Hydrothermal Vents
Relating Science to the World Around Us

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The Project

- Motivation
  - Student interest generated by research presentation.
  - Highlight ‘real-world’ application of course material
  - Interesting way to address specific Delaware State Standards

- Learning Goals

  Student
  - Exposure to Research
  - Technological Experience
  - Meet Delaware State Standards

  Teacher
  - Exposure to Research
  - Technological Experience
  - Familiarization with PBL activities

  Graduate Fellow
  - Develop classroom management/communication skills
  - Technological Experience
  - Familiarization with PBL activities
The Project

The Process

Project Wiki
- Development of Written and Visual communication skills
- Allows students to work from home
- Learn unfamiliar software
- Teachers are able to track the development (history) of the product
Assessment

- Student Perception of the Project
- Student Performance

Bar chart showing student responses:
- Yes: high number of students
- No: moderate number of students
- Blank: few students
- Like Part II?: few students
- Like Part I?: few students

Number of Students on the y-axis (0 to 50)
Assessment

- Student Perception of the Project

- Student Performance
  - Question 1: What took us so long to explore hydrothermal vents?
  - Question 2: Describe hydrothermal vents and the physical properties of the environments surrounding them.
Assessment

- Student Perception of the Project

- Student Performance
  - Question 3: From the view of a geochemist, describe the ‘smoke’ that comes out of hydrothermal vents.
  - Question 4: Using the chemical formula CuCl₂, determine the oxidation state of copper (Cu).

![Bar graph showing student performance for questions 3 and 4]
Questions

- Dr. Ridge
- Kevin Madigan
- GK-12 Advisors
- GK-12 Fellows