



- d) **Complete** the table.
- i) **Calculate** the energy used by each device.
- ii) **Calculate** the cost for each device with a cost of 36p per kWh.
- iii) **Convert** any costs to pounds, if relevant.

Device	Power (kW)	Time (hours)	Energy (kWh)	Cost (p)	Cost (£)
TV	110	0.5			
games console	50	1 hour			
bulb	0.04	5 hours			

- e) **Fill** in the table to **calculate** your average daily energy use cost. The cost of energy is 34p per kWh.
- If you do not use one of these items, use 2 hours as an example.



Item	TV	mobile phone	games console
Power (kW)	0.5	0.15	0.9
Daily use (hours)			
Total cost per day			
Total cost per week			

Why would this not be accurate over the whole week?

- f) A fridge has a power of 0.8 kW and was on for 5 hours. The cost of electricity is 44.5p per kWh. **How** much did this electricity cost?

- g) A 1,200 W washing machine was on for 1 hour and 45 minutes. The cost of electricity is 35p per kWh. **How** much did it cost to run the machine?



Task 4: Energy bills

a) Fill in the blanks.

Oak Electricity Monthly Statement September	
Previous reading	13,780
Current reading	14,165
Units used	
Cost per kWh	34p
Total cost	

Oak Electricity Monthly Statement October	
Previous reading	
Current reading	14,923
Units used	
Cost per kWh	36p
Total cost	

b) Jane received her electricity bill. The reading on her previous bill was 25670 kWh. The reading on her new bill was 33250 kWh. The cost per kWh is 27.5p. **Calculate** the total cost of her electricity bill.

c) In February, Tom's current reading was 54821 and his previous reading was 54402. February was charged at 25p per kWh. In July, Tom used 262 kWh at a cost of 35p per kWh.

Which month did Tom pay more for electricity?



Energy in the home

Task 1: Converting units

a) **Convert** the following from minutes to hours.

i) 60 mins = *1 h*

ii) 54 mins = *0.9 h*

iii) 81 mins = *1.35 h*

b) **Convert** the following from hours to minutes.

i) 4 h = *240 mins*

ii) 16 h = *960 mins*

ii) 2.25 h = *135 mins*

c) A runner takes 2 hours and 15 minutes to run a half marathon.

i) **Convert** the time to minutes. *130 minutes*

ii) **Convert** the time to hours. *2.25 hours*

Task 2: Calculating energy in kWh

a) **Calculate** the energy used in kWh for the following:

i) An object has a power of 5kW and is on for 3 hours.

15 kWh

ii) An object has a power of 1200 W and is on for 30 minutes.

0.6 kWh

b) **Which** item uses most energy in the given time?

hand dryer



1.7 kW

3 minutes

0.085 kWh

drill



1.1 kW

15 minutes

0.275 kWh

tumble dryer



0.8 kW

1 hour

0.8 kWh

The tumble dryer uses the most energy in the given time.

Task 3: Cost of energy

a) A washing machine used 20 kWh of energy. The electricity costs 32.5p per kWh. **How much** did this electricity cost?

650p = £6.50

b) An oven used 200 kWh of energy. The electricity costs 28p per kWh. **How much** did this electricity cost?

5,600p = £56.00

c) At a cost of 33p per kWh, **what** is the cost of electricity for a hairdryer using 1.8kWh of energy?

59.4p

Name _____



- d) **Complete** the table.
 i) **Calculate** the energy used by each device.
 ii) **Calculate** the cost for each device with a cost of 36p per kWh.
 iii) **Convert** any costs to pounds, if relevant.

Device	Power (kW)	Time (hours)	Energy (kWh)	Cost (p)	Cost (£)
TV	110	0.5	55	1,980	19.80
games console	50	1 hour	50	1,800	18.00
bulb	0.04	5 hours	0.2	7.2	n/a

- e) **Fill** in the table to **calculate** your average daily energy use cost. The cost of energy is 34p per kWh.
 If you do not use one of these items, use 2 hours as an example.



Item	TV	mobile phone	games console
Power (kW)	0.5	0.15	0.9
Daily use (hours)	2 hours	2 hours	2 hours
Total cost per day	34p	10.2p	61.2p
Total cost per week	£2.38	71.4p	£4.28

- ii) **Why** would this not be accurate over the whole week?

This cost would not be accurate as I use it a different number of hours each day.

- f) A fridge has a power of 0.8 kW as was on for 5 hours. The cost of electricity is 44.5p per kWh.
How much did this electricity cost?

178p = £1.78

- g) A 1,200 W washing machine was on for 1 hour and 45 minutes. The cost of electricity is 35p per kWh. **How** much did it cost to run the machine?

73.5p



Task 4: Energy bills

a) Fill in the blanks.

Oak Electricity Monthly Statement September	
Previous reading	13,780
Current reading	14,165
Units used	385
Cost per kWh	34p
Total cost	£130.90

Oak Electricity Monthly Statement October	
Previous reading	14,165
Current reading	14,923
Units used	758
Cost per kWh	36p
Total cost	£272.88

b) Jane received her electricity bill. The reading on her previous bill was 25670 kWh. The reading on her new bill was 33250 kWh. The cost per kWh is 27.5p. **Calculate** the total cost of her electricity bill.

£2,084.15

c) In February, Tom's current reading was 54821 and his previous reading was 54402. March was charged at 25p per kWh. In July, Tom used 262 kWh at a cost of 35p per kWh.

Which month did Tom pay more for electricity?

February = £104.75 July = £91.70
Tom paid more in February for his electricity.