

Monday 22nd June

Year 5/6: Calculating Ratio

Introduction

Complete the sentences using the images below.



For every _____ sprouts there are _____ carrots.

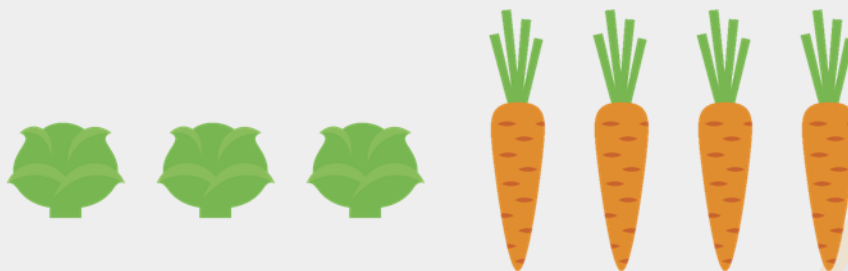
of the vegetables are sprouts,

of the vegetables are carrots.

:

Introduction

Complete the sentences using the images below.



For every 3 sprouts there are 4 carrots.

3

of the vegetables are sprouts,

4

of the vegetables are carrots.

7

7

3

:

4

Varied Fluency 1

Use the image below to complete the ratio statements.



For every _____ teacher, there are _____ pupils.

If there are 12 teachers, how many pupils will there be?

Varied Fluency 1

Use the image below to complete the ratio statements.



For every 1 teacher, there are 10 pupils.

If there are 12 teachers, how many pupils will there be?

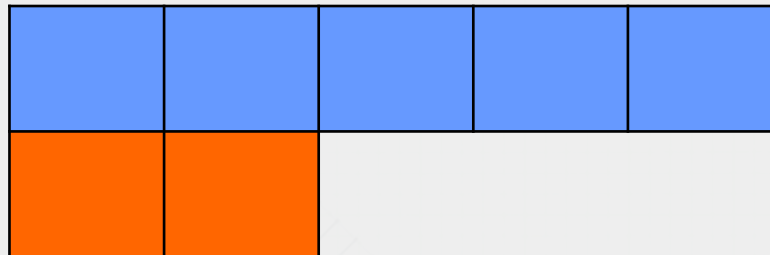
120

Varied Fluency 2

There are 35 animals on a farm. For every 5 cows there are 2 pigs.
Use the bar model to help you calculate:

How many cows altogether?

How many pigs altogether?



Varied Fluency 2

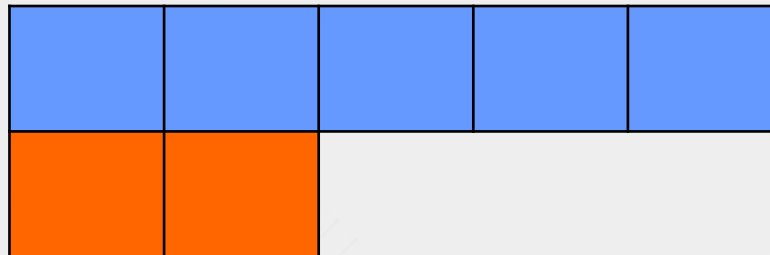
There are 35 animals on a farm. For every 5 cows there are 2 pigs.
Use the bar model to help you calculate:

How many cows altogether?

25

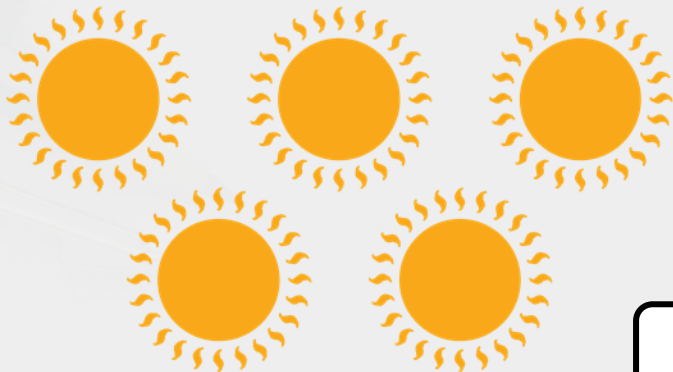
How many pigs altogether?

10



Varied Fluency 3

What is the ratio of suns to rainclouds?



:

Use the ratio to calculate how many symbols there will be altogether if there are 20 suns.

