Rural and Virtual: PBL Planning at Claxton Middle School

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Our Presenting Team

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Our Journey

STEM Cohort
Community and Classroom
Virtual Planning
2020-2021
CMS Defines STEM

Science • Technology • Engineering • Math
Regional STEM/PBL Cohort

PBL Cohort
Brainstorming and Sharing our PBL Learning Journey

- **Empathize**
- **Define**
- **Ideate**
- **Prototype**
- **Test**

- **ModeGuideBOOTCAM 2010**
  - PDF document
  - dschool-old.stanford.edu

- **Design Thinking: A 5 Stage Process**
  - **Empathize**, **Define**, **Ideate**, **Prototype**, **Test**
  - 5 Stages in the Design Thinking Process
  - Design Thinking is a design methodology that involves empathy, definition, ideation, prototyping, and testing.

- **We are born makers, we just don't make our work. What we're learning is first order to our heads to our hearts through our hands.**

- **Design Thinking**
  - dschool bootleg deck 2018
  - PDF document
  - static1.squarespace.com

- **Assume a beginner's mindset.**
  - Beginners Mindset
  - PDF document
  - packet drive
Community and Classrooms

- Looked for ways to make PBL authentically Claxton. What are the opportunities and needs?
- Invited community members to talk about their role and their work. It helped us to see how what they do naturally fit our elements of the standards. As we talked about our standards, they added more authentic connections.
- Agriculture: poultry, genetically engineered trees, farming practices
Earth Science Planning Guide

Driving Question: How do we solve problems, faced by our local ag community, concerning climate and weather patterns that impact natural resources?

Math: erosion rates due to elevation, integers, conversion of unit rates, analyzing and interpreting data, percentages, angle of sunlight
ELA: Preparing students to ask questions, constructing explanations, PTEAP-W, mentor texts, informational texts, bring out human empathy of problem
SS: Past problems...better solutions in future
Technology: Does Arborgen use software for seedling information? Is it possible for our students to use same/similar tech as community partners?
Enrichment: Spanish: cultural perspectives of seasons, Chorus: understanding song structure, create songs about Earth

Kickoff: Students given standards with sentence stems to pull key words. Explore what the words mean. Develop questions. Identify panel participants. Refine questions as a result of panel responses, with standards in mind. Identify committed community partners

Melanie Hendrix
Andy Hendrix & sons pecans (soil conservation)
Gary Bell
6th grade Bartlett teachers guide us on questioning

Standards:
SSE2c. Analyze and interpret data to relate the tilt of the Earth to the distribution of sunlight throughout the year and its effect on seasons.
SSE3a. Ask questions to determine where water is located on Earth's surface (oceans, rivers, lakes, swamps, groundwater, aquifers, and ice) and communicate the relative proportion of water at each location.
SSE3b. Plan and carry out an investigation to illustrate the role of the sun's energy in atmospheric conditions that lead to the cycling of water.
( Clarification statement: The water cycle should include evaporation, condensation, precipitation, transpiration, infiltration, groundwater, and runoff.)
SSE6b. Design and evaluate solutions for sustaining the quality and supply of natural resources such as water, soil, and air.
   - Ask questions to identify types of weathering, agents of erosion and transportation, and environments of deposition.
( Clarification statement: Environments of deposition include deltas, barrier islands, beaches, marshes, and rivers.)
   - Develop a model to demonstrate how natural processes (weathering, erosion, and deposition) and human activity change rocks and the surface of the Earth.
Life Science Planning Guide

Driving Question: How do we solve problems, faced by our local ag community, using the transfer of genetic information through reproduction to solve problems?

Math: Probability, developing models
ELA: Debate genetic modifications, persuasive texts, point of view from farmer, clients, others? Preparing students to ask questions, constructing explanations, FTAAP-V, mentor texts, informational texts
SS: Genetics and governmental structures, perceptions of people who do certain jobs, should we genetically modify? Cattlemen's Association, agriculture in GA, perception over time, natives to modern GA, coastal plains.
Technology: Does ArberGen use software for seedling information? Is it possible for our students to use same/similar tech as community partners?
Enrichment: Art: The Boy who Harnessed the Wind...create mobiles/windmills, Spanish, cultural perspectives

Science Standard
S7L3 Obtain, evaluate, and communicate information to explain how organisms reproduce either sexually or asexually and transfer genetic information to determine the traits of their offspring.

Science
- L1, L4, L3, L5
- Selective breeding
- Asexual reproduction
- Punnett squares
- Parasitism and mutualism of plants
- Human impact
- Probability of survival
- Genetic variation

Kickoff: Fieldtrip

Panel of community members.
Students prepare questions to ask.
They take notes.
Students ask questions.

Argumentative writing GMOs
STEM Cohort Virtual Meeting

1. STEM Cohort at South Tattnall Middle School
2. Community Partner Meeting with Allyson Morgan
3. Virtual Meeting to Present Progress to Peers for Feedback
4. STEM Tour
STEM PBL Cohort

- STEM Cohort at South Tattnall Middle School
- Community Partner Meeting with Allyson Morgan
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- STEM Tour
Virtual Planning

- PLC
- Zoom
- Google Meet
- Critical Friends
- Community Partners
- VLAC- Visible Learning Across Contents
STEM/STEAM Statewide Leadership Cohort
Where do we grow from here?

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