PLTW Launch Modules
WSSLS Science Scope and Sequence

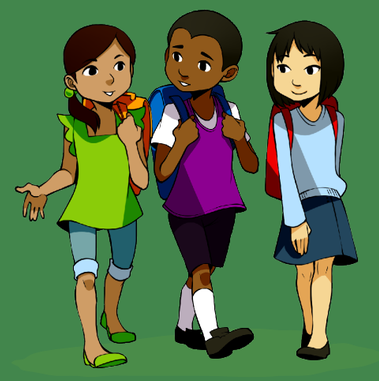
PLTW Launch Modules integrate science performance expectations (PEs) with science and engineering practices (SEPs), disciplinary core ideas (DCIs), and crosscutting concepts (CCCs) and focus on one or more of the 3 domains of science outlined in the WSSLS:

- **Physical Science**
- **Life Science**
- **Earth and Space Science**

ELA and Math are integrated into all PLTW Launch modules through authentic science and engineering activities, projects, and problems; connections to those bodies of standards are included to support planning. Additional modules, that focus solely on computer science or engineering are not included in this guide, but can be included to enhance STEM learning. There are not prerequisites, so modules can be taught in whatever order works in your classroom.

Most often, PEs are covered in one module per grade level; 1st Grade, 3rd Grade, and 4th Grade contain multiple modules that cover the same standard to provide options for extra instruction and engagement. To support with pacing decisions, *the least amount of modules possible to reach 100% standards coverage* **is noted for each grade level with this symbol:**

More information can be found in the *Teacher's Guide,* **including module specific standards connections and the Curriculum Framework.The framework offers a big-picture view of the module that includes the desired results of student learning, an overview of the module's scaffolded approach to learning, and assessment opportunities found in each activity, project, and problem.**



Please note: The information included in this document is subject to change. As with all course materials, we will continue to update as more information becomes available.

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LAUNCH K-5 Science Scope and Sequence

	Physical Science	Life Science	Earth and Space Science
K	Pushes and Pulls K-PS2-1, K-PS2-2	Living Things: Needs and Impacts K-LS1-1, K-ESS2-2 K-ESS3-1, K-ESS3-3	Sunlight and Weather K-PS3-1, K-PS3-2, K-ESS2-1, K-ESS3-2
1	Light and Sound 1-PS4.1, 1-PS4-2, 1-PS4-3, 1-PS4-4	Designs Inspired by Nature 1-LS1-1, 1-LS1-2, 1-LS3-1 Animal Adaptations 1-LS1-1, K-2-ETS1-1	Light: Observing the Sun, Moon, and Stars 1-ESS1-1, 1-ESS1-2
2	Materials Science: Properties of Matter 2-PS1-1, 2-PS1-2, 2-PS1-3, 2-PS1-4 Materials Science: Form and Function 2-PS1-2, 2-PS1-3, 2-LS2-2	Living Things: Diversity of Life 2-LS2-1, 2-LS4-1	The Changing Earth 2-ESS1-1, 2-ESS2-1, 2-ESS2-2, 2-ESS2-3
3	Stability and Motion: Forces and Interactions 3-PS2-1, 3-PS2-2, 3-PS2-3, 3-PS2-4 Stability and Motion: Science of Flight 3-PS2-1, 3-PS2-2	Variation of Traits 3-LS3-1, 3-LS3-2, 3-LS4-2 Life Cycles and Survival 3-LS1-1, 3-LS2-1 Environmental Changes 3-LS4-1, 3-LS4-3, 3-LS4-4	Weather: Factors and Hazards 3-ESS2-1, 3-ESS2-2, 3-ESS3-1
4	Energy Exploration 4-PS3-1, 4-PS3-2, 4-PS3-3, 4-PS3-4 Input/Output: Computer Systems 4-PS4-3 Waves and the Properties of Light 4-PS4-1, 4-PS4-2	Organisms: Structure and Function 4-LS1-1, 4-LS2-1 Input/Output: Human Brain 4-LS1-1	Earth: Past, Present, and Future 4-ESS1-1, 4-ESS2-1, 4-ESS2-2 Earth: Human Impact and Natural Disasters 4-ESS3-1, 4-ESS3-2
5	Matter: Properties and Reactions 5-PS1-1, 5-PS1-2, 5-PS1-3, 5-PS1-4	Ecosystems: Flow of Matter and Energy 5-PS3-1, 5-LS1-1, 5-LS2-1	Patterns in the Universe 5-ESS1-1, 5-ESS1-2 Earth's Water and Interconnected Systems 5-PS2-1, 5-ESS2-1, 5-ESS2-2, 5-ESS3-1

