



Developed at:

**The Lawrence  
Hall of Science**  
UNIVERSITY OF CALIFORNIA, BERKELEY®

**One science program  
meets the challenge  
of our time.**



**FOSS PATHWAYS™**  
Developed at  
**The Lawrence Hall of Science**

# FOSS Pathways: Designed with you in mind.

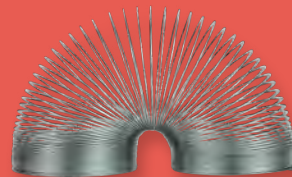
Today as never before, the world needs scientific thinkers—to view the world thoughtfully, approach challenges analytically, and embrace opportunities enthusiastically. FOSS®, a longtime leader in science education, has stepped forward to meet that challenge with the newly streamlined FOSS Pathways™. Pathways was designed to provide teachers with everything they need to meet standards in the time they have allotted to teach science. In these pages, you will see how Pathways:



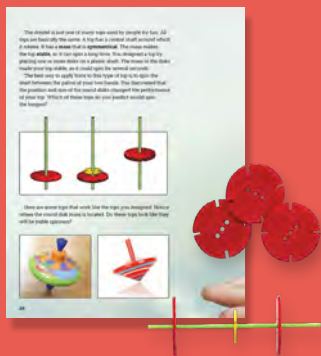
**Aligns with Alabama  
Course of Study  
Standards for science**



**Incorporates the digital  
tools for a flexible  
multimedia experience**



**Lends flexibility to teach  
in the class time allotted  
for science**



**Utilizes a multimodal  
approach to resonate  
with every student**



**Immerses students in  
figuring out local and  
relevant phenomena and  
engineering problems**



**Provides unmatched  
teacher support to teach  
phenomena-based science**

# Built on a long-standing foundation of excellence.

The FOSS Pathways program supports the science teaching and learning needed today, while building on the classroom-proven three-decade legacy of FOSS.

## Accessible for all

The founding principle of the FOSS program was to enlist students not as passive recipients of information but as active investigators of phenomena. This approach engages and advances learners of all languages and cultures, taking advantage of prior experiences so all students can reason scientifically—a goal that has only gained relevance with time.

## Proven and tested

The FOSS program has been refined through three decades of collaboration with developers, educators, and students around the world. It has empowered teachers, excited students, and elevated test scores for students with diverse backgrounds and experiences living in urban, suburban, and rural areas.

## Standards-aligned

FOSS has evolved over time to meet the changing science education landscape. This newest edition of FOSS meets Alabama Course of Study Standards, while providing the flexibility to adapt to individual teaching needs.



**“Students absolutely love the hands-on experimentation. It makes science come alive for them. Thanks to FOSS, my students love science and actually beg for more.”**

Peggy S. –  
Educator/Gifted and Talented Education Coordinator



# Phenomena-based science with an eye to the future.

FOSS Pathways incorporates local and relevant phenomena in a way that addresses standards and instills science literacy that will serve students and their communities well for a lifetime.

## Promotes scientific thinking

FOSS Pathways empowers students to act as scientists and engineers using hands-on experiences to figure out the world around them. FOSS phenomena encourages students to engage with real-world issues using three-dimensional learning practices.

## Time-efficient, standards-aligned

FOSS Pathways gives educators the flexibility to customize instruction while still addressing standards in the time allotted to teach science. To further respect the teacher's time, all key materials for activities are included to reduce preparation time and retain focus on what matters most—providing meaningful learning experiences for students.

## Multimedia experiences

FOSS Pathways provides digital resources, including custom-designed simulations and videos, for students and teachers through FOSSweb on ThinkLink™. These multimedia materials provide additional information to help students make sense of phenomena and ensure flexibility to keep active science teaching viable if classroom circumstances change.



# The curriculum that puts students first.

The FOSS program was developed to engage students of all backgrounds, languages, and abilities. Now FOSS Pathways advances this students-first approach, providing opportunities to differentiate and support each student experience.

