



The following checklists ideas have been gathered from a variety of sources and modified to reflect NZ schools.


They have been compiled to help raise awareness and promote environmentally sustainable practices for staff and students.

Using a team of students (with staff to oversee) conduct an audit of what is happening in your school.

Good “schoolkeeping” practices can reduce energy costs by at least 25% but everyone needs to be involved.

There are many aspects to consider in becoming energy efficient and some can be immediately implemented while others may have to be part of a long term plan.

DESIGN YOUR AUDIT CHART

 Survey each room in the school (includes library, hall, administration area...) and make a tally chart of all items which use electricity.

 Create charts for each area to complete a statistical analysis of energy use.

EXAMPLE

ROOM 14 - Tuesday 17/02/14 (just a selection of items)

ITEM	NUMBER	LOAD Wattage	TIME Hours/Day	USE Kilowatts/Day	COST
Laptop (pupils)	15	150	1.5	3.375	\$0.53
Laptop (teacher)	1	150	8	1.2	\$0.19
Data Projector	1	1000	4	4	\$0.62
Listening post	1	34	1	0.034	\$0.01
Lights	12 tubes	100	7	8.4	\$1.31
Vacuum Cleaner	1	1440	.5	.72	\$0.11

(Based on 15.57 cents per kilowatt)

Remember this is one classroom one day!

EQUIPMENT ENERGY USE

The following list is a selection of items that may be in use in your school - the data has been collated from many sources.

The figures will vary depending on the make, age of the item and general maintenance.

So when conducting your audit, check the manufacturer's specifications.

Wattage of items when:	In Use	On Standby
Desktop computer (no monitor)	120	30
Laptop (on mains)	60-250	50
Server (no monitor)	300	never sleeps
Monitor (CRT)	230	30
Monitor (LCD)	150	20
Printer	100	5
Fax	40	5
Fridge	800	Turns off/on
Microwave	600-1500	5
Jugs/kettles	2000	none
Dishwasher	2000	5
Photocopier	600-1000	3-15
Cellphone (chargers)	.4	.1
Toaster	1100	none
Sandwich-maker	1500	none
Telephone	3	3
Heatpump	400-500	20-30
TV	65-170	5
DVD	25	3
Stereo System	70-400	30
Listening Post	34	3
Fan Heater	1500-2000	5
Projectors	1000	25
Vacuum Cleaner	1000-1440	na

For example an average electric jug uses 2000 watts per hour, but it only takes 3 minutes to boil 1 litre of water. So, it has only used a 100 watts,

An ordinary (incandescent) light bulb uses 75 watts per hour, so after a day at school (8am to 4pm) it has used 600 watts - for one bulb!!

Remember 1000 watts = 1 kilowatt per hour
(1kW/h)



CHECKLIST FOR ENERGY USE

Energy Use	Check	Yes/No
Lighting	Throughout the school:	
	Do you use LED lighting?	
	Are your rooms evenly lit?	
	Are you using solar tubes in corridors?	
	Are the lights turned off when not in use?	
	Does switching enable specific areas to be lit?	
	Do the interior paint colours minimise the lighting requirements?	
Heating	Do heaters/heat-pumps have timers or thermostats?	
	Are the timer clocks set accurately?	
	Have you checked windows and doors close firmly - no drafts?	
	When you leave the room, do you close the doors?	
	Do you have the heating operating and the windows or doors open?	
	Are the temperature settings for the rooms between 18-20°C? (WHO recommendation)	
Equipment	Is equipment turned off overnight?	
	Are computer monitors turned off when not in use?	
	Is the fridge well ventilated?/Defrosted?	
	Is the dishwasher used on the economy cycle and only	
	Does your equipment (photocopier, fax, printer...) have timed standby functions?	
	Does all your equipment have high-efficiency ratings?	
	Building	Are the school buildings insulated?
Ceilings?		
Under-floor?		
Walls?		
Are the windows double-glazed?		
Do hot-water cylinders have cylinder wraps?		
	Have you energy efficient curtains/blinds?	

SURVEY IDEAS

Decide the duration of your survey:

1 day a week - for the term/year

Every day for a week - every term

Assign pupils (**Power Rangers, Electrical Elves, Energy Ewoks...**) to:

- ◆ Complete the tally
- ◆ Design and implement the surveys
- ◆ Contact manufacturers for specifications
- ◆ Complete the Energy Checklist (with adult assistance)

The general classroom checks could become part of a regular monitoring programme.

WHERE TO FROM HERE?

Use the **CHECKLIST FOR ENERGY USE** to develop your long term strategy plan.

Using less energy is the key to environmental sustainability.

LED lights use considerably less electricity. Compared with a traditional 100W bulb the equivalent LED lamp uses 91% less electricity, while providing more usable light.

The electricity savings means that LEDs cost way less to use. Lights used 4 to 5 hours a day will pay for themselves in a year.

If you are painting your roofs in the future, consider a light colour - this not only reduces your energy bills, reduces the wear and tear on the materials but helps off-set our effects on the environment.

(check out www.whiteroofs.org.nz)