

# Hydrothermal Vents

Delaware  
K-12



Relating Science to the World Around  
Us



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# The Project



## Learning Goals

### 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

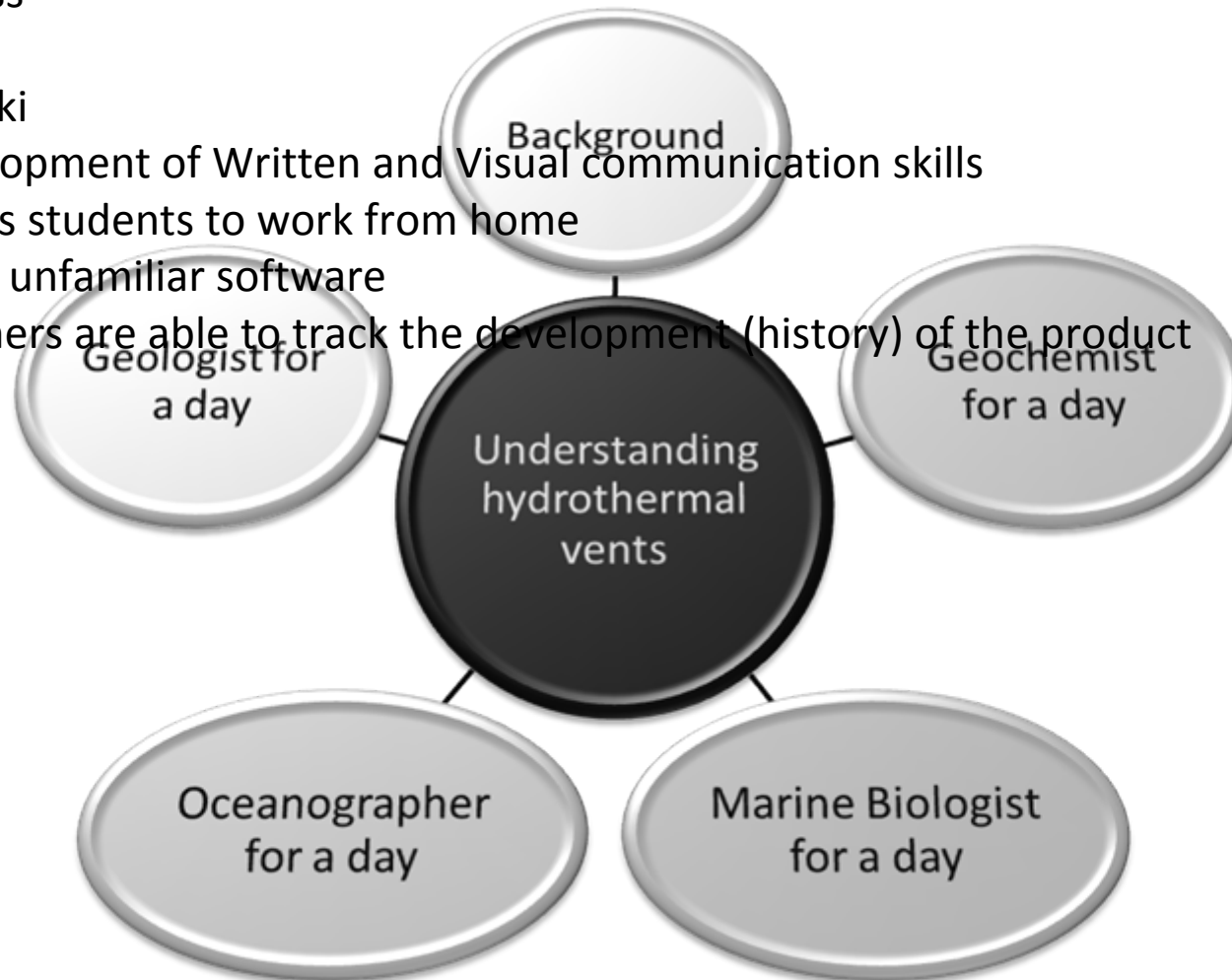
- Develop classroom management/communication skills
- Technological Experience
- Familiarization with PBL activities

