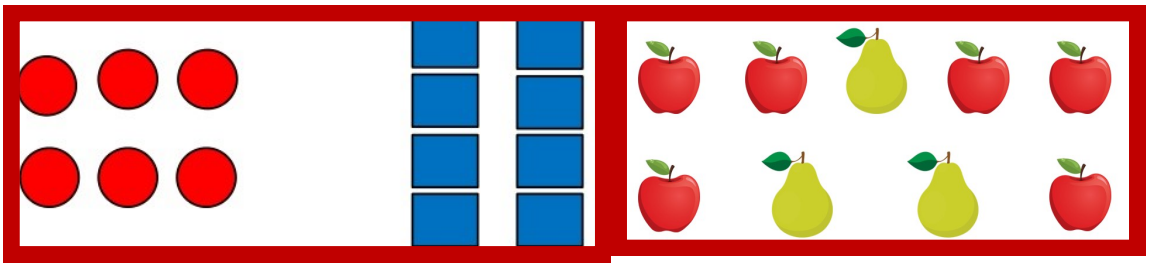
But the simplified ratio would be

Circles: Triangles

3 : 4

You need to write headings for the ratios (not just the numbers!) so you know what the ratios represent!

Your turn:



Ratios may also look like word problems.

1. There are some pupils in a class. 20 of them are girls and 12 of them are boys. What is the ratio of boys to girls in its simplest form?

The two parts are boys and girls, the whole is the class

Boys: Girls = Class

20: 12 = 32

Simplest form

Boys: Girls

5:3

2. A fruit drink is made by mixing some orange juice with 180ml of pineapple juice. The drink is 300ml What is the ratio of orange juice to pineapple juice in its simplest form?

I know that the two parts are pineapple and orange. The total is the drink. We don't know the orange juice so we have to work it out.

Orange: Pineapple = Drink

____ : 180 = 300 I know that 300 (whole) - 180 (part) = 120 which must be the other part so

120 : 180 = 300

Simplest form:

Orange : Pineapple

2 : 3

Fluency

In the zoo there are five giraffes for every two rhinos. Write this as a ratio	In a class there are three girls for every two boys. Write this as a ratio	A racing school has two Ferraris for every three Lamborghinis. Write the ratio of Ferrari to Lamborghinis.	A theme park has four roller coasters for every three other types of ride. Write the ratio of coaster's to other rides.
There are 45 girls and 30 boys. Write in its simplest form the ratio of boys to girls.	In a tin of beans and sausages there are 8 sausages to 240 beans. Write in its simplest form sausages to beans.	Money taken at a school fair is in coins and notes. There are 550 coins and 150 notes. Write the ratio of coins to notes in its simplest form	A game of fortnite has 45 wins to 150 games. Write the ratio of wins to games in its simplest form
There are 6 eggs in each egg box. Write, in its simplest form, how many eggs there are to egg boxes if you have 72 eggs.	A student has been collecting coins. He has 20 50p's and 25 £1. Write in its simplest form the value of 50p to £1	A cake takes 360g of flour, the same amount of sugar, the same amount of butter, and 6 eggs. Write this ratio in its simplest form	A train takes 1 and a half hours to do a journey, where as the bus takes three times this amount. Write the ratio of train time to bus times in minutes, as a ratio in its simplest form

Problem Solving and Reasoning

I mixed up some lemonade in two glasses.

The first glass had 200ml of lemon juice and 300ml of water.
The second glass had 100ml of lemon juice and 200ml of water.

Which mixture has the stronger tasting lemonade?
How do you know?

