



# BYTE-SIZED EDTECH

Presented by Technology Integration Specialist,  
Christine Danhoff, of North Point ESC  
and PBS Western Reserve

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# PLANTING THE SEEDS OF PBL (PROJECT-BASED OR PROBLEM-BASED)

with Christine Danhoff

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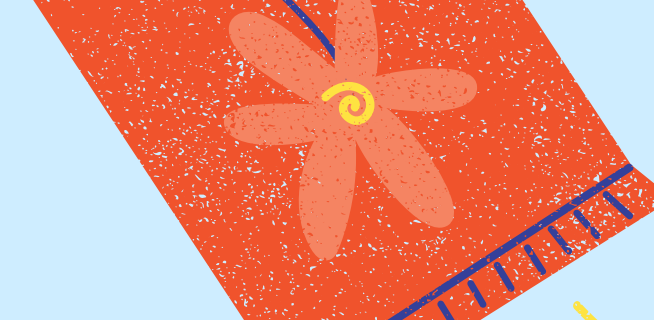
# PLANTING THE SEEDS



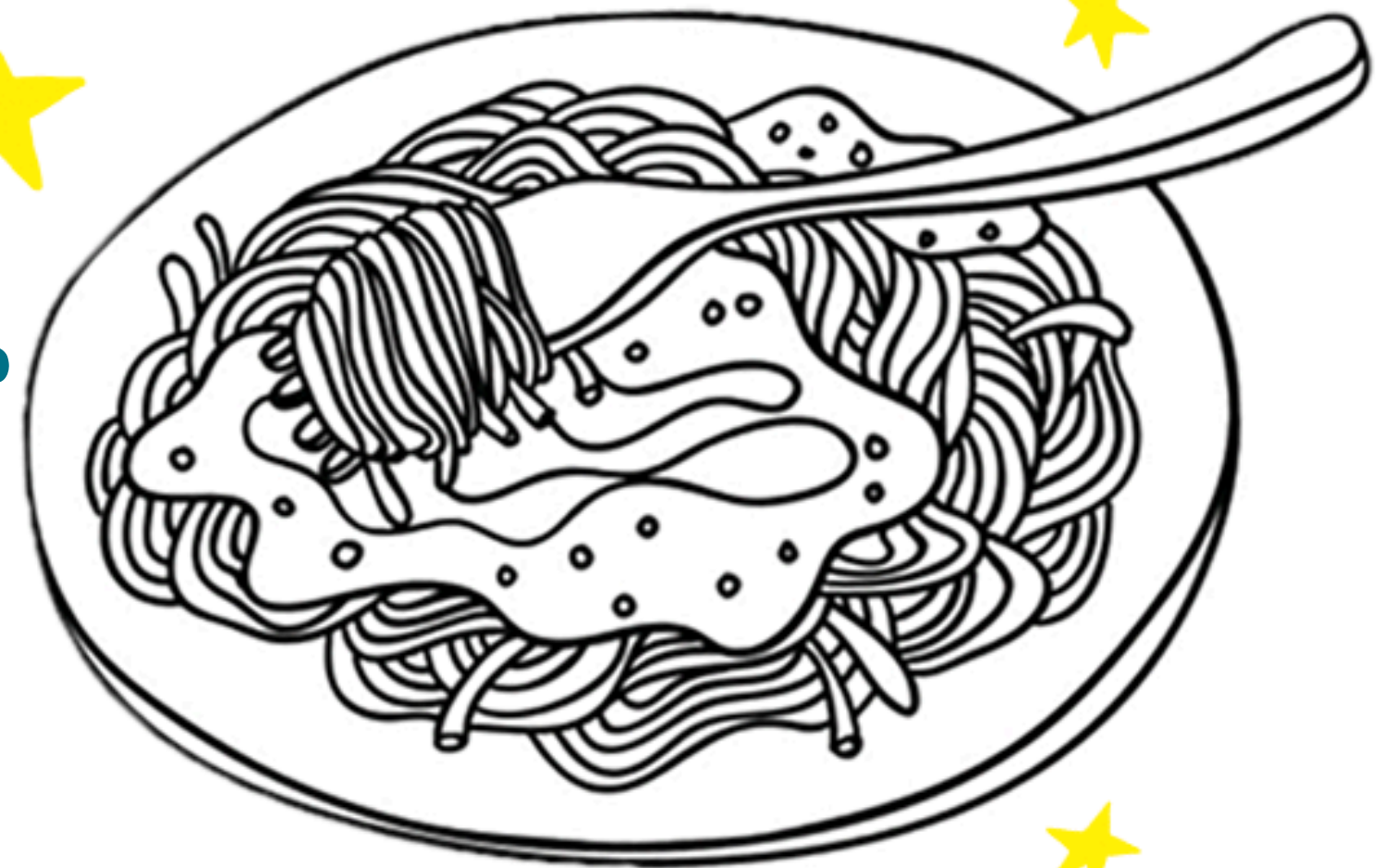
- WHY: Cultivate Curiosity & Inquiry
- HOW: Grow PBL from the Ground Up
- From Seeds to Sprouts: Launching PBL







