Gifted Extensions:

Using Project Based Learning to meet individual strengths in a pullout program

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Presentation Goals

- Describe success of elementary gifted programming
- Share reasoning behind core components
- Provide framework of program
- Share parent and student reflections
- Minimum: provide one implementable idea

About Me

- Solanco School District
  - 11 years teaching elementary gifted
  - 3 years teaching middle level gifted
- M.Ed. from Millersville University—Gifted Education
- B.S. from Lebanon Valley College—Elementary/Special Education

Part One:
Welcome to Giftedland. Now what?

Early Challenges

- General issues
  - Varied student strengths
  - Pullout program
  - Chapter 16 vagary
- Prior programming
  - Inconsistent at elementary level
  - Topics chosen at random

Saving Grace

- Motivated administration
- Experienced mentor
- Time
- Gifted education courses (Go Millersville!)

Gifted Extensions Model

- Project based thematic units that:
  - Extend core curriculum
  - Are individualized by student strength
  - Have embedded critical thinking
  - Are student chosen

Part Two:
Why this model?

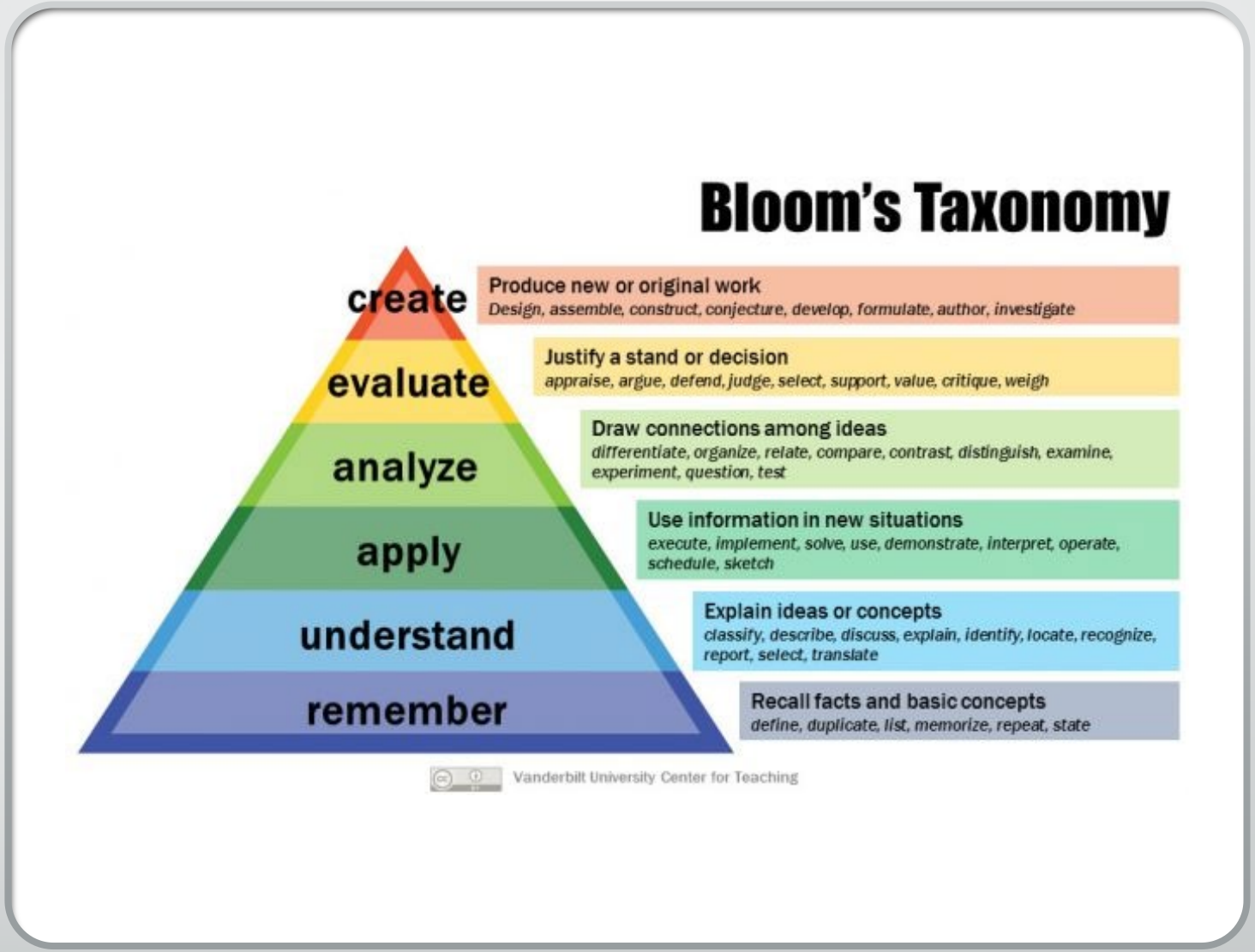
Project Based Learning (PBL)

