Varied Fluency
Step 4: Calculating Ratio

National Curriculum Objectives:

Mathematics Year 6: (6R1) Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
Mathematics Year 6: (6R3) Solve problems involving similar shapes where the scale factor is known or can be found
Mathematics Year 6: (6R4) Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Differentiation:

Developing Questions to support using information to calculate ratios of two groups, scaling up using 2 and 10 times tables. Using pictorial representations to support.
Expected Questions to support using information to calculate ratios of two groups. Using pictorial representations to support.
Greater Depth Questions to support using information to calculate ratios of up to three groups, where ratios may need simplifying. Using some pictorial representations to support.

More Year 6 Ratio resources

Did you like this resource? Don't forget to review it on our website.

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Calculating Ratio

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?

D VF

Calculating Ratio

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

For every ___ rubbers, there is ___ pencil sharpener.

☐ : ☐

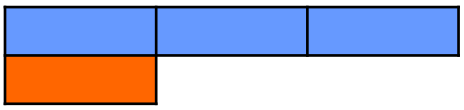
If there are 4 rubbers, how many pencil sharpeners will there be?

D 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? ☐



D VF

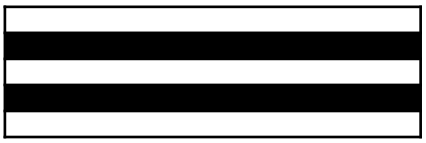
2b. There are 60 balls in a bag. For every 2 footballs, there are 4 tennis balls. Use the bar model to help you calculate:

How many footballs altogether? ☐

How many tennis balls altogether? ☐

D VF

3a. What is the ratio of white stripes to black stripes?



☐ : ☐

Use the ratio to calculate how many stripes there will be altogether if there are 6 white stripes.

6 white stripes

☐ black stripes

☐ stripes altogether

D VF

3b. What is the ratio of lions to tigers?

☐ : ☐

Use the ratio to calculate how many animals there will be altogether if there are 30 lions.

30 lions

☐ tigers

☐ animals altogether

D VF

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Calculating Ratio

4a. Use the image below to complete the ratio statements.

For every ___ apples, there are ___ bananas.

☐ : ☐

If there are 12 apples, how many bananas will there be?

E

VF

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:

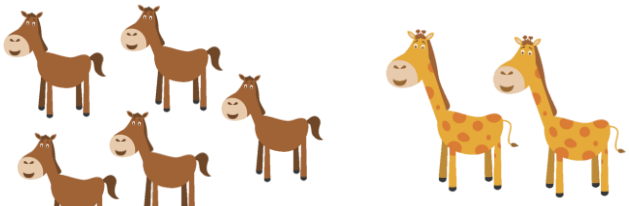
How many strawberries altogether? ☐

How many raspberries altogether? ☐

E

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.

20 horses

☐ giraffes

☐ animals altogether

E

VF

Calculating Ratio

4b. Use the image below to complete the ratio statements.

For every ___ pairs of scissors, there are ___ glue pots.

☐ : ☐

If there are 18 pairs of scissors, how many glue pots will there be?

E

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:

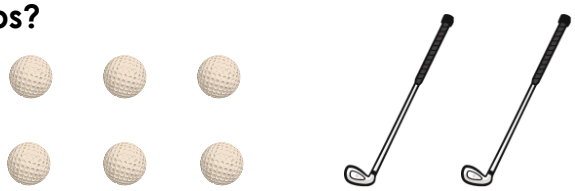
How many cars altogether? ☐

How many vans altogether? ☐

E

VF

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.

24 golf balls

☐ golf clubs

☐ items altogether

E

VF

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Calculating Ratio

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?

GD VF

Calculating Ratio

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?

GD 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? ☐

GD 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? ☐

GD VF

9a. What is the simplified ratio of crisps to chocolate to sweets?

There are 4 bags of crisps for every 8 chocolates and 2 sweets.

☐ : ☐ : ☐

Use the ratio to calculate how many treats there will be altogether if there are 12 bags of crisps.

☐ chocolates

☐ sweets

☐ treats altogether

GD VF

9b. What is the simplified ratio of red to white to blue bricks?

There are 6 red bricks for every 36 white and 18 blue bricks.

☐ : ☐ : ☐

Use the ratio to calculate how many bricks there will be altogether if there are 18 red bricks.

☐ blue bricks

☐ white bricks

☐ bricks altogether

GD VF

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Varied Fluency
Calculating Ratio

Developing

1a. 4 oranges, 2 pears (accept 2 oranges, 1 pear). Ratio = 4: 2 (2:1). 4 pears.
2a. 10 pencils, 30 pens.
3a. 3:2. 4 black stripes, 10 stripes altogether.

Expected

4a. 4 apples, 8 bananas (accept 1 apple, 2 bananas. Ratio = 4:8 (1:2). 24 bananas.
5a. 16 strawberries, 12 raspberries
6a. 5:2. 8 giraffes, 28 animals altogether.

Greater Depth

7a. 4 strawberry, 6 cherry and 2 raspberry. Ratio = 2:3:1. 18 cherry and 6 raspberry.
8a. 18 home goals, 6 away goals.
9a. 2:4:1. 24 chocolates and 6 sweets, 42 treats altogether.

Varied Fluency
Calculating Ratio

Developing

1b. 2 rubbers, 1 pencil sharpener. Ratio = 2:1. 2 pencil sharpeners.
2b. 20 footballs, 40 tennis balls.
3b. 3:1. 10 tigers, 40 animals altogether.

Expected

4b. 6 pairs of scissors, 2 glue pots (accept 3 pairs of scissors, 1 glue pot). Ratio = 6:2 (3:1). 6 glue pots.
5b. 18 cars, 12 vans
6b. 6:2 (accept 3:1). 8 golf clubs, 32 items altogether.

Greater Depth

7b. 4 paint pallets, 8 paintbrushes and 2 water pots. Ratio = 2:4:1. 32 paintbrushes, 8 water pots.
8b. 12 large marbles, 24 small marbles.
9b. 1:6:3; 54 blue bricks, 108 white bricks, 180 bricks altogether.

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