Project-Based Learning in CCSD

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Entry Event

- **Project Description**:
  At Horace Greeley High School, there is only one entrance to the driveway that leads to the front of the school. There are over 1,300 students and many of them either drive or are dropped off each morning with only one student in each car. Traffic enters the driveway from both directions, which makes a "T" intersection with the school. Vehicles make a right or a left turn into the school driveway and there is no light, stop sign or crossing guard at the entrance. This causes excessive back up, safety concerns and student tardiness.
- Create a "Know / Need to Know" chart.

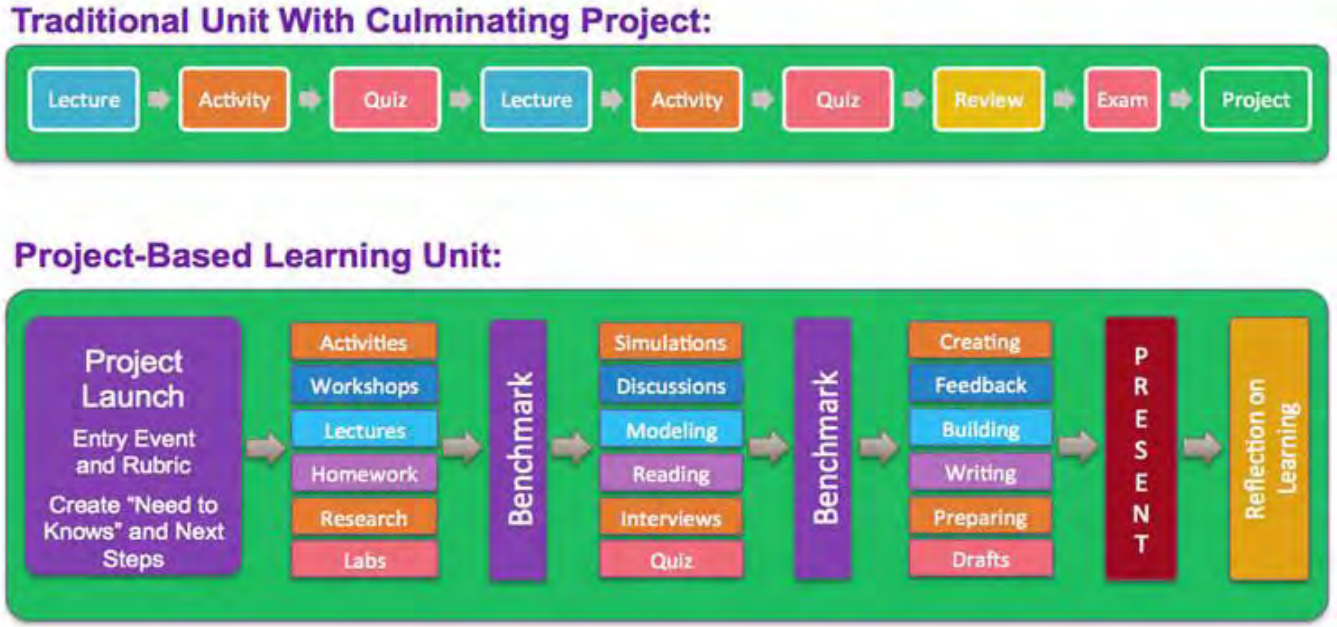
What is PBL?

- PBL is a curriculum design tool
- Focused on sustained student inquiry

How is this different?

- Projects **"AS"** Learning - instead of **"OF"** Learning

The Difference Between Doing Projects Versus Learning Through Projects



http://www.teachthought.com/learning/project-based-learning/difference-between-doing-projects-and-project-based-learning/

Why PBL?

Directly connected to the Teaching and Learning Vision and Goals

VISION: Active student learning

We want students engaged in experiences that involve meaningful inquiry, action, imagination, invention, interaction, hypothesizing, and personal reflection. [2]

VISION: Strong student collaboration

We want students to work cooperatively toward a common goal, exchange ideas, and rely on one another to create a product or arrive at a solution that could not be achieved by an individual.

Why PBL?

Focuses on skill development & habits of mind

GOALS: Teaching students to

- Make good decisions
- Persevere
- Be resilient
- Apply problem-solving processes
- Be creative
- Think divergently
- Show empathy
- Ask thoughtful questions
- Give and receive feedback

PBL Gold Standard

https://www.bie.org/blog/gold_standard_pbl_essential_project_design_elements

How does PBL help our students?