- In Project Based Learning, students…
  - Work on project/complex problem
  - Have an extended timeline
  - Explore a real-world challenge
    - "Authentic, engaging" activities
  - Develop a product/presentation

Buck Institute for Education. (2019). *What is PBL?* PBLWorks. Retrieved September 22, 2022, from https://www.pblworks.org/what-is-pbl

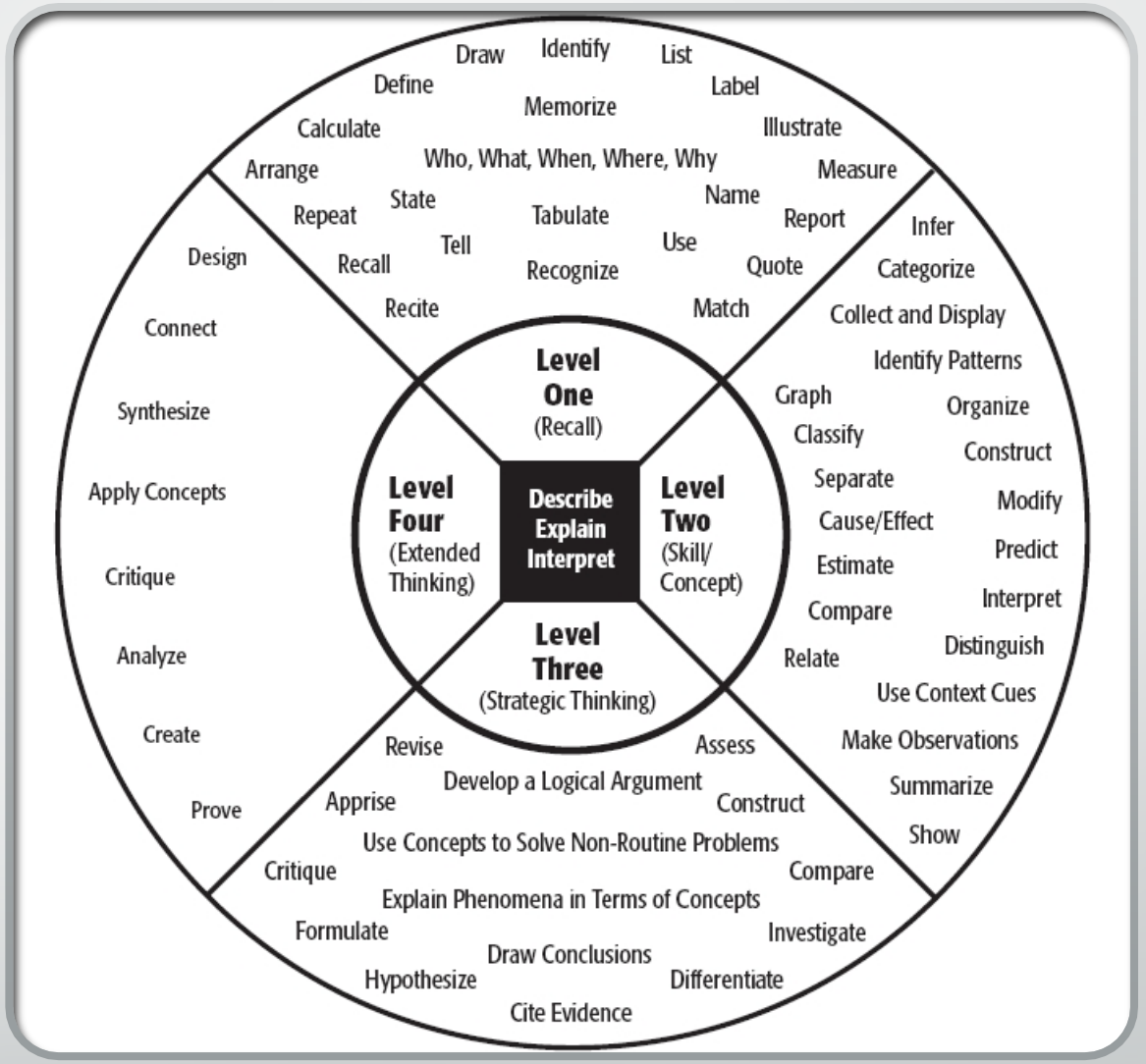
Why Project Based Learning?