IS IT A...

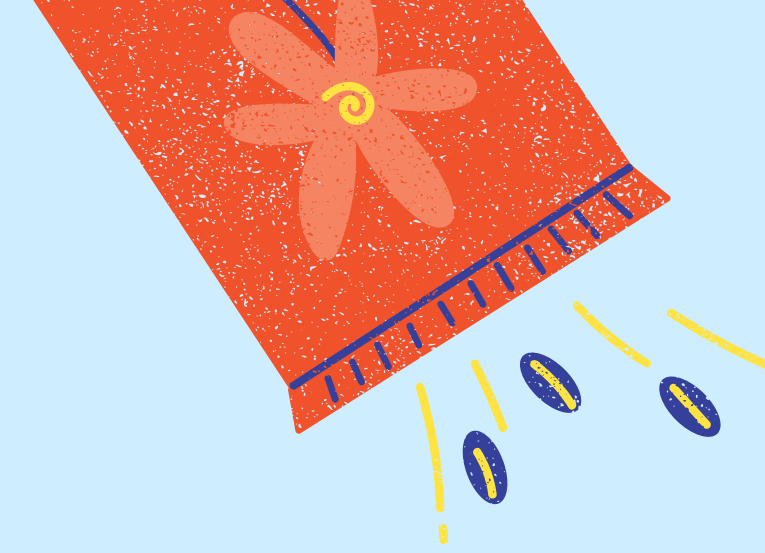


**DESSERT**  
"DOING A PROJECT"

**MAIN COURSE**  
PROJECT BASED LEARNING





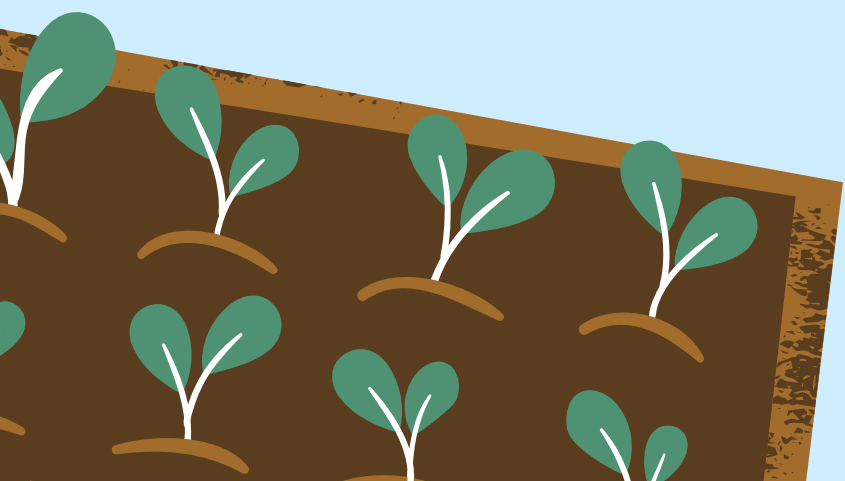


# **STUDENTS BUILD A POPSICLE STICK BRIDGE AFTER COMPLETING A UNIT ON ENGINEERING.**

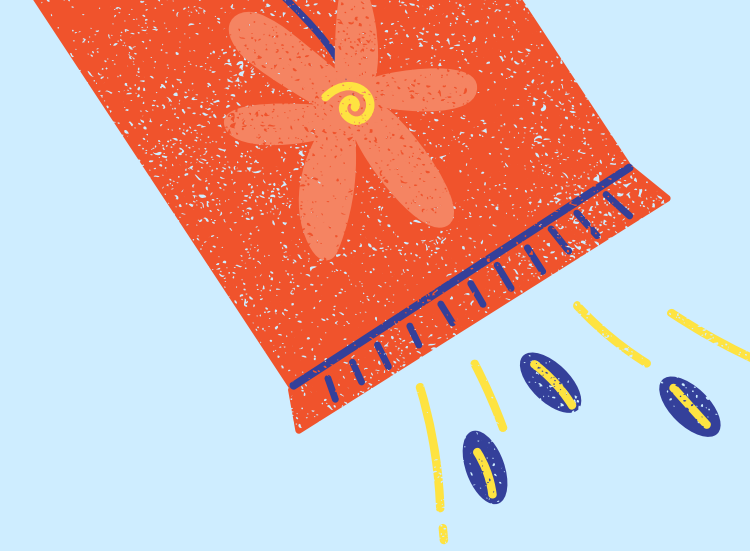




**AFTER A GEOMETRY UNIT, STUDENTS DESIGN THEIR "DREAM BEDROOM" USING BASIC MEASUREMENTS AND AREA/PERIMETER FORMULAS, DECORATING IT WITH FURNITURE CUTOUTS ON GRAPH PAPER.**





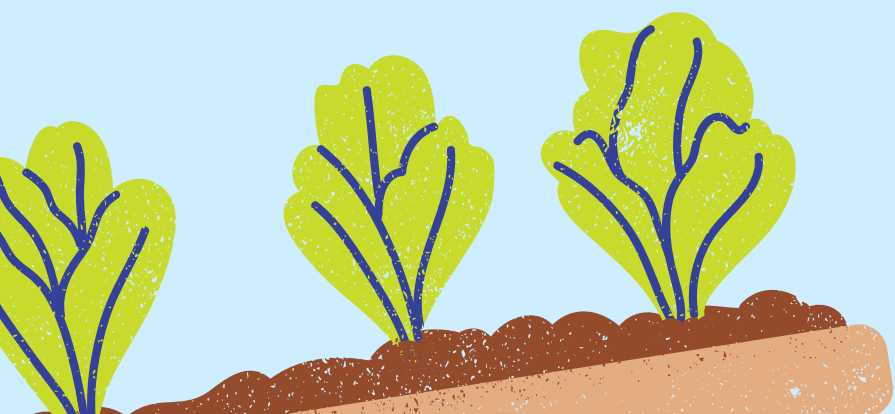


**STUDENTS WORK TOGETHER TO DETERMINE HOW THEY CAN HELP THEIR COMMUNITY GROW FOOD MORE SUSTAINABLY. THEY PRESENT SUSTAINABLE GROWING METHODS TO A LOCAL GARDEN OR FARMERS' MARKET GROUP.**





**STUDENTS EXPLORE THE RISE AND FALL OF A CHOSEN ANCIENT CIVILIZATION, THEN CHOOSE HOW TO SHOWCASE AN EXHIBIT OF ITS GOLDEN AGE AND DECLINE. THEY PRESENT TO AN AUDIENCE DURING A PUBLIC MUSEUM EVENT.**







WHAT DID YOU  
NOTICE?





**DESSERT**  
**"DOING A PROJECT"**

An add-on to the traditional instruction; at the end (or alongside) of the unit

Follows direction of the teacher

Focused on product

Often unrelated to standards and skills

Can be completed alone and/or at home

Remains within the school world

End result of project displayed in the classroom



**MAIN COURSE**  
**PROJECT BASED LEARNING**



Instruction integrated into the project  
(The project is the unit!)

