



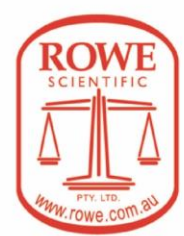
Prize Winner

Models & Inventions

Year R-2

Jack Williams

Immanuel Primary School



Sustainable House

In my house model I have created environmentally friendly ways of living.

These are:

- Solar powered electricity (lights and fan)
- Rain water system
- Vegetable patch
- Solar charged battery for energy storage.
- Recyclable bin
- Compost bin
- Earth wool insulation (made from sheep wool) and
- Floor boards from recyclable paper

I made my model from mostly recycled material including a large cardboard box, paper, coffee cups, and wood pieces.

My model works by holding a torch to the small solar panel. This turns on a red alarm light which would be on the outside of a house.

There is a switch on the wall for upstairs bathroom and bedroom, which turns on and off the LED lights to those rooms.

There is also a switch on the ground floor which turns on and off the fan for this level.

I have left the front open so that you can see inside the house and also inside the roof. The model is not to scale.

I had difficulty making a model that has all lights and fans working on solar energy indoors. To solve this, I researched how to make a circuit with a battery, to show how the solar panels can charge and store energy in batteries, which then send power to lights and fans when switched on. I have kept one red light (alarm system) which works indoors with the torch attached to my model. The light from a torch is not as powerful as the light from the sun when working with solar energy. Because it is less powerful the big circuit with all lights and fans did not work from the torch light.

I had trouble with the fan circuit, and we figured out that there was a fault in the battery pack which made the batteries heat up. To solve this problem, we created a new circuit for the fan, and replaced all the wires, motor, switch, battery pack and used new batteries.

In this model I had help from my mum and dad researching how to make lights work from solar panels. I had help from them when using the hot glue gun, Stanley knife, and they connected the wires together with the soldering iron for me, as this was too dangerous.

References

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