



Geothermal Energy Game - Curriculum Connections

Suggested Grades: 3-8, 10

Curriculum Connections: Earth Systems (Gr 4, 6), Computer Science (Gr 3), Energy (Gr 5, 6), Heat & Temperature (Gr 7), Mix & Flow of Matter (Gr 8), Energy Flow in Technological Systems (Science 10), Understanding Energy Transfer Technologies (Science 14), Investigating Matter and Energy in the Environment (Science 14)

Specific Learning Outcomes:

Grade 3

- *Computer Science* - Students investigate creativity and its relationship to computational thinking (identify examples of creativity in computer science, technology, or engineering).

Grade 4

- *Earth Systems* - Students investigate the systems of Earth and reflect on how their interconnections sustain life (natural resources).

Grade 5

- *Energy* - Students investigate and analyze various energy resources (geothermal).
- *Computer Science* - Students apply design processes when creating artifacts that can be used by a human or machine to address a need (a computational artifact is anything created by a human using a computer such as computer programs and code).

Grade 6

- *Energy* - Students investigate energy resources and explain factors that influence their use.
- *Earth Systems* - Students investigate climate, changes in climate, and the impact of climate change on Earth.
- *Computer Science* - Students examine abstraction in relation to design and coding, and describe impacts of technologies (computational artifacts can be designed to address societal needs and wants).

Grade 7

- *Heat & Temperature* - Students will illustrate and explain how human needs have led to technologies for obtaining and controlling thermal energy and to increased use of energy resources. Students will apply an understanding of heat and temperature in interpreting natural phenomena and technological devices.



Grade 8

- *Mix & Flow of Matter* - Investigate and describe fluids used in technological devices and everyday materials; Identify, interpret, and apply technologies based on properties of fluids.

Science 10

- *Energy Flow in Technological Systems* - Apply the principles of energy conservation and thermodynamics to investigate, describe and predict efficiency of energy transformation in technological systems; explain the need for efficient energy conversions to protect our environment and to make judicious use of natural resources.

Science 14

- *Understanding Energy Transfer Technologies* - Describe how natural and technological cooling and heating systems are based upon the transfer of thermal energy (heat) from hot to cold objects
- *Investigating Matter and Energy in the Environment* - Describe how the flow of matter in the biosphere is cyclical along characteristic pathways and can be disrupted by human activity.