One-Step Word Problems Percentage of Amounts

Aim: I can solve one-step word problems involving percentages.

1. A grocer has 60kg of potatoes. In one day, he sells 50% of the potatoes. What mass of potatoes does he sell?

2. A decorator buys 24 litres of paint. When he finishes painting, there is 25% of the paint left. How much paint is left?

3. A collection is made for local charities, which raises £60. 20% of the money is given to a children's charity. How much does the children's charity receive?

4. Amit reads a book with 250 pages. He reads 10% of the book each day. How many pages does he read each day?

5. An athlete runs 30 miles a week in three runs. On one day, the athlete runs 40% of the mileage. How long does the athlete run on this day?

6. A sunflower grows to be 200cm tall. After four weeks, it was 30% of this height. How tall was the sunflower after four weeks?

7. Six children collect 45 pencils. 20% of the pencils need sharpening. How many pencils need sharpening?

8. A football match lasts 90 minutes. One player plays 80% of the match. How many minutes does the player play?

9. There is 500g of flour left in the cupboard. 90% is needed for a cake. How much flour is needed for the cake?

10. 270 children attend a school. 60% of the children walk to school. How many children walk to school?

Challenge
Write some simple one-step word problems involving percentages for a partner.

One-Step Word Problems Percentage of Amounts **Answers**

1. **30kg**

2. **6 litres**

3. **£12**

4. **25 pages**

5. **12 miles**

6. **60cm**

7. **9**

8. **72 minutes**

9. **450g**

10. **162**

Two-Step Word Problems Percentage of Amounts

Aim: I can solve two-step word problems involving percentages.

1. A supermarket stocks 300kg of potatoes. 25% of the potatoes are sold in 5kg bags. The rest are sold in 1.5kg bags. What mass of potatoes are sold in 1.5kg bags?

2. Some children hold a bake sale for a local charity and raise £90. 10% comes from selling biscuits. 50% of the remaining money comes from selling chocolate cakes. How much is made from selling chocolate cakes?

3. A builder has 600kg of bricks delivered to build an extension to a house. 50% are used on the first day, and 25% are used on the second day. How many bricks are left after the second day?

4. Niamh enters the 500 words story competition. She writes 10% of the required words on the first day. How many words has she left to write?

5. A swimmer swims 800m every morning. She swims the first 50% of the distance on her front, and then 25% of the remaining distance on her back, before finishing on her front. How far does she swim on her back?

6. 25% of the 240 children in a school come to breakfast club. There are enough places for another 10% of the children to attend the breakfast club. How many places are there at the breakfast club?

7. A florist has 85m of florist wire. In one day 10% of the wire is used. How much wire is left?

8. 3000 people attend a football match. 25% of the crowd are children. 10% of the children are under five years old. How many children under five years old are in the crowd?

9. A baker has 2000kg of white flour and 1500kg of wholemeal flour. The flour is mixed together and 50% is used to make bread. How much flour is used to make bread?

10. Some children are asked to hand out some felt pens to each class. Each class receives 25% of the felt pens. Each class receives 35 pens. How many pens are given out?

Challenge
Write some simple two-step word problems involving percentages for a partner.

Two-Step Word Problems Percentage of Amounts **Answers**

1. **225kg**

2. **£40.50**

3. **150kg**

4. **450 words**

5. **100m**

6. **84 places**

7. **76.5m**

8. **75**

9. **1750kg**

10. **140 pens**

Two-Step Word Problems Percentage of Amounts

Aim: I can solve two-step word problems involving percentages.

1. A farmer harvests 850kg of parsnips. 30% go to the local market and 50% go to a local supermarket. What mass of parsnips are left?

2. A plumber has 150m of pipes. The plumber uses 20% fitting a central heating system, and then 25% of what is left to fit a bathroom. How much pipe does the plumber use to fit the bathroom?

3. A library has 2500 books. 40% of the books are fiction. How many books are not fiction books?

4. A cyclist rides 460 miles each week in training. She covers 30% of the miles in one ride. How many miles are left after 1 ride?

5. A charity raises £1740 at an auction. 20% of the money was raised by auctioning one item. How much did the rest of the auction raise?

