

2026-2027 SCHOOL YEAR

SCIENCE & ENGINEERING

COMPUTER SCIENCE & ROBOTICS

5th/ 6th	2026-2027		2026-2027	
	Earth Science	GEOLOGIC HAZARDS Geology and Plate Tectonics Students examine the historical and ongoing impact of geoscience processes, such as the movement of plate tectonics. They explore how these slow, large-scale Earth processes change the surface, leading to rapid, catastrophic events like earthquakes and volcanoes. Students analyze natural hazard data to forecast risks for regions around the world and collaboratively design solutions aimed to reduce the geological impacts on communities. • Rock strata • The Geologic Time Scale • Plate tectonics • Geologic hazards (volcanic eruptions, earthquakes, tsunamis)	Robotics	LEGO ROBOTICS Data and Cloud Computing Students develop life hack solutions that combine hardware and software. They master core computer science concepts by creating clearly named variables and lists to represent different data types and perform math operations. Students are introduced to cloud data concepts, where students design projects that collect and exchange data (e.g., live weather forecasts) to make real-world decisions and refine their programs for reliable solutions. • Variables and lists • Cloud data • Data Processing • Hardware/Software integration • Program refinement and debugging
		CLOUD SEEDING Weather and Physical Science Students investigate why water supply is a critical issue in Colorado and how the state innovates to manage this resource. They study how weather works and why natural precipitation cycles are often insufficient. They examine the science behind Colorado's weather modification programs and learn how scientists use compounds to influence freezing or accelerate droplet merging. With support from the Colorado Water Conservation Board (CWCB), students develop a scientific proposal, pitching a new cloud seeding location to the responsible water district with a rationale explaining its potential benefit.		INTERACTIVE VIRTUAL SCENES Design, Code, and Dialogue Students blend manual design with programming to build engaging interactive virtual scenes. They use design tools to add and customize objects, controlling their size, rotation, and materials. They then apply CoBlocks to enable click events and programmatically manage animations and character dialogue. Students are introduced to the concept of fairness in technology, ensuring students design scenes with both technical skill and social responsibility. • Scene design tools

		• Water management and allocation • Weather modification • Phase changes • Molecular structure		• Enabling click events • Character dialogue and coded animations • Materials, custom text, and images
	Life Science	MARTIAN BIODOMES Cycling of Matter Students investigate the essential processes needed to sustain a closed human habitat (biodome) on Mars. They focus on how matter and energy must be strictly managed for astronauts to survive. Students apply biology and engineering skills to design a self-sustaining Martian Bioreactor, a comprehensive, closed-loop system for food and oxygen production that models life support on an extraterrestrial body. • Cycling of matter and energy • Photosynthesis • Nutrient recycling • Cellular respiration	Game Design	GAME LOGIC AND SYSTEMS Functions, Decisions, and Game State Students master advanced programming constructs by synthesizing key concepts like variables across multiple data types (strings, numbers, Booleans), functions, and loops. They use conditional logic to manage complex, non-linear flow, implementing nested conditionals and else-if statements. The unit focuses on creating efficient, reusable code with functions, using physics for object interactions, and managing user choices that link and affect multiple scenes. • Functions • Strings, numbers, booleans • Conditional and nested logic • Loops and physics • Multi-Scene management
	Environmental Science	SAVE OUR OCEANS Climate, & Human Impact Students examine a variety of problems affecting the health of our oceans (e.g. acidification, coral bleaching, trash gyres), and understand how human actions, even far away from oceans, affect ocean health. They investigate a variety of ocean problems and explore realistic solutions to reduce human impact on our oceans. • Earth's spheres • Saltwater and freshwater • Water cycle • Atmospheric and oceanic circulation • Pollution	Robotics	SEQUENCING AND INPUT VEX Robotics Students build foundational VEX IQ robots and master basic computer control. They focus on sequencing commands for precise movement and motor control (BaseBot). Students introduce input devices like the Controller and program simple sensors. They learn to create code that allows the robot to react to basic user and environmental input. • Sequencing commands and motor control • Input devices • Basic sensor feedback • Conditional movement and simple reactions • Code efficiency for movement

