

# Renewable Energy

## Sustainability

Humans have always used energy to make life easier. Many traditional energy sources are not renewable, meaning the supply of fossil fuels is finite (limited) and being depleted. We can capture energy from sustainable resources such as the sun, wind, water, geothermal (underground), and biogas (such as animal waste).



**RESPOND** to your observations of various energy sources. Note the ways energy is used in your home, school, and community and if the sources are from fossil fuels or renewable sources. Further explore by doing research on how energy use and sources could be more sustainable.



**Energy Use**



**Energy Source**



**Sustainability Ideas**

**WRITE AND SKETCH YOUR OBSERVATIONS AND IDEAS.**

**Examples:**  
(heat/cooling, refrigeration, lighting, farms, factories, technology, transportation, etc.)

**Sketch additional energy uses**

**Note observations**

**Examples:**  
(electricity fueled by coal, wind, hydropower, or sun; car fueled by gasoline or electric-charged battery; heat fueled by oil, natural gas, or geothermal, etc.)

**Sketch additional energy sources**

**Note observations**

**Examples:**  
(ways each use could be made more sustainable, for example reducing the temperature of hot water, sealing windows to reduce heat loss, etc.)

**Sketch sustainability ideas**

**Note observations**

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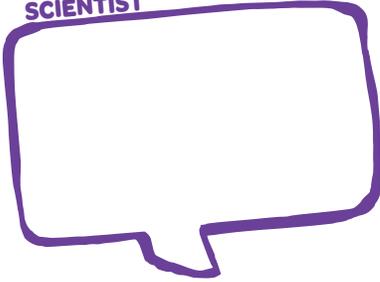
## Sustainability



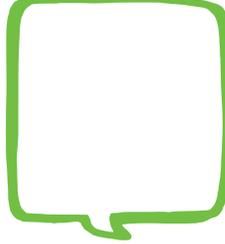
**CONNECT** your curiosity with inquiry. Form teams that will explore an energy source from the lens of each STEAM team member's role. In each speech bubble, write a question from the point of view of a Scientist, Technologist, Engineer, Artist/designer, and Mathematician. Start with solar energy. Your team could repeat the exercise for each type of renewable energy being explored.

WHAT QUESTIONS WOULD EACH STEAM TEAM MEMBER ASK ABOUT A RENEWABLE ENERGY SOURCE, STARTING WITH SOLAR ENERGY?

**SCIENTIST**



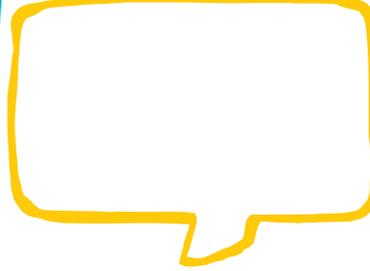
**TECHNOLOGIST**



**ENGINEER**



**ARTIST/DESIGNER**

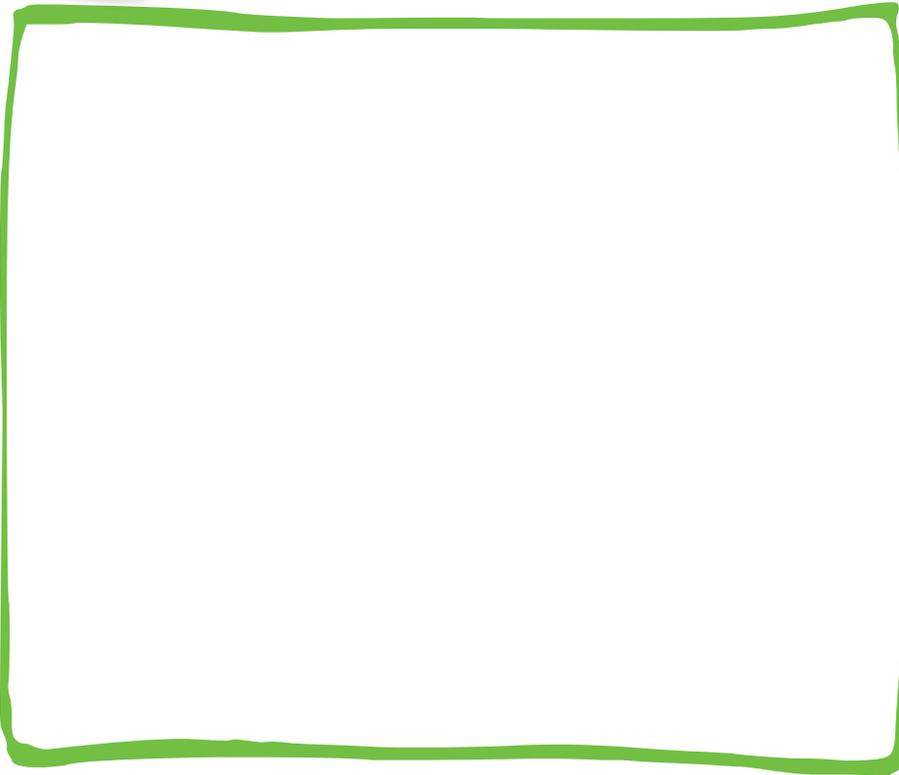


**MATHEMATICIAN**



**CREATE** a sketch of one or more renewable energy sources that might be an alternative to fossil fuels. Use your art to show what you have learned about a renewable energy source and the equipment involved in capturing it.

SKETCH A RENEWABLE ENERGY SOURCE



Water Dam Hydropower



Solar Panels



Wind Turbines



**PRESENT** your sketches to others as a work in progress and refine your image based on feedback. At the end of the activity, present your ideas to the class.