Visualizing Solar Power in Idaho
Caldwell High School

Learning Intention → To visualize 30+ solar power projects within Idaho using the **Idaho Giant Map** and location markers for manufacturing, installation and research agencies.

Success Criteria → To analyze how geographic location, climate and resources affect solar power installation within the State of Idaho.

Questions → What is the price of solar energy per Watt?
Where is energy stored during "dark seasons?"
How much power does a solar cell generate?
What is the best design to capture sunlight?
How can we arrange solar panels to generate the most power?
Can a concave lens capture more energy than a flat panel? A convex lens? Can we create a more efficient shape of solar panel?
How can we get equipment to collect solar power?
How much solar power is needed to power a home?
How much does it cost to manufacture a solar panel?
Where in Idaho can we capture the greatest solar power?
How does solar power in Idaho compare to other states in the United States?
How much power does one person use per day?
Are there regulations to use of solar energy?
Will more solar panels be used in the future?

Plan → We have previously completed experiments and research about how independent variables such as color of light, angle of exposure and source of light affect solar power output of small photovoltaic (PV) cells. Government agencies and private companies provide application of solar power using manufacturing, installation and research to utilize the potential energy of solar power within the State of Idaho. If we can understand the geographic location of these agencies then students will be able to predict areas of growth for solar energy in Idaho.

Review and discuss the Caldwell Science Challenge (5 minutes).
Record and analyze facts about solar power in Idaho (5 minutes).
Assign and analyze one project per student using information from the Solar Energy Industry Association (15 minutes).
Predict the areas of potential solar energy in Idaho using geographic location, climate and local resources (10 minutes).

Students will apply knowledge of waves, energy and climate to predict areas of potential solar energy and discuss the benefits of using solar energy in each location. Each student will analyze one location using the above criteria.

Resources → **Solar Energy Industry Association**

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Department of Energy → Idaho and United States

Vernier