6. 680 pupils attend a primary school. 20% of the children are in the Foundation Stage and 25% are in Key Stage 1. How many children are in Key Stage 2?

7. Janek's height increases by 10% each year for two years. At the beginning of those two years, he was 120cm tall. How tall is he at the end of the two years?

8. 90 000 people attend the FA cup final. 10% are not fans of either team. 50% of the remaining fans are from each team. How many fans from each team attend the final?

9. 450g of flour is needed for a cake recipe. A new packet of 2kg flour is used. 20% of the remaining flour is used to make some pastry. How much flour is used to make pastry?

10. There are 450 chairs in a school. 80% of the chairs are in good condition. Of the remaining chairs, 40% need to be thrown away. How many chairs need to be thrown away?

Challenge
Write some simple two-step word problems involving percentages for a partner.

Two-Step Word Problems Percentage of Amounts **Answers**

1. **170g**

2. **30m**

3. **1500 books**

4. **322 miles**

5. **£1392**

6. **374 children**

7. **145.2cm**

8. **40 500**

9. **310g**

10. **36 chairs**

Multi-Step Word Problems Percentage of Amounts

> Aim: I can solve multi-step word problems involving percentages.

1. A supermarket has 1800kg of root vegetables. 50% are potatoes and 25% are onions. What mass are the remaining root vegetables?

2. A school have a sponsored spell to raise money for their chosen charity, raising £764. 50% of the money is raised through dressing up. Of the remaining money, 25% is raised by selling cakes. The rest is raised by pupils paying to play games. How much is raised by playing games?

3. A book is 340 pages long. 10% of the book is the introduction. Alex reads the introduction and 50% of the rest of the book in one week. How many pages are left to read?

4. A plasterer buys fifteen 25kg bags of plaster. At the end of the week, only 10% of the plaster is left. How much plaster did they use?

5. A football team train for 18 hours every week. 25% of the time is spent on fitness and 10% on skills. The rest of the time is spent preparing for the next match. How long is spent on preparing for the next match?

6. In a class of 30 children, 10% cycle to school. Another 10% come by bus. 25% of the remaining children come by car. The rest of the children walk. How many children walk to school?

7. The population of a town is 24 400. 25% of the people are children. 10% of the children are under the age of two. How many children under the age of two live in the town?

8. A school orders 80 packs of pencils. Each pack contains 12 pencils. 10% of the pencils are given out the day they arrive in school. How many pencils are given out on that first day?

9. A bakery uses 48kg of flour each day to bake bread. 2kg of flour makes three loaves of bread. 25% of the loaves are wholemeal loaves. How many wholemeal loaves are baked each day?

10. A sunflower is measured at the beginning of June and is 40cm tall. The sunflower grows by 25% each month for three months. What height is the sunflower to the nearest centimetre at the beginning of September?

Challenge
Write some simple multi-step word problems involving percentages for a partner.

Multi-Step Word Problems Percentage of Amounts **Answers**

1. **450kg**

2. **£286.50**

3. **153 pages**

4. **337.5kg**

5. **11 hours and 42 minutes.**

6. **18 children**

7. **610**

8. **96**

9. **18**

10. **78cm**

Multi-Step Word Problems Percentage of Amounts

Aim: I can solve multi-step word problems involving percentages.

1. A grocer has 160kg of onions. 50% of the onions are sold in 2kg bags. The rest are sold loose. 20% of the loose onions and 12 bags of onions are left at the end of the day. What percentage of onions were sold that day?

2. A bookshop has a stock of 11 240 books. 45% of the books are adult fiction and 20% are children's fiction. 480 fiction books are sold in one week, 50% of which are children's fiction. How many children's books will be left at the end of the week?

3. A pallet holds 250 bricks. A builder orders three pallets. 60% of the bricks are used to build wall A. 80% of the remaining bricks from wall A are used to build wall B. How many bricks are left after building both walls?

4. A hospital charity has 25 people raising money by running a half marathon. The average each person raises is £120. 10% of the money is used to pay the entry fees for the half marathon. How much money is raised after the fees are paid?

