Unleash the Power of Mathematical Thinking with PLTW Launch
Overview

• Welcome
  • Introduction to the PLTW Launch Instructional Development Team

• Overview of the Math Connections in PLTW Launch
  • How did we get here?
  • Explore new math enhancements and connections
  • Connections to Common Core State Standards for Mathematics

• Exploration of Math Performance Tasks
  • Hands-on
  • Collaboration

• Collaborative Brainstorm
  • Share ideas for new math performance tasks

• Q & A
PLTW Launch Instructional Development Team

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How Did We Get Here?

- Math inventory
- Identifying standard gaps
- Enhancements throughout the modules
Math Enhancements

1st Grade: Designs Inspired by Nature Activity 3

- What materials did you choose for your model? Why did you choose them?
- Why did you choose this specific structure? What is its function?
- What shape are your ears? How does the shape of the ears impact their function?
- What would you like to do to improve your model? Why do you think this will be a better solution?
- Did your final model look like your sketch? Why or why not?

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1st Grade: Designs Inspired by Nature Project

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Constraints</th>
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<tbody>
<tr>
<td>The mask must:</td>
<td>• Time</td>
</tr>
<tr>
<td>• Be inspired by nature.</td>
<td>• Available materials</td>
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<tr>
<td>• Include false eyes as part of the design.</td>
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<tr>
<td>• Include two-dimensional shapes in the design.</td>
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Math Connections

Multiple PLTW Launch modules now include optional math connections that allow students to apply mathematical thinking in a purposeful way.

1st Grade: Animal Adaptations

Optional: Math Connection
Guide students to use nonstandard units to measure the length of the wingspans. Students can use items such as paperclips, cubes, or counters. Have them compare the lengths.

Optional: Math Connection
Guide students to look at the number of patterned butterflies and the number of solid-colored butterflies they caught.
- Have students write a number sentence to find the difference between the number of patterned and number of solid-colored butterflies.
- Guide students to compare the two numbers of butterflies using comparison symbols (>, =, and <).

5th Grade: Earth’s Water and Interconnected Systems

Optional: Math Connection
Guide students to write a numerical expression using parentheses to calculate the percentage of water on their map and round the decimal to the nearest tenth or hundredth.

Example
\[(645 \div 1254) \times 100 = 51.44\%\]
- Area of water = 645 squares
- Total area = 1254 squares
- \[645 \div 1254 = 0.51435407\]
- \[0.51435407 \times 100 = 51.435407\%\]
- Round = 51.44\%
Math Performance Tasks

Some PLTW Launch modules now include optional performance tasks that require students to apply math skills that go beyond the math connections found in the activities, project, and problem. These performance tasks are found in the Summative Assessment.

Sunlight and Weather Math Performance Task

Stability and Motion: Forces and Interactions Math Performance Task

Matter: Properties and Reactions Math Performance Task
Connections to Common Core State Standards for Mathematics

Each module now includes Connections to Common Core State Standards for Mathematics found in the Introduction to the Module. This document indicates the connections to the Standards for Mathematical Practices and the Standards for Mathematical Content.
Math Performance Tasks

- Work with your group to complete a performance task
- Be prepared to share out:
  - A brief summary of the task
  - Your initial impressions
  - How you see the performance task being implemented
Collaborative Brainstorm

Work with your group to brainstorm ideas for new performance tasks for the following modules:

• Structure and Function: Exploring Design (K)
• Animals and Algorithms (K)
• Living Things: Needs and Impacts (K)
• Animated Storytelling (1)
• Designs Inspired by Nature (1)
• Materials Science: Properties of Matter (2)
• Grids and Games (2)
• Programming Patterns (3)
• Input/Output: Computer Systems (4)
• Infection: Modeling and Simulation (5)