Prove it using:

Ratio

Images

Fractions

Answers

5:2	3:2	2:3	4:3
45:30 3:2	8:240 1:30	550:150 11:3	45:150 3:10
72:12 12:1	10:25 2:5	360:360:360:6 60:60:60:1	90:270 1:3

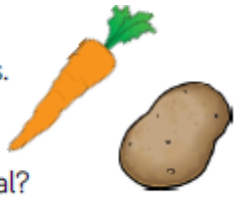
Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

2 x 2 =	3 x 3 =	4 x 4 =	11 x 10 =
3 x 5 =	6 x 8 =	7 x 5 =	10 x 2 =
4 x 6 =	12 x 5 =	8 x 12 =	3 x 12 =
7 x 4 =	8 x 6 =	10 x 11 =	4 x 9 =
10 x 10 =	10 x 12 =	4 x 2 =	5 x 7 =
9 x 3 =	11 x 2 =	10 x 3 =	9 x 8 =
7 x 2 =	3 x 9 =	6 x 8 =	10 x 7 =
11 x 3 =	4 x 11 =	12 x 10 =	7 x 8 =
10 x 5 =	2 x 5 =	2 x 11 =	4 x 3 =
2 x 4 =	6 x 10 =	8 x 3 =	12 x 4 =
5 x 6 =	10 x 9 =	3 x 4 =	5 x 8 =
7 x 10 =	2 x 12 =	4 x 5 =	8 x 8 =
9 x 2 =	5 x 3 =	7 x 8 =	12 x 2 =
3 x 11 =	9 x 4 =	8 x 10 =	5 x 4 =
10 x 4 =	5 x 5 =	2 x 8 =	9 x 5 =
8 x 5 =	8 x 8 =	8 x 0 =	8 x 11 =
9 x 8 =	9 x 10 =	4 x 12 =	2 x 10 =
4 x 10 =	5 x 2 =	12 x 8 =	4 x 7 =
3 x 2 =	6 x 3 =	3 x 6 =	11 x 5 =
7 x 3 =	6 x 4 =	5 x 10 =	2 x 3 =
4 x 8 =	5 x 11 =	8 x 2 =	8 x 9 =
5 x 9 =	2 x 6 =	3 x 7 =	8 x 4 =
12 x 8 =	3 x 10 =	11 x 4 =	11 x 8 =
2 x 9 =	2 x 7 =	5 x 12 =	12 x 3 =
10 x 8 =	3 x 8 =	0 x 4 =	8 x 7 =

Date			
Subject/s	**Maths**		
Learning Objective 	To calculate with ratios		
		SA 	TA 
Success Criteria 	I can write the ratio as part: part = whole		
	I can use my knowledge of multiples		
	I know that what happens to one "part" must happen to the other		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

A farmer plants some crops in a field.
For every 12 carrots he plants 5 potatoes.
He plants 60 carrots in total.
How many potatoes did he plant?
How many vegetables did he plant in total?



Teacher Led

There are 5 girls for every 6 boys at the swimming pool There are 18 boys at the pool. How many girls are there ?

First you need to write out the simplified ratio with the correct heading.

Girls: Boys

5 : 6

I then know what there are actually 18 boys, so I line this up underneath the boys column.

Girls : Boys

5 : 6

__: 18

I know with ratio that whatever happens to one side, happens to the other. So the 6 has been ***multiplied by 3*** to get to 18. So I need to multiply the 5 by 3 which gets 15. So there are 15 girls. I can then fill in my final ratio.

Girls : Boys

5 : 6

15: 18

For every five adults on the bus there are 2 children. There are 18 children on the bus. How many adults are there?

Write the simplified ratio with the correct heading:

Adults : Children

5 : 2

There are 18 children so I can line this up and work out what it has been multiplied by

Adults : Children

5 : 2

_ : 18

The 2 has been ***multiplied by 9*** to get to 18 so I need to do the same the other side. 5 x 9 = 45

Adults : Children

5 : 2

45 : 18

Your turn

In a bag of sweets there are 3 green ones for every 2 red ones. There are 12 green sweets in the bag. How many red ones?

Fluency

1. A math club has 27 boy members. The ratio of boys to girls is 3 : 6 . How many girl members does the math club have?

2. A school has 8 boys for every 9 girls. There are 56 boys. How many girls are there?

3. A pattern has 4 blue triangles to every 12 yellow triangles. There are 48 yellow triangles. How many blue triangles are there?

4. A gardening club has a range of members, for every 13 pensioners there are 2 below 60. If there are 12 people below 60, how many pensioners are there?