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Kindergarten Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA Standards	Math Standards
★ **Pushes and Pulls**	In what ways do forces impact your daily life? How are pushes and pulls related? How can a step-by-step process help you design or improve a solution to a problem?	K-PS2-1 K-PS2-2	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	W.K.2 SL.K.1.a SL.K.1b SL.K.2 SL.K.3 SL.K.4 SL.K.5	K.CC.A.3 K.MD.A.2 K.MD.B.3 Math Practices 1, 3,5
★ **Living Things: Needs and Impacts**	How can plants and animals impact their natural environment to meet their needs? How can humans lessen their negative impact on the natural environment? How can a step-by-step process help you design or improve a solution to a problem?	K-LS1-1 K-ESS2-2 K-ESS3-1 K-ESS3-3	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.K.3 RI.K.1 RI.K.2 W.K.2 W.K.7 SL.K.1 SL.K.2 SL.K.4 SL.K.5	K.CC.A.1 K.CC.A.3 K.CC.B.5 K.MD.B.3 Math Practices 1, 3
★ **Sunlight and Weather**	How does the Sun affect Earth? How does weather affect our lives? How can a step-by-step process help you design or improve a solution to a problem?	K-PS3-1 K-PS3-2 K-ESS2-1 K-ESS3-2	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.K.1 RL.K.3 RL.K.10 RI.K.1 RI.K.2 RI.K.10	K.CC.A.3 K.MD.A.2 Math Practices 1-3

★ *Least amount of modules possible to reach 100% standards coverage*

PLTW LAUNCH 1st Grade Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA Standards	Math Standards
★ **Light and Sound**	How do light and sound affect your life? Why is understanding cause and effect important to your life? How can collaboration help you solve problems?	1-PS4-1 1-PS4-2 1-PS4-3 1-PS4-4	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.1.1 RL.1.2 RL.1.3 RI.1.1 RI.1.2 W.1.8 SL.1.1 SL.1.2 SL.1.5	Math Practices 1, 3, 5
★ **Designs Inspired by Nature**	Why do animals communicate as they do? How can nature inspire solutions to human problems? How can a step-by-step process help you design or improve a solution to a problem?	1-LS1-1 1-LS1-2 1-LS3-1	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RI.1.1 RI.1.2 RI.1.10 W.1.7 W.1.8 SL.1.1 SL1.2 SL.1.5	1.G.A.1 1.G.A.2 Math Practices 1, 3, 5
Animal Adaptations	How do plants and animals adapt to their environments? How can nature inspire solutions to human problems? How can a step-by-step process help you design or improve a solution to a problem?	1-LS1-1	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.1.1 RI.1.1 W.1.8 SL.1.2 SL.1.5 SL.1.6	1.NBT.C.4 1.MD.C.4 Math Practices 1-6
★ **Light: Observing the Sun, Moon, and Stars**	How does the Sun affect your life? Why is understanding cause and effect important to your life? What is the relationship between patterns and natural phenomena?	1-ESS1-1 1-ESS1-2	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.1.1 RI.1.1 W.1.8 SL.1.1.C SL.1.5 SL.1.6	1.MD.A.1 1.MD.B.3 1.MD.C.4 Math Practices 1-6