## Local and relevant phenomena

FOSS Pathways is built around phenomena that students can observe firsthand and relate to the world they know. Phenomena are organized into coherent storylines for the teacher, empowering them to engage students as they explore.

## Provides a multimodal approach

FOSS Pathways combines hands-on science experiences with rich resources. This enables differentiated instruction that helps all students explore and understand scientific concepts in a way that resonates individually with each of them, promoting access and equity.





# Empowering educators like no other science curriculum.

FOSS Pathways™ provides the appropriate instructional support to implement phenomena-based instruction.



## Helps teachers connect with students

FOSS Pathways modules present scientific concepts cohesively. Phenomenon storylines are provided for the teacher. The Investigations Guide gives direction to ask probing questions and deepens students' understanding as they progress through the module.

## Presents concepts in a coherent progression

In every module, core ideas build upon each other in a logical sequence. Teacher support in the Investigations Guides and videos explicitly connects the anchor phenomenon being investigated and the core ideas being discovered. This background information helps teachers understand how students develop ideas related to the phenomenon driving the investigation.

## Affords flexibility in science instruction

FOSS Pathways provides opportunities to customize instruction to meet local educational goals. Educators can customize the provided instructional resources to create learning experiences that make science relevant to their students' lives. Pathways provides Side Trip opportunities as optional activities that can be used with the whole class or as student choice activities.

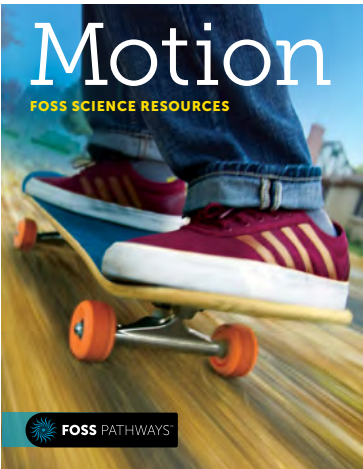
## Provides field-tested assessment

Assessments are research-based and field-tested. They accurately measure student learning and progress. A variety of formative assessment tools provide evidence of students' use of the three dimensions and their knowledge of phenomena.





# Module Descriptions for Grade 3

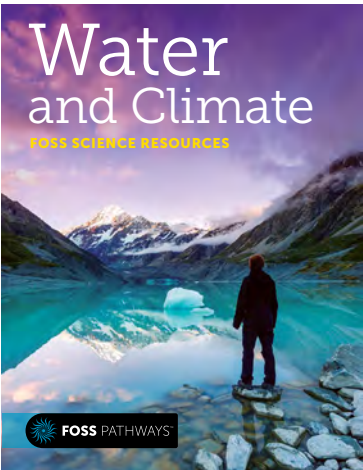


## Motion

PHYSICAL SCIENCE

In the Motion Module, students engage in science and engineering practices as they investigate phenomena and collect data to answer questions about the effects of magnetic force and the force of gravity on objects. Students explore the crosscutting concepts of patterns; cause and effect; and systems and system models as they define problems in order to develop solutions. Students reflect on their own use of science and engineering practices and find out how others use these practices in their careers.

Alabama Course of Study Standards: 3.1 • 3.2 • 3.3 • 3.4 • 5.6

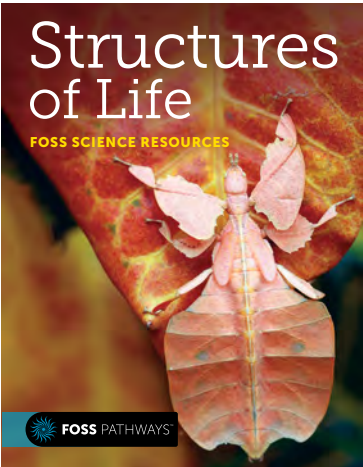


## Water and Climate

EARTH SCIENCE

In the Water and Climate Module, students engage in science and engineering practices as they investigate the role of water in weather and how weather conditions change around the world and throughout the year while exploring the crosscutting concepts of patterns; cause and effect; and scale, proportion, and quantity. They are introduced to the nature of science, how science affects everyday life, and the influence of engineering, technology, and science on society and the natural world.

