SAVVAS
LEARNING COMPANY

A Reverse Correlation of

Elevate Science Modules
Middle Grades ©2019

To the

Next Generation Science Standards
Performance Expectations
Grades 6-8

A Reverse Correlation of Elevate Science, Middle Grades Modules ©2019
To the
NGSS Performance Expectations for Grades 6-8

Introduction

This document demonstrates how the *Elevate Science Modules ©2019* aligns to the Next Generation Science Standards Performance Expectations for grades 6-8 at the topic level.

Savvas Learning Company is proud to introduce *Elevate Science Modules* for Middle Grades – where exploration is the heart of science! Designed to address the rigors of new science standards, students will experience science up close and personal, using real-world, relevant phenomena to solve project-based problems. Our newest program prepares students for the challenges of tomorrow, building strong reasoning skills and critical thinking strategies as they engage in explorations, formulate claims, and gather and analyze data that promote evidence-based arguments. The blended print and digital curriculum covers all Next Generation Science Standards at every grade level.

Elevate Science helps teachers transform learning, promote innovation, and manage their classroom.

Transform science classrooms by immersing students in active, three-dimensional learning.
Elevate Science engages students with real-world phenomena, open-ended Quests, uDemonstrate performance-based tasks, and in the engineering/design process with uEngineer It! investigations.
- A new 3-D learning model enhances best practices.
- Engineering-focused features infuse STEM learning.
- Phenomena-based activities put students at the heart of a Quest for knowledge.

Innovate learning by focusing on 21st century skills.
Students are encouraged to think, collaborate, and innovate! With *Elevate Science*, students explore STEM careers, experience engineering activities, and discover our scientific and technological world. The content, strategies, and resources of Elevate Science equip the science classroom for scientific inquiry and science and engineering practices.
- Problem-based learning Quests put students on a journey of discovery.
- STEM connections help integrate curriculum.
- Coding and innovation engage students and build 21st century skills.

Manage the classroom with confidence.
Teachers will lead their class in asking questions and engaging in argumentation. Evidence-based assessments provide new options for monitoring student understanding.
- Professional development offers practical point-of-use support.
- Embedded standards in the program allow for easy integration.
- ELL and differentiated instruction strategies help instructors reach every learner.
- Interdisciplinary connections relate science to other subjects.

Designed for today's classroom, preparing students for tomorrow's world. *Elevate Science* promises to:

- Elevate thinking.
- Elevate learning.
- Elevate teaching.

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Elevate Science Modules & Topics	NGSS Middle Grades 6-8 Performance Expectations
Physical Sciences	
Module: Structure and Properties of Matter	
Topic 1: Introduction to Matter	(MS-PS1-1) Develop models to describe the atomic composition of simple molecules and extended structures. (MS-PS1-2) Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
Topic 2: Solids, Liquids, and Gases	(MS-PS1-4) Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.
Module: Energy Transfer	
Topic 1: Energy	(MS-PS3-1) Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object. (MS-PS3-2) Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system. (MS-PS3-5) Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
Topic 2: Thermal Energy	(MS-PS3-3) Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. (MS-PS3-4) Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample. (MS-PS3-5) Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Elevate Science Modules & Topics	NGSS Middle Grades 6-8 Performance Expectations
Module: Atoms and Chemical Reactions	
Topic 1: Atoms and the Periodic Table	(MS-PS1-1) Develop models to describe the atomic composition of simple molecules and extended structures.
Topic 2: Chemical Reactions	(MS-PS1-2) Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. (MS-PS1-3) Gather and make sense of information to describe that synthetic materials come from natural resources and impact society. (MS-PS1-5) Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. (MS-PS1-6) Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
Module: Forces	
Topic 1: Forces and Motion	(MS-PS2-1) Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects. (MS-PS2-2) Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object. (MS-PS2-4) Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects. (MS-PS3-2) Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

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Topic 2: Electricity and Magnetism	(MS-PS2-3) Ask questions about data to determine the factors that affect the strength of electric and magnetic forces. (MS-PS2-5) Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact. (MS-PS3-2) Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
Module: Waves and Information Technologies	
Topic 1: Waves and Electromagnetic Radiation	(MS-PS4-1) Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave. (MS-PS4-2) Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
Topic 2: Information Technologies	(MS-PS4-3) Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
Life Sciences	
Module: Systems, Reproduction, and Growth	
Topic 1: Living Things in the Biosphere	(MS-LS1-1) Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.
Topic 2: The Cell System	(MS-LS1-1) Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells. (MS-LS1-2) Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function. (MS-LS1-3) Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

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Topic 3: Human Body Systems	(MS-LS1-3) Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. (MS-LS1-8) Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories
Topic 4: Reproduction and Growth	(MS-LS1-4) Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. (MS-LS1-5) Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. (MS-LS3-2) Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation
Module: Relationships Within Ecosystems	
Topic 1: Cell Processes	(MS-LS1-6) Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (MS-LS1-7) Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.
Topic 2: Ecosystems	(MS-LS2-1) Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. (MS-LS2-3) Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

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Topic 3: Populations, Communities, and Ecosystems	(MS-LS2-1) Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. (MS-LS2-2) Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. (MS-LS2-4) Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. (MS-LS2-5) Evaluate competing design solutions for maintaining biodiversity and ecosystem services.
Module: Diversity of Life	
Topic 1: Genes and Heredity	(MS-LS3-1) Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. (MS-LS3-2) Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (MS-LS4-5) Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

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Topic 2: Natural Selection and Change Over Time	(MS-LS4-1) Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. (MS-LS4-2) Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. (MS-LS4-3) Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy. (MS-LS4-4) Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. (MS-LS4-5) Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. (MS-LS4-6) Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

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Earth and Spaces Sciences	
Module: Cycles Influencing Weather and Climate	
Topic 1: Weather in the Atmosphere	(MS-ESS2-4) Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity. (MS-ESS2-5) Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. (MS-ESS2-6) Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. (MS-ESS3-2) Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
Topic 2: Energy in the Atmosphere and Ocean	(MS-ESS2-6) Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.
Topic 3: Climate	(MS-ESS2-6) Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. (MS-ESS3-5) Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
Module: Earth Systems	
Topic 1: Introduction to Earth's Systems	(MS-ESS2-1) Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.
Topic 2: Minerals and Rocks in the Geosphere	(MS-ESS2-1) Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

Elevate Science Modules & Topics	NGSS Middle Grades 6-8 Performance Expectations
Topic 3: Plate Tectonics	(MS-ESS2-2) Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales. (MS-ESS2-3) Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. (MS-ESS3-2) Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
Topic 4: History of Earth	(MS-ESS1-4) Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.
Module: Changing Earth and Human Activity	
Topic 1: Earth's Surface Systems	(MS-ESS2-3) Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. (MS-ESS2-3) Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.
Topic 2: Distribution of Natural Resources	(MS-ESS3-1) Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

Elevate Science Modules & Topics	NGSS Middle Grades 6-8 Performance Expectations
Topic 3: Human Impacts on the Environment	(MS-ESS3-3) Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. (MS-ESS3-4) Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.
Module: Earth's Place in the Universe	
Topic 1: Earth-Sun-Moon System	(MS-ESS1-1) Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
Topic 2: Solar System and the Universe	(MS-ESS1-2) Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. (MS-ESS1-3) Analyze and interpret data to determine scale properties of objects in the solar system.