Varied Fluency
Step 21: Percentages – Missing Values

National Curriculum Objectives:

Mathematics Year 6: (6R2) Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

Mathematics Year 6: (6F11) Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Differentiation:

Developing Questions to support finding percentages and amounts using a variety of strategies. Percentages are multiples of 10 and solutions are whole numbers.

Expected Questions to support finding percentages and amounts using a variety of strategies. Percentages are multiples of 2 and 5, and solutions may have one decimal place.

Greater Depth Questions to support finding any percentage or amount using a variety of strategies. Solutions may have one decimal place.
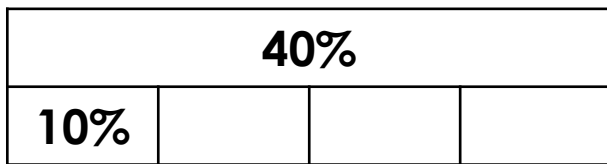
More Year 5 and Year 6 Decimals and Percentages resources.

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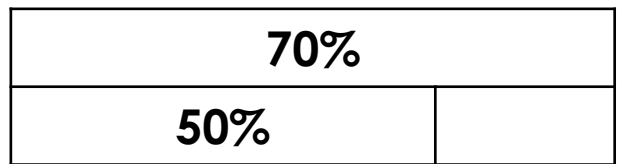
Percentages – Missing Values

Percentages – Missing Values

1a. Complete the bar model.

40%			
10%			

D ⭐   6 VF

1b. Complete the bar model.

70%		
50%		

D ⭐   6 VF

2a. Which two facts help to calculate:

40%   of   80   =   **?**

A.   40 is half of 80

B.   40% = 4 x 10%

C.   80 ÷ 10 = 8

D ⭐   Complete the calculation.   6 VF

2b. Which two facts help to calculate:

30%   of   120   =   **?**

A.   120 ÷ 4 = 30

B.   10% of 120 is 12

C.   30% = 3 x 10%

D ⭐   Complete the calculation.   6 VF

3a. True or false?

If 10% = 12 then 30% = 36

D ⭐   6 VF

3b. True or false?

If 10% = 18 then 40% = 54

D ⭐   6 VF

4a. Find the missing values.

20% of 40 = ☐

10% of ☐ = 4

D ⭐   6 VF

4b. Find the missing values.

30% of 60 = ☐

10% of ☐ = 3

D ⭐   6 VF

5a. Trixie uses 70% of a bag of sugar to make cupcakes.

The bag had 200g of sugar when full.

How much sugar did she use?

D ⭐   6 VF

5b. A dressmaker uses 90% of a roll of fabric.

The roll had 500cm of fabric when full.

How much fabric did she use?
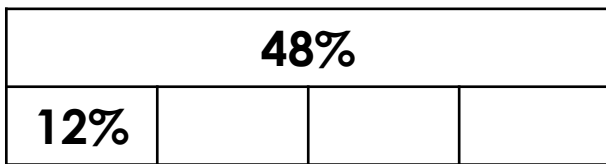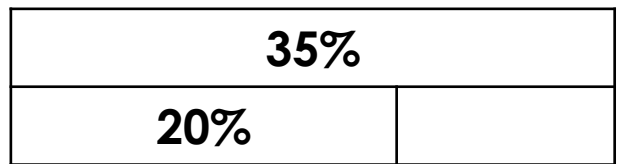
D ⭐   6 VF

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Varied Fluency – Percentages – Missing Values – Year 6 Developing

Percentages – Missing Values

Percentages – Missing Values

6a. Complete the bar model.

48%			
12%			

E   6 VF

6b. Complete the bar model.

35%		
20%		

E   6 VF

7a. Which two facts help to calculate:

15%   of   90   =   ?

- A.   90 ÷ 10 = 9
- B.   50% of 90 = 45
- C.   5% is half of 10%

E   Complete the calculation.   6 VF

7b. Which two facts help to calculate:

12%   of   150   =   ?

- A.   150 ÷ 2 = 75
- B.   10% of 150 = 150 ÷ 10
- C.   2% = 10% ÷ 5

E   Complete the calculation.   6 VF

8a. True or false?

If   36% = 45   then   4% = 9

E   6 VF

8b. True or false?

If   5% = 13   then   45% = 65

E   6 VF

9a. Find the missing values.

5%   of   60   =   ☐

42%   of   ☐   =   84

10%   of   30   =   ☐

25%   of   ☐   =   15

E   6 VF

9b. Find the missing values.