Alabama Course of Study Standards: 3.13 • 3.14 • 3.15 • 4.10



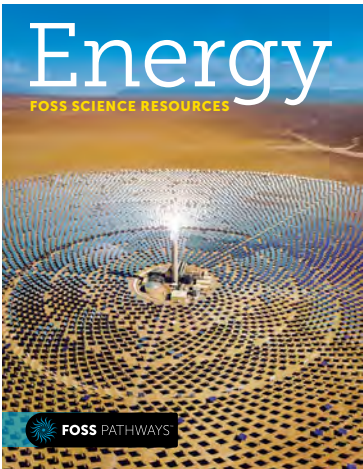
## Structures of Life

LIFE SCIENCE

In the Structures of Life module, students observe, compare, categorize, and care for organisms. Students engage in science and engineering practices to investigate the structures and behaviors of organisms and learn how the structures function in growth, survival, and reproduction. Students look at the interactions between organisms of the same kind, among organisms of different kinds, and between the environment and populations of organisms over time. Students develop understandings about organisms and populations' survival.

Alabama Course of Study Standards: 3.5 • 3.6 • 3.7 • 3.8 • 3.9 • 3.10 • 3.11 • 3.12

# Module Descriptions for Grade 4



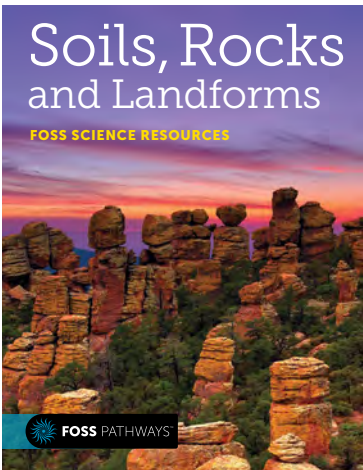
## Energy

PHYSICAL SCIENCE

In the Energy Module, students investigate electricity and magnetism as related effects and engage in engineering design to convert energy from one form to another. They gather information about how energy is derived from natural resources and how that affects the environment, and explore alternative sources of energy such as solar energy.

Students interpret data to build explanations from evidence and make predictions of future events. They develop models to represent how energy moves from place to place in electrical circuits and in waves.

Alabama Course of Study Standards: 4.1 • 4.2 • 4.3 • 4.4 • 4.5 • 4.6 • 4.7 • 4.14



## Soils, Rocks, and Landforms

EARTH SCIENCE

In the Soils, Rocks, and Landforms module, students plan and carry out investigations by incrementally changing specific environmental conditions to determine the impact of changing the variables of slope and amount of water in stream tables. Students analyze and interpret data from diagrams and visual representations to build explanations from evidence and make predictions of future events. They develop model mountains and represent the landforms from different perspectives to look for change.

Alabama Course of Study Standards: 4.11 • 4.12 • 4.13 • 4.15



## Senses and Survival

LIFE SCIENCE

In the Senses and Survival Module, students plan and carry out investigations with stimulus and response to gather data to develop models and construct explanations. Students design physical models to understand how structures in a system function together to provide information and resources to organisms to support survival. Students gain experiences that will contribute to the understanding of these crosscutting concepts: cause and effect; systems and system models; and structure and function.

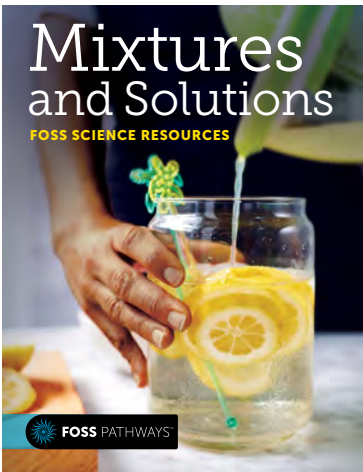
Alabama Course of Study Standards: 4.8 • 4.9

*\*4.10 is not addressed in 4th grade Pathways; this standard is in 3rd grade Pathways Water and Climate and 5th grade Pathways Earth and Sun*





