

Electricity Use at Home

Survey

Secondary (7-10)

ACTIVITY SEQUENCE

The Electricity Use at Home survey is an exercise in developing energy auditing skills. This exercise will help you to understand where and how much electricity is used at home and to start to identify energy saving opportunities.

STEP 1: Household Description

STEP 2: Electricity Use at Home Survey

STEP 3: Annual Electricity Use

STEP 4: Electricity 'Hot Spots' and Recommendations

STEP 1: HOUSEHOLD DESCRIPTION

Write a brief description of your household. Include information about the building material, its size, number of rooms, the building's age and how many people live there. Identify if your heating and cooking is electric or gas. Based on your energy provider and bills, can you identify if any of your electricity is powered by green energy?

STEP 2: ELECTRICITY USE AT HOME SURVEY

Complete the table.

1. Identify which electric appliances in this list you use at home and how many of each appliance you use. If there are items that are not found here, add them to the list and research how many watt hours of energy the appliance uses when active.
2. Estimate how many hours each appliance is used per day and how many days of the week it is used.
3. Estimate how many weeks per year (52 weeks in total) the appliance is used. Some appliances, for example, such as heating or cooling, will be used seasonally.

**** Please Note:**

Energy use for each item is a general estimate. Exact figures will vary based on the design and age of different appliances. You can update these with exact figures by using a PowerMate at home or looking at the usage figures on the appliance label where possible. Be sure to check if your heating and cooking is electric before including these.

Appliance	No. of appliances	Power - watt (w)	Time used per day (hrs)	Days used per week	No. of weeks per year used	Annual consumption (kWh)
Electric central heating		4000				
Air conditioner (cool)		1350				
Air conditioner (heat)		1650				
Heater (oil filled column)		Small - 1000 Medium - 1750 Large - 2400				
Heater (space)		Small - 3600 Medium - 5000 Large - 7000				
Electric blanket		Single - 70 Double - 120				
Fridge		1 door 350-400 L (2star) = 1060 2 door 350-420L (3 star) = 1671				
TV		LCD - 270 Plasma - 311				
Laptop		75				
Computer and monitor		300				
Microwave		Conventional - 1300 Convection - 1600				
Phone charger		4.35				
Vacuum cleaner		1400				
Kettle		1850				
Toaster		900				
Wi-fi modem		23				
Ceiling fan		65				

Appliance	No. of appliances	Power - watt (w)	Time used per day (hrs)	Days used per week	No. of weeks per year used	Annual consumption (kWh)
Dishwasher		1 star rating - 1 wash = 1335 2 star rating - 1 wash = 950 3 star - 1 wash = 712	# of washes per week:			
Washing machine		1 wash = 365	# of washes per week:			
Clothes dryer		Small rotary - 1 cycle = 4900 Large rotary - 1 cycle = 2500	# of cycles per week:			
Lights		Compact fluoro = 88W LED = 7- 9W Energy efficient = 15W Halogen= 65W				
Toaster		2400				
Radio		60				
Electric oven		1500				
Electric stove top cooking		1100				
Photocopier		Active - 180 Standby - 75				
Printer		20				
DVD player		25				
Fish tank		Small - 50 Large - 1210				
Iron		1700				
Coffee maker		1000				
Lawn sprinkler		11				
Pool pump		1000				
Other:						
Other:						
			Total annual electricity consumption:			

STEP 3: CALCULATE ANNUAL ELECTRICITY USE

1. Work out the **annual electricity consumption** of **each** appliance in order to complete the table. Use the following formula:

No. of appliances x (Power (watt) x Time used per day (hours) x Days used per week x No. of weeks per year used) = Annual consumption per appliance (Wh)

In order to convert watt (w) into kilowatt hours (kWh) divide W/1000

2. Once you've calculated electricity use totals for each appliance in the table, you can add up your total annual electricity use.

What is your overall total annual electricity consumption (kWh)?

STEP 4: ELECTRICITY 'HOT SPOTS' AND RECOMMENDATIONS

1. What 5 areas in your home use the most electric energy? Why do you think this is the case?

2. How could you reduce or minimise the energy use in these areas? How could you implement this successfully?
