Reasoning and Problem Solving
Step 19: Percentage of an Amount 1

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:

Questions 1, 4 and 7 (Problem Solving)
Developing Work out whether or not a percentage target has been met by various contributions. 50% and 10% are included, and no conversions are required.
Expected Work out whether or not a percentage target has been met by various contributions. 50%, 25%, 10% and 1% are included, and some conversions are required.
Greater Depth Work out whether or not a percentage target has been met by various contributions. 50%, 25%, 10% and 1% are included, some conversions are required and numbers with up to two decimal places are used.

Questions 2, 5 and 8 (Problem Solving)
Developing Change the percentage or the amount in a calculation to reach the target answer. 50% and 10% are included, and no conversions are required.
Expected Change the percentage or the amount in a calculation to reach the target answer. 50%, 25%, 10% and 1% are included, and some conversions are required.
Greater Depth Change the percentage or the amount in a calculation to reach the target answer. 50%, 25%, 10% and 1% are included, some conversions are required and numbers with up to two decimal places are used.

Questions 3, 6 and 9 (Reasoning)
Developing Give an example to show a statement about percentages can be true, or false. 50% and 10% are included.
Expected Give a pair of examples which show a statement about percentages can sometimes be true and sometimes be false. 50%, 25%, 10% and 1% are included.
Greater Depth Give a pair of examples which show a statement about percentages can sometimes be true and sometimes be false. 50%, 25%, 10% and 1% are included and conversions are required.

More Year 5 and Year 6 Decimals and Percentages resources.

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

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Percentage of an Amount 1

Percentage of an Amount 1

1a. Anjay is trying to raise £40. He wanted to raise 50% of that total amount at a fundraising party. He kept a record of how much people gave:

Person	Amount given
Rich Fella	10% of £80
Guy Withmoney	10% of £30
Lotta Cash	50% of £10

How much money did he raise at the party? Did he reach 50% of £40?

D ☆

6 PS

1b. Leah is trying to raise £6,000. She wanted to raise 10% of that total amount at a fundraising party. She kept a record of how much people gave:

Person	Amount given
Carrie Dollars	50% of £250
Bill Mybank	50% of £370
Angel Hinvesta	10% of £3,000

How much money did she raise at the party? Did she reach 10% of £6,000?

D ☆

6 PS

2a. Ollie and Shae are trying to get the largest answer by changing one part of the calculation below.

10% of 80kg = 8kg

Ollie says, "If I find 10% of 100kg, instead of 80kg, my answer will be largest."

Shae says, "I will change the percentage to find a larger answer."

What percentage could Shae change 10% to in order to get the largest answer?

D ☆

6 PS

2b. Finny and Max are trying to get the smallest answer by changing one part of the calculation below.

50% of 110m = 55m

Finny says, "If I find 10% of 110m, instead of 50%, my answer will be smallest."

Max says, "I will change the number of metres to find a smaller answer."

What number could Max change 110m to in order to get the smallest answer?

D ☆

6 PS

3a. Esme is thinking about percentages.

> 10% of one amount is less than 50% of a different amount.

Give an example to show that Esme's statement can sometimes be true.

D ☆

6 R

3b. Karl is thinking about percentages.

> 50% of one amount will be more than 10% of a different amount.

Give an example to show that Karl's statement can sometimes be false.

D ☆

6 R

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Reasoning and Problem Solving – Percentage of an Amount 1 – Year 6 Developing

4a. Michelle is trying to raise £500. She wanted to raise 25% of that total amount at a fundraising party. She kept a record of how much people gave:

Person	Amount given
Owen Lotts	1% of £6,800
Penny Pincher	10% of £360
Noah Goodeal	50% of £66

How much money did she raise at the party? Did she reach 25% of £500?

E | 6 PS

4b. Elliot is trying to raise £16,000. He wanted to raise 1% of that total amount at a fundraising party. He kept a record of how much people gave:

Person	Amount given
Milly Yonaire	25% of £180
Anna Notherquid	25% of £148
Landon Hisfeet	10% of £770

How much money did he raise at the party? Did he reach 1% of £16,000?

☆ | 6 PS

5a. Shona and Toby are trying to get the largest answer by changing one part of the calculation below.

1% of 13m = 13cm

Shona says, "If I find 25% of 13m, instead of 1%, my answer will be largest."

Toby says, "I will change the number of metres to find a larger answer."

What amount could Toby change 13m to in order to get the largest answer?

