

'Scouts Solar Day Program' for Special interest area (Stem and Innovation)

When- On a Saturday or Sunday (preferably 10 am to 2 pm).

Where- Scouts Hall ground/any open area where you get good sunlight.

Note-In scout section SIA project should cover minimum 8 hrs. Therefore, this project has some activities, which need to be done at home, before the actual face to face solar day.

Pre-Solar day activity- To be done at home

1. Scouts are instructed to prepare a solar oven/cooker/dehydrator at home and bring it to the Solar day to test.

More information can be found at,

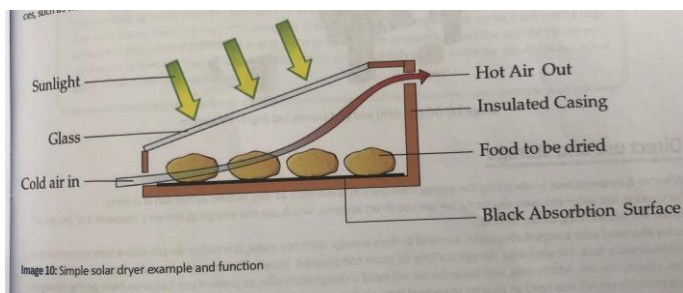
[https://solarcooking.fandom.com/wiki/Solar_Cooking_Wiki_\(Home\)](https://solarcooking.fandom.com/wiki/Solar_Cooking_Wiki_(Home))

One of the great solar ovens plan our scout troop made as below;



Solar dehydrator

Scouts can make a Solar dehydrator (example picture is from solar energy handbook).



Solar dehydrator from 1st Carlingford solar project patrol;



2. Chasing light

Very simple project, from which scouts can learn the importance of sunlight for growth of trees.

We did our project during the winter, and we planted snow peas seeds, which was very successful.

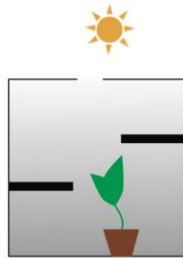
Task informations;

Chasing light

Discover how a plant turns/grows towards the light.

You can either visit a sunflower field and observe it or take pictures of it at different times of the day.

You can also grow your own sunflower and observe it. Alternatively, grow a bean and put the seedling in a box. Cut a 1 cm x 1 cm hole on one side of the box or build a more complex box as shown in the picture. Make sure that there is no light coming into the box except from the hole you cut. Observe how your plant is growing after a few days.



Age Level	1 / 2
Time	One day/week
Result / Aim	Sunflowers turn towards the sun during the day The plant in the box will grow towards the source of light All plants need sunlight for living (photosynthesis), they only grow with sunlight
Materials	<ul style="list-style-type: none">• Cardboard box• Cardboard• Tape/glue• Beans seedling• Knife/scissors• Camera for time-lapse photography

Pictures from our project: Snow peas plant chasing lights



3. Colors of Solar Energy

Colours of solar energy

Paint small PET plastic bottles in different colours, at least one black, one white. Alternatively, you can wrap coloured paper around the bottles. Fill them with water and measure their temperature.

Put the bottles in direct sunlight and after 30 minutes, measure their temperature again. What can you observe?

Advanced: Measure the temperature of different material surfaces in direct sunlight (mirror, glass, dusty and clean glass, etc). What can you observe and what does it mean for the use of solar energy?

Age Level	1/2
Time	30 minutes
Result / Aim	Show how different colours absorb sunlight
Materials	<ul style="list-style-type: none">• PET bottles• Different colours• Water• Thermometer

Pictures from us; Using the colored papers to cover the bottles and the results.



One scout has use colored water;



Solar day activities;

Scouts can be divided into patrols and do the following activities, depending on how many scouts participated for the project.

1. Test their solar oven/cooker/dehydrator and enjoy solar lunch.

The Scouts had egg and cheese sandwiches and smore's for lunch.

