

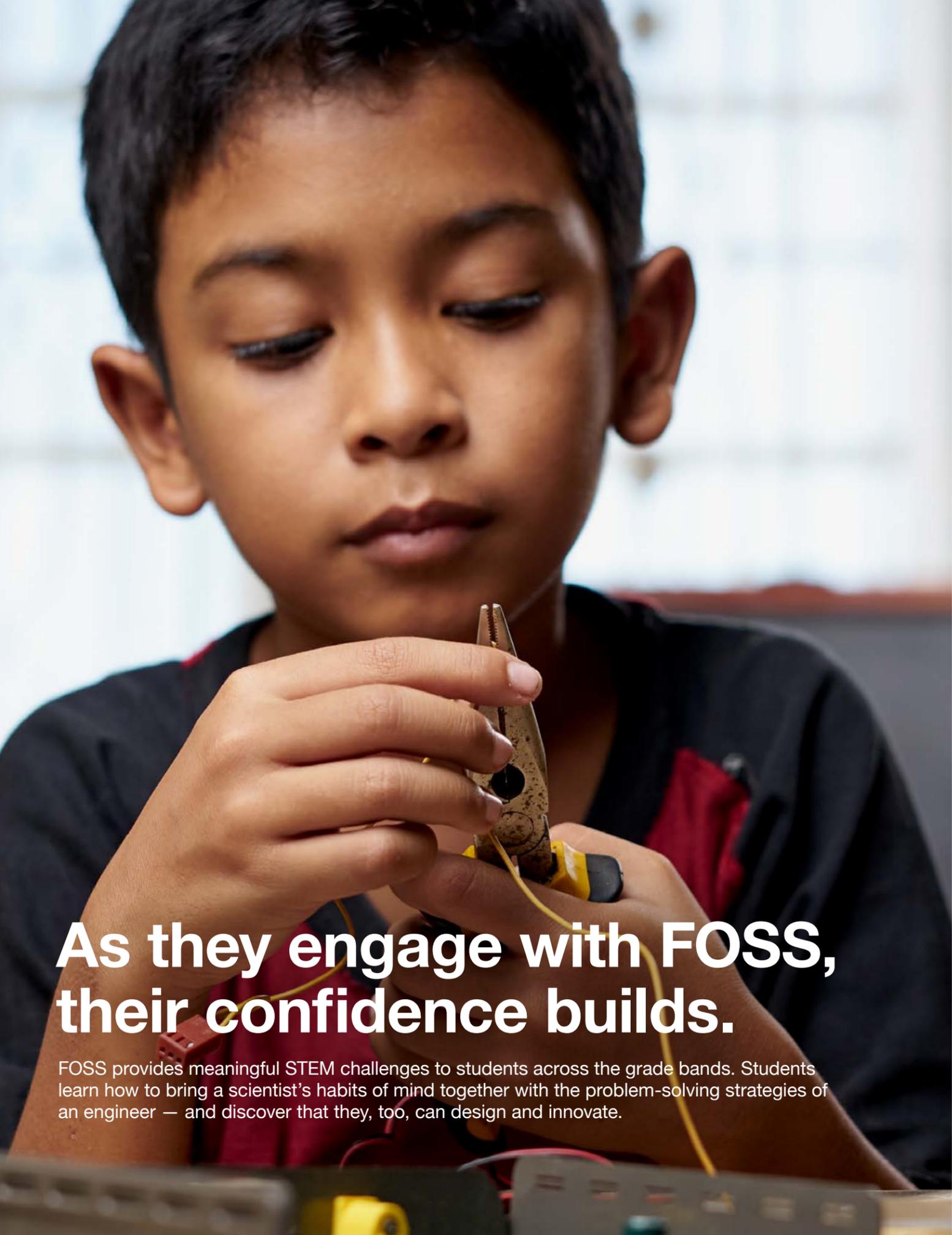


NEW

FOSS STEM Modules, Grades 1–8

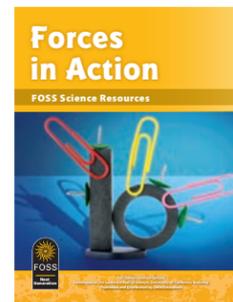
Students do more than design, they innovate.

