

# Renewable Engines

Vocab: sunlight, wind, electricity, fossil fuels, coal, wood, renewable, water, solar, energy, oil, natural gas, nonrenewable

**Background:** The sun is the direct source of light and thermal energy. The force of flowing water and moving air (wind) can also be used to generate electricity. These are called renewable energy sources. We can use the energy from these sources to do work, like power our cars or heat our homes.

**Design Challenge:** Create a car that can run on its own power using renewable energy sources.

**Criteria:** The car must:

- Run under its own power
- Travel at least 18 inches
- Be no larger than your hand
- Use a renewable energy source

**For a badge, try...**

- Making a hybrid car that uses more than one energy source
- Being able to control the speed of the car
- Giving it headlights

**Materials:**

Solar panels  
Rubber bands  
Pinwheels  
Construction Paper

Car base  
Tape  
Hot glue  
String

Pipcleaners  
LEDs  
Balloons  
Wires



**Guided Portfolio**

Name: \_\_\_\_\_

**Group members:**

\_\_\_\_\_

\_\_\_\_\_

**What is the problem? State it in your own words:**

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**What are some possible solutions? Write or draw at least 4 options**

Create the solution that you think is best. Keep notes here about what problems you face and how you solve them.

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**Test your solution:**

## Evaluate your work

Was this the best solution? Would one of your other ideas have worked better? Why or why not?

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What would you have done differently? What are you proud of?

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Could you change or add something to make it even better? What could you do?

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## Think about...

1. How do renewable energy sources produce electricity?

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2. What are some advantages to using renewable energy?

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3. What are some disadvantages?

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4. Which renewable energy source do you think is the best?

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