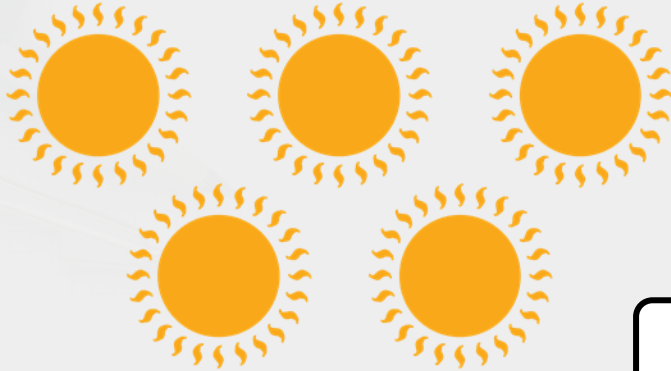
suns

rainclouds

symbols altogether

Varied Fluency 3

What is the ratio of suns to rainclouds?



5 : **3**

Use the ratio to calculate how many symbols there will be altogether if there are 20 suns.

20 suns

12 rainclouds

32 symbols altogether

Problem Solving 1

Mary is making buns for her birthday party.

For every 3 chocolate buns, she makes 2 vanilla buns.

There are 66 people at the party, $\frac{1}{3}$ of the people want a vanilla bun.

How many buns does Mary need to make altogether?

How many chocolate buns will she need to make?

Problem Solving 1

Mary is making buns for her birthday party.

For every 3 chocolate buns, she makes 2 vanilla buns.

There are 66 people at the party, $\frac{1}{3}$ of the people want a vanilla bun.

How many buns does Mary need to make altogether?

55

How many chocolate buns will she need to make?

33

Reasoning 1

A cashier is sorting the money in the till.
He works out the ratio of £5 notes to £10 notes is 2:1

Have the notes been sorted correctly?



Explain your answer.

Reasoning 1

A cashier is sorting the money in the till.
He works out the ratio of £5 notes to £10 notes is 2:1

Have the notes been sorted correctly?



Explain your answer.
No because...

Reasoning 1

A cashier is sorting the money in the till.
He works out the ratio of £5 notes to £10 notes is 2:1

Have the notes been sorted correctly?



Explain your answer.

No because there are 1 too many £10 notes (or there needs to be 2 more £5 notes).

Problem Solving 2

For every blue front door on the row of terraces, there are 2 red doors. There are 12 blue doors altogether.

One third of the red doors are repainted blue.

What is the new ratio of blue doors to red doors?

How many red doors are there altogether?

Problem Solving 2

For every blue front door on the row of terraces, there are 2 red doors. There are 12 blue doors altogether.

One third of the red doors are repainted blue.

What is the new ratio of blue doors to red doors?

20:16 (accept 5:4)

How many red doors are there altogether?

16

Year 5 and Year 6 Developing

1a. Use the image below to complete the ratio statements.



For every ___ oranges, there are ___ pears.

:

If there are 8 oranges, how many pears will there be?



6 VF

1b. Use the image below to complete the ratio statements.



For every ___ rubbers, there is ___ pencil sharpener.

:

If there are 4 rubbers, how many pencil sharpeners will there be?

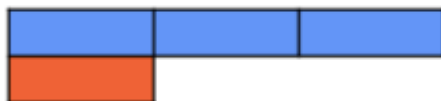


6 VF

2a. There are 40 pencils and pens in a box. For every 1 pencil, there are 3 pens. Use the bar model to help you calculate:

How many pencils altogether?

How many pens altogether?



6 VF

2b. There are 60 balls in a bag. For every 2 footballs, there are 4 tennis balls. Use the bar model to help you calculate:

How many footballs altogether?

How many tennis balls altogether?



6 VF

1a. Jackie is decorating the house with balloons using this ratio:



There are 20 balloons altogether. Sixteen children come to the party, $\frac{1}{4}$ of them choose a blue balloon.

How many children get a blue balloon?
How many children get a yellow balloon?
How many spare blue and yellow balloons are there?



6 PS

1b. Katie is giving her party guests party hats using this ratio:



There are 30 party hats altogether. Eighteen children come to the party, $\frac{1}{2}$ of them choose a stripy hat.

How many children get a stripy hat?
How many children get a spotty hat?
How many spare stripy and spotty hats are there?



6 PS

2a. A gardener is planting vegetables. She wants them to grow in a pattern of 1 carrot and 3 onions.

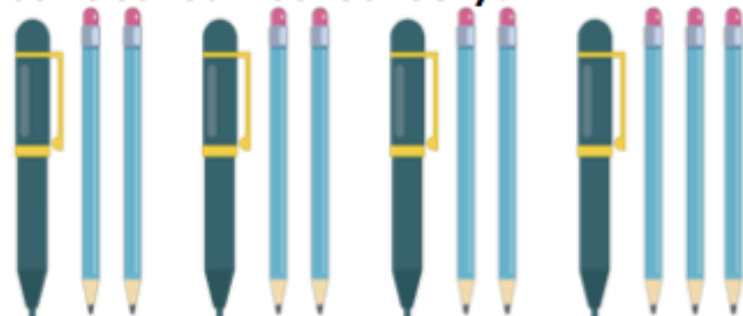
Have they been planted correctly?



Explain your answer.