5. Dylan draws 1 heart for every 3 star for every 26 circles. Dylan has drawn 7 hearts. How many stars and circles has he drawn?

6. Gavin has nickels, dimes, and quarters in the ratio of 8 : 1 : 2. If 30 of Gavin's coins are quarters, how many nickels and dimes does Gavin have?

7. The ratio of girls to boys in a a swimming club was 2 : 4. There were 14 girls. How many total members were there in the club?

8. A truck is carrying pear juice, cherry juice, and apple juice bottles in a ratio of 3 : 1 : 3. If there are 16 cherry juice bottles, then how many juice bottles in total are there?

9. The ratio of girls to boys in a chess club was 5 : 4. There were 32 boys. How many girls were there in the club?

10. A truck is carrying grape juice, passion fruit juice, and pear juice bottles in a ratio of 2 : 1 : 2. If there are 20 grape juice bottles, then how many passion fruit juice bottles are there?

Problem Solving and Reasoning

Prove it!

Find the cost of one pen from each shop.

ASDI	TESCU
4 pens £2.88	7 pens £4.83

Which is better value?

Use it!

Here is the recipe for making flapjacks.

Flapjacks
Serves: 10
120 g butter
100 g dark brown soft sugar
4 tablespoons golden syrup
250 g rolled oats
40 g sultanas or raisins

Jonathan has 180 g butter.
What is the largest number of flapjacks he can make?
How much of everything else will he need?

Use it!

Jodie has two packets of sweets.

In the first packet, for every 2 strawberry sweets there are 3 orange.

In the second packet, for one strawberry sweet, there are three orange.

Each packet has the same number of sweets.

The second packet contains 15 orange sweets.

How many strawberry sweets are in the first packet?

Answers

1. Boys: Girls 3:6 27 : 54
2. Boys : Girls 8 : 9 56: 63
3. Blue : Yellow 4 : 12 16: 48
4. Pensioners : Below 60 13: 2 78: 12
5. Heart : Star : Circle 1:3:26 7:21:182
6. Nickels: Dimes: Quarters 8:1:2 120:15:30
7. Girls: Boys 2: 4 14:28 = 42
8. Pear: Cherry: Apple 3:1:3 48:16:48 = 112
9. Girls : Boys 5 : 4 40 : 32
10. Grape : Passion : Pear 2 : 1 : 2 20: 10 : 20

Problem solving and reasoning answers

ASDI: 1 pen = 0.72 TESCU: 1 pen = 0.69 TESCU is better value
He has enough butter to make 15 flapjacks. He will need 150 g dark brown soft sugar, 6 tablespoons golden syrup, 375 g rolled oats and 60 g sultanas or raisins.
Second packet: 15 orange 5 strawberry So there are 20 sweets in each packet. First packet: 8 strawberry 12 orange The first packet contains 8 strawberry sweets.

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

3 x 4 =	7 x 8 =	9 ÷ 3 =	36 ÷ 12 =
21 ÷ 7 =	8 x 6 =	12 x 4 =	10 x 8 =
4 x 8 =	3 x 9 =	4 x 7 =	3 x 11 =
40 ÷ 8 =	15 ÷ 3 =	27 ÷ 9 =	20 ÷ 4 =
4 x 11 =	48 ÷ 6 =	8 ÷ 4 =	6 x 8 =
5 x 8 =	11 x 3 =	5 x 8 =	80 ÷ 10 =
24 ÷ 4 =	88 ÷ 11 =	24 ÷ 3 =	4 x 1 =
72 ÷ 8 =	8 x 4 =	9 x 4 =	8 x 5 =
10 x 3 =	16 ÷ 4 =	8 x 11 =	6 x 4 =
5 x 4 =	32 ÷ 8 =	6 ÷ 3 =	3 ÷ 3 =
12 ÷ 3 =	3 x 6 =	48 ÷ 12 =	44 ÷ 11 =
4 x 9 =	8 ÷ 8 =	3 x 4 =	7 x 3 =
11 x 8 =	4 x 3 =	0 x 8 =	12 x 8 =
3 x 12 =	48 ÷ 8 =	18 ÷ 3 =	28 ÷ 4 =
24 ÷ 8 =	30 ÷ 10 =	3 x 3 =	56 ÷ 7 =
27 ÷ 3 =	8 x 9 =	64 ÷ 8 =	4 x 12 =
7 x 4 =	10 x 4 =	36 ÷ 4 =	5 x 3 =
36 ÷ 9 =	16 ÷ 8 =	8 x 8 =	56 ÷ 7 =
56 ÷ 8 =	8 x 3 =	21 ÷ 3 =	4 x 6 =
3 x 0 =	72 ÷ 9 =	4 x 12 =	32 ÷ 4 =
12 ÷ 4 =	3 x 8 =	96 ÷ 12 =	12 x 3 =
33 ÷ 3 =	4 x 4 =	24 ÷ 8 =	7 x 8 =
6 x 3 =	9 x 8 =	2 x 3 =	9 x 3 =
40 ÷ 4 =	4 ÷ 4 =	11 x 4 =	21 ÷ 3 =
28 ÷ 7 =	3 x 7 =	32 ÷ 8 =	8 x 12 =

