



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.

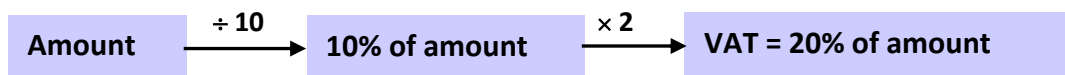
#### To find VAT at 20% without a calculator

- 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

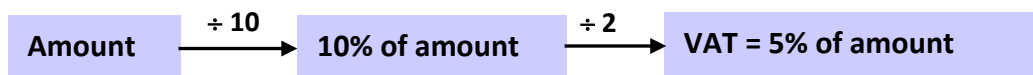
#### To find VAT at 5% without a calculator

- 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

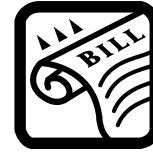
#### To find VAT using a calculator

- 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	0 0
<b>20% VAT =</b>	<b>1 2</b>	<b>0 0</b>
Bill =	6 0	0 0
<b>Total =</b>	<b>7 2</b>	<b>0 0</b>

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% =	4 9	5 0
<b>20% VAT =</b>	<b>9 9</b>	<b>0 0</b>
Price =	4 9 5	0 0
<b>Total =</b>	<b>5 9 4</b>	<b>0 0</b>
	1 1	

Rough work

4 9	.	5 0	
			× 2
9 9	.	0 0	
1 1			

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% =	1 2	4 0
<b>5% VAT =</b>	<b>6</b>	<b>2 0</b>
Price =	1 2 4	0 0
<b>Total =</b>	<b>1 3 0</b>	<b>2 0</b>
	1	

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** = \_\_\_\_\_

Price = \_\_\_\_\_

**Total** = \_\_\_\_\_

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



**£**      **pence**

10% = \_\_\_\_\_

**20% VAT** = \_\_\_\_\_

Price = \_\_\_\_\_

**Total** = \_\_\_\_\_

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



**£**      **pence**

10% = \_\_\_\_\_

**20% VAT** = \_\_\_\_\_

Price = \_\_\_\_\_

**Total** = \_\_\_\_\_

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



**£**      **pence**

10% = \_\_\_\_\_

**20% VAT** = \_\_\_\_\_

Price = \_\_\_\_\_

**Total** = \_\_\_\_\_

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



£460 + VAT

	£	pence
10% =		
<b>20% VAT =</b>		
Price =		
<b>Total =</b>		

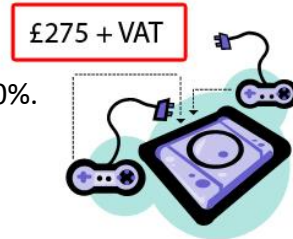
6 The cost of a holiday is £590 without VAT. Find the total price including VAT at 20%.



£590 + VAT

10% =		
<b>20% VAT =</b>		
Price =		
<b>Total =</b>		

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



£275 + VAT

	£	pence
10% =		
<b>20% VAT =</b>		
Price =		
<b>Total =</b>		

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

£330 + VAT



	£	pence
10% =		
<b>20% VAT =</b>		
Price =		
<b>Total =</b>		

## 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% =		
<b>5% VAT =</b>	<input type="text"/>	
Price =		
<b>Total =</b>	<input type="text"/>	

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

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

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

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

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

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