8%   of   200   =   ☐

4%   of   ☐   =   16

15%   of   70   =   ☐

75%   of   ☐   =   60

E   6 VF

10a. A sweet shop makes 48% of its yearly profit in the month of December.

This December they made a profit of £4,800.

How much was their profit for the whole year?

E   6 VF

10b. The local pool uses 25% of the total water to run the water slides.

The total water used by the swimming pool is 12,000 gallons.
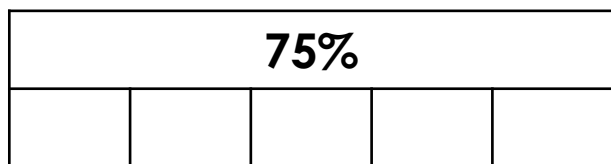
How much water do the slides use?

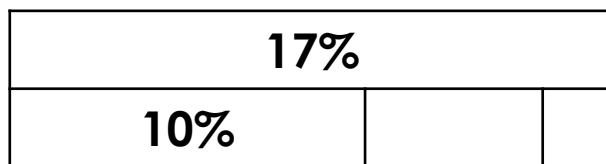E   6 VF

Percentages – Missing Values

11a. Complete the bar model.

| 75% | | | |

| | | | |

GD   6 VF

11b. Complete the bar model.

| 17% | | |

| 10% | | |

GD   6 VF

12a. Which two facts help to calculate:

$$93\% \quad of \quad 350 \quad = \quad \boxed{?}$$

A. $350 \div 70 = 5$

B. 10% of $35 = 3.5$

C. $3 \times 3.5 = 10.5$

GD **Complete the calculation.**   6 VF

12b. Which two facts help to calculate:

$$4\% \quad of \quad 240 \quad = \quad \boxed{?}$$

A. $240 \div 50 = 4.8$

B. $2\% = 10\% \div 5$

C. 10% of $240 = 24$

GD **Complete the calculation.**   6 VF

13a. True or false?

$$If \quad 12\% = 2.4 \quad then \quad 48\% = 19.2$$

GD   6 VF

13b. True or false?

$$If \quad 9\% = 13.5 \quad then \quad 81\% = 150$$

GD   6 VF

14a. Find the missing values.

$$7\% \quad of \quad 150 \quad = \quad \boxed{}$$

$$64\% \quad of \quad \boxed{} \quad = \quad 192$$

$$19\% \quad of \quad 250 \quad = \quad \boxed{}$$

$$14\% \quad of \quad \boxed{} \quad = \quad 21$$

GD   6 VF

14b. Find the missing values.

$$21\% \quad of \quad 530 \quad = \quad \boxed{}$$

$$89\% \quad of \quad \boxed{} \quad = \quad 178$$

$$3\% \quad of \quad 120 \quad = \quad \boxed{}$$

$$21\% \quad of \quad \boxed{} \quad = \quad 25.2$$

GD   6 VF

15a. A gardener is mixing compost and manure for his allotment. He uses a whole 7kg bag of compost.

The final product is 65% manure.

How much manure did he use? Give your answer in kilograms.

GD   6 VF

15b. A chef is making fudge. He mixes peanut butter and sugar together. He uses a whole 6kg bag of sugar.

The final product is 70% peanut butter.

How much peanut butter did he use? Give your answer in kilograms.

GD   6 VF

Developing
1a. **10%, 10%, 10%**
2a. **B and C; 32**
3a. **True**
4a. **8, 40**
5a. **140g**

Expected
6a. **12%, 12%, 12%**
7a. **A and C; 13.5**
8a. **False: 4% = 5**
9a. **3, 200, 3, 60**
10a. **£10,000**

Greater Depth
11a. **15%, 15%, 15%, 15%, 15%**
12a. **B and C; 325.5**
13a. **False: 48% = 9.6**
14a. **10.5, 300, 47.5, 150**
15a. **13kg**

Developing
1b. **20%**
2b. **B and C; 36**
3b. **False: 40% = 72**
4b. **18, 30**
5b. **450cm**

Expected
6b. **15%**
7b. **B and C; 18**
8b. **False: 45%= 117**
9b. **16, 400, 10.5, 80**
10b. **3,000 gallons**

Greater Depth
11b. **Various answers, for example: 5%, 2%**
12b. **B and C; 9.6**
13b. **False; 81% = 121.5**
14b. **111.3, 200, 3.6, 120**
15b. **14kg**