Driven by student inquiry

Focused on product and process

Aligned to academic standards and success skills

Involves collaboration with students and in-class guidance from teacher

Has a real-world context and application

Results of project shared beyond the classroom with a public audience



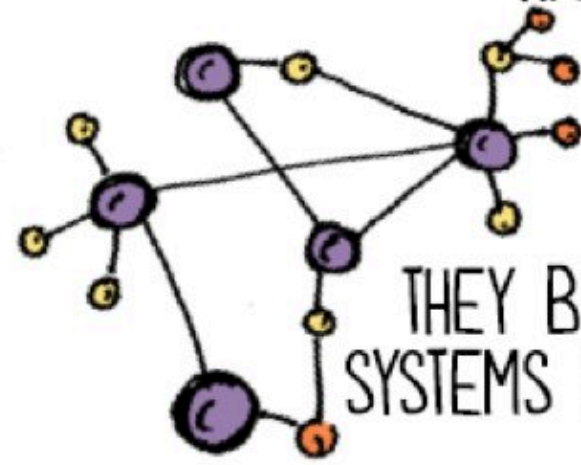




THEY LEARN  
PROJECT MANAGEMENT



THEY GROW MORE  
EMPATHETIC

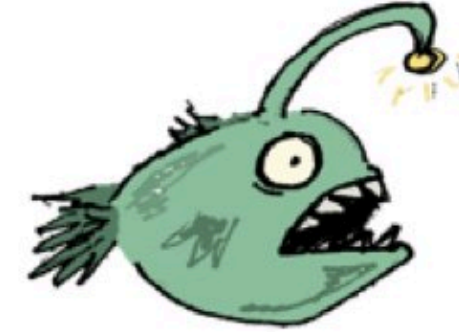


THEY BECOME  
SYSTEMS THINKERS

THEY BECOME  
HACKERS AND  
REBELS



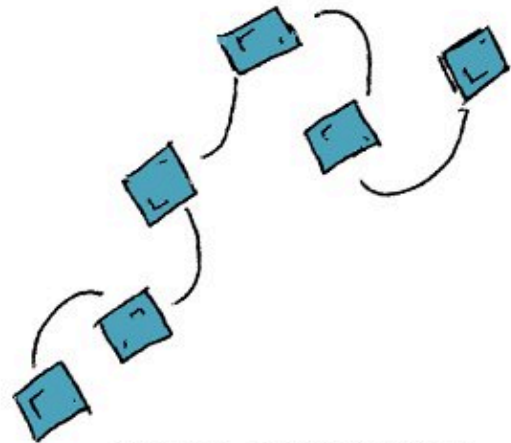
THEY BECOME EXPLORERS



THEY BECOME WILDLY  
AND UNABASHDELY  
DIFFERENT



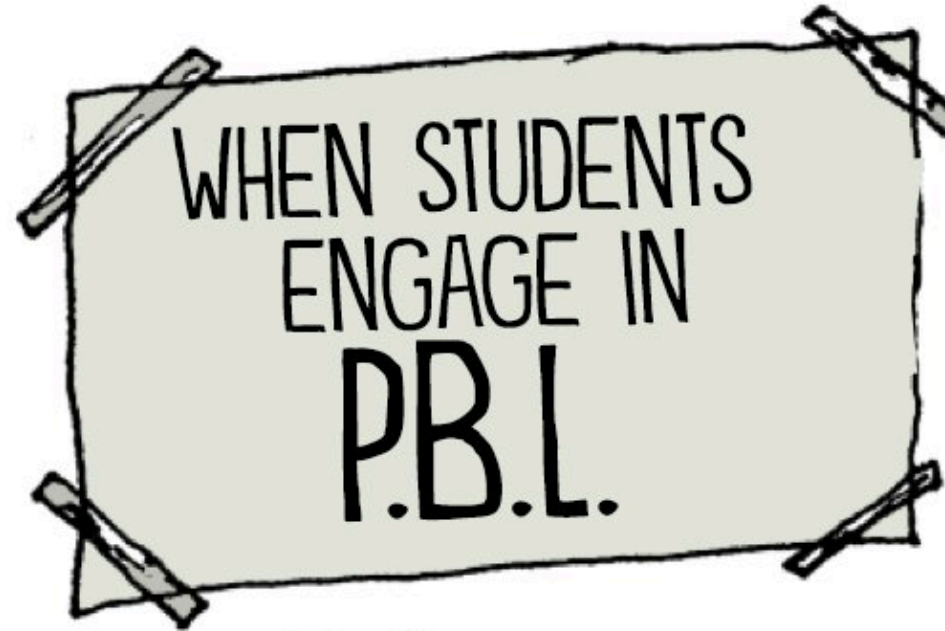
THEY ARE  
MORE ENGAGED  
IN THE LEARNING



THEY ENGAGE  
IN ITERATIVE  
THINKING



THEY BECOME  
PROBLEM-SOLVERS



THEY THINK DIVERGENTLY  
(THINKING OUTSIDE THE BOX BY  
THINKING DIFFERENTLY ABOUT THE BOX)



