

## SunEzoon

Grades 4+ | Students Served: 30

ELEMENTARY

MIDDLE LEVEL

HIGH SCHOOL



### Essential Questions


What is the optimal combination of gears to achieve the maximum speed?

Why is it important to conserve energy and consider alternative energy sources?

How is energy from the sun converted into electricity?

### Career Connections:

- Scientific Researcher
- Solar Power Plant Operator
- Photovoltaic Panel Installer
- Electrician

 Cancer and reproductive harm – [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### STEM Connections

#### Science

- Photovoltaics
- Force and motion
- Energy and power

#### Technology

- Systems
- Problem solving
- Social impacts

#### Engineering

- Technological design
- Data analysis and prediction
- Electric power

#### Math

- Ratios
- Graphing data
- Measurements

## Sample Activity

### Sunny Side Up

#### Challenge

Determine the relationship between the direction of the Sun's rays and the power of the car.

- Construct SunEzoon Cars and, on a sunny day, take them outside to a flat, smooth surface.
- Draw a three-meter circle on the surface and mark the north, south, east, and west points, as well as the other 12 compass points: NNE, NE, ENE, ESE, SE, SSE, SSW, SW, WSW, WNW, NW, and NNW.
- Work in pairs with one student timing and the other releasing the solar car so it runs across the circle toward the corresponding mark on the opposite side of the circle. The timing is stopped when the car reaches the opposite side of the circle.
- Collect and record times and observations for all 16 starting points.

#### Discussion

Which direction provided the fastest time? Why is that? How would a different time of day affect the results?