5. There are 420 children in a school. 20% of the children bring a cold lunch from home. The rest of the children eat school meals, of which 25% eat a cold meal made by school. How many children eat a cold meal?

6. A Long-jumper trains for 32 hours a week. She spends 40% of the time running. 75% of the remaining time is spent on jumping practice. How much time does she spend practicing jumping?

7. A plumber charges £20 call out fee and £12 per hour. The plumber decides to decrease the call out fee by 25% and increase the hourly rate by 25%. Explain why the plumber will charge more for two hours work under the new charges.

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8. Simon makes jam to sell at a market. The amount of sugar he uses is 40% of the weight of fruit. He uses 3.6kg of sugar. How much fruit will he use?

9. A school orders 1460 exercise books. 30% of the books have squared paper, 45% have lines and the remaining books are plain. By the end of the first term, all the squared and lined books have been used, and 80% of the plain books have been used. How many books are left?

10. A baby weighs 12kg and increases in weight by 20% each week. How many weeks will it take for the baby's weight to at least double?

Challenge
Write some simple multi-step word problems involving percentages for a partner.

Multi-Step Word Problems Percentage of Amounts **Answers**

1. **75%**

2. **2008**

3. **60 bricks**

4. **£2700**

5. **168 children**

6. **14 hours and 24 minutes**

7. **Old rate: £20 + £12 + £12 = £44**
   New rate: £15 + £15 + £15 = £45

8. **9kg**

9. **73 books**

10. **4 weeks**

Multi-Step Word Problems Percentage of Amounts

Aim: I can solve multi-step word problems involving percentages.

1. An author writes 2400 words each day. The book being written is 80 000 words. What percentage of the book does the author write each day?

2. A car has 60 litres of fuel in the tank. After a long journey, only 22% of the fuel is left. The driver puts another 30 litres into the tank, and uses 25% of the fuel in the tank over the following day. How much fuel is now in the tank?

3. A paint shop stocks 1800 litres of paint. 24% of the paint is white. The shop sells 18% of the white paint and 7% of the rest of the paint. How much paint is sold altogether?

4. A school raises £468 for their chosen charity by dressing up. The money raised is increased by 42% by holding a cake sale. The Headteacher makes up the total sum to £700. How much does the Headteacher donate?

5. A rugby team spend a number of hours training each week. 35% is spent on fitness and this lasts for 7 hours and 21 minutes. How long do the team spend training each week?

6. There are three Year 6 classes in a school, with an average of 28 children in each class. 75% of the children are going on a residential visit. 33% of the remaining children are going to visit for one day. The remaining children have a special visit arranged. How many children will be on the special visit?

7. A locksmith charges £32 call out charge and £15 per hour. The locksmith decides to reduce his callout by 25% and increase the hourly charge by 20%. The locksmith charges by the half hour. After what period of time will the locksmith earn more with the new charges?

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8. A city's population is 480 000. 28% of the people in the city are children. There are 69 888 children under 11 years old. What percentage of the children are under 11 eleven years old?

9. A factory making tomato soup has 400kg tomatoes delivered each week. The factory uses 72% of the tomatoes each week to make the soup. After how many weeks does the factory not need to take delivery of any more tomatoes because it still has enough from the previous week?

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10. A cherry tree is 1 year old and is 1m tall.
To be considered healthy, the tree must be 1.728m tall by the time is it 4 years old.
What percentage must the tree grow by, each year, to be considered healthy?

Challenge
Write some simple multi-step word problems involving percentages for a partner.

Multi-Step Word Problems Percentage of Amounts **Answers**

1. **3%**

2. **32.4l**

3. **173.52l**

4. **£35.44**

5. **21 hours**

6. **14 children (33% is used to represent 1/3)**

7. **After three hours. Call out decreases by £8. Hourly rate increases by £3. After 2.5 hours, hourly increase will be £7.50, and after three hours by £9.**

8. **52%**

9. **After 3 weeks. Each week, 72% of the tomatoes are used (288kg) leaving 112kg left over. After 3 weeks, the factory will have 336kg of tomatoes left which is more than the 288kg needed.**

10. **20%**