

Solar Cars

Lego Education, SunZoon Lite

Subject: Physical Science	Topic or Unit of Study: Renewable Energy
Grade/Level: Grades 4-8	Time Allotment: 6 hours (three two-hour sessions)
Objectives: <ul style="list-style-type: none">• Students will identify pros and cons of solar energy, as well as other types of renewable energy.• Students will build solar cars.• Students will test solar cars using multiple gear sizes to determine ideal gear ratios.• Students will collect and analyze data to determine ideal gear ratios.	Standards: <ul style="list-style-type: none">• 4-PS3-4: Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.• 3-5-ETS1-1: Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.• 3-5-ETS1-2: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
Synopsis: <p>Students will use their background knowledge of solar energy to race student-created solar cars. They will collect and analyze data using distances traveled to determine ideal gear ratios.</p>	Materials: <ul style="list-style-type: none">• SunZoon Lite kits (one kit per student)• Tape that you can write on (to mark start/end points during testing)• Rulers (one per student)• Solar Car decoration supplies (stickers, markers, etc.)• Solar energy absorbing balls• Pins (two per student)• Baby wipes (to wipe off axles)