- More active, student-centered, learning environment
- Deep learning
- Focus on skill development
- Sustained inquiry and reflection
- Building 21st century skills: Collaboration, Creativity, Communication, and Critical Thinking

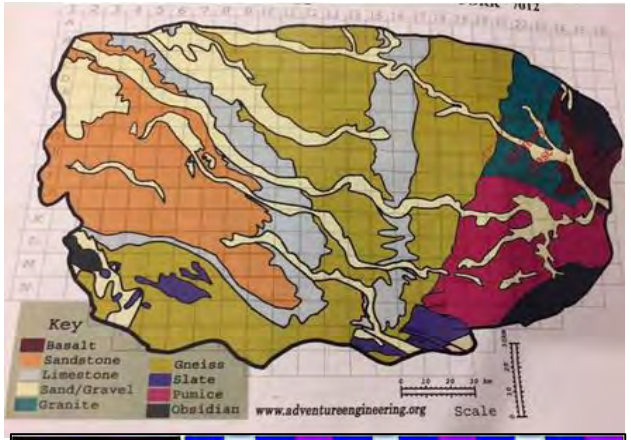
Elementary School PBL – Iditarod Project 2.0

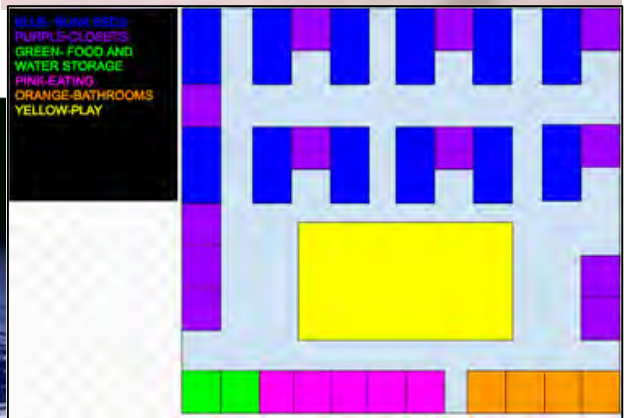
- Grade-wide Project – 3rd Grade
- Driving Question:
  - How can we use our research about the climate and culture of the arctic to help us successfully survive the Iditarod race?
  - As a musher, what would you need, know and have to do to survive the race?
- Space: Whole building

Race video

Middle School PBL - Asteroid Impact Project

- 6th grade – Science, Math and Art Collaboration
- Driving Problem:
  An asteroid is heading towards the fictitious state of Alabraska! The future for the people inhabiting Alabraska is in immediate danger. Using data from rock tests and scaling geologic maps, student teams must select a location to build an underground cavern.
- Space: Bell Learning Lab





Interdisciplinary Unit of Study

Science Component: Earth Science

- Testing physical properties of rocks
- Exploring geologic maps
- Selecting a location to build a cavern

Technology Component:

- Feedback
  - Google Forms
- Presentations

Math Component:

- Composite shapes
- Geometry Ratio and Proportional Reasoning
- Number Sense
- 7th grade preview on Scale Factor

Art Component: Design Thinking

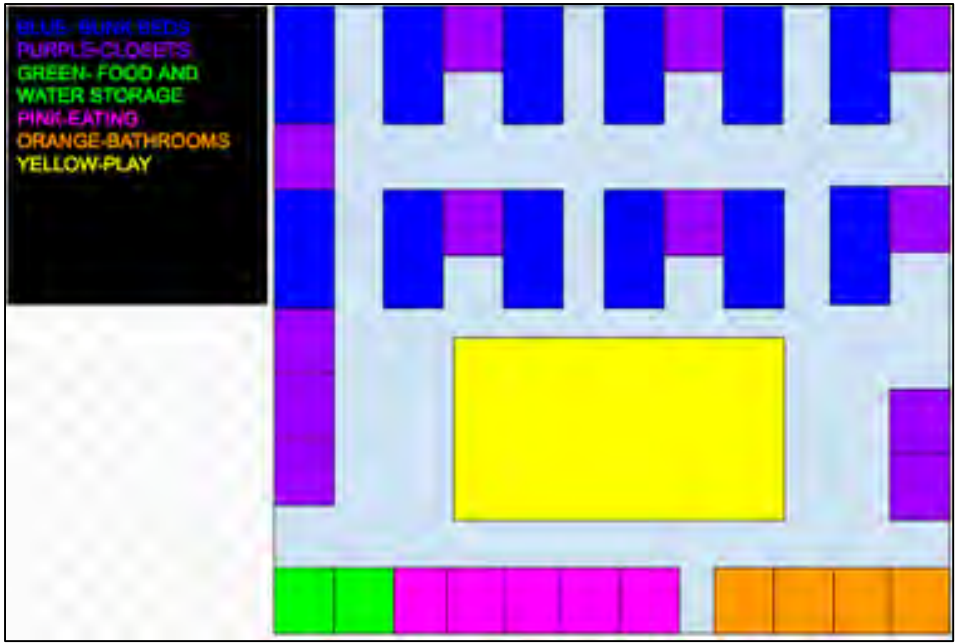
Brainstorming a range of possibilities for cavern design solutions

- Living quarters
- Storage
- Recreation spaces

Sketching scaled floor plans

Caverns

Challenge:
To create scaled, 3D models of their underground caverns to shelter and protect themselves from an uninhabitable Earth for one year.