# The Project

### The Process

### Project Wiki

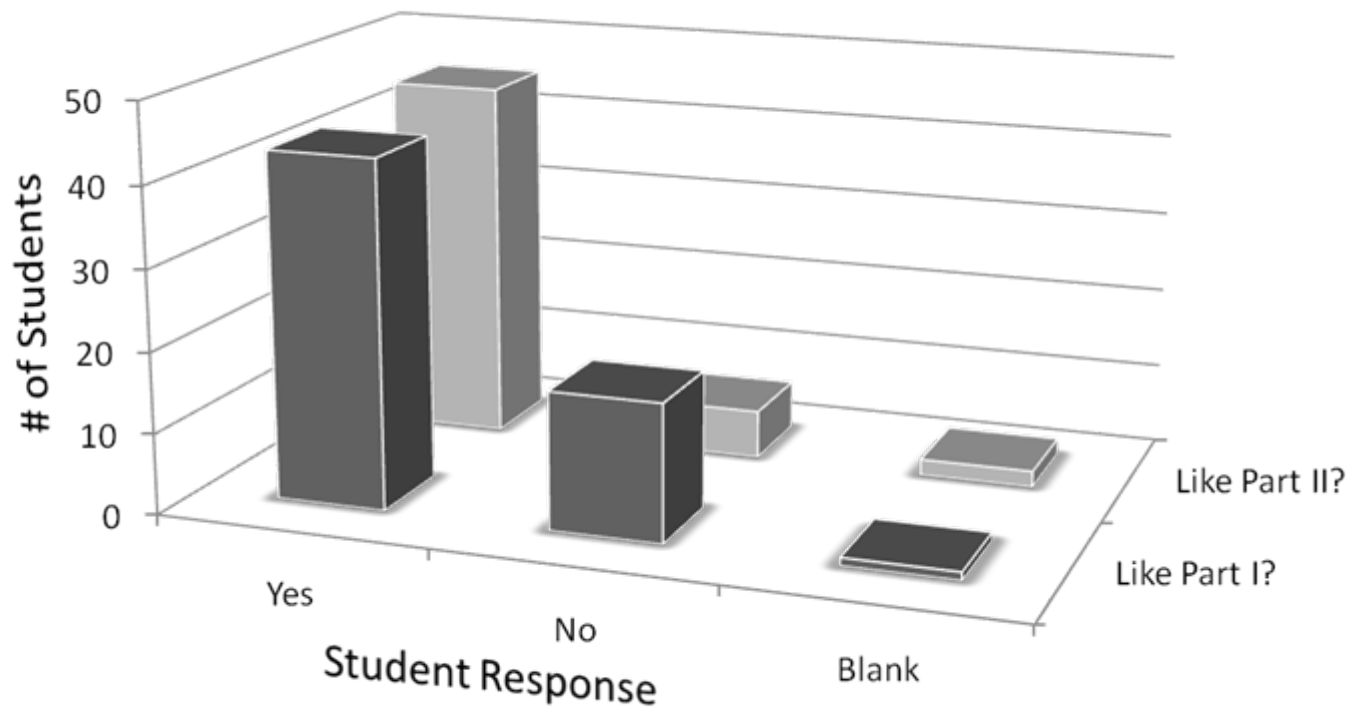
- Development of Written and Visual communication skills
- Allows students to work from home
- Learn unfamiliar software
- Teachers are able to track the development (history) of the product



