



ECO-ENERGY
ÉCO-ÉNERGIE

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Solar Car Activity

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Goal: To learn about solar energy.

Ages/Grades:

Younger children (elementary ages) can participate in the story and drawing the town. Older children (middle schoolers) can make the solar cars. Everyone can take a turn racing the cars.

Length: 1-1.5 hours

Materials:

- Recommended books
 - *Sun Power A Book about Renewable Energy* by Esther Porter
 - *Running on Sunshine How Does Solar Energy Work* by Carolyn Cinami DeCristofano
- Solar Car Kits (<https://www.flinnsci.ca/solar-powered-cars---flinn-stem-design-challenge/ap8049/>)
- Roll of brown paper, markers, pencils
- Wire strippers, masking tape and scissors (one per group assembling the cars)
- Lamps with halogen bulbs and extension cords (if it is raining and you need to be inside, these can be your “sunlight”)

Activity:

1. Start by introducing the concept of renewable energy, the different types of renewable energy, and its benefits. This can be done by reading a book. Ask students about the types of renewable energy they see in their day-to-day life, for example hybrid or electric vehicles.
2. Depending on the number and ages of the children, divide the group and ask some students (could be elementary ages) to design and draw a town on a long roll of paper featuring the types of renewable energy they just learned about - wind mills, solar panels, hydro dams etc. Have a racetrack or big road go straight down the middle.

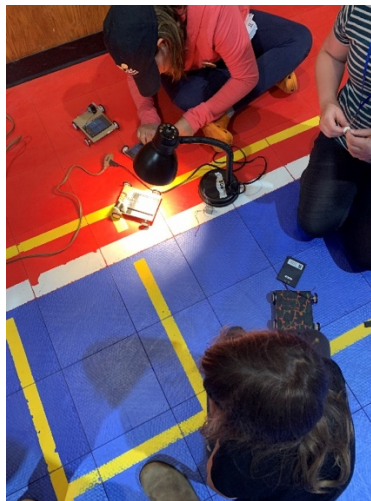


Students drawing a town with a racetrack.



Solar panel drawn on house.

3. While some students are drawing, ask others (middle school age) to use Flinn Scientific Canada's Solar-Powered Cars- Flinn Stem Design Challenge™, Lab Kit. They can build model cars that run on energy from the sun and learn about how solar cars work. Follow the assembly instructions that come with the kits. Kits can be assembled in groups of 2 to 4 students. (This activity offers flexibility. If you have a group of middle schoolers, they could make the cars and the maps/racetracks.)
4. Finally, race the cars! Take the cars and the paper town outside on a dry sunny day. On a rainy day when the activity must be performed inside, halogen lightbulbs in a lamp with an extension cord work to power the cars. (Note: LED bulbs will not work as they don't emit enough light.) Teams can then race their cars down the track to see who wins. Based on their observations of their car's performance, they can reflect on how well their design optimized speed. Teams can tweak their designs and try again.
5. Wrap up with a discussion about their observations.



Testing the solar cars with a halogen lightbulb inside on a rainy day.