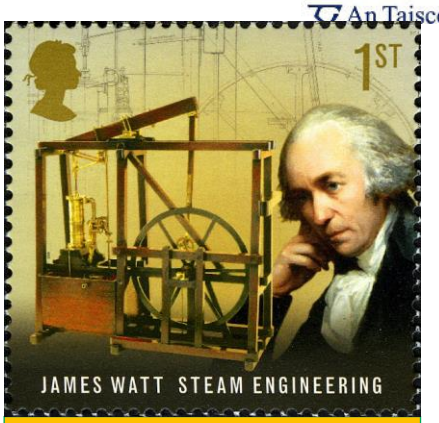
Energy Theme:
What is a Watt?:

Suitable for All Students

Green-Schools
An Taisce

- A watt (W) is a unit that measures electrical power with.
- A watt measures the rate of energy transfer, meaning how much energy is used each second.
- Watts show us how fast energy is used or moved. How quickly a light bulb glows or a phone charges depends on watts.
- It's like measuring how much water flows through a pipe per second, and different appliances can use more, or less, watts.
- A 100-watt light bulb uses more energy than a 10-watt bulb.

- 1,000 watts is a kilowatt (kW), used for bigger things like your whole house
- Our Electricity bills are measured in units. Each unit is equivalent to 1,000 watts of electricity used for one hour - or one kilowatt-hour (kWh).



Watt's are named after inventor James Watt . James watt lived from 1736 until his death in 1819.

He was a Scottish inventor, engineer on chemist who worked on dwarf steam engine, and was a key figure in the industrial revolution.

It was in recognition of what significant contribution to the understanding and measuring of power that the scientific community Named to unit Watts.

1 kWh in Ireland, you get a unit of energy that powers things like:

- 10 minutes of an electric shower,
- an hour of a desktop PC,
- one cycle of an older washing machine
- 30 mins on a large hob.
- One cycle of a dishwasher
- 6 hours of TV or desktop computer use
- 8 hours for a modern PC with an LCD monitor
- Ten 100-watt bulbs for one hour

The exact cost depending on your energy supplier and tariff (around 30-36 cents/kWh including VAT as of early 2026).

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1 kWh in	Lasts for
an electric shower	7 to 10 min
an immersion water heater	15 to 20 min
a electric hob on a cooker	30 min High to 60 min Low
a standard kettle	3 – 5 boils, 15-20 cups of tea
a tumble dryer	About 1 hour
a two-slice toaster	40 to 60 min or 20 -30 slices
a washing machine	On Cold – 2 cycle On Medium – 1 cycle On Hot – half a cycle
a dishwasher	One full cycle
A laptop	10 to 20 hours of typical laptop use
A Tablet	33 to 66 hours of active use
Mobile phone	200 to 400 full phone charges,
average TV	6 to 16 hours – depending on size, technology, and settings
a 100 watt standard lightbulb	10 hours
a 20 watt CFL lightbulb	50 hours
9-watt LED bulb	111 hours
Games Console	4.5 to 10 hours of active gameplay

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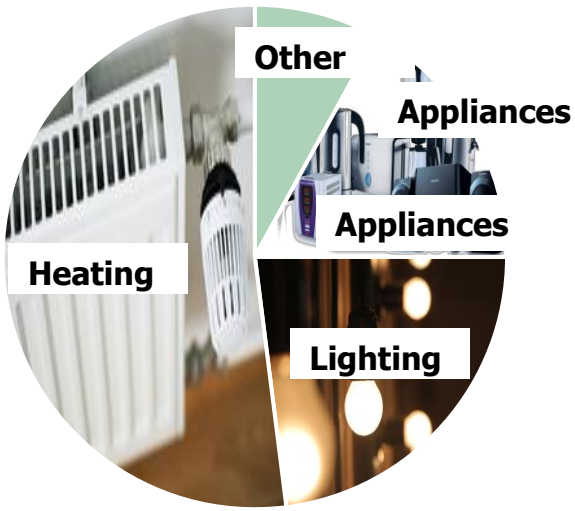
What consumes the most electricity in your School?
Can you swap your hungriest appliances for more energy efficient ones?
Can you change you lighting, and when its used?

The first step to saving electricity is understanding where it's being used in your School. This should give you a good picture.

Energy efficiency measures taken by schools are unique, because of the school hours and nature of use. Typically, 60-70% of energy consumption in a school is expended on heating demand, with 30-40% on electrical demand (lighting and services).

The good news is, there are simple steps to save money whilst reducing energy use and maintaining comfort at school. Many of which are simple low and no-cost actions that can be carried out to increase efficient use of energy and help save you money.

Schools Energy Use



Lighting is one of the areas that links well with Green Schools energy actions, Electricity is expensive and has a relatively high global warming potential. Lighting a school can be responsible for up to 30% - 40% of energy costs. Before your school takes any actions related to lighting, you should review the lighting situation in the school.

How can your school review its lighting: This can be done, simply by counting the lights in the school, both indoors and outdoors. You can investigate the type of bulbs, look at the wattage, estimate how long they are left on each day, and even carry out a natural light surveys.

Standby power is the energy used by some products when they are turned off but still plugged into a power source. Sometimes this is simply wasted power as a result of leaving an electronic device or power adapter plugged in. The devices causing this waste are referred to as energy vampires because these products are slowing sucking energy from your home while not providing any useful function!

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Between 30% and 40% of the energy used in schools is electrical. This is mostly for lighting and plug powered items including computers, screens and other ICT equipment. There are some electrical items that need to be constantly powered on but many can be switched off when not in use.

Always on	Can be switched off and on	Can be automated
Fire alarm systems	Computers	Heating controls
Security systems	Screens	Ventilation
Emergency systems	Projectors	Internal lighting
CCTV	Chargers	External lighting
Phones	Photocopiers	Hot water
Heating frost protection	Teaching equipment	
Lift controls	Fridges (during holiday periods)	
ICT mainframe	Public address system	
	Sound systems / amplifiers	
	Cooking appliances	
	Water boilers in staff rooms	

How can we reduce our Energy use?

- Start with no cost / low cost
- Switch it off campaign
- Standby campaign
- Check energy ratings if buying new appliances
- Switch to more energy efficient bulbs
- Use plug strips
- Host Low Energy Days
- Re-organise furniture to maximise light
- Investigate energy in Ireland.
- Learn about EirGrid
- Take energy meter readings.
- Students as energy monitors.
- Learn more about renewable energy.
- Investigate more energy efficient lighting, sensors and A-rated appliances.
- Revisit previous themes and show the links to the Energy Theme (Litter and Waste, Water, Travel).