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2nd Grade Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA Standards	Math Standards
★ **Materials Science: Properties of Matter**	What properties of materials do you need to consider when designing a product? How can we identify when something is (or is not) a solution to a problem?	2-PS1-1 2-PS1-2 2-PS1-3 2-PS1-4	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RI.2.1 RI.2.3 W.2.7 W.2.8	2.MD.D.10 Math Practices 1, 3-6
★ **Materials Science: Form and Function**	How does the function of an object influence its form? How does nature influence design? How can a step-by-step process help you design or improve a solution to a problem?	2-PS1-2 2-PS1-3 2-LS2-2	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.2.1 RI.2.1 RI.2.3 W.2.8 SL.2.1 SL.2.2	Math Practices 1, 3-5
★ **Living Things: Diversity of Life**	How do scientists learn about the world? How do diverse habitats meet the needs of organisms? How can a step-by-step process help you design or improve a solution to a problem?	2-LS2-1 2-LS4-1	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	W.2.7 W.2.8	2.MD.A.1 2.MD.D.10 Math Practices 1-6
★ **The Changing Earth**	How can something appear stable when it is actually changing? How are system models used to predict and understand real-world situations or scientific phenomena? How can a step-by-step process help you design or improve a solution to a problem?	2-ESS1-1 2-ESS2-1 2-ESS2-2 2-ESS2-3	K-2-ETS1-1 K-2-ETS1-2 K-2-ETS1-3	RL.2.1 RI.2.1 RI.2.3 W.2.7 W.2.8 SL.2.1 SL.2.2	Math Practices 1-6

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PLTW LAUNCH

3rd Grade Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA	Math	Common Core Math Standards
★ **Stability and Motion: Forces and Interactions**	In what ways do forces impact your daily life? How do machines make life easier? How can a step-by-step process help you design or improve a solution to a problem?	3-PS2-1 3-PS2-2 3-PS2-3 3-PS2-4	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.3.1 RI.3.3	W.3.7 W.3.8	Math Practices 1, 3, 5
Stability and Motion: Science of Flight	In what ways do forces impact our world? How do balanced and unbalanced forces affect aircraft flight? How can a step-by-step process help you design or improve a solution to a problem?	3-PS2-1 3-PS2-2	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.3.1 RI.3.3	W.3.7 W.3.8 SL.3.1	3.MD.B.4 Math Practices 1-3, 5-6
★ **Variation of Traits**	Why do some offspring look like their parents while others do not? How are traits of one generation passed to the next? How can a step-by-step process help you design or improve a solution to a problem?	3-LS3-1 3-LS3-2 3-LS4-2	3-5-ETS1-1 3-5-ETS1-2	RI.3.1 RI.3.2 RI.3.3 RI.3.4	W.3.8 SL.3.1 SL.3.2	3.MD.B.3 Math Practices 1-7
★ **Life Cycles and Survival**	Why are life cycles of organisms important for life on Earth? How do bees impact our world? How can a step-by-step process help you design or improve a solution to a problem?	3-LS1-1 3-LS2-1	3-5-ETS1-1 3-5-ETS1-2	RI.3.1 RI.3.2 RI.3.3 RI.3.4	W.3.7 W.3.8 SL.3.1	Math Practices 1-3
★ **Environmental Changes**	How does an animal's habitat affect its survival? How do environmental changes affect organisms? How can a step-by-step process help you design or improve a solution to a problem?	3-LS4-1 3-LS4-3 3-LS4-4	3-5-ETS1-1 3-5-ETS1-2	RI.3.1 RI.3.2 RI.3.3 RI.3.4	W.3.2 W.3.7 W.3.8 SL.3.1 SL.3.4	Math Practices 1-5
★ **Weather: Factors and Hazards**	How does weather affect our lives? How can a step-by-step process help you design or improve a solution to a problem?	3-ESS2-1 3-ESS2-2 3-ESS3-1	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.3.1 RI.3.2 RI.3.3 RI.3.4	W.3.7 W.3.8 Sl.3.1	3.MD.A.2 Math Practices 1-3, 5-6

