Summer Learning With PLTW Launch

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SPARKING CURIOSITY
A PLTW Launch Conference
Agenda

- Summer Learning Experiences
- Benefits of Problem Based Learning
- PLTW Launch for Summer Learning
  - Potential implementations of PLTW Launch in the summer learning space
- Grade Level Recommendations
- Develop a Plan
- Q and A
- Exploration in the Exploratorium
Summer Learning Experiences

• What are examples of bad summer learning experiences?
• What are examples of great summer learning experiences?
Benefits of Launch for Summer Learning

“Moreover, researchers conducted the studies in diverse districts with large percentages of traditionally underserved students, indicating project-based learning can be a powerful lever for improving equity in U.S. schools.”

“Rigorous project-based learning has strong, positive effects in science achievement and aspects of social and emotional development related to science learning among elementary students.”

On average, third graders in the ML-PBL classrooms performed 8 percentage points better on science assessment compared with students in the control group classrooms.”

“The Evidence is Clear: Rigorous Project-Based Learning is an Effective Lever for Student Success

Introduction

For many, research-based evidence of the positive impact of project-based learning (PBL) is sufficient to convince them of its efficacy. However, evidence is not the same as certainty. We know that students learn more deeply when they are engaged in meaningful, authentic experiences that involve collaboration, critical thinking, and creativity. Yet, many teachers and leaders remain skeptical of the potential of this approach to drive academic gains. This guide aims to bridge that gap by providing a comprehensive overview of the evidence for PBL and how it can be implemented to support student success.”

Read the Case Study ▼
Why use PLTW Launch during the summer?

**Science Domain Focus** – Turn students’ curiosity into confidence with learning experiences that focus on developing sense making in specific science domains.

**Early Exposure Science Learning** – Spark students’ excitement with early, hands-on exploration of phenomena in science for the upcoming school year.

**Review Science Learning** - Provide students with a hands-on, engaging learning experience to review standards from the past school year.

**Learning Support** – Elevate school year learning by selecting modules that cover your grade level standards and expose your students to additional science content.

**Computer Science Focus** – Shape your students’ computational and algorithmic thinking by selecting computer science modules from PreK-5th grade.

**VEX IQ focus** – Kickstart a robotics club at school, or support an existing one, by selecting modules that utilize VEX IQ kits.
"I think it will be hot and sunny," said Mylo.

"Very good!" said Ms. Morales. "You made a prediction about the weather pattern."

"This sounds like a problem!" said Mylo. "We can use the design process to design a structure that will block the sunlight so we will not be as hot during our weekend activities."

"Let's go climb the monkey bars!" said Mylo as the three friends ran across the playground. It was one of their favorite things to do at school.

"I'm hurt!" cried Angelina. "I fell down and scraped my knee."

"You need to see the nurse," said Ms. Morales. "I'll take you there."

"In the meantime, try not to move your arm."
First

Light: Observing the Sun, Moon, and Stars

The friends decided to take a break. They sat in a small patch of shade next to the school building. “I wish we could be protected from the bright sunlight, heat, and those UV rays while we play. Our recess is too short to waste time sitting,” said Mylo sadly.

“Hiking List:
- Backpack
- Comfortable Walking Shoes
- Water Bottle
- Bandana
- Rain Jacket
- Snacks
- Flashlight

The school’s nature club gave everyone a list of supplies.

“We combed the backpack and brought a flashlighthouse,” Angelina said.

“I brought a Flashlight, which gets dark.”

“My dad says that you need to bring a flashlight so that you don’t expect.”

Angelina, Mylo, and Suzi had designed a communication device using flashlights and mirrors. They heard a whistle and sounds of people coming near them. They had been found.

Designs Inspired by Nature
"This is what we have been learning about in school," said Angelina. "The ice pops are matter and right now they are a solid. If they melt, they will turn into a liquid."

"This is a problem!" said Mylo. "We need to find a way to keep the ice pops frozen during the soccer game."

"Thank you so much, Mr. Patel!" said the three friends.

"Of course!" said Mr. Patel. "Angelina wants to grow plants indoors. What about you, Suzi and Mylo?"

"I think I would like to plant something that would grow in the shade by my playset," said Suzi.

"And I would like a planter garden to grow beside my cactus – in the sun," said Mylo.

Have you ever had to keep something frozen?
What did you use?
What would you design to keep ice pops frozen?
What materials would you use?
“Oh no!” said Angelina as they walked toward the field. “Some plants are already growing in the field where we need to plant the seeds.”

“How did they get there?” asked Mylo. “We haven’t planted anything yet.”

How can you help the three friends solve the problem of spreading seeds over the large area?

What would you design to spread the seeds?

What do you need to learn to get started?

“The problem is that rain is coming!” said Mylo.

“No, the problem is that the hill is just ashes and burnt tree stumps. The rain may cause a landslide because there are no plants to hold the soil in place,” suggested Suzi.
Third

Stability and Motion: Science of Flight

Stability and Motion: Forces and Interactions
Third

Life Cycles and Survival

Weather: Factors and Hazards
Fourth

Waves and the Properties of Light

Energy Exploration
Fourth

Organisms: Structure and Function

Earth: Human Impact and Natural Disasters
Fifth

Robotics and Automation
Robotics and Automation: Challenge

Matter: Properties and Reactions
Fifth

Patterns in the Universe

Earth’s Water and Interconnected Systems
Action item:

1. Develop a plan for summer learning experiences
Questions?

Thoughts?
Visiting the Exploratorium to experience new modules

Choose two modules to experience that would fit well into your potential summer learning experience.