Date			
Subject/s	**Maths**		
Learning Objective 	To calculate with ratios using the total amount		
		SA 	TA 
Success Criteria 	I can write the ratio as part: part = whole		
	I can use my knowledge of multiples		
	I know that what happens to one "part" must happen to the other		
Support	Independent Adult Support ( ) Group Work		

Pre-task:

Emily has a packet of sweets.
For every 3 red sweets there are 5 purple sweets.
If there are 32 sweets in the packet in total, how many of each colour are there? You

Teacher Led

https://www.youtube.com/watch?v=ZσA84WbOQdk

In a bag of sweets there are 3 green ones for every 2 red ones. There are 15 sweets in the bag. How many green ones? How many red ones?

First thing we need to do is write the ratio we have been given

Green : Red

3 : 2

In the word problem we have been given the total, rather than one of the parts. So we need to work out the total of the ratio we have been given and compare it to the new total

Green : Red

3 : 2 = 5

_ : _ = 15

The total has been multiplied by 3 to get to the new total, so I need to do the same to both of the parts

Green : Red

3 : 2 = 5

9 : 6 = 15

I can check if it is right by adding up the two parts and checking I get the total

9 + 6 = 16

In a box of buttons there are 6 silver ones for every 4 gold ones. There are 20 buttons in the box. How many silver ones? How many gold ones?

Write the ratio

Silver : Gold

6 : 4

Write the new total and compare with the old one to work out the new parts

Silver : Gold

6 : 4 = 10

_ : _ = 20

I know what 10 has been multiplied by 2 to get to twenty, so I need to do the same to the rest of the ratio

Silver : Gold

6 : 4 = 10

12 : 8 = 20

Your Turn

In a test Rachel answered five questions correctly to every four she answered wrongly. There were 45 questions in the test. How many did she get right?

Fluency

1. Karen and Priti are sharing a packet of sweets in the ratio 2:3. There are 35 sweets in total. How many do they each get?
2. Tom, Phil and Ali deliver newspapers. One weekend they deliver 120 newspapers between them. If the numbers they delivered are in the ratio 1:4:3, how many newspapers did Ali deliver?
3. Ando and Hiro are 13 and 15 respectively. Their grandad gives them £112 to share in the ratio of their ages. How much do they each get?
4. There are 12 people in a book club . The ratio of men to women is 1:2. How many men and women are there?
5. In a tennis club there are 3 times as many right-handed players as there are left-handed players. If there are 36 players in total, how many are left-handed?

Using the same method as you've been using:

1. Split £150 into the following ratios:

a. 2:1 b. 1:4 c. 3:7

2. Split 360g into the following ratios:

a. 3:1 b. 5:7 c. 2:4:3

3. Split 225m into the following ratios:

a. 11:4 b. 5:1:3 d. 10:9:6

Problem Solving and Reasoning

Problem Solving and Reasoning

Use it!

David has two packets of sweets.

In the first packet, for every one strawberry sweets there are two orange sweets.

In the second packet, for every three orange sweets there are two strawberry.

