

Fostering Ethical Thinking in Elementary Students



Overview

- Welcome
- Consider an Ethical Dilemma
- Build Student Capacity to Think Ethically
- **Brainstorm Ethical Thinking Opportunities**
- Q & A



**SPARKING
CURIOSITY**

A PLTW Launch Conference

PLTW Launch Instructional Development Team



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Learning Objectives

- Consider why it is important for students to think ethically.
- Explore how ethical thinking is woven into PLTW Launch modules.
- Brainstorm new opportunities for students to think ethically while solving problems in PLTW Launch.

Consider an Ethical Dilemma



Quick Breakdown

- What did you do first? Why did you do that?
- Did you come to consensus?
- How should we approach ethical dilemmas?
- Why is it important for students to build these skills?





Building Transportable Skills

PLTW Frameworks

Practice ethical behavior in all settings.	Engage in and maintain positive interactions and relationships with other children and adults.
	Value and credit the contributions of others.
	Recognize that one's behavior impacts those around them.

Table Talk

- How are you currently facilitating ethical reasoning and mindset skill building in your classroom?
- Think about a specific module. How do your students practice each KS while engaging in that module?

Connections to Standards

- Next Generation Science Standards (NGSS)
 - Science and Engineering Practice: Engaging in Argument from Evidence
- Computer Science Teachers Association (CSTA) Standards
 - Concept: Impacts of Computing
- Common Core State Standards (CCSS) ELA
 - Speaking and Listening Standards

Framework for Ethical Decision Making

1. Recognize an ethical issue.
2. Get the facts.
3. Explore various options.
4. Make a decision and test it.
5. Act and reflect on the outcome.

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Animated Storytelling



Teacher Move: Modeling

- 19 Before you introduce title pages, facilitate a discussion about attribution and the importance of recognizing the work of others.



- We used the Introduction Story: *Sharing Stories* to create an animated story. Who do you think wrote the original Introduction Story: *Sharing Stories*?

Project Lead The Way (or PLTW)

- It is important to give credit to someone when you use their ideas or creations. When someone writes a book, where can we find the name of the author?

The front cover or title page

- 20 Optional: Using the read aloud introduced during Activity 3, show students the name of the author on the title page.

Materials Science: Properties of Matter



Teacher Move: Case Study / Discussion

Tethys Device

Patent Number 11,085,907

Gitanjali Rao saw a news story about the water in Flint, Michigan. The city's water had too much lead. It made some people sick. Gitanjali wanted to help.

Her invention lets people know when lead is in the water. She solved a problem that helps others. [Source](#)



Life Cycles and Survival



Teacher Move: What If? Scenario

CONCLUSION QUESTIONS

- 1 You have learned about some of the causes of the decline of the honeybee population. What other animals may be affected by pesticides? Why do you think this?
- 2 How would your life be affected if there were no bees?

Energy Exploration



Teacher Move: Point-of-View Analysis

Town Council Meeting Invitation

You're invited to the next Town Council meeting! During the meeting we will discuss plans for Energy Park. This new park will feature energy in new ways. Soon we will order equipment for the park. We want to make sure the equipment meets the needs of our community. This means we need input from community members like you.

To prepare for the meeting, complete the following:

- Review each item in the [Energy Park Equipment Catalog](#).
- Select the items that you think the community should purchase.
- Provide your reason for selecting each item.
- Keep your selections within the park equipment budget of \$10,000.
- Decide how you will present your ideas to the Town Council.

Community Member Roles

With your group, read your assigned community member role. Discuss how you will think like your community member as you make decisions.



Role 1

Art Association



Role 2

Property Owners



Role 3

Parenting Group



Role 4

Business Owner



Role 5

Pedal Boat Company



Role 6

Energy Cooperative

Earth's Water and Interconnected Systems



Teacher Move: Zooming In & Out
/ Expert Analysis

Biologist



[Source](#)

Carlton Jones is a biologist at the Environmental Protection Agency. He is focused on safe and sustainable water resources. Specifically, he looks for chemicals in drinking water. Carlton's work in chemical exposure helps locate early warning signs of cancer.

Carlton thinks that within the next 20 years, water insecurity will be the biggest scientific challenge. He believes people will struggle to find water because fewer water sources will be available. [Source](#)

Figure out what you are most passionate about and stay focused on that.

Earth's Water and Interconnected Systems



Teacher Move: True-False / Recognizing Shifts in Thinking

Listen as your teacher reads a list of statements. Respond with a thumbs up if you think the statement is true. Respond with a thumbs down if you think it is false.

- Water can be found in rivers.
- Water can be found in lakes.
- Water can be found near Earth's poles.
- Most of the fresh water in Earth is liquid.
- Earth has more land than water.

Time to Explore a Module

Work with your group to identify opportunities to emphasize ethical thinking for one of the following modules:

- Living Things: Needs and Impacts (PreK/K)
- Designs Inspired by Nature (1)
- Materials Science: Properties of Matter (2)
- Environmental Changes (3)
- Earth: Human Impact and Natural Disasters (4)
- Infection: Detection (5)



Questions & Answers



Resources

Computer Science Teachers Association (2017). CSTA K–12 Computer Science Standards, Revised 2017. Retrieved from <https://csteachers.org/k12standards/>.

Markkula Center for Applied Ethics (2021, November 5). A framework for ethical thinking. **Santa Clara University**. Retrieved from <https://www.scu.edu/ethics/ethics-resources/a-framework-for-ethical-decision-making/>

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). **Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects**. Washington, DC: Authors.

NGSS Lead States. 2013. **Next Generation Science Standards: For States, By States**. Washington, DC: The National Academies Press.