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PLTW LAUNCH
4th Grade Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA	Math	Common Core Math Standards
★ **Energy Exploration**	Why is energy necessary? How does energy transfer affect your life? How can a step-by-step process help you construct an explanation or design a solution to a problem?	4-PS3-1 4-PS3-2 4-PS3-3 4-PS3-4	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.4.1 RI.4.2 RI.4.3 RI.4.4 RI.4.7 W.4.2	W.4.7 W.4.9 SL.4.1 SL.4.3 SL.4.4 SL.4.5	Math Practices 1, 3, 5-6
★ **Input/Output: Computer Systems**	How does technology impact our lives? In what ways do computing systems work together to accomplish tasks? How can a step-by-step process help you design or improve a solution to a problem?	4-PS4-3	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.4.3 RI.4.4	W.4.2 W.4.4 SL.4.1 SL.4.2	Math Practices 1-5, 8
★ **Waves and the Properties of Light**	How are waves used to predict results and solve problems? How do the properties of light allow us to see? How can we use patterns to make sense of the world? How can a step-by-step process help you design or improve a solution to a problem?	4-PS4-1 4-PS4-2	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3		SL.4.5	4.MD.C.5 4.MD.C.6 4.G.A.1 Math Practices 1-6
★ **Organisms: Structure and Function**	How are organisms structured to support and sustain life? How do scientists and engineers understand the world around them? How can a step-by-step process help you design or improve a solution to a problem?	4-LS1-1 4-LS1-2	3-5-ETS1-1 3-5-ETS1-2	RI.4.2 RI.4.3 RI.4.4 W.4.1.B W.4.2.D	W.4.8 SL.4.1 SL.4.2 SL.4.4 SL.4.5	Math Practices 1, 3, 5-6
Input/Output: Human Brain	How does technology impact our lives? In what ways do computing systems work together to accomplish tasks? How can a step-by-step process help you design or improve a solution to a problem?	4-LS1-2	3-5-ETS1-1 3-5-ETS1-2	RI.4.1 RI.4.2 RI.4.3 RI.4.4 RI.4.7 W.4.2	W.4.7 W.4.9 SL.4.1 SL.4.3 SL.4.4 SL.4.5	Math Practices 1,3, 5-6
★ **Earth: Past, Present, and Future**	How has Earth changed over time? Why is Earth constantly changing? How can a step-by-step process help you design or improve a solution to a problem?	4-ESS1-1 4-ESS2-1 4-ESS2-2	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.4.3 RI.4.4 RI.4.7 W.4.2 W.4.7	W.4.8 W.4.9 SL.4.4 SL.4.5	Math Practices 1, 3, 5-6
★ **Earth: Human Impact and Natural Disasters**	In what ways do human interactions impact Earth? How do natural hazards impact Earth? How can a step-by-step process help you design or improve a solution to a problem?	4-ESS3-1 4-ESS3-2	3-5-ETS1-1 3-5-ETS1-2	RI.4.1 RI.4.3 RI.4.4 RI.4.9 W.4.2	W.4.7 W.4.8 W.4.9 SL.4.1 SL.4.4	Math Practices 1-4

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PLTW LAUNCH 5th Grade Science

	Essential Questions	Science Standards	Engineering Design Standards	ELA	Math	Common Core Math Standards
★ **Matter: Properties and Reactions**	How do the structures and properties of matter help us solve real-world problems? How do mechanical properties impact engineering design? How can a step-by-step process help you design or improve a solution to a problem?	5-PS1-1 5-PS1-2 5-PS1-3 5-PS1-4	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.5.7 W.5.8 W.5.9	SL.5.1 SL.5.2 SL.5.4	5.MD.C.3 5.MD.C.4 Math Practices 1-6
★ **Ecosystems: Flow of Matter and Energy**	How do matter and energy flow through an ecosystem? How does a change in an ecosystem affect its balance? How can a step-by-step process help you design or improve a solution to a problem?	5-PS3-1 5-LS1-1 5-LS2-1	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.5.1 RI.5.3 RI.5.4 RI.5.7 RI.5.9 W.5.2.D	W.5.7 W.5.8 W.5.9 SL.5.1 SL.5.2 SL.5.5	5.MD.B.2 Math Practices 1-6
★ **Patterns in the Universe**	What is Earth's place in the universe? How do the predictable patterns of Earth impact our lives? How can a step-by-step process help you design or improve a solution to a problem?	5-ESS1-1 5-ESS1-2	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.5.1 RI.5.4 RI.5.7 RI.5.8 RI.5.9 W.5.1 W.5.2	W.5.7 W.5.8 SL.5.1 SL.5.2 SL.5.4 SL.5.5	Math Practices 1-4, 6
★ **Earth's Water and Interconnected Systems**	How do Earth's major systems interact? Is there enough fresh water on Earth? How can a step-by-step process help you design or improve a solution to a problem?	5-PS2-1 5-ESS2-1 5-ESS2-2 5-ESS3-1	3-5-ETS1-1 3-5-ETS1-2 3-5-ETS1-3	RI.5.3 RI.5.4 RI.5.7 RI.5.9	W.5.8 W.5.9 SL.5.1 SL.5.2 Sl.5.4 SL.5.5	5.NBT.B.5 Math Practices 1-6

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