## Student Performance

Student Perception of the Project

Student Performance



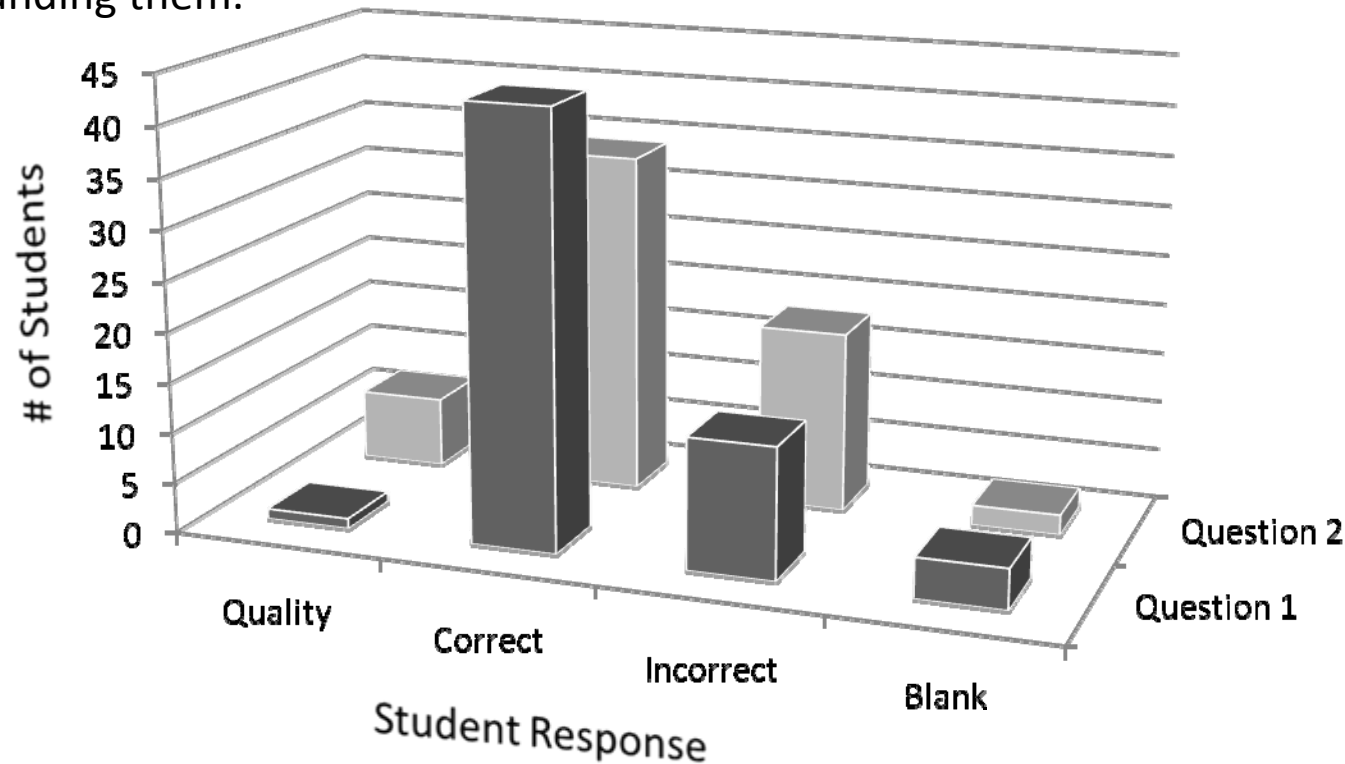
## Student Performance

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.



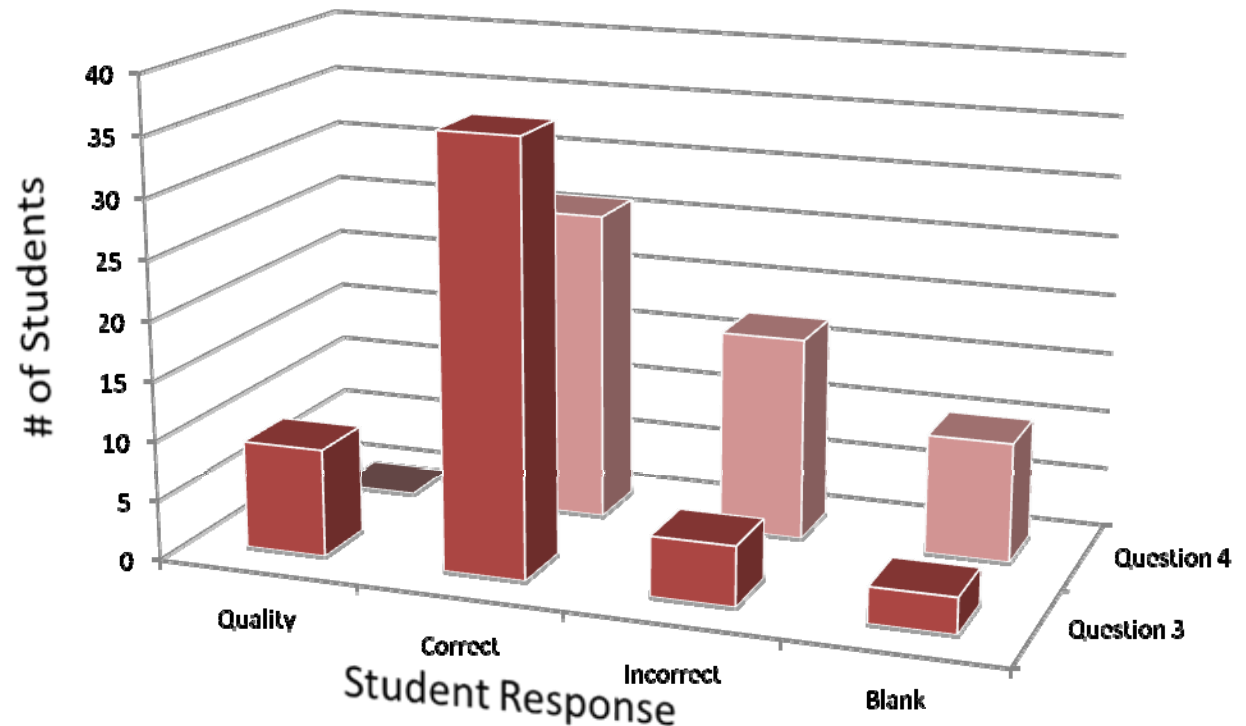
## Student Performance

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  $\text{CuCl}_2$ , determine the oxidation state of copper (Cu).



# Questions

## Acknowledgements

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