☆ | 6 PS

5b. Theo and May are trying to get the smallest answer by changing one part of the calculation below.

25% of 5L = 1,250ml

Theo says, "If I find 25% of 2L, instead of 5L, my answer will be smallest."

May says, "I will change the percentage to find a smaller answer."

What percentage could May change 25% to in order to get the smallest answer?

E | 6 PS

6a. Harry is thinking about percentages.

> ## 10% of one amount will be more than 1% of a different amount.

Give one example to show Harry's statement can be true, and one example to show it can be false.

E | 6 R

6b. Josie is thinking about percentages.

> ## 1% of one amount will be less than 25% of a different amount.

Give one example to show Josie's statement can be true, and one example to show it can be false.

☆ | 6 R

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Reasoning and Problem Solving – Percentage of an Amount 1 – Year 6 Expected

7a. Dylan is trying to raise £485. He wanted to raise 50% of that total amount at a fundraising party. He kept a record of how much people gave:

Person	Amount given
Ruby Dealer	25% of £335
Liv Decadent-Lee	1% of £4,540
Max Profits	10% of £1,196

How much money did he raise at the party? Did he reach 50% of £485?

6 PS

7b. Sienna is trying to raise £1,610. She wanted to raise 25% of that total amount at a fundraising party. She kept a record of how much people gave:

Person	Amount given
Ivor Fortune	1% of £11,170
Kitty Isfull	1% of £16,320
Chase Wonga	50% of £255

How much money did she raise at the party? Did she reach 25% of £1,610?

6 PS

8a. Cal and Eva are trying to get the smallest answer by changing one part of the calculation below.

25% of 2.35km = 587.5m

Cal says, "If I find 25% of 1.67km, instead of 2.35km, my answer will be smallest."

Eva says, "I will change the percentage to find a smaller answer."

What percentage could Eva change 25% to in order to get the smallest answer?

6 PS

8b. Nia and Arlo are trying to get the largest answer by changing one part of the calculation below.

10% of 4.5cm = 4.5mm

Nia says, "If I find 25% of 4.5cm, instead of 10%, my answer will be largest."

Arlo says, "I will change the number of centimetres to find a larger answer."

What number could Arlo change 4.5cm to in order to get the largest answer?

6 PS

9a. Layla is thinking about percentages.

> 1% of a number of kilograms will be more than 50% of a different number of grams.

Give one example to show Layla's statement can be true, and one example to show it can be false.

6 R

9b. Aiden is thinking about percentages.

> 10% of one number of centimetres will be less than 25% of a different number of metres.

Give one example to show Aiden's statement can be true, and one example to show it can be false.

6 R

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Reasoning and Problem Solving – Percentage of an Amount 1 – Year 6 Greater Depth

Reasoning and Problem Solving
Percentage of an Amount 1

Developing
1a. £16. No, he wanted to raise £20
2a. Any percentage larger than 12.5%
3a. Various answers, for example:
10% of 10 = 1, and 50% of 6 = 3

Expected
4a. £137. Yes, she wanted to raise £125
5a. Any amount larger than 325m
6a. Various answers are possible.
To show it can be true:
10% of 70 = 7, and 1% of 200 = 2
To show it can be false:
10% of 30 = 3, and 1% of 2,500 = 25

Greater Depth
7a. £248.75. Yes, wanted to raise £242.50
8a. Any percentage smaller than 17.76%
9a. Various answers are possible.
To show it can be true: 1% of 12kg = 120g, and 50% of 150g = 75g
To show it can be false: 1% of 1kg = 10g, and 50% of 40g = 20g

Reasoning and Problem Solving
Percentage of an Amount 1

Developing
1b. £610. Yes, she wanted to raise £600
2b. Any amount smaller than 22m
3b. Various answers, for example:
50% of 20 = 10, and 10% of 120 = 12

Expected
4b. £159. No he wanted to raise £160
5b. Any percentage smaller than 10%
6b. Various answers are possible.
To show it can be true:
1% of 400 = 4, and 25% of 20 = 5
To show it can be false:
1% of 2,000 = 20, and 25% of 24 = 6

Greater Depth
7b. £402.40. No, she wanted to raise £402.50
8b. Any number larger than 11.25cm
9b. Various answers are possible.
To show it can be true: 10% of 730cm = 73cm, and 25% of 4m = 100cm.
To show it can be false: 10% of 990cm = 99cm, and 25% of 3m = 75cm

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