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5th/ 6th	Environmental Science	ECO-MINING Geologic Processes & Resources Students investigate geologic processes and Earth systems to solve the challenge of sustainable mining for non-renewable resources. They design the full operational cycle for a zero-impact mine site. Students develop physical solutions to control erosion and water runoff, create innovative plans for material cycling of waste rock, and design a final land reclamation strategy to ensure the environment is healthy and stable. • Geologic processes • Soil analysis • Surface weathering and deposition • Material cycling • Non-renewable mineral resources	INTRO TO GAME LAB Sprite Animation and Motion Students build the foundation for game design by mastering the Sprite Lab environment. They focus on sprite creation, setting basic properties (size and location using coordinates), and using the draw loop to achieve continuous animation and motion. Students learn how to organize their visual elements and control the flow of action on the screen before introducing user interaction. • Sprite creation and management • Sprite properties (size, location, coordinates) • The draw loop • Basic movement and positioning • Visual organization of the game canvas
	Game Design		

	Aerospace Science	CELESTIAL MECHANICS Astronomy Students investigate celestial mechanics and the apparent motion of stars to solve the challenge of long-term observation. Throughout the unit, they use models of Earth's rotation and orbit to calculate optimal star visibility and plan equipment needs. Students analyze shadows, map star paths, and apply data to develop an observation strategy that maximizes effective data collection from the night sky. • Length and direction of shadows • Earth's rotation and revolution • Seasonal appearance of stars • Apparent brightness	Game Design	GAME LAB CREATIONS Events, Conditionals, and Game Design Students advance their coding by implementing game logic to make their games interactive. They master event-driven programming, writing code that uses user input (clicks or key presses) to trigger actions. Students apply conditionals (if statements) to control the program's flow and change game state, culminating in the design and development of a complete, playable mini-game that is both interactive and shareable. • Event-Driven programming • Conditionals • Flow control and state changes • Creating a playable mini-game • Debugging interactive code
	Environmental Science	TINY HOME VILLAGE Green Engineering Students investigate resource consumption to solve the challenge of sustainable urban development. They engage in a series of design projects to create a tiny home settlement, bringing together designs for housing, optimized land use, and critical infrastructure. Students work to minimize the ecological footprint by calculating resource use and engineering closed-loop water and energy systems to reduce per-capita consumption. • Water and land usage • Urban development • Sustainability • Per-capita consumption of resources	Coding and Programming	WEBSITE CREATION Content Organization and Styling Students begin their journey into web development by learning to build a website using HTML tags. They focus on structuring and organizing content with tags for headings, paragraphs, and lists. Students learn to organize the page using grouping elements like header and section, and add media such as images, videos (iframe), and clickable links (a tag). They also assign basic appearance and colors directly using the style attribute within their HTML. • Building a website • Organizing content with HTML tags (headings, paragraphs, lists) • Grouping elements (header, section) • Adding media (images, links, video) • Assigning styles using the style attribute

	Physical Science	INNOVATING MATERIALS Chemistry & Material Science Students explore the exciting field of nanotechnology, investigating how manipulating matter at the particle level can solve large-scale problems. They experiment with self-repairing materials, such as healing gels or polymers and use quantitative analysis to demonstrate that the material's repair process adheres to the fundamental laws of chemistry. • Atomic composition • Chemical reactions • Synthetic materials • Law of conservation of matter • Material properties	Coding and Programming	WEBSITE DESIGN External Stylesheets and Layouts Students advance their web development skills by using external CSS stylesheets to control webpage design. They learn to apply various CSS properties for setting layout, styling text, adding borders, and managing backgrounds. Students practice structuring content display by designing and styling HTML tables and enhance the user experience by implementing hover effects and spacing techniques. • External CSS stylesheets • CSS properties • Styling HTML tables • Hover effects and spacing • Enhancing user experience
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