Each packet contains 15 sweets in total.

Which packet has more strawberry sweets and by how many?

Use it!

Danielle is making some necklaces to sell. For every one pink bead, she uses three purple beads.

Each necklace has 32 beads in total.

The cost of the plain necklace is £2.80
The cost of a pink bead is 72 p
The cost of a purple bead is 65 p

How much does it cost to make one necklace?

Further Challenge

A swimming club has three categories of member: junior, senior and veteran. The ratio of junior to senior members is 3:2, and the ratio of senior to veteran members is 5:2. What is the least possible number of members of the swimming club?

Answers

1. Karen : Priti

   2 : 3 = 5

   14 : 21 = 35

2. Tom: Phil : Ali

   1 : 4 : 3 = 8

   15 : 60 : 45 = 120

3. Ando : Hiro

   13 : 15 = 28

   52 : 60 = 112

4. Men : Women

   1 : 2 = 3

   4 : 8 = 12

5. Right : Left

   3 : 1 = 4

   27 : 9 = 36

1. Split £150 into the following ratios:

a. 2:1
£100:£50

b. 1:4
£30:£120

c. 3:7
£45:£105

2. Split 360g into the following ratios:

a. 3:1
270g:90g

b. 5:7
150g:210g

c. 2:4:3
80g:160g:120g

3. Split 225m into the following ratios:

a. 11:4
165g:60g

b. 5:1:3
125g:25g:75g

d. 10:9:6
90g:81g:54g

Problem solving and reasoning

The first packet has 5 strawberry sweets and 10 orange sweets.

The second packet has 6 strawberry sweets and 9 orange sweets.

The second packet has 1 more strawberry sweet than the first packet.

Each necklace has 8 pink beads and 24 purple beads.

The cost of the pink beads is £5.76

The cost of the purple beads is £15.60

The cost of a necklace is £24.16

Date	
Subject/s	Maths
Learning Objective	To calculate with ratio

RATIO

CONTENT DOMAIN REFERENCES:
R1, R4

KS2 SATS

PRACTICE QUESTIONS BY TOPIC

1 [2004]

Mari is the presenter of a weekly radio show.

She always plays **five** new songs
for every **two** old songs.

Last week she played 15 **new** songs.

How many songs did she play altogether?

Show your method

[2 marks]

2 [2017]

Amina planted some seeds.

For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina plant?

[1 mark]

Questions compiled by:
@Maths4Everyone

3 [2006]

David and his friends prepare a picnic.

Each person at the picnic will get:

3 sandwiches

2 bananas

1 packet of crisps

The children pack **45** sandwiches.

How many **bananas** do they pack?

Show your method

[2 marks]

4 [2012]

A gardener plants tulip bulbs in a flower bed.

She plants 3 red bulbs for every 4 white bulbs.

She plants 60 red bulbs.

How many **white** bulbs does she plant?

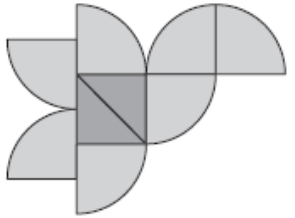
Show your method

[2 marks]

5 [2011]

Joe has some triangular tiles and some quarter-circle tiles.

He uses 2 triangles and 7 quarter-circles to make this 'flying bird' design.



Joe makes some more of these 'flying bird' designs.

He uses 56 quarter-circles.

How many **triangles** does he use?

Show your method

[2 marks]

6 [Extra]

Two numbers are in the ratio **4 : 5**

One of the numbers is **60**

There are two possible values for the other number.

What are the two possible values?

[2 marks]

7 [Extra]

A dessert has both fruit and yoghurt inside.

Altogether, the mass of the fruit and yoghurt is **175g**.

The **ratio** of the mass of **fruit** to the mass of **yoghurt** is **2 : 5**

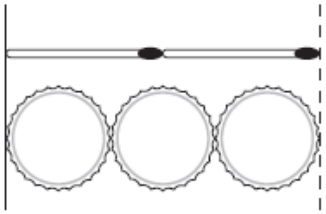
What is the mass of the yoghurt?

