



# MUNDARING ENVIRONMENTAL ART PROJECT 2020

## CLEAN ENERGY – Let's reduce our energy impact!

Australia is one of the largest consumers of non-renewable energy per person in the world. However, our landscape is rich in natural resources and we have access to an abundance of renewable or clean sources of energy production such as solar, wind, hydro, geothermal and wave energy.

This education resource investigates what we can do to reduce climate change by focusing on clean energy technologies and implementing actions to reduce our personal energy use.

This project invites students to explore different types of energy sources: **non-renewable** fossil fuels vs **clean energy** and investigate **their impact on our environment**. Students can use the information presented to understand and present creative solutions for cleaner and more sustainable energy production and use.

## KEY RENEWABLE ENERGY SOURCES TO INVESTIGATE

- Why we need clean energy  
[futuresparks.org.au/why-we-need-clean-energy.aspx](https://futuresparks.org.au/why-we-need-clean-energy.aspx)
- Wind Power – wind farms/turbines  
[futuresparks.org.au/media/25372/wind\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25372/wind_energy_fact_sheet.pdf)
- Solar Power – the Sun captures radiant energy and converts to heat, electricity or hot water  
[futuresparks.org.au/media/25363/solar\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25363/solar_energy_fact_sheet.pdf)
- Geothermal Energy – from heat from the earth  
[futuresparks.org.au/media/25348/geothermal\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25348/geothermal_energy_fact_sheet.pdf)
- Hydroelectric Power – through rivers and dams  
[futuresparks.org.au/media/25351/hydro-electric\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25351/hydro-electric_energy_fact_sheet.pdf)
- Tidal Energy – mechanical energy from the motion of tides  
[futuresparks.org.au/media/25366/tidal\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25366/tidal_energy_fact_sheet.pdf)
- Wave Energy – mechanical energy from the motion of waves  
[futuresparks.org.au/media/25369/wave\\_energy\\_fact\\_sheet.pdf](https://futuresparks.org.au/media/25369/wave_energy_fact_sheet.pdf)

## KEY ENERGY SAVING ACTIVITIES TO INVESTIGATE

- Walking, riding to school  
[s3.amazonaws.com/green-learning/eneraction/Eneraction-Lesson-Plan-12-Ride-Roll-and-Stroll.pdf](https://s3.amazonaws.com/green-learning/eneraction/Eneraction-Lesson-Plan-12-Ride-Roll-and-Stroll.pdf)
- Changing to energy efficient alternatives  
[futuresparks.org.au/media/24696/topic\\_resources\\_-\\_energy\\_efficient\\_design.pdf](https://futuresparks.org.au/media/24696/topic_resources_-_energy_efficient_design.pdf)
- How to calculate your carbon footprint  
[wwwf.org.au/our\\_work/people\\_and\\_the\\_environment/human\\_footprint/footprint\\_calculator](https://wwwf.org.au/our_work/people_and_the_environment/human_footprint/footprint_calculator)

- Eating locally grown (or home grown) food  
[abc.net.au/life/what-is-better-for-the-environment-eating-seasonal-or-organic/11219734](http://abc.net.au/life/what-is-better-for-the-environment-eating-seasonal-or-organic/11219734)  
[buywesteatbest.org.au/](http://buywesteatbest.org.au/)  
[hsph.harvard.edu/nutritionsource/sustainability/plate-and-planet/](http://hsph.harvard.edu/nutritionsource/sustainability/plate-and-planet/)  
[environmentvictoria.org.au/resource/eating-planet-environment-victoria/](http://environmentvictoria.org.au/resource/eating-planet-environment-victoria/)
- Avoiding single use plastics  
[taronga.org.au/sites/default/files/content/pdf/LitterFreeRivers\\_Toolkit\\_Schools.pdf](http://taronga.org.au/sites/default/files/content/pdf/LitterFreeRivers_Toolkit_Schools.pdf)

## EASY ENERGY SAVING ACTIVITIES AT HOME OR IN THE CLASSROOM

### LIGHTS

- Turn off the lights when you are not using them. Just switching off at recess and lunchtime can save a lot of energy. Check the hallways and other shared spaces.
- Open the blinds to let in natural light and maybe you won't need to turn on so many lights.
- Design a small sticker to display next to your light switches to remind people to turn them off when they leave a room.
- Investigate getting lights on timers.

### HEATING / COOLING

- When the air conditioner or heater is on keep the doors, windows and blinds closed.
- Only use heaters when there is someone in the room.
- Check the settings on your thermostat. Winter heating should be set at 21°C and summer cooling at 25°C.
- Check for draughts coming through gaps around windows and doors by holding a tissue up near the gap and seeing if it moves. Talk to your teacher about how to plug the gaps.

### ELECTRICAL APPLIANCES

- Even when electrical appliances are not being used they still use power, even if they are switched to standby. We need to turn appliances off not only from their remote control, but also at the powerpoint to avoid wasting electricity.
- Design a small sticker to display next to your powerpoints to remind people to turn them off when they leave a room

### POWER DOWN YOUR COMPUTERS

- Make sure all computers are turned off when not in use. Screen savers do not save energy!
- Monitors use a lot of energy, so ensure they are switched off. New computers have a function setting which automatically switches off the computer and/or monitor after a set amount of time. Investigate these options by going to your computer's control panel.
- Ensure printers and photocopiers are switched off at night and on weekends. Check to see if they have an 'Energy Saver' setting and make sure people know how to use it.

### APPOINT A 'POWER RANGER'

- Appoint a 'Power Ranger' in each class. This person is responsible of making sure everything is turned off each day. Everyone should have a turn at being the Power Ranger.

