



# TUTORS' TIPS

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## Using Simple Percentages and Fractions

There are several different usages for percentages. Throughout everyday life, we are faced with percentages on a daily basis. The % sign is used for discounts at big department stores, interest rates, lay-by, taxes, stock market and money conversions just to name a few. If you do not understand the concept of percentages, the daily use of percentages would be daunting and would affect your confidence. So, this Tip will show you different ways to apply percentages without using a calculator or doing any calculations on a piece of paper.

The technique that will be used is something that can be taught to anyone, regardless of what their numeracy skills are like. All you need is someone who is keen to finally understand the concept of percentages and how they are applied in everyday life.

### Step 1

■ Begin by teaching the concept of a half, and then develop an understanding of the relationship between fractions and percentages. At a higher level, you can introduce the relationship between fractions, percentages and decimals. They are all intertwined and are significant, but to understand percentages, fractions need to be understood. Why you ask?? Because some department stores talk about 1/2 price sales or 1/4 deposit on lay-by. It makes the students feel more comfortable by learning these terms in the classroom, a safe haven for them to learn things they have always been too embarrassed to ask!!

■ Demonstrate that a half and 50% are the same. The pizza/pie diagram is the easiest as it is the most familiar to the learner. The learner must understand that 1/2 is talking about 1 part out of 2 parts; or 50% of the pizza. 50% can be written as 50/100 and is 50 parts out of 100 parts

■ Follow a similar procedure to teach 25% or a 1/4. Students need to see the relationship between the percent and fraction. Using the pie/pizza diagram is the most effective.

**1/2 or 50% means divide by 2**  
**1/4 or 25% means divide by 4**

### Example 2

Cathy has lay-by-ed a lovely new couch for her house. The couch cost \$1200. If she has to leave a 25% deposit, how much was the deposit and how much does Cathy have left to pay on the couch?

### Example 3

Target is having a 25% sale store wide. I have purchased \$128 worth of goods. How much does it cost after the discount?

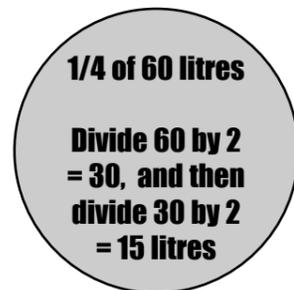
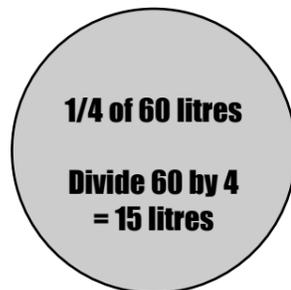
### Example 4

At Christmas time, Kim's boss gives her an extra 25% of her wage. If Kim usually earned \$500 a week, how much extra will she get in her pay?

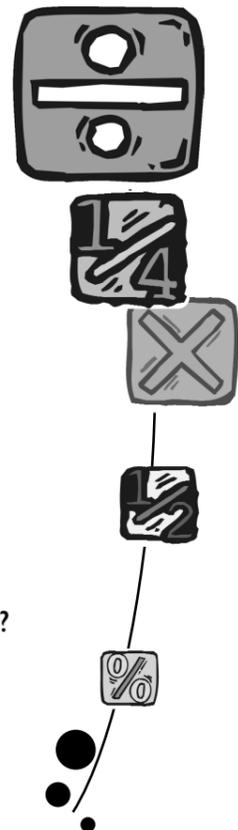
## Application 4 - 1/4

If my fuel tank is 1/4 full, and the tank is a 60 litre tank, how much petrol do I have?

1. 1/4 of 60 litres = divide by 4
2. Divide 60 by 4 or divide 60 by 2, then divide by 2 again



3. 15 litres



### Example 1

The 2 litre milk bottle is a 1/4 full. How many millilitres are there?

### Example 2

If I buy 6 kilos of oranges and give 1/4 to my friend, how much do I have left?

### Example 3

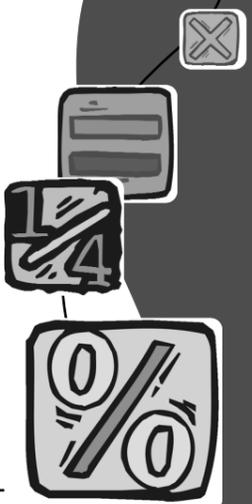
If Wendy ate 1/4 of an 8 slice pizza, how many pieces did she eat?

### Example 4

If I bought 32 nails, but only used a 1/4 of them, how many did I use?

