



The Sky's the Limit: **Solar Energy Project Toolkit**

The Sky's the Limit 4-H Science curriculum was created to increase awareness and scientific literacy about solar energy. Activities in this toolkit use engineering design principles to develop an understanding of solar energy. Participants will become familiar with the how and why of using solar energy. The activities focus on the transfer of energy, circuits, capturing solar energy, and engineering design. Lessons scaffold from the basic understanding of circuits and include building design challenges such as building a solar oven, constructing a solar-powered boat, and exploring elements that impact solar cars.

The activities are designed for middle school students (grades 6-8), but may be adapted for other-age learners. These lessons require access to direct sunlight or a high-power spotlight.

If you need assistance with these activities please email us: 4-HScience@maine.edu.

Information about additional 4-H STEM Toolkits is available on the 4-H STEM Toolkits page: extension.umaine.edu/4h/stem-toolkits/

- Activity 1: What is a Circuit?
- Activity 2: Capture the Sun
- Activity 3: Series and Parallel Circuits
- Activity 4: Solar S'mores
- Activity 5: Design and Build a Solar Car
- Activity 6: Engineering Solar Powered Boats

Acknowledgments

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Activity 1: What is a Circuit?



Activity 2: Capture the Sun



Activity 3: Series and Parallel Circuits



Activity 4: Solar S'mores



Activity 5: Design and Build a Solar Car



Activity 6: Engineering Solar Powered Boats



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