

Work out the VAT



This activity shows how to work out the tax you pay on what you buy.

Information sheet

Value Added Tax (VAT) is charged on most of the goods and services you buy.

VAT rates

The standard rate of 20% is charged on most things.

A reduced rate of 5% is charged on fuel.

VAT is not charged on food, books and children's clothing.

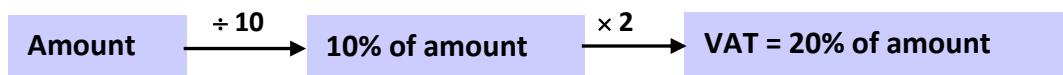
To find VAT at 20% without a calculator

- Divide by 10 – this gives 10% of the amount.
- Multiply by 2 to give 20% of the amount – this is the VAT.
- To find the total cost, add the VAT to the original amount.

Alternative method

$$20\% = \frac{20}{100} = \frac{1}{5}$$

so dividing by 5 gives 20%



Add together: Total cost = Original amount + VAT

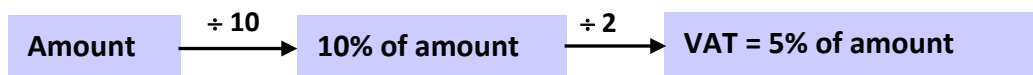
To find VAT at 5% without a calculator

- Divide by 10 – this gives 10% of the amount.
- Divide by 2 to give 5% of the amount – this is the VAT.
- To find the total cost, add the VAT to the original amount.

Alternative method

$$5\% = \frac{5}{100} = \frac{1}{20}$$

so dividing by 20 gives 5%



Add together: Total cost = Original amount + VAT

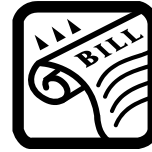
To find VAT using a calculator

- Divide by 100 – this gives 1% of the amount.
- Multiply by 20 to find the VAT at 20%
(or multiply by 5 to find the VAT at 5%).
- To find the total cost, add the VAT to the original amount.

Finding VAT: examples

A plumber's bill is £60 without VAT. The VAT rate is 20%.

Find the VAT and the total bill.



	£	pence
10% =	6	00
20% VAT =	12	00
Bill =	60	00
Total =	72	00

To check the VAT, use a calculator or the alternative method

VAT = £12
Total bill = £72

A television costs £495 without VAT.

Work out the price including VAT.



	£	pence
10% =	49	50
20% VAT =	99	00
Price =	495	00
Total =	594	00

Rough work

49	.	50	
			× 2
99	.	00	
11	.	00	

Price including VAT = £594.00

An electricity bill is £124 without VAT. The VAT rate is 5%.

Work out the price including VAT.



	£	pence
10% =	12	40
5% VAT =	6	20
Price =	124	00
Total =	130	20

Price including VAT = £130.20

Worksheet A Work out the VAT and the total price

Try these. Do rough work at the side.

- 1 A digital camera costs £75 without VAT.
Find the total price including VAT.



	£	pence
10% =		
20% VAT =	<input type="text"/>	
Price =	<input type="text"/>	
Total =	<input type="text"/>	

- 2 A jacket costs £64 without VAT. The VAT rate is 20%.
Find the total price including VAT.



	£	pence
10% =		
20% VAT =	<input type="text"/>	
Price =	<input type="text"/>	
Total =	<input type="text"/>	

- 3 A suitcase costs £83 before VAT.
Find the total cost including VAT.



	£	pence
10% =		
20% VAT =	<input type="text"/>	
Price =	<input type="text"/>	
Total =	<input type="text"/>	

- 4 An electrician's bill is £140 before VAT. He adds 20% VAT.
Find the VAT and the total cost.



	£	pence
10% =		
20% VAT =	<input type="text"/>	
Price =	<input type="text"/>	
Total =	<input type="text"/>	

5 A builder charges £460 before VAT. The VAT rate is 20%. Find the VAT and the total bill.



£460 + VAT

	£	pence
10% =		
20% VAT =		
Price =		
Total =		

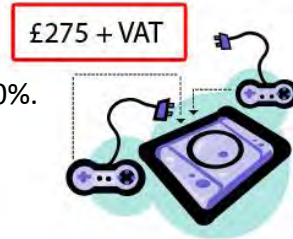
6 The cost of a holiday is £590 without VAT. Find the total price including VAT at 20%.



£590 + VAT

10% =		
20% VAT =		
Price =		
Total =		

7 A games console costs £275 before VAT. The VAT rate is 20%. Find the total cost including VAT.



£275 + VAT

	£	pence
10% =		
20% VAT =		
Price =		
Total =		

8 The price of a laptop before VAT is £330. Find the VAT and the total cost.

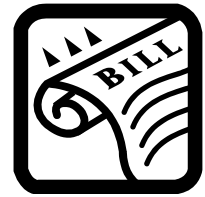


£330 + VAT

	£	pence
10% =		
20% VAT =		
Price =		
Total =		

Worksheet B Work out the VAT and the total price

Try these. Do rough work at the side.



1 An electricity bill is £180 without VAT. The VAT rate is 5%. Work out the price including VAT.

	£	pence
10% =		
5% VAT =	<input type="text"/>	
Price =		
Total =	<input type="text"/>	

2 A gas bill is £328 without VAT. The VAT rate is 5%. Work out the price including VAT.

	£	pence
10% =		
5% VAT =	<input type="text"/>	
Price =		
Total =	<input type="text"/>	

3 An electricity bill is £73 plus 5% VAT. Work out the price including VAT.

	£	pence
10% =		
5% VAT =	<input type="text"/>	
Price =		
Total =	<input type="text"/>	

4 A gas bill is £281 plus 5% VAT. Work out the price including VAT.

	£	pence
10% =		
5% VAT =	<input type="text"/>	
Price =		
Total =	<input type="text"/>	

Worksheet C Use a spreadsheet to work out VAT

The spreadsheet is shown below.

You can use it to check the answers to the questions on Worksheet A.

Try these ...

	A	B	C	D
1	Question	Amount	VAT	Total Price
2	1			
3	2			
4	3			
5	4			
6	5			
7	6			
8	7			
9	8			

- 1 Enter the amount from each Worksheet A question into column B.
- 2 Left click on cell C2 and enter the formula **=20%*B2**
This gives the VAT for question 1.
Check that it agrees with your answer.
- 3 Left click on cell D2 and enter the formula **=B2+C2**
This gives the total price.
Check that it agrees with your answer.
- 4 Complete the rest of the spreadsheet.
You can use formulae or 'fill down'.
- 5 Check that the answers agree with those you worked out earlier.

Extension

Set up a spreadsheet to check your answers to Worksheet B.

At the end of the activity

Think about the methods you have used to work out VAT.

- Which method was the easiest?
- Which method was the hardest?
- Which method would you use in a shop?
- Which method do you think a business would use?