2b. Martin is sorting out his pencil case. He wants to have 2 pencils for every 1 pen.

Has he sorted it out correctly?



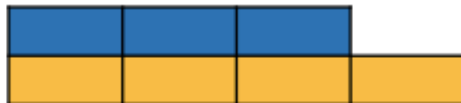
Explain your answer.

Year 6 Expected

5a. There are 28 pieces of fruit on a plate. For every 4 strawberries, there are 3 raspberries. Use the bar model to help you calculate:

How many strawberries altogether?

How many raspberries altogether?



6 VF

5b. There are 30 vehicles in a traffic jam. For every 3 cars, there are 2 vans. Use the bar model to help you calculate:

How many cars altogether?

How many vans altogether?



6 VF

6a. What is the ratio of horses to giraffes?



Use the ratio to calculate how many animals there will be altogether if there are 20 horses.

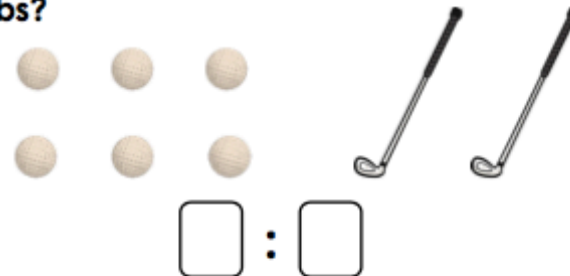
horses

giraffes

animals altogether



6b. What is the ratio of golf balls to golf clubs?



Use the ratio to calculate how many items there will be altogether if there are 24 golf balls.

golf balls

golf clubs

items altogether



4a. Fred is catering for a large party.

For every 2 cheese pizzas, he makes 3 ham pizzas.

There are 60 people in the party, $\frac{1}{3}$ of the people want a cheese pizza.

How many pizzas does Fred need to make altogether?

How many ham pizzas will he make?



6 PS

4b. Will is providing drinks for a school disco.

For every 4 bottles of pop, he takes 1 bottle of water.

There are 45 people going to the disco, $\frac{1}{3}$ of them want water.

How many bottles does Will take altogether?

How many bottles of water does he take?



6 PS

5a. A florist is arranging flowers. She wants to arrange the flowers using the ratio 3 yellow flowers to every 1 red flower.

Have the flowers been arranged correctly?



Explain your answer.



5b. Caleb is sorting jam flavours. He wants to arrange the flavours using the ratio 2 marmalade to every 3 strawberry jam.

Have the flavours been arranged correctly?



Explain your answer.



Year 6 Greater Depth

7a. Use the image below to complete the sentence and simplify the ratio statement.



For every ___ strawberry buns, there are ___ cherry buns and ___ raspberry buns.

: :

If there are 12 strawberry buns, how many cherry and raspberry buns will there be?



6 VF

7b. Use the image below to complete the sentence and simplify the ratio statement.



For every ___ paint pallets, there are ___ paintbrushes and ___ water pots.

: :

If there are 16 paint pallets, how many paintbrushes and water pots will there be?



6 VF

8a. There are 24 goals scored during a match. For every 3 goals scored by the home team, there is 1 goal scored by the away team. Use the bar model to help you calculate:

How many home goals altogether?

How many away goals altogether?



6 VF

8b. There are 36 marbles in a bag. For every 2 large marbles, there are 4 small marbles. Use the bar model to help you calculate:

How many large marbles altogether?

How many small marbles altogether?



6 VF

7a. Manjit is organising his work clothes. For every 2 ties, there are 8 shirts and 4 suits.

What is the simplified ratio of ties to shirts to suits?

He has 28 items in his work wardrobe, but decides to get rid of half of his shirts.

**How many shirts does he now have?
How many ties and suits could he get rid of to keep the ratio the same?**



6 PS

7b. Amaya is making drinks. For every 4 coffees, she makes 8 teas and 6 orange juices.

What is the simplified ratio of coffee, tea and orange juice?

She has 36 drinks to make in total, but one quarter of the coffee orders are cancelled.

How many coffee orders does she have now? How many orange juice orders does she have?



6 PS

8a. A shopkeeper is organising the drinks shelf. She wants the drinks to follow the ratio 3 cherry to every 2 cola and 1 soda.

Have the drinks been arranged correctly?

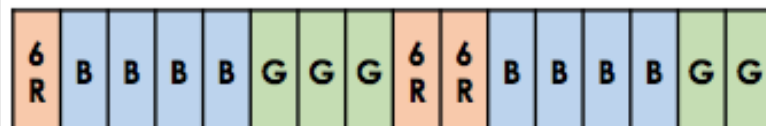


Explain your answer.



8b. Luca chooses three colours for a stripy scarf and decides he wants to use the ratio 1 red for every 4 blue and 3 green.

Has the scarf been knitted correctly?



Explain your answer.

