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Calculate Fractions of a Quantity



Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



Va Nurs

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

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Aim

• Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

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Chen has 20 biscuits.

Use the counters above to represent Chen's biscuits and find:

Diving

 $\frac{1}{2}$ of 20 = 10

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 $\frac{1}{4}$ of 20 = 5

$$\frac{1}{5}$$
 of 20 = 4

 $\frac{1}{10}$ of 20 = 2

MIL

Va Nin 1

Use the answers from the previous question to help find:

 $\frac{2}{2}$ of 20 = 20 $\frac{3}{4}$ of 20 = 15 $\frac{4}{5}$ of 20 = 16 $\frac{6}{10}$ of 20 = 12

 $\frac{1}{2}$ of 20 = 10 $\frac{1}{4}$ of 20 = 5 $\frac{1}{5}$ of 20 = 4 $\frac{1}{10}$ of 20 = 2

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Draw this bar model to find and represent:

$$\frac{1}{4}$$
 of 36 = 36 ÷ 4 = 9

$$\frac{2}{4}$$
 of 36 = 18

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$$\frac{3}{4}$$
 of 36 = 27

 $\frac{4}{4}$ of 36 = 36



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Draw a bar model to help solve this problem.

Mary uses $\frac{3}{8}$ of a 400g bag of flour to make some cakes.

Diving

 a) How many grams of flour did Mary use?

150g

b) How many grams of flour were left in the bag?

250g

MIL

Va Nurs

400							
50	50	50	50	50	50	50	50



16 milas



Deeper

Which is the odd one out and why?

a) $\frac{3}{5}$ of 30 = 18 b) $\frac{2}{9}$ of 81 = 18

c) $\frac{2}{6}$ of 24 = 8

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Va Nurs

The odd one out is c) because it equals 8. Both a) and b) equal 18.

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 $\frac{5}{10} \text{ of } 80 = 8$ Explain the mistake.
Draw a bar model to help.

Deeper

This is incorrect. They have divided the quantity (80) by the denominator (10). They have worked out the value of one tenth, which is 8, but then have forgotten to carry out the second calculation to find the value of five-tenths. They should have then multiplied 8 by the numerator (5) to make 40.

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Va Nin 12



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Deepest

Taylor has a bag of 15 coins. He throws some (but not all of them) into the air. A quarter of them land on tails while the rest land on heads.

Taylor turns over two of the coins and now half of them are tails.

How many coins did Taylor throw up into the air at the beginning?

8

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Solve this problem.

Flavia saw 64 animals whilst on safari in Africa.

Some of the animals she saw were elephants, $\frac{1}{4}$ of the animals she saw were lions and $\frac{5}{8}$ of the animals she saw were giraffes.

What fraction and quantity of the 64 animals she saw were elephants?

Va Nurs

 $\frac{1}{8}$ = 8 of the animals are elephants.

lions =
$$\frac{1}{4} = \frac{2}{8} = 16$$

giraffes = $\frac{5}{8} = 40$
elephants = $\frac{1}{8} = 8$

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Dive in by completing your own activity!



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Need Planning to Complement this Resource?

National Curriculum Aim

Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

For more planning resources to support this aim, <u>click here</u>.



Twinkl PlanIt is our award-winning scheme of work with over 4000 resources.

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