ResourceSmart Schools Online Learning

Instructions

This activity should take students approximately 20 minutes to complete.

In the classroom: After watching the video and reading Sustainability Victoria's "Household Energy Action Guide" teachers can use these questions to facilitate class discussion or provide students time to research and answer.

From home: Using the video, Sustainability Victoria's "Household Energy Action Guide" (see below) and desktop research, students can provide written responses to the questions.

Activity | Years 5-8

Reflect, research and answer

1. What are the benefits of saving energy?
2. Mention two ways to reduce energy consumption at your school.
3. What is the relationship between fossil fuels, energy production and pollution?
4. Heating and water heating are two of the biggest energy consumers in the household. Reflect on how you can contribute to reducing energy consumption in your home.
5. Using the "Household Energy Action Guide" create your own guide with 5 easy ways to reduce energy consumption in your home.

Households

GUIDE

Household Energy Action Guide

This Guide offers some simple but cost effective actions to help reduce your energy bills. Some actions will have no cost, require minimal effort but result in big dollar savings. These are the obvious ones to start with and will give the 'biggest bang for your buck'!

Place a tick in the right-hand column against all the energy saving actions you can do around your home and stop spending more than you should on energy!

Heating				
Action	Cost	Effort	Savings	✔
Keep the thermostat below 20°C. Every degree higher will increase running costs by around 10%.	–	●	★★	
Close off rooms not in use so you only heat the rooms you are using.	–	●	★★	
Turn the heater off overnight or when you go out, don't leave it running!	–	●	★★★	
Check your ceiling insulation. › If you have none, install ceiling insulation. › Top up your ceiling insulation. Old ceiling insulation can compress over time and lose its effectiveness. Topping up insulation will lead to improved comfort and reduced energy bills. Check that it's properly installed and that you have the right R value. *In Victoria R3.5 is a minimum for ceilings, but up to R5.0 is best.*	 $$$ $$	 ● ●●	 ★★★ ★★	
In winter, keep the hot air in and the cold air out! Seal up any gaps and cracks under and around doors and windows, use draught excluders and weather stripping on doors and windows, cover evaporative cooler outlets, seal wall vents (providing you don't have unflued gas heating), and install a chimney damper.	$	●●	★★	
Install window coverings to protect windows from heat loss through glass. › Closely woven, close fitting, floor length curtains or blinds that extend past each side of the window with boxed pelmets to stop the draughts at the top of the curtain. › Vertical or venetian blinds, unlined curtains. *These are the bare minimum.*	 $$ $	 ●● ●	 ★★★ ★	
If you are going to buy a new heater use the energy rating labels to upgrade to a high efficiency heater. You will spend less on running costs over the life of the purchase.	$	●	★★	

White Goods – Fridges, Washing Machines, Clothes Dryers and Dishwashers

Action	Cost	Effort	Savings	✔
Turn off that second fridge when it's not needed!	–	●	★★★	
Check your fridge and freezer seals, clean and replace damaged seals.	$	●	★★	
Check that the heat exchange coils at the back of the fridge are clean and well ventilated.	–	●	★	
Consider replacing an older fridge (>15 years old) with a new high efficiency model — always choose the right size for your needs — bigger is not always better!	$$$	●	★★★	
Don't open the fridge door too often.	–	●	★	
Wash clothes with cold water whenever possible.	–	●	★★	
Avoid using the dryer. *Use the sun and wind instead.*	–	●	★★	
Only run your dishwasher when it's full.	–	●	★	
If you are going to buy a new appliance use the energy rating labels to upgrade to a high efficiency appliance. Whether you are buying a new fridge, freezer, washing machine, clothes dryer or dishwasher you will spend less on running costs over the life of the purchase.	$	●●	★★	

Hot Water

Action	Cost	Effort	Savings	✔
Take shorter showers; use a shower timer to make sure everyone has a four minute shower.	–	●	★★	
Install a low flow shower head and save water AND energy.	$	●	★★	
Fix any dripping taps especially hot water taps.	$	●●	★★	
Insulate hot water pipes leading from your hot water system into the house.	$	●	★	
The average hot water system has a lifespan of 12–13 years, so if yours is more than 10 years old, start to do the research and plan for its replacement. Think about: › the fuel source available to you › how much hot water your household uses › the running costs of a new system › the purchase cost of a new system.	–	●	–	
When you purchase your new hot water system, spend a little more and upgrade to a high efficiency one. You will spend less on running costs over the life of the purchase. › Use the energy rating labels to identify the highest efficiency gas hot water system. › Invest in a solar hot water system.	$ $$	● ●●	★★★★ ★	

