

CASE STUDY

SWAN HILL PRIMARY SCHOOL

SOLAR BOAT RACING



Swan Hill Primary School is dedicated to sustainability.

They grow vegetables, keep chickens, run a comprehensive recycling program and they even have a student run council of 'Environmental Leaders of the Future'. Learning about sustainable living is ingrained in Swan Hill Primary School's culture and curriculum.

From Grade Prep onwards, students learn about recycling and different forms of renewable energy including wind, water and solar power. Students develop an understanding of these energy solutions through hands on investigations and projects run by specialist science and technology teacher Bruce Stevens.

The Solar Boat Challenge

In preparation for the Solar Boat Challenge Grade Five students whet their appetites by building model solar cars. Grade Six students spend forty-five minutes each week, over three weeks, in Term Four exploring the use of solar energy by building and racing model solar powered boats. Students work in pairs and build their solar boat out of soft drink bottles, icy pole sticks, melamine and glue.

The boats are powered by a small motor connected to a panel of solar photovoltaic cells. Once the boats are constructed students work out the best angle to attach their solar panel. This is done by students' observation of the solar tracker and solar panels installed at their school. They test their boats and observe how the panel angle alters the speed of the boats.

Race Day

Race day consists of each class holding head to head knock out races in a 10m x 1m pool constructed of wooden planks and covered by builders' plastic. The whole school gets involved, with younger students in the audience building curiosity and enthusiasm for their own participation in the challenge once they reach Grade Six.

The winners from each class compete until an overall champion is found.

'Our students thrive on the competitive element and are all eager to make their boat the fastest and most structurally sound in order to win,' says science teacher Bruce Stevens.

Bruce believes the best way to educate children in science is to engage them in hands on projects.

'Creating something that demonstrates a scientific principle or system is the clearest way for students to understand any topic. The solar boat construction, and subsequent races, helps students understand the basics of solar energy. They learn that energy from the sun can be used to make electricity.'

Working in Partnership

Swan Hill Primary School works in partnership with Central Victoria Solar City and the Department of Education and Early Childhood Development, to showcase the possibilities of renewable energy education. For the school students, the culmination of seven years learning in this area occurs in Grade Six through the Solar Boat Challenge. Funding for the challenge is provided by Central Victoria Solar City through a \$5,000 contribution that supports the school to purchase the solar based materials used in the science classes and teacher time release to refine a unit of curriculum for future use through the Victorian Department of Education's Ultranet.

With the help of Central Victoria Solar City this school in Northern Victoria has also installed 1kW of fixed solar panels and 1kw of tracking solar panels to compare energy output with the tracking system, as well as another 2kW fixed solar system. Output from the solar systems are closely monitored and reported by students.

The upcoming Innovators in Renewable Energy Education Forum, sponsored by Central Victoria Solar City and the Department of Education and Childhood Development, will bring together passionate science teachers from around Victoria. Bruce looks forward to sharing the Model Solar Boat curriculum with them at the forum.

Bruce believes that students, who develop a strong awareness of renewable energy at an early age, will become advocates for sustainability in their lives outside of school and be ready to enter the renewable energy workforce.

'Swan Hill Primary's role as a lighthouse school for renewable energy in the north, supported by its partnership with Central Victoria Solar City, is an inspiring one that builds upon the school's real commitment of being a leader in sustainability within its community.'



Central Victoria Solar City is part of the Australian Government's Solar Cities Program, a partnership between all levels of government, industry, business and local communities to trial sustainable energy solutions. Central Victoria Solar City Consortium members include Bendigo and Adelaide Bank, Central Victorian Greenhouse Alliance (CVGA), Origin, Powercor and Sustainable Regional Australia. This project is also supported by the Victorian Government Sustainability Fund and Sustainability Victoria.

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