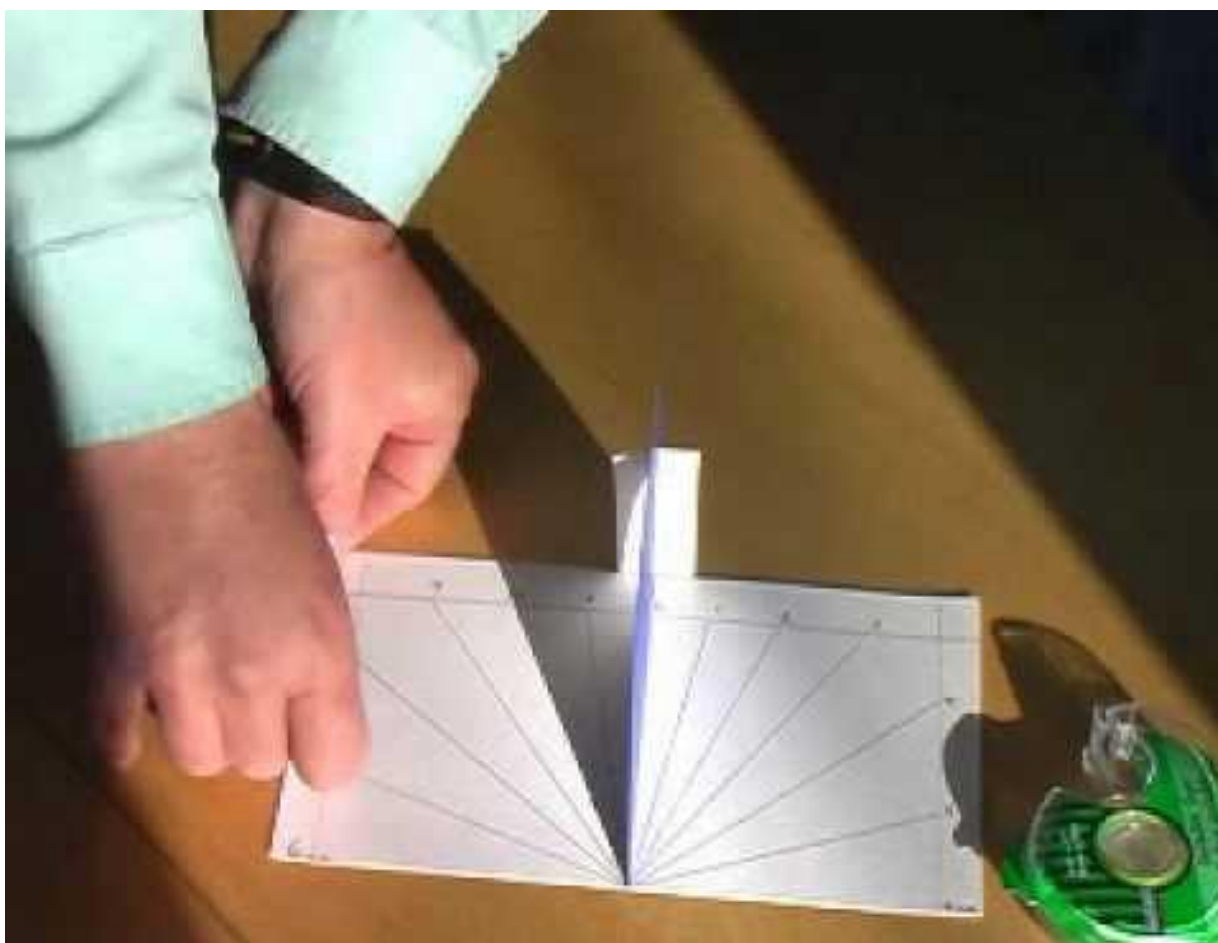
Equipment's-cheese slices, eggs, bread, biscuits, chocolate chips/chocolate, marshmallows and their solar oven/cooker.

They had dried lemon and apples for dessert as well.

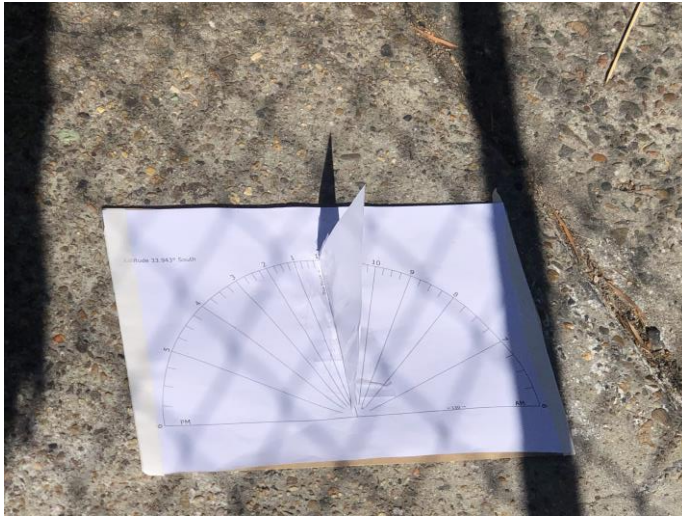
2. Sundial – Scouts made a sundial in patrol and calibrated it.

Sundial links-<https://www.sundialsaustralia.com.au/sundials>

Set up sundial-[Setup a Sundial](#)



The most accurate sundial that we made in our scout troop project patrol as



below;

3. Colors of solar energy (this also can be done on the solar day if the scouts didn't do it at home)

4. Solar compass

Method 1-

Materials needed-analogue watch.

<https://www.wikihow.com/Use-an-Analog-Watch-as-a-Compass>

Method 2-

Materials needed- wooden stick/pole

Scouts will learn how to find the north using the shadow of wood stick/pole.

5. Solar arts

Scouts can learn about the strength of sunlight, to focus and be creative.

Solar art

Always wear sunglasses for this experiment!

Wear ultra strong sunglasses or sunglasses with an extra layer of UV absorbing black plastic.

You may use car window tint and glue it on the sunglasses.

Try to focus the sunlight with a lens on a wooden plank so that the wood gets slightly burned. You can make a drawing or write a text or your name. To make it easier, you can first draw lines with a pencil (not pen) on the wood. When you're done, put the lenses back in a closed container. If left in the sunlight, it may cause a fire. On the other hand, if you need a fire, you can easily light one with the help of the sun and a lens. For this activity, never leave children without supervision and keep a pail of water close by in case of emergency.

Age Level	1 / 2 / 3
Time	15 minutes - 1 hour
Result / Aim	Learn about the strength of sunlight, to "focus" and be creative Good introduction to the parabolic cooker
Materials	<ul style="list-style-type: none"> • Lens • Dark sunglasses with UV protection or darkened sunglasses • Wooden planks • Water

We made a camp gate way sign.



Thank you for reading. Hope you enjoy our project, looking forward to your solar projects.

1st Carlingford Scouts Troop "Bartoo" Go solar Project patrol-2023 August

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Leaders-Nirosha (Woylie) and Udaya (Saratoga)

Reference- Solar Energy Handbook.