Lighting

Action	Cost	Effort	Savings	✔
Switch the lights off when you leave the room and in rooms that aren't being used, including fluorescent lighting – it's a myth that it's better to leave it on because it uses a lot of energy during start up.	–	●	★	
Use natural lighting wherever possible.	–	●	★	
Use task lighting.	$	●	★	
Count the number and wattage of your downlights. Replace inefficient lamps with more efficient lighting: › Replace 12 volt halogen lamps with lower wattage halogens › Replace 12 volt halogen lamps with 12 volt LEDs if compatible › Replace 12 volt halogen downlight fittings with a240 volt CFL or LED downlight fitting.	 $ $$ $$$	 ● ● ●●	 ★ ★★★ ★★★	

TV, Home entertainment, IT and other small appliances

Action	Cost	Effort	Savings	✔
Turn the TV and entertainment appliances off at the wall when they're not being used. They are still drawing power in standby mode. In most homes TVs, DVDs, computers, set top boxes, stereos and game consoles are on standby for a lot of the time. You will often see a small light, if you see this and the appliance should be off, turn it off at the wall. Standby power can account for as much as 10% of your energy bill.	–	●●	★★	
Install a 'standby-killer' switch or a standby power controller (SPC) to disconnect power to appliances when they're not being used.	$	●	★★	
Use the radio rather then the TV for background noise.	–	●	★	
If you are going to buy a new television or computer monitor use the energy rating labels to upgrade to a high efficiency model. You will spend less on running costs over the life of the purchase.	$	●	★★	

Cooking[1]

Action	Cost	Effort	Savings	✔
Only heat the amount of water you need, if you are making a cup of tea for one or two don't overfill the kettle.	–	●	★	
Keep lids on pots and pans when cooking and use the right sized pot for hob.	–	●	★	
Cook in bulk and freeze the excess.	–	●●	★	
Use small appliances when you can, eg the toaster instead of the griller.	–	●	★	
Check that your oven door seals are in good condition and don't open the oven door unnecessarily during cooking.	–	●	★	
Use the microwave for cooking whenever you can, but switch the clock off. More energy is used to power the clock than to cook food.	–	●	★	

1 While each action will have a small impact, adopting more efficient cooking practices will contribute to overall savings.

Cooling

Action	Cost	Effort	Savings	✔
In summer, close curtains during the day to keep the heat out.	–	●	★	
Use external shading to keep the sun off the windows and to improve your homes summer comfort: › North windows can be shaded by horizontal structures that stop the high summer sun from hitting the glass but allow the lower angled winter sun in. › East and west windows need protection from the low summer sun which can heat the house, so vertical shading is best for them (eg bamboo blind, canvas awnings).	$$	●●	★★	
Use a fan before turning the air conditioner on.	–	●	★★	
Set your air conditioner thermostat to 24–26°C or above. Every degree lower will increase running costs by around 10%.	–	●	★★	
Keep windows and doors closed when your air conditioner is operating to avoid wasting energy.	–	●	★★	
Avoid running your air conditioner all night unless you need to for medical reasons. A fan can generally keep you comfortable at during the night at much lower running cost.	–	●	★★	
Open the doors and windows to ventilate the house when the outside temperature drops on summer evenings.	–	●	★★	
If you are going to buy a new air conditioner use the energy rating labels to upgrade to a high efficiency model. You will spend less on running costs over the life of the purchase.	$	●	★★	

Other appliances

Action	Cost	Effort	Savings	✔
Reduce your pool filter running time to the safe minimum set out in the manual. *Pool pumps and filters can be very expensive to run.*	–	●	★★	
If you are going to buy a new pool pump use the energy rating labels to upgrade to a high efficiency model. You will spend less on running costs over the life of the purchase.	$	●	★★	

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