The Habits of Mind

- Estimation and Reasonableness
- Thinking Flexibly
- Striving for Accuracy
- Thinking and communicating with clarity and precision
- Creating, imagining and innovating

Sample Student Work

Student Project Video

High School PBL – Destino 2016

- Spanish 5
- Driving Questions:
  - How can I be a more informed voter?
  - How will this influence my vote in 2016?
  - How is empathy connected to understanding? How can I be a more empathetic citizen?
- Space: iLab

K-12 PBL – Ubuntu in Chappaqua: How mixed grade level groups can raise awareness and collaborate.

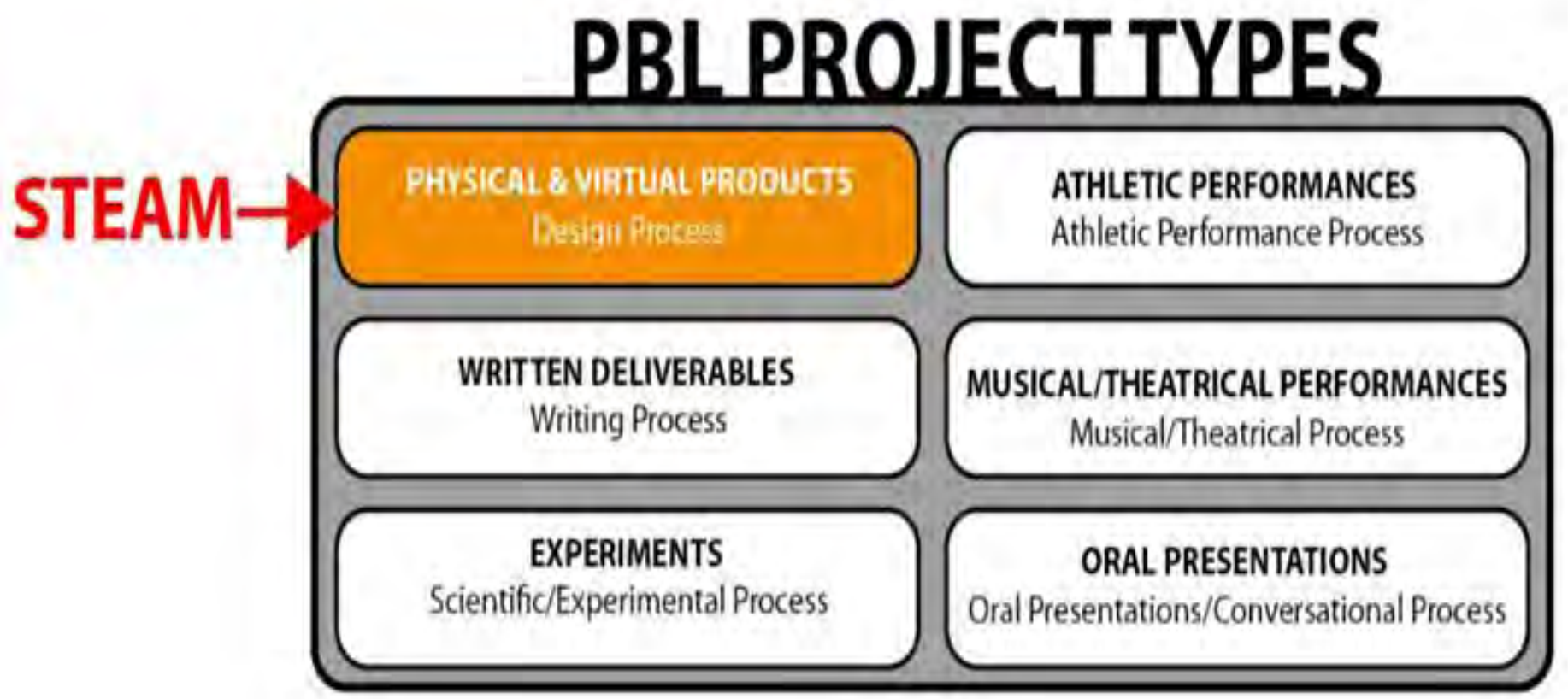
- Collaboration among a 3rd grade class, a middle school 5th- 8th grade club, and students in the LIFE School at Greeley.

- Driving Question:
  - To what extent can cross-grade level groupings and the use of technology facilitate more effective learning of collaboration skills, digital citizenship and commitment to community?

- Space: Across buildings and "digital space"

Connection to STEAM

Connection to STEAM



How are we supporting teachers?

- Curriculum development facilitated by Staff Developers
- Support from outside experts
- Learning Teams at all levels
- Fellowships:
  Innovation Fellows
  Advanced Technology Fellows
- Faculty Meetings
- Department and Grade-level Chairs
- Learning Symposiums
- Outreach beyond the District

Resources

- In-District Staff Developers
- PBL Canvas Course
- Unit Planning Templates
- CCSD PBL Common Language Map
- Archive of past CCSD projects
- Buck Institute of Technology
- EduChange