## ILLUSTRATING CLEAN ENERGY

### FREE VIDEO TUTORIALS WITH MIKAELA MILLER

- ***Illustrating Clean Energy*** – This year, instead of a workshop visit to your school, we've organised for local artist Mikaela Miller to record you'll three new 15minute tutorials which you can download from the Mundaring and Midland Junction Art Centre websites. These will be released in May.

### YOUTUBE CLIPS

- ***Reduce Your Carbon Footprint – EPAM Systems Global*** Short animations with plenty of examples for illustrating clean energy.  
[youtube.com/watch?v=Xdl5Vht0sO8](https://youtube.com/watch?v=Xdl5Vht0sO8)
- ***What is a carbon footprint? What can you do about yours?*** – **Kat Brink** Short animations with plenty of examples for illustrating clean energy.  
[youtube.com/watch?v=YseZXXfT\\_yY](https://youtube.com/watch?v=YseZXXfT_yY)
- ***Understanding Colour – Blender Guru*** Why Colour is so important? An introduction to saturation, value and six colour harmonies that work.  
[youtube.com/watch?v=Qj1FK8n7WgY](https://youtube.com/watch?v=Qj1FK8n7WgY)
- ***Understanding Composition – Blender Guru*** Discover one of the most important things you can learn as an artist: Composition. There's more to it than the rule of thirds.  
[youtube.com/watch?v=O8i7OKbWmRM](https://youtube.com/watch?v=O8i7OKbWmRM)
- ***What makes a great poster?*** Short slideshow of iconic posters in popular culture.  
[youtube.com/watch?v=f72e4GT6QqM](https://youtube.com/watch?v=f72e4GT6QqM)

## MORE RESOURCES

### YOUTUBE CLIPS

- ***Energy - The Dr. Binocs Show*** A simple introduction to Energy for lower primary students with Dr. Binocs.  
[youtube.com/watch?v=O0LBegPWzrg](https://youtube.com/watch?v=O0LBegPWzrg)
- ***Renewable Energy 101 - National Geographic*** There are many benefits to using renewable energy resources, but what is it exactly? From solar to wind, find out more about alternative energy, the fastest-growing source of energy in the world—and how we can use it to combat climate change.  
[youtube.com/watch?v=1kUE0BZtTRc](https://youtube.com/watch?v=1kUE0BZtTRc)
- ***Energy Literacy Video Playlist – Student Energy*** The world of energy doesn't have to be complex. These short, concise videos will intro you to the basics of energy. This playlist features video introductions to all renewable energy resources such as: Wind Power, Natural Gas, Hydrogen, Water, Tidal Power, Solar Power, Biomass and Solar Thermal Power.  
[youtube.com/playlist?list=PL7b293q4n8alo87IK74wa2iuJRVGmBxvH](https://youtube.com/playlist?list=PL7b293q4n8alo87IK74wa2iuJRVGmBxvH)

### BOOKS FROM YOUR LOCAL LIBRARY

- ***Our Little Inventor – Sher Rill Ng*** The innovation of youth is showcased wonderfully in Australian author and illustrator Sher Rill Ng's stunningly illustrated story of a young inventor whose determination to clean the air of pollution in the town near where she lives is thwarted time and time again by adults who refuse to pay attention to her brilliant new invention.
- ***The Rhythm of the Rain – Grahame Baker-Smith*** Guiding children in their understanding of just how big the planet is, and that natural environments exist beyond what they have witnessed with their own eyes, can be a challenge, one made easier with the help of this exquisite picture book.

- ***The Last Dance – Sally Morgan*** The Last Dance might have been published almost 10 years ago, but its message is more important than ever before. Still one of the gentlest and kindest reminders in print to care for our native wildlife, Morgan, who is of the Palyku people of the eastern Pilbara, tells a story encompassing all of Australia, from rainforests to beaches to desert, bringing attention to wildlife affected by human beings.
- ***A Planet Full of Plastic – Neal Layton*** Did you know that we manufacture over 300 million tonnes of plastic every year? This is even more concerning when you realise eight million of those tonnes end up in our oceans. For the more factually minded child, A Planet Full of Plastic both tells the history of plastic invention, use and overuse alongside suggestions for how we can wean ourselves off it.

## FILMS

- **Saving Hieronymus (1993):** an educational kit for school students on saving energy and the greenhouse effect.  
[trove.nla.gov.au/work/10640917](http://trove.nla.gov.au/work/10640917)
- **2040 (2019):** This recent documentary focusses on technology and solutions to address climate change and includes interviews with children around the world. It is optimistic in nature and provides a way to engage with students on climate change issues without messages of doom and despair. Copies can be ordered for use as a learning tool or to host on-site screenings for the school community (including fundraisers).  
[whatsyour2040.com/schools-get-involved/](http://whatsyour2040.com/schools-get-involved/)
- **Australia's Science Channel:** Accessible science news via free videos, articles, podcasts, news and events. Australia's Science Channel is operated by a not-for-profit organisation to promote public awareness and understanding of science. It aims to provide a hub for researchers, Australian universities, organisations and institutions to share compelling science stories for everyone to watch, read, and listen.  
[australiascience.tv/](http://australiascience.tv/)
- **A Beautiful Planet (2016):** Stunning look at Earth -- and man's sobering impact on it. Age 6+

## GET INVOLVED!

### MILLENNIUM KIDS

- Millennium Kids Inc. for young people, 10-25 yrs who want to change their world. Through community or school based workshops kids think about their communities, hatch ideas for change and implement their ideas with support of mentors & stakeholders.  
[millenniumkids.com.au/the-issues/air-and-transport/](http://millenniumkids.com.au/the-issues/air-and-transport/)