

## How to Save Energy and Have a Comfortable Classroom

This Factsheet gives advice on how to keep your classroom comfortable to create a better learning environment, whilst reducing the amount of money spent on energy. More information can be found on the Energy in Education website at [www.energyineducation.ie](http://www.energyineducation.ie).

### Heating

Most schools built or refurbished after 2004 will have digital thermostats in each classroom. You can adjust the thermostat to control the room temperature. It is best to set the thermostat to 18 °C. That is about the right temperature for students. Make sure the teachers know where the thermostats are located. These should be able to be set and locked at an upper room temperature limit, this will avoid thermostats been accidentally set too high.



Room thermostat

Do not adjust the thermostat often. Just find a temperature that suits the students and leave it alone. If you want to adjust the thermostat, adjust it by a degree or so. Do not turn it to 23°C if you are cold or down to 15°C if you are hot. The room will not heat up or cool down any more quickly.

23°C is too warm and may make students less attentive, 15°C may be too cold. The higher the thermostat setting, the more the fuel will be used and the more money will be spent on heating.

Do not open the window during the heating season just because you are too hot. Turn the thermostat down a little instead. If your classroom constantly overheats, mention it to the principal. It may be that the boiler controls need adjusting. You can always turn off one of the radiators in the classroom using the valve, provided you remember to open it again before you leave the room at the end of the class. Otherwise the room may not be hot enough for the next class or, more critically, the next morning.



Radiator valve

### Fresh air

Make sure there is enough fresh air in the classroom. When there are students in the room, open the windows to bring in fresh air, even on a cold day. Otherwise, the classroom will become stuffy, and students will be less alert.

If the room is stuffy, it is best to start by opening high level windows rather than low level windows, as high level windows are less likely to cause draughts. If you have high level windows which do open but you have no means of opening them, ask for a pole to operate the window. If window hardware is broken, have it repaired.



Window latch

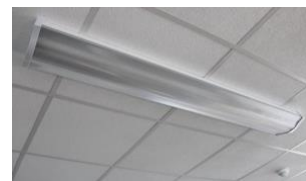
If you know the room will be used during the next class, it may be a good idea to open the windows between classes to freshen up the room.

During milder weather, and particularly when the heating is off and it is warm outside, the windows can be opened more.

You might find that your windows can be latched barely open to a position where they provide just a small amount of fresh air and this might be useful sometimes.

A lot of classrooms have trickle-vents in the window. Some schools have an adjustable grille in the classroom wall instead. The trickle vent or grille should always be left open to provide background ventilation. This background ventilation is vitally important as it helps reduce the risk of condensation formation on walls, and associated mould growth.

### Daylight, lighting & blinds



Light fitting

Lights use electricity and electricity costs can easily mount up if lights are left on unnecessarily. Most classrooms have enough daylight for a lot of the school year, so that lights can be switched off a lot of the time, especially lights near the window.

The room may well be bright enough with no lights on, even on cloudy days.

Schools with lighting systems installed after 2005 should have sensors and controls which switch the lights off or dim the lights when there is enough daylight. The sensors also detect

whether or not there is anyone in the room so that if everyone leaves the room, but forgets to switch the lights off, the lights will go off automatically after a few minutes. The lights should then stay off until someone switches them back on. To maximise savings, you should nevertheless always turn off the lights when you leave the room.



*Naturally lit classroom*

The lights should be used in conjunction with the blinds. Sometimes daylight causes glare. Glare can be controlled by adjusting the blinds, but do not necessarily close the blinds completely. If you can, adjust the blinds as the daylight and sun changes. Do not leave the blinds in the same position all the time or leave them partly open when they could be fully open. The most useful daylight comes through the top of the window, as it reaches further into the classroom, so it is good to raise blinds completely when you can. If you have vertical blinds, open them fully when you can.

Do not install blackout blinds. Install blinds with an open weave so that when they are closed, daylight still comes in.<sup>1</sup>



*Open weave versus blackout blind*

Frequently, blinds are left in the same position for days or weeks. Instead, consider adjusting their position at the beginning of each class. Students can operate the blinds and lights. Another reason to keep blinds open, is that if they are closed, ventilation is made more difficult.

During warmer weather when the heating is off, it may be necessary to use the blinds to reduce excessive solar gain. If the blinds have an open weave, diffuse light will still enter the classroom, and you might still find you do not need electric lights.

In warm weather remember that having electric lights on only adds to any overheating problem that may exist in the classroom.

<sup>1</sup> The DoE suggests blind characteristics approximately as follows are suitable:

- a) Light transmission value of between 9% and 12%
- b) Solar absorption of 17% to 20%
- c) Openness factor of 3% to 5%

You should request a full mock-up in a south facing room before purchasing any blinds.

## ICT equipment & projectors

As efforts are made to reduce energy use in schools, there is one area in which energy use is increasing, namely Information and ~Communication Technology (IT) equipment. Computers, interactive flat screen technologies and whiteboards (IWBs) are creating a demand for electricity that did not exist a few years ago. It is essential to manage and make efforts to control this increasing demand, as it could negate any savings made in other areas, such as lighting. Fortunately, many of the measures that can be taken involve little or no cost.

Overhead projectors and smart boards can use quite a lot of electricity, especially if they are left on when not in use. Switch them off when you can. Do not leave them in standby, especially over weekends and holidays. Switch the projector off at the socket.

Many projectors have an eco-mode which can be used via the menu system on the remote control. Many schools will find that in eco-mode the image on the whiteboard is bright enough. Eco mode uses less electricity, and the bulb may last significantly longer. Eco-mode may also be significantly quieter which can be a significant benefit to some students. The school should experiment with eco-mode and use it in every classroom if possible. Projectors and classrooms vary, so adjust each projector individually.

If replacing old whiteboards consider interactive flat screen with LED technologies, which use less energy than other technologies.



*Projector*

There is a dedicated factsheet on IT Equipment, check it out!

## Summary

Schools can play their part in reducing energy use and helping the environment, whilst improving comfort conditions in classrooms and creating a better learning environment. Teachers, other staff, and pupils, can work together to meet these objectives and save money. The money saved can be used for other purposes. Do not forget, the money is already in the school's budget, it is being spent on energy. If the energy is being wasted, the budget is being wasted.

For factsheets and videos on heating, lighting and IT go to [www.energyineducation.ie](http://www.energyineducation.ie)