- Bloom's Taxonomy
  - Research/apply
  - Analyze/evaluate
  - Create

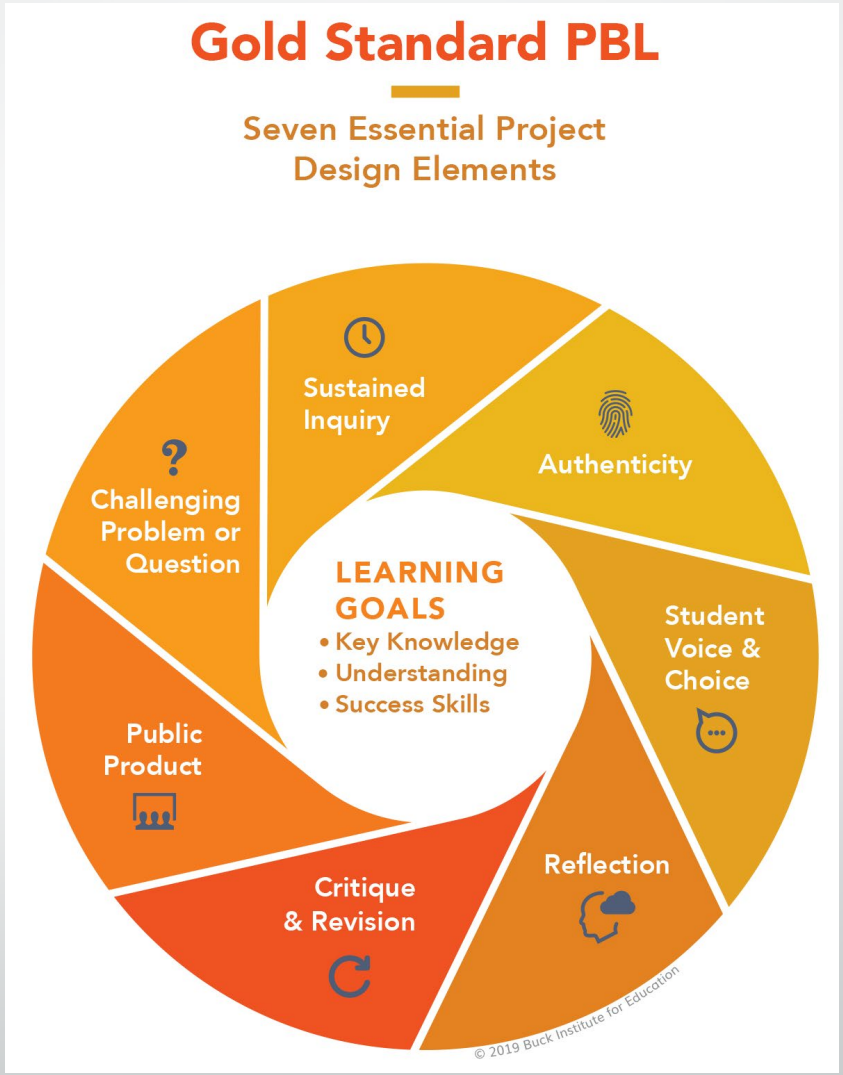


Why Project Based Learning? cont'd

- Webb's Depth of Knowledge
  - Strategic thinking
  - Extended thinking



Why Project Based Learning? cont'd



Buck Institute for Education. (2019). Gold Standard PBL: Essential Project Design elements. PBLWorks. Retrieved September 22, 2022, from https://www.pblworks.org/what-is-pbl/gold-standard-project-design