THEY MAKE DEEP  
CONNECTIONS BETWEEN  
IDEAS



THEY ARE READY FOR  
THE CREATIVE ECONOMY



THEY LEARN TO TAKE  
CREATIVE RISKS



JOHN SPENCER





# Top 10 skills of 2025

## Type of skill

- Problem-solving
- Self-management
- Working with people
- Technology use and development



Analytical thinking and innovation



Active learning and learning strategies



Complex problem-solving



Critical thinking and analysis



Creativity, originality and initiative



Leadership and social influence



Technology use, monitoring and control



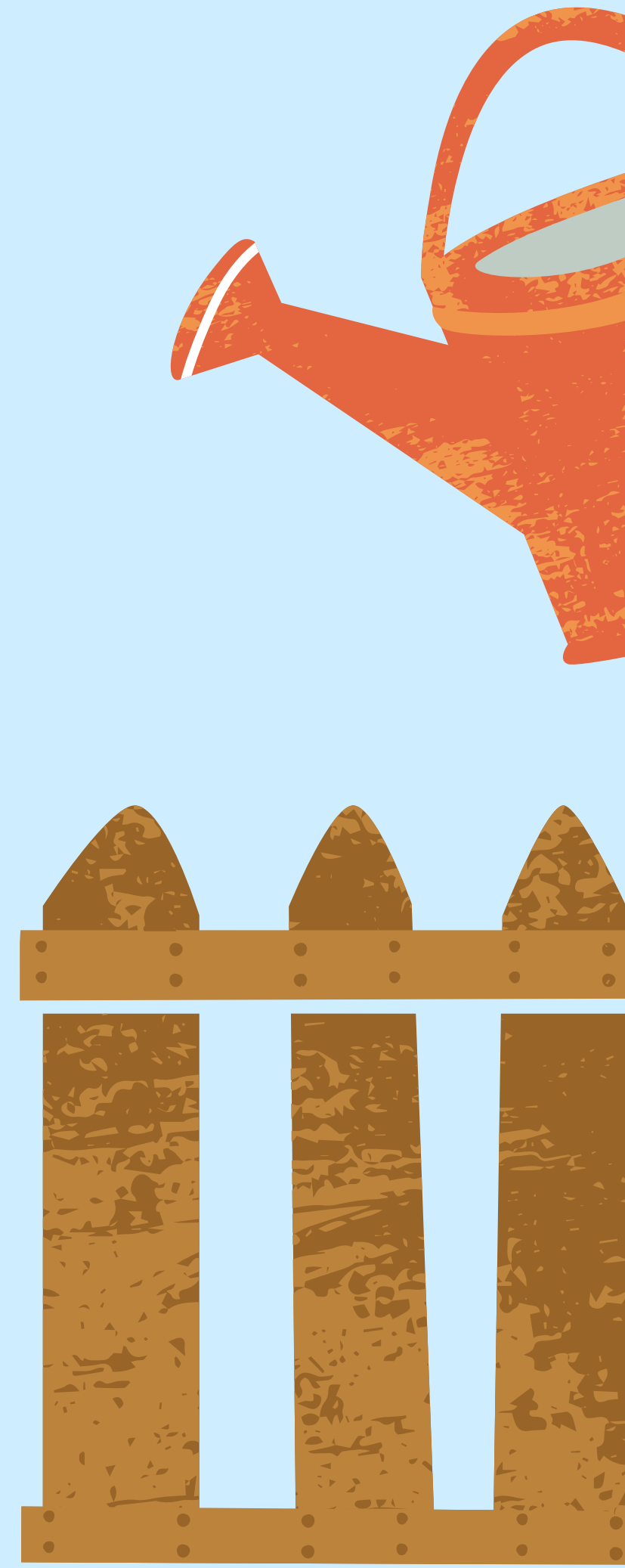
Technology design and programming



Resilience, stress tolerance and flexibility



Reasoning, problem-solving and ideation





# CULTIVATE CURIOSITY AND INQUIRY

It's all about the  
driving question!







# Project Based Learning (PBL)

Based on the principles of Project Based Learning (PBL), create a full project plan.

Grade level: \*

3rd grade

Topic or Title / Description of Project: \*

Create and design a community garden, building in our unit of area and perimeter.