## Important!!

You must do each step with the students so they can grasp the idea. If the student does not understand the concept, it will inhibit them from attempting again. Most numeracy students have low self esteem and confidence in their abilities to understand concepts of literacy and numeracy. It is imperative when teaching something unfamiliar that the tutor makes the student comfortable about asking questions. Make fractions and percentages relevant to their everyday lives. If a student does not grasp the idea, go back over the steps until they understand. Try explaining the difficult step in several different real life ways. Students will understand the idea with a patient tutor! **Good luck!**



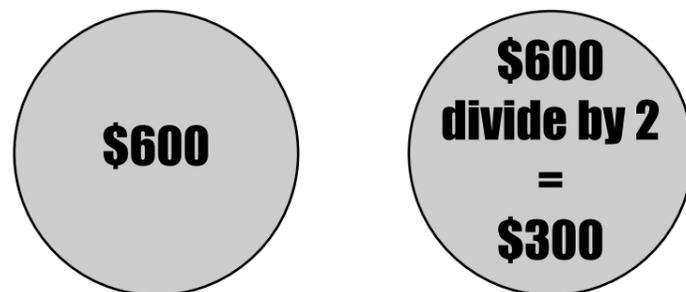
## Step 2

Once the students have grasped the concept of  $\frac{1}{4}$  and  $\frac{1}{2}$ , teach the students how to apply it in everyday terms. The next step will show four different calculations using  $\frac{1}{4}$  and 25% and  $\frac{1}{2}$  and 50%. The first will deal with  $\frac{1}{2}$  and 50%. Ask the students where they would use the  $\frac{1}{2}$  or 50% in real life. For example, shops, fuel tank, lay-bys, recipes etc.

### Application 1 - 50%

Sam walks into an electronic store and they are offering 50% off on selected items. Sam would like to buy a new television for \$600. If the sale is 50% on the TV, how much would Sam pay and how much would he save?

- Remember to 50% is the same as a  $\frac{1}{2}$ . Divide by 2. The price of the TV is \$600
- Divide \$600 by 2 to get 50%



- Half of \$600 is \$300, so Sam will save \$300

#### Example 1

Jerry walks into a used car yard. The car of his dreams is in front of him. The car yard offers finance, but requires a deposit of 50%. The car is advertised at \$4400. If Jerry gives a 50% deposit, how much is his deposit and how much does he have left to pay?

#### Example 2

Diane would like to get her boyfriend some driving lessons for his birthday. The local driving school is having 50% off lessons this week. Diane buys 5 lessons for a total of \$250. How will she save after the 50% discount?

#### Example 3

Troy is 50% taller than John. If John is 160 cm, how tall is Troy?

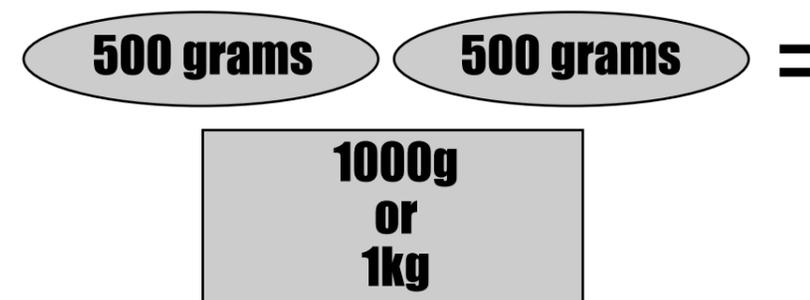
#### Example 4

Paul needs to buy 50% more wood so he can make a workbench. He already has 12 square metres. If he buys 50% more, how much more will he have, and now how much will he have in total?

### Application 2 - $\frac{1}{2}$

I am making spaghetti bolognaise for dinner. The recipe says I need  $\frac{1}{2}$  kilo of mince for the sauce. How many grams of mince is that? To teach this application, break it down into the following steps:

- 1 kilogram (kg) = 1000 grams (g)
- Divide 1000 by 2 or if I put the mince into two equal bags, how much would be in each one



- $\frac{1}{2}$  kilo = 500 grams

#### Example 1

My car has a tank of 50 litres. If it is  $\frac{1}{2}$  full, how many litres do I have? (You could expand these questions by getting the students to work out how much it would cost to fill the tank)

#### Example 2

Reg tries to save  $\frac{1}{2}$  his wage each week. How much would he save if he earned \$440 a week?

#### Example 3

If I drink  $\frac{1}{2}$  a 700ml bottle of rum, how much is left?

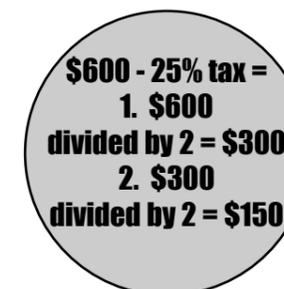
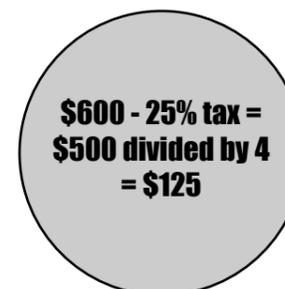
#### Example 4

If there 16 people in class yesterday, and only  $\frac{1}{2}$  the people turn up today, how many people will be in class today?

### Application 3 - 25%

I earn \$600 a week before tax. If I pay 25% tax, how much will I earn after tax?

- \$600 before tax
- 25% tax =  $\frac{1}{4}$  = divide by 4
- Divide \$600 by 4 OR divide \$600 by 2, then divide by 2 again



#### Example 1

John bought a television on interest free terms from Televisions 'r us. If John doesn't pay the television off in the year, he will pay 25% interest. If he paid \$1000 for the television, how much interest would he pay?