PBL and Gifted Students

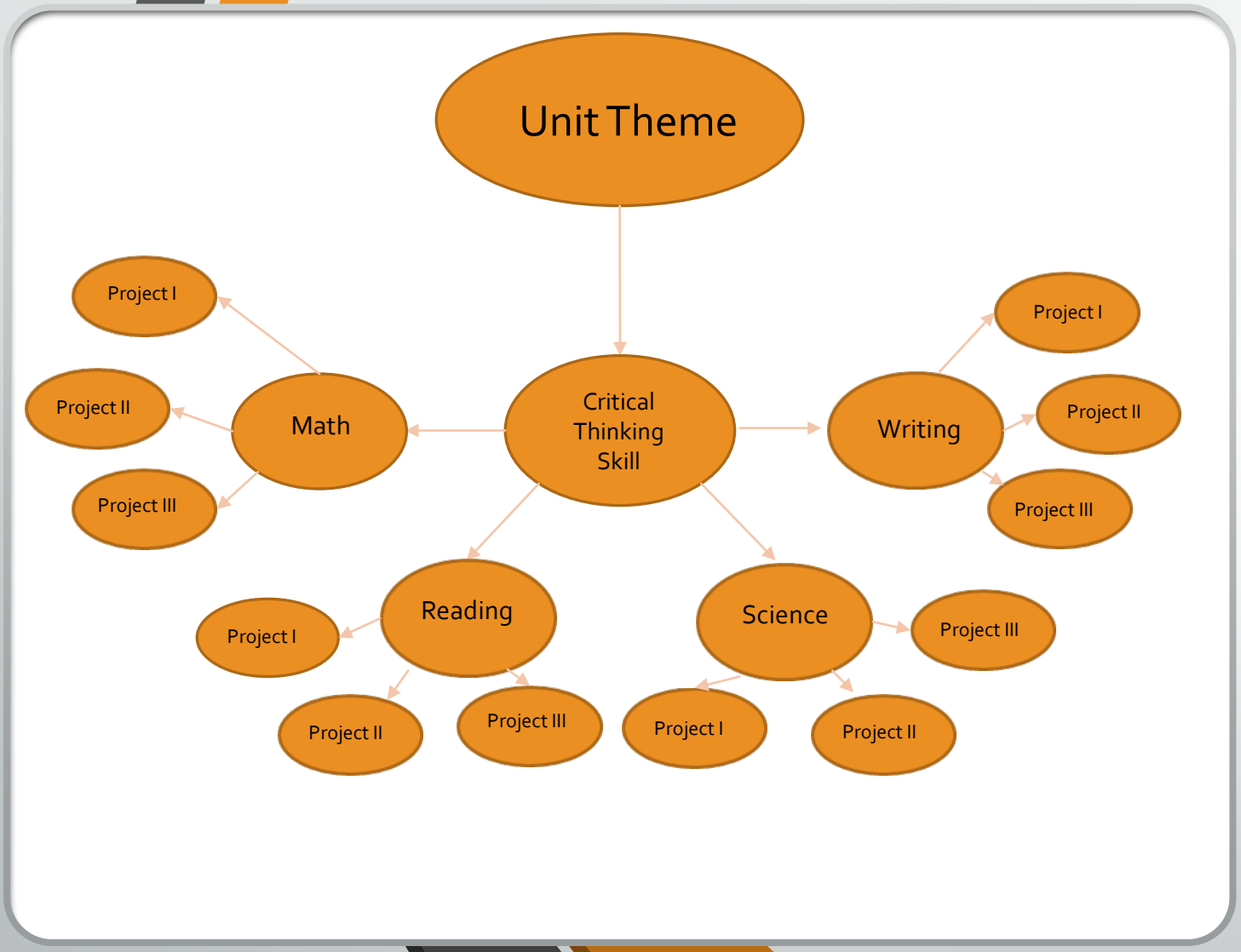
- Benefits to gifted students include…
  - Collaboration
  - Critical thinking development
  - Real world connections
  - Student choice
  - Student empowerment

Project based learning. Going Gifted. (n.d.). Retrieved September 22, 2022, from https://goinggifted.weebly.com/project-based-learning.html