# Module Descriptions for Grade 5



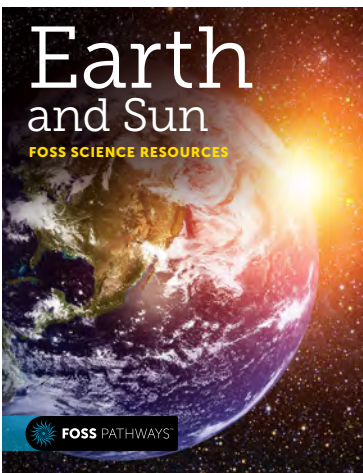
## Mixtures and Solutions

PHYSICAL SCIENCE

In the Mixtures and Solutions module, students construct models about matter made of particles too small to be seen and develop the understanding that matter is conserved when it changes state, when it dissolves in another substance, and when it is part of a chemical reaction.

Students have experiences with mixtures, solutions of different concentrations, and reactions forming new substances. They also engage in engineering experiences using the properties of materials to design useful products. This gives them the opportunity to use and develop models that explain phenomena too small to see without magnification.

*Alabama Course of Study Standards: 5.1 • 5.2 • 5.3 • 5.4 • 5.15*

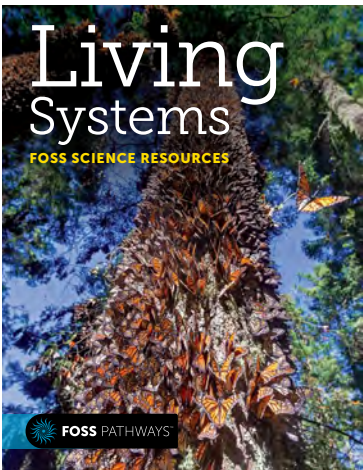


## Earth and Sun

EARTH SCIENCE

In the Earth and Sun Module, students explore the properties of the atmosphere, the energy transfer from the Sun to Earth, and the dynamics of weather and water cycling in Earth's atmosphere. The constant renewal of water on Earth's land surfaces by the activities in the atmosphere is one of the defining characteristics of Earth, the water planet. Other experiences help students to develop and use models to understand Earth's place in the solar system, and the interactions of Earth, the Sun, and the Moon to reveal predictable patterns—daily length and direction of shadows, day and night, and the seasonal appearance of stars in the night sky.

*Alabama Course of Study Standards: 4.10 • 5.5 • 5.10 • 5.11 • 5.12 • 5.13 • 5.14*



## Living Systems

LIFE SCIENCE

In the Living Systems Module, students think about systems on different scales—systems within an organism that move matter and provide energy to the individual organism, and the system of feeding relationships in ecosystems that move matter among plants, animals, decomposers, and the environment. Students come to understand through a variety of experiences that plants get the materials they need for growth primarily from water and air, and that energy in animals' food was once energy from the Sun. There are opportunities for students to explore how human activities in agriculture, industry, and everyday life can have major effects on these systems.

*Alabama Course of Study Standards: 5.7 • 5.8 • 5.9 • 5.12 • 5.14*

*\*5.6 is not addressed in 5th grade Pathways; this standard is in 3rd grade Pathways Motion*



## FOSS Pathways™ Grades 3–5

### Recommended Scope & Sequence for Alabama

Grade	Physical Science	Earth Science	Life Science
3	Motion	Water and Climate	Structures of Life
4	Energy	Soils, Rocks, and Landforms	Senses and Survival
5	Mixtures and Solutions	Earth and Sun	Living Systems

## Your partners in supporting quality science education.

At School Specialty, providing science curriculum is our specialty, every day of every year. We'll be right there with you, from purchase through implementation and ongoing annual professional development. Our team is supported by experienced FOSS consultants and by the program authors themselves at the Lawrence Hall of Science. We go beyond the ordinary to ensure that you have all you need to ignite your students' curiosity. With decades of combined FOSS experience, we stand ready to support your success.

## Learn more.

Go to [FOSS-Science.com/Alabama](https://FOSS-Science.com/Alabama) or contact your local FOSS representatives:

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