Introducing FOSS® STEM Instructional Materials. Developed at the Lawrence Hall of Science, these three new engaging modules invite students to step into the roles of engineers. Developed for various grade levels, all three challenge students to apply their knowledge of science concepts to invent new products or find solutions to problems. Along the way, students gain a deeper understanding of science concepts, and a new appreciation for the role of science and engineering in their lives.



**As they engage with FOSS,
their confidence builds.**

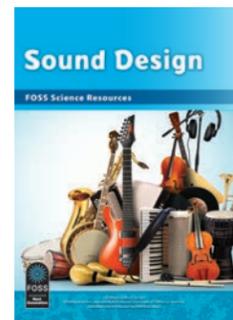
FOSS provides meaningful STEM challenges to students across the grade bands. Students learn how to bring a scientist's habits of mind together with the problem-solving strategies of an engineer — and discover that they, too, can design and innovate.



Grades 1–2

FOSS Forces in Action Module

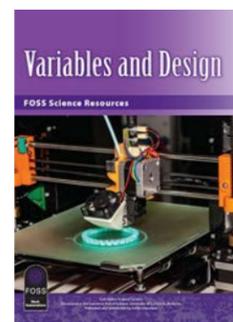
Young students explore the phenomena of forces, forces that make objects start to move or change their motion, and force at a distance — gravity and magnetism. What makes objects spin in certain ways? What causes them to roll? What can the magnetic force do? How can we get objects to balance? Students address problems and design solutions using spinning tops, rolling wheels and spheres, interacting magnets, and balancing toys.
(23 sessions)



Grades 3–5

FOSS Sound Design Module

In Sound Design, students explore the phenomenon of sound to understand the variables that affect pitch and volume. What causes the different sounds we hear? How does sound travel? Students work in groups to observe how sound travels through solids, liquids, and gases. They investigate musical instruments, leading to a final challenge: using their understanding of vibrations to design and build their own instruments from available materials.
(17 sessions)



Grades 5–8

FOSS Variables and Design Course

Middle schoolers put STEM principles into action. They investigate the relationships between variables and design a controlled experiment. Students learn how the engineering design process solves problems, taking the initiative to design an air trolley themselves. Finally they meet a design challenge of their choice in the community, explore digital fabrication including 3D printing—and see from firsthand experience what engineers do to solve real-world problems.
(22 sessions)

More options for teaching and learning STEM.

FOSS® STEM modules are about 17 to 23 sessions in length. Each can be taught as a unit in a science class, a STEM class, an engineering class, as support for a summer learning program, or as a before/after-school enrichment activity. Each module comes with an *Investigations Guide*, *Online Teacher Resources*, *Science Resources* student book, equipment kit for students, and technology through FOSSweb on ThinkLink™.

FOSS® Middle School Scope & Sequence

Grade	Integrated Middle Grades					STEM Enrichment
8	Heredity & Adaptation* ES, LS	Electromagnetic Force* PS, ES, E	Gravity & Kinetic Energy* PS, E	Waves* PS, E	Planetary Science PS, ES	Variables & Design† Grades 5-8 E
7	Chemical Interactions PS, ES, E		Earth History PS, ES, LS		Populations and Ecosystems ES, LS, E	
6	Weather and Water PS, ES, E		Diversity of Life LS		Human Systems Interactions* LS	

PS: Physical Science content, ES: Earth Science content, LS: Life Science content, E: Engineering content *Half-length courses
†STEM Enrichment courses and modules can supplement the FOSS core curriculum or be purchased separately for STEM electives or extracurricular activities.

FOSS® Pre-K–5 Scope & Sequence

Grade	Physical Science	Earth Science	Life Science	STEM Enrichment
5	Mixtures & Solutions	Earth & Sun	Living Systems	Sound Design†
4	Energy	Soils, Rocks & Landforms	Environments	
3	Motion & Matter	Water & Climate	Structures of Life	
2	Solids & Liquids	Pebbles, Sand & Silt	Insects & Plants	Forces in Action†
1	Sound & Light	Air & Weather	Plants & Animals	
K	Materials & Motion	Trees & Weather	Animals Two by Two	
Pre-K	Full-year Observing Nature			

†STEM Enrichment courses and modules can supplement the FOSS core curriculum or be purchased separately for STEM electives or extracurricular activities.

Learn more. Find your local FOSS/Delta Education representative at FOSSNextGeneration.com/sales



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