Part Three:
The Gifted Extensions Framework

Sample Student: Sally

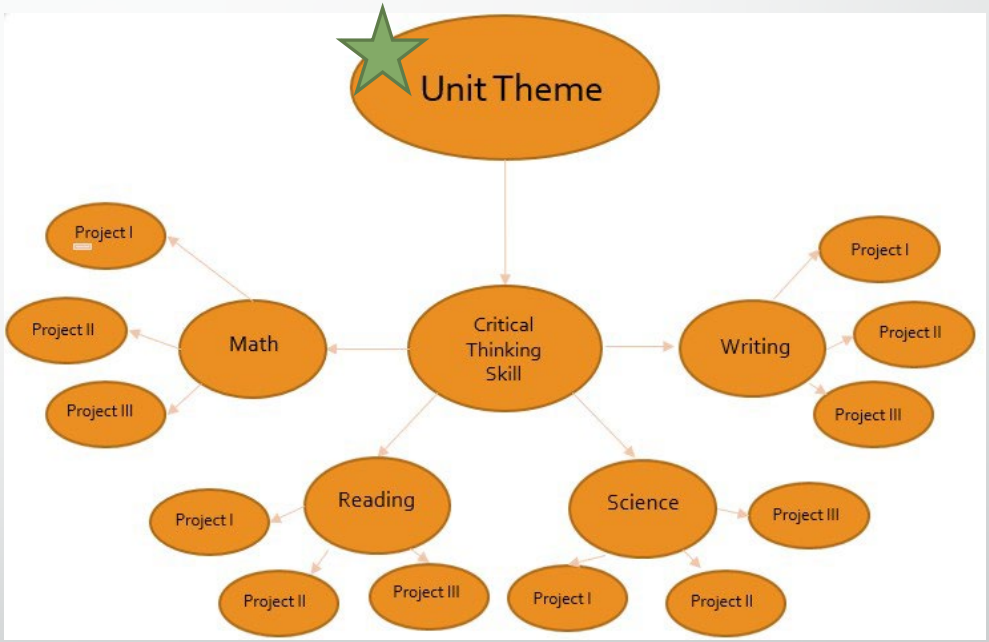
- 5th grade student
- Identified strengths: mathematics and reading
- Prior Knowledge
  - ELA: Informational reading, narrative writing
  - Math: Place value, time
  - Social studies: Native Americans, Colonial America



Gifted Extensions Framework

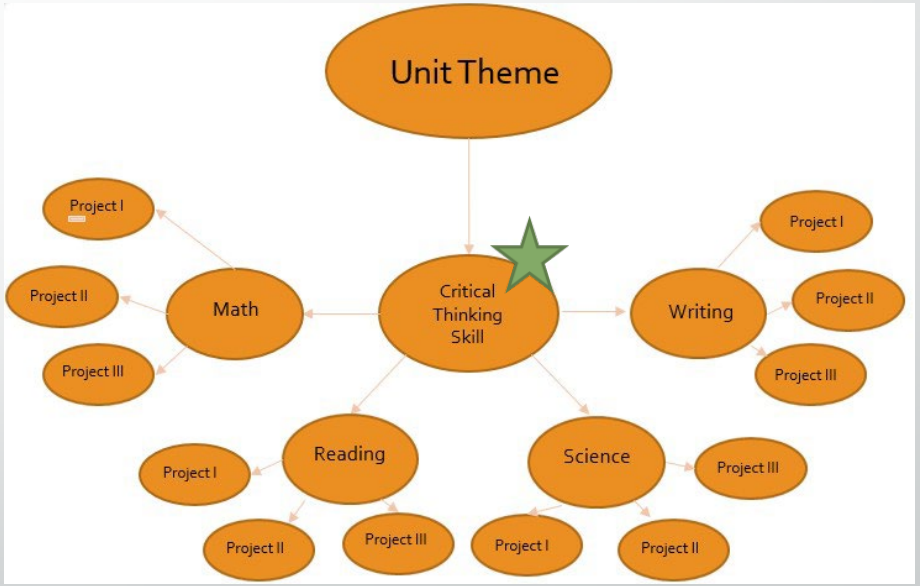
Unit Theme

- Based off previously studied topics
- Applies to multiple subject areas
- Sally's unit?
  - Age of Discovery
    - Prior knowledge extended in projects



Critical Thinking Skills

- Identifying assumptions
  - Native Americans less advanced than Europeans
    - Is this true?
- Builds off other thinking skills
  - Deductive/inductive reasoning
  - Examination of credibility