Additional detail / considerations to include in the project(Optional):

Make sure the driving question involves inquiry, research, real-world experts choice and options as well as provide ideas for an authentic audience end pr

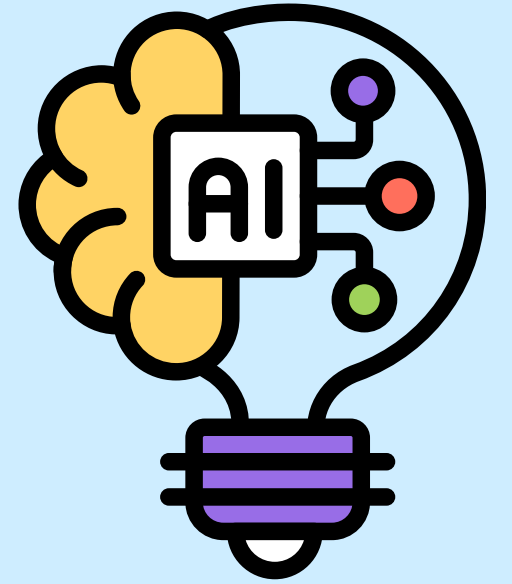


Standards Set to Align to (Optional):

Ohio Math Standards for 3rd grade



MAGIC SCHOOL



Google Slides

Brisk

Unit Plan

English

Standard AI

Create a PBL unit about the ancient civilization of China. Help me create an engaging driving question that students cannot Google search, but have to do extensive research. Include options for student choice, bringing in real-world careers or experts, and an authentic audience.

Standards

Prompt history

6th grade

5 days

☐ Personalize to my learners

Brisk It



# Gold Standard PBL

Seven Essential Project Design Elements





**"PASSION IS RARE:  
CURIOSITY IS EVERYDAY."**

Quote from Elizabeth Gilbert, [Social Media Post](#)



# GROW PBL FROM THE GROUND UP

Start small....

1 class period...

START SOMEWHERE!



**StartSOLE**





# HOW TO...



1

**ASK A BIG QUESTION**

2

**INVESTIGATE - 3-4 IN A TEAM, 1  
TECH DEVICE, 20-25 MIN.**

3

**REVIEW - GROUP SHARE OUT 2 MIN.  
EACH**

4

**DEBRIEF AND FEEDBACK**



PLAN A LESSON

VIRTUAL



My Profile



My SOLEs



Explore Questions



My Questions



Add a Question



How to SOLE?



Teacher Resources



Search by keyword \*

|

SEARCH QUESTIONS

All Subjects



All Grades



Why and how is art important in learning?

How do you effectively check the accuracy and veracity of information posted by a certain site?

Does a good story have to have a villain?

What are the current sandwich trends?

Why do we use a

What can cause food borne illnesses?

How can you use language to empower yourself?

What is a bully?

How can context clues help determine the meaning of words within a text?

Who is one artist who

What was the Holocaust?

How do we know that atoms exist?

What are numbers?

What is the purpose of genes in the human body?

How can DNA differentiate between each species?

Why doesn't Earth run out of oxygen?

Why does a smell evoke a memory?

Who was William Shakespeare and how did his writing impact society?

When are variables useful?

What is the difference

What are real-world examples where volume is calculated?

How would your life be different if you lived in the desert/tropics/arctic?

Does American Indian culture influence us today?

How are penguins able to survive in some of the harshest weather conditions on Earth?







**TRY A SOLE WITH  
YOUR CLASS...**



**NEXT TIME...  
CULTIVATING PBL**





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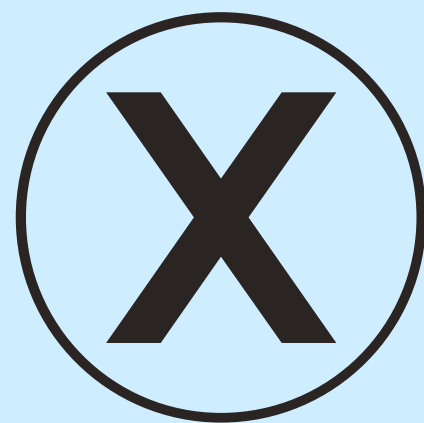
The Byte-Sized EdTech sessions were funded through the Ohio EdTech grant awarded to PBS Western Reserve through the Ohio Department of Education and Workforce.





# THANK YOU!

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*Book some time with me!*