_____ g

[1 mark]

8 [2007]

Two matchsticks have the same length as three bottle tops.



How many bottle tops will have the same length as 50 matchsticks?

Show your method

[2 marks]

9 [Extra]

Rita buys a box of chocolates.

For every 2 plain chocolates there are 3 milk chocolates.

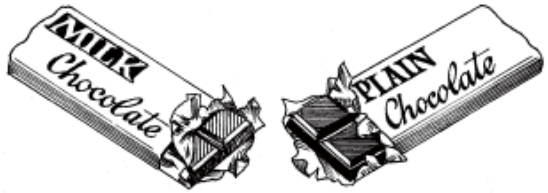
There are 30 chocolates in the box.

How many milk chocolates are there?

Show your method

[2 marks]

10 [2001]



In a survey, the **ratio** of the number of people who preferred **milk chocolate** to those who preferred **plain chocolate** was **5 : 3**

46 more people preferred milk chocolate, to plain chocolate.

How many people were in the survey?

Show your method

[2 marks]

11 [Extra]

There are 90 children in Year 6 at Woodland Junior School.

They are split into three classes.

Class	Number in class
6M	27
6P	33
6T	30

Each child chose football **or** netball **or** hockey.

In **6M**, 13 children chose hockey.
The rest of the class were split equally between football and netball.

In **6P**, 9 children chose netball.
Twice as many children chose football as chose hockey.

In **6T**, the ratio of children who chose
football to netball to hockey was 1:2:3

Complete this table.

Class	Number in class	Football	Netball	Hockey
6M	27			13
6P	33		9	
6T	30			

[3 marks]

12 [Extra]

The heights of Russian dolls are in the ratio **4 : 6 : 7**

In a set of dolls, the height of the **middle** doll is **9 cm**.

What are the heights of the other dolls?

..... cm smallest
9 cm middle
..... cm tallest

In another set of dolls, the height of the **tallest** doll is **9 cm**.

What are the heights of the other dolls?

Show your working, and give your answers to **1 decimal place**.

..... cm smallest
..... cm middle
9 cm tallest

[3 marks]

RATIO

CONTENT DOMAIN REFERENCES:
R1, R4

KS2 SATS

PRACTICE QUESTIONS BY TOPIC

1 [2004]

Mari is the presenter of a weekly radio show.

She always plays **five** new songs
for every **two** old songs.

Last week she played 15 **new** songs.

How many songs did she play **altogether**?

Show your method

NEW : OLD TOTAL
5 : 2 5
×3 ↓ ×3
15 6 → 21

21

[2 marks]

2 [2017]

Amina planted some seeds.

For every 3 seeds Amina planted, only 2 seeds grew.

Altogether, 12 seeds grew.

How many seeds did Amina **plant**?

PLANTED : GREW
3 : 2
×6 ↓ ↓ ×6
18 12

18

[1 mark]

3 [2006]

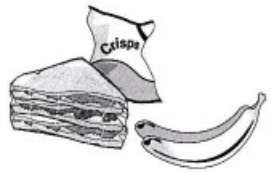
David and his friends prepare a picnic.

Each person at the picnic will get:

3 sandwiches

2 bananas

1 packet of crisps



The children pack **45** sandwiches.

How many **bananas** do they pack?

Show your method

S : B : C
3 : 2 : 1
×15 ↓ ↓ ×15
45 30

30

[2 marks]

4 [2012]

A gardener plants tulip bulbs in a flower bed.

She plants 3 red bulbs for every 4 white bulbs.

She plants 60 red bulbs.

How many **white** bulbs does she plant?

Show your method

RED : WHITE
3 : 4
×20 ↓ ↓ ×20
60 80

80

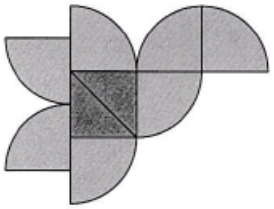
[2 marks]

Answers

5 [2011]

Joe has some triangular tiles and some quarter-circle tiles.

He uses 2 triangles and 7 quarter-circles to make this 'flying bird' design.