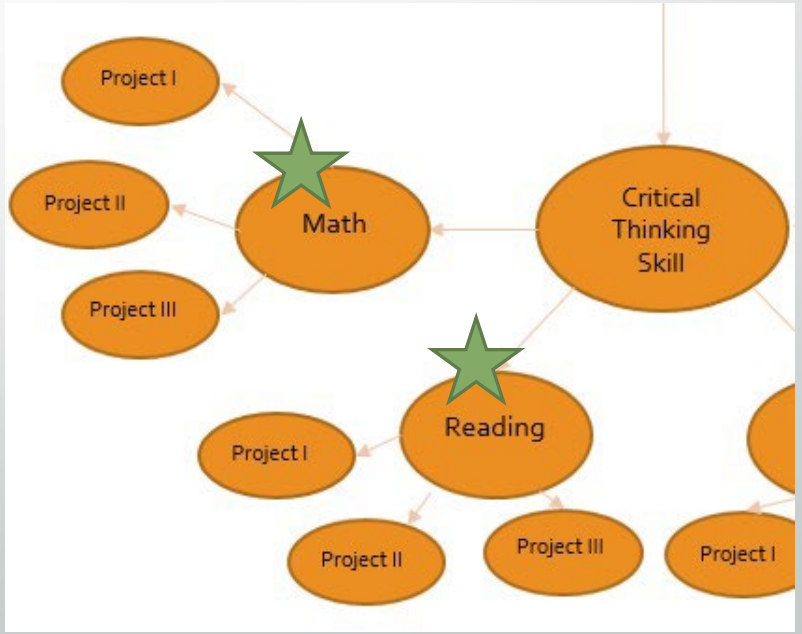


Theme and Critical Thinking Skill Pairings

- 3rd Grade
  - Birds and inductive reasoning
  - City planning and identifying assumptions
- 4th Grade
  - Environment/conservation and inductive reasoning
  - Outer space and examining credibility
- 5th Grade
  - Presidential elections and examination of credibility
  - Mini golf and deductive reasoning

Strengths Areas and Projects

- Students choose projects from strength areas
- Each strength has three project choices
- One project completed per marking period
  - Student choice
  - Student paced
  - Meets multiple strengths at one time



Project I—Maya Math

Summary: The Maya were well ahead of their time when it came to the concept of mathematics. Though they used a different number system than we use today, they were brilliant mathematicians who came up with the concept of zero long before other civilizations. The project will allow you to explore the Maya number system and compare it to our very own system.

Checkpoint One: Learning the System—Symbols and Place Value (Research)

- Head to this website: http://www.hanksville.org/yucatan/mayamath.html, read the page, and copy down the Maya numbers from 0-20 in your notebook
- Work with Mr. Humphries to go over the place value system of the Maya
- Write the following numbers in Maya: 57, 832, 3765, 59732, 324010,1000000
- Create a Venn Diagram where you compare and contrast the Maya and Arabic number systems
- Turn in to Mr. Humphries when complete.

Checkpoint Two: Adding and Subtracting (Apply)

- Using what you know about the Maya number system, come up with at least 8 addition and 8 subtraction problems to solve.
  - Of those problems, two should be 1 digit by 1 digit, two should be 2 digit by 2 digit, two should be 3 digit by 3 digit, two should be a mix (3 by 2 or 2 by 1)
    - Did I mention I'm talking Maya digits, not Arabic? ☺
- Turn in to Mr. Humphries when complete.

Checkpoint Three: Multiplication and Division (Evaluate)

- Attempt to come up with a way of solving multiplication and division problems in a **SIMPLIFIED MANNER** using the Maya math system. The Maya were unable to do this (they may not have used the concepts of multiplication and division) but give it a shot yourself.
- Create five multiplication and five division problems in Maya numbers and solve them yourself.
  - Mix up the digits for each problem.
- Turn in to Mr. Humphries when complete.

Final Project: Your own number system (Create)

- The Maya Math System was vigesimal. Our number system is decimal. Come up with your own number system that is neither of these and prepare to teach our class how it works in a presentation.

Sample Project: Math

Note: Each checkpoint reflects Bloom's Taxonomy

Sample Project: Reading

- Some projects can meet multiple strengths
  - This one can fit reading and writing

Project II— Exploring a Brand New World

Summary: When European settlers arrived on North American, South American, African, and Asian shores, they found something totally unlike anything they had ever seen before. Rivers, forests, wide open plains, things they could never see in crowded European cities. In this project, you will take a look at some of the firsthand accounts of new world explorers and will use them as a guide to writing about your experience in a brand new world.

Checkpoint One: Writings from the Past (Research)

- Read the firsthand accounts of Christopher Columbus, Leif Erikson, and English settlers exploring the new world.
  - You may have to read these aloud, as many of the words are written in an older version of English.
- Create a graphic organizer with four categories and space to write notes. Your categories will be titled: descriptions of plant life, descriptions of animal life (human and not-human), descriptions of landforms, and other descriptions. Then re-read the firsthand accounts a second time and fill out at least 5 descriptions in each category.
- Turn in to Mr. Humphries when complete.

Checkpoint Two: World Building (Apply)

- Imagine you have traveled to a brand new world that no one has ever seen. It can be on this planet, another planet, in another galaxy, whatever you like! Create your world via drawing, written descriptions, or something else.
- Create a fact sheet where you discuss:
  - The name of the new world
  - Where it is located
  - Natural resources
  - Descriptions of plants
  - Descriptions of animals
  - Description of landforms
- Turn in to Mr. Humphries when complete.

