

FOSS K–8 PHYSICAL SCIENCE STRAND MATRIX

	MODULE	SCIENCE CONCEPTS	THINKING PROCESSES	MODULE OVERVIEW
Grades 6–8	Electronics Course	Circuit Ohm's law Component Meter Digital Potential Current Resistance	Inferring Relating Organizing Comparing Communicating Observing	Students learn fundamental electrical circuitry and basic electronic principles. They make circuits, quantify electric interactions, and discover how different components affect circuits.
	Chemical Interactions Course	Atom Molecule Reaction Oxidation Element Solution Concentration		Students learn the atomic theory of matter and use this notion to think about familiar materials and chemical interactions. The history of the periodic table of the elements guides an inquiry into the properties of elements.
	Force and Motion Course	Force Motion Acceleration Velocity, Change Gravity Mass Linear Rotation Cycle Technology		Students investigate motion (linear, rotational, and cyclic) and forces (gravity and electromagnetism). They discover what happens when they apply equal, unbalanced, and multiple forces to systems.
Grades 5–6	Mixtures and Solutions Module	Crystal Dissolve Mixture Evaporation Property Solution Saturation Volume Solubility Concentration Volume Change Gas Chemical reaction Precipitate	Relating Organizing Comparing Communicating Observing	Students learn basic concepts of chemistry. They measure, mix, and compare solids and liquids, and observe and describe the interactions that result from their experiments.
	Levers and Pulleys Module	Advantage Effort Fulcrum Lever Load Diagram Class-1 lever Class-2 lever Class-3 lever Fixed pulley Movable pulley Simple machine		Students explore mechanics and simple machines using levers and pulleys. They observe, measure, and diagram lever and pulley systems. They relate force needed to lift a load to advantage resulting from the use of various lever and pulley systems.
Grades 3–4	Magnetism and Electricity Module	Attract Force Magnet Repel Closed circuit Open Circuit Switch Conductor Electric circuit Insulator Electromagnet Technology Telegraph Code	Advanced Organizing Comparing Communicating Observing	Students explore permanent magnetism, electrical circuits, and electromagnetism. They compare electrical and magnetic phenomena and organize their observations as graphs. Their accumulated knowledge is applied to make a telegraph.
	Physics of Sound Module	Sound discrimination Code Sound receiver Sound source Vibration Sound Travel Pitch		Students investigate sound as a property of a vibrating object. They compare how sound travels through different media, how pitch of sound can be altered, and how sound can be amplified.
Grades 1–2	Balance and Motion Module	Balance Balance point Mobile Stability Motion Rotate Disk Wheel Motion Roll Slope Spin Axle Sphere	Beginning Organizing Comparing Communicating Observing	Students explore stable (balanced) and unstable systems, use counterweighting to manipulate center of gravity, and investigate two classes of motion—spinning and rolling.
	Solids and Liquids Module	Change Crystal Dissolve Solution Property Solid Foam Liquid Evaporation Layer Mixture Viscous Transparent Opaque		Students are introduced to two fundamental states of matter—solid and liquid. They investigate and describe the properties of solids and liquids and discover some things that happen when solids and liquids interact.
Kindergarten	Fabrics, Wood and Paper Modules	Float Sink Wood Change Cut Mixture Sculpture Corrugated Same Different Material Paper Source Tear Fold Absorb Cloth Fiber Pulp Recycle Fabric Sew Thread Yarn Dry Graph Permanent	Comparing Communicating Observing	Students observe and describe the properties of a variety of kinds of wood, fabric, and paper, and find out what happens when these materials interact with other materials. Students discover uses and applications for the materials in the real world.