Joe makes some more of these 'flying bird' designs.

He uses 56 quarter-circles.

How many **triangles** does he use?

Show your method

TRI : QUART-CIR.
2 : 7
×8 ↓ ↓ ×8
16 56

16

[2 marks]

6 [Extra]

Two numbers are in the ratio **4 : 5**

One of the numbers is **60**

There are two possible values for the other number.

What are the two possible values?

4 : 5 ×15 ↓ ↓ ×15
60 75

OR 4 : 5 ×12 ↓ ↓ ×12
48 60

75

48

[2 marks]

7 [Extra]

A dessert has both fruit and yoghurt inside.

Altogether, the mass of the fruit and yoghurt is **175g**.

The **ratio** of the mass of **fruit** to the mass of **yoghurt** is **2 : 5**

What is the mass of the yoghurt?

FRUIT : YOGHURT
2 : 5
×25 ↓
125

TOTAL
7
×25 ↓
175

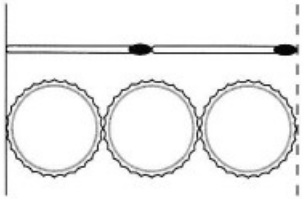
125 g

[7 | 175 → 25]

[1 mark]

8 [2007]

Two matchsticks have the same length as three bottle tops.



How many bottle tops will have the same length as 50 matchsticks?

Show your method

MATCHES : BOTTLE TOPS
2 : 3
×25 ↓ ↓ ×25
50 75

75

[2 marks]

9 [Extra]

Rita buys a box of chocolates.

For every 2 plain chocolates there are 3 milk chocolates.

There are 30 chocolates in the box. → TOTAL = 30!

How many milk chocolates are there?

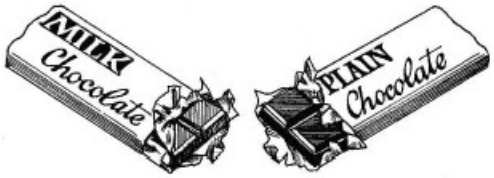
Show your method

PLAIN : MILK TOTAL
2 : 3 5
×6 ×6
18 30

18

[2 marks]

10 [2001]



In a survey, the **ratio** of the number of people who preferred **milk chocolate** to those who preferred **plain chocolate** was **5 : 3**

46 more people preferred milk chocolate, to plain chocolate.

How many people were in the survey?

Show your method

MILK : PLAIN TOTAL
5 : 3 8
2 [DIFFERENCE] ×23
×23 184
46

184

[2 marks]

11 [Extra]

There are 90 children in Year 6 at Woodland Junior School.

They are split into three classes.

Class	Number in class
6M	27
6P	33
6T	30

Each child chose football **or** netball **or** hockey.

In **6M**, 13 children chose hockey. 27 − 13 = 14, $\frac{14}{2} = 7$

The rest of the class were split equally between football and netball.

In **6P**, 9 children chose netball. 33 − 9 = 24

Twice as many children chose football as chose hockey. 2 : 1 → 16 : 8

In **6T**, the ratio of children who chose football to netball to hockey was 1:2:3

F : N : H TOTAL
1 : 2 : 3 6
×5 ×5
5 10 15 30

Complete this table.

Class	Number in class	Football	Netball	Hockey
6M	27	7	7	13
6P	33	16	9	8
6T	30	5	10	15

[3 marks]

12 The heights of Russian dolls are in the ratio **4 : 6 : 7**

[Extra]

4 : 6 : 7 ×1·5

6 9 10·5

In a set of dolls, the height of the **middle** doll is **9cm**.

What are the heights of the other dolls?

6 ..... cm smallest

9 ..... cm middle

10·5 ..... cm tallest

In another set of dolls, the height of the **tallest** doll is **9cm**.

What are the heights of the other dolls?

Show your working, and give your answers to **1 decimal place**.

4 : 6 : 7 ×1·28

9

7 | 9·00 = 1·28

1·28 × 4 = 5·12

1·28 × 6 = 7·68

5·1 ..... cm smallest

7·7 ..... cm middle

9 ..... cm tallest

[3 marks]