Checkpoint Three: Written Descriptions (Evaluate)

- Write seven examples of figurative language to be used to describe your piece.
  - Keep in mind: You have to describe this place to people who have never seen it before. You have to make connections to things they would understand.
  - You will need ten examples in your final product.
- Turn into Mr. Humphries when complete

Final Project: Explorer's Journal (Create)

- Create a written journal describing your journey (minimum of 5 entries) and incorporate as much figurative language to describes your place (must have at least ten examples in final product)
- Revise and edit with Mr. Humphries and, if you have time, create a second draft.
- Prepare for a presentation to the class.

Unit Three Reading Projects—Identifying Assumptions and the Age of Discovery

Project I— the Lost Colony

Summary: One of history's greatest mysteries is wondering what happened to the "Lost Colony of Roanoke." In this unit, you will use your knowledge of the early colonies of Pennsylvania, Jamestown, and Plymouth, along with research of Roanoke and will imagine what happened here.

Checkpoint One: What was Roanoke? (Research)

- Begin by research what the Roanoke Colony was, who it was founded by, any important people, the number of people who lived there, times, dates, and what happened.
  - This is your introduction to the project and great care should be taken to gather and record as much information up front as possible.
- Turn in to Mr. Humphries.

Checkpoint Two: Tough Life in a Colony (Apply)

- Using your social studies textbooks, library books, or the internet, come up with a list of at least four trials and tribulations faced by the colonists at the following locations:
  - Plymouth
  - Jamestown
- Were these difficulties faced by the colonists at Roanoke? In a paragraph, compare and contrast the different situations.
- Turn in to Mr. Humphries

Checkpoint Three: What Could Have Happened? (Evaluate)

- Research and come up with at least four theories as to what could have happened to the colony of Roanoke.
  - You may utilize theories developed from the first two checkpoints and/or may use social studies textbooks, library books, or the internet to help you along.
- Turn in to Mr. Humphries

Final Project: (Create)

- In a product presented to the class, discuss your beliefs as to what happened to the Lost Colony of Roanoke. Be sure to answer the following questions:
  - What happened to the Colony?
  - Where are the Colonists?
- NOTE: Writing students who choose to do this product must create a writing product. Reading students may choose any type of product to complete.
- Turn product in to Mr. Humphries when complete for a grade.

Sample Project: Reading

Part Four:
Running a Gifted Extensions Class

Sample Marking Period Timeline (9 Weeks)

Week One

- Intro Lessons

Week Two

- Project Selection

Weeks Three-Eight

- Mini Lessons/Project Completion

Week Nine

- Presentations

Week One: Intro Lessons

- Set the stage for unit
- Introduce major concepts
- Preview projects and critical thinking skills

Week Two: Project Selection

- Students reminded of strength areas
- Receive three projects per strength area
- "Brainstorming Week"
  - Self-guided review of possible projects

Weeks Three-Eight: Day to Day Classes

- Mini lessons
  - 15-20 minutes
  - Fill in gaps, introduce new information
- Project work time
  - Conferencing
  - Learning Logs/Summarization

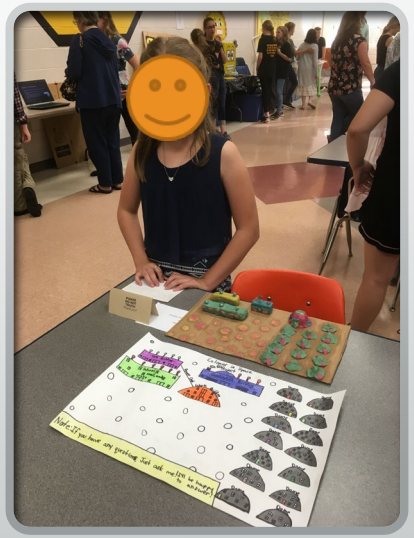
Week Nine: Presentations

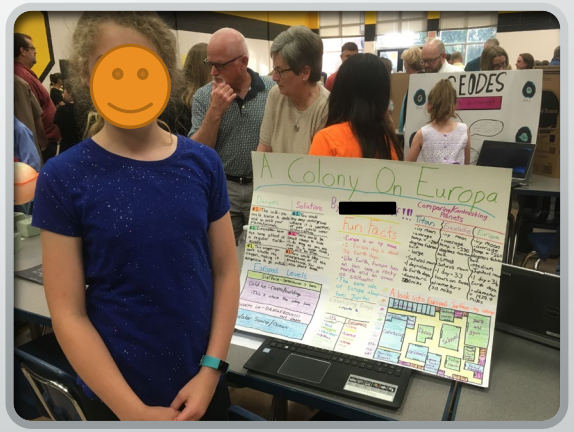
- End of marking period
  - Students share final projects with classmates
  - Extensions rubric
  - Final conference

Component	Exemplary Characteristics	Ratings
Argument	- Clear Argument - Uses critical thinking to solve problem	1 2 3 4 5 1 2 3 4 5
Evidence	- Accurate evidence to back up answers - Evidence is important and relevant	1 2 3 4 5 1 2 3 4 5
Asking Questions	- You ask detailed questions of teacher and peers in order to develop own learning	1 2 3 4 5
Creativity	Work includes: - Fluency (A lot of ideas) - Flexibility (A lot of unique ideas) - Originality (Own ideas) - Elaboration (Expand on idea)	 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5
Taking on Challenges	- You take on new challenges, and force yourself out of your comfort zone to try new things that might be difficult - You willingly share your work and ideas	1 2 3 4 5 1 2 3 4 5
Learning From Mistakes	- You look at a mistake as a right now problem and make a plan for the next time that situation comes up.	1 2 3 4 5
Accepting Advice from Others	- You welcome advice from others. - You come up with new plans from	1 2 3 4 5 1 2 3 4 5

End of School Year: Extensions Night

- Students choose favorite project from year
  - Class time given to revise/improve
- Community presentation
  - Science Fair style
    - 60 second pitch
  - Administration, teachers, families, etc. invited





Part Five: Reflections

Positives of Implementation

- Meets various strengths at one time
- Continuity across buildings
- Can be scaled down
- Adaptable for student needs
- Low resource needs

Challenges of Implementation

- A lot of work upfront
  - Knowledge of curriculum
  - Creating projects/pacing
- Hands-off teaching
  - Students need to adjust, also!
- Upkeep

Since We've Implemented

- 10 years of using framework
- Pilot program
  - Same unit for grade clusters
    - $4^{th}/5^{th}$ and $2^{nd}/3^{rd}$
  - New units introduced next school year
  - Separate units for grades thereafter

Since We've Implemented

- Presentation to school board
- Units revised and edited yearly
  - Curriculum changes
  - Projects do not meet needs
  - Better themes available

Since We've Implemented

- Complement with academic competitions
  - MathCON—5 national finalists
  - Odyssey of the Mind—regional championship
  - Stock Market Game—PA state champion

Student Comments

- T.H. (6th Grade): "Extensions allowed me to do hands on activities, be challenged outside of the classroom and become more confident in myself when presenting in front of others."
- L.D. (8th Grade): "I really enjoyed the Weslandia alphabet project because it forced me to think logically and understand how to create organized systems in a more complicated way. I appreciated his class greatly because it gave me a lot of opportunity to be challenged and think differently about topics I was interested in."
- C.W. (6th Grade): "I enjoyed Extensions because it was always fun learning! We got to learn in neat and different ways… I really enjoyed the hands-on activities"

Parent Comments

- "As a parent, I was excited to see how excited my son became when working on projects for extensions. He often was not challenged in his regular classes and became bored very easily. However, on days he had extensions, his attitude changed. He loved doing projects and having the freedom to research projects that interested him."
- "We are so thankful for our son's participation in Extensions! The Extensions program pushed and broadened his learning in awesome and innovative ways. We know that he was exposed to advanced curriculum that challenged his thinking and gave him unique opportunities for learning and growth."

Parent Comments

- “My daughters have really blossomed due to Extensions. They were given the opportunity to learn more about themselves and grow confident in their abilities, learning about what really makes them unique. Very early on in elementary school, both of my daughters struggled with having enough outlets to support their burgeoning curiosities, emotions, and desire to learn. Extensions is exactly what they needed; it's a space for them to explore their interests, develop a sense of self, and to fulfill goals they're already setting for themselves. Asynchronous development in gifted kids is challenging, and the projects that were developed helped my girls flourish. Between Odyssey of the Mind, the Stock Market Game, and tons of other hands-on, creative-thinking units, they were constantly tasked with thinking outside of the box, using their unique skill sets to solve problems, and interacting with the world in a way that fits their special needs.”

Closing Thoughts

How can I implement?

- https://tinyurl.com/HumphriesExt

What if I have questions?

- Ryan Humphries, Solanco School District
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