

2026-2027 SCHOOL YEAR

SCIENCE & ENGINEERING

COMPUTER SCIENCE & ROBOTICS

1st/ 2nd	2026-2027		2026-2027	
	Aerospace Science	COLORADO'S ENGINEERS Aerospace Engineering, Teamwork, & Our Local Community Students will immerse themselves in the work of various engineers, exploring the diverse skillsets needed to build complex projects. They regularly interact with local aerospace engineers to learn about their work, and apply teamwork and engineering design skills to develop solutions for future Mars civilizations. • Engineering careers • The engineering design process • Jobs in the community • Qualities of an effective team	Coding and Programming	MUSIC LAB Music and Sound Effects Students explore digital composition by sequencing beats and melodies in a coding environment. They focus on foundational musical concepts like tempo and repetition (loops) to structure various sound projects. Students experiment with creating various sound effects and rhythms, using tools to explore how code controls sound and music. • Sequencing and loops • Beats and melodies • Recording sound effects • Digital music fundamentals
	Life Science	BEAR AWARE Animal Characteristics Students explore how the features that help bears survive can be dangerous to humans. They conduct experiments to compare their abilities to a bears' abilities, follow bears on live cameras, build devices to mimic other animals, and ultimately educate the local community about how to stay safe from bears and other animals you might encounter in Colorado. • External features • Biomimicry • Parents and offspring	Game Design	CREATING ENVIRONMENTS Scene Design and Foundational Algorithms Students develop foundational computer science skills by building and animating interactive virtual reality scenes using CoBlocks. They select environments, add objects (including buildings), and use design tools to change object materials and apply animations. Students practice computational thinking by sequencing actions to create simple algorithms, with an emphasis on troubleshooting object placement and animation to bring their creative vision to life. • VR Scene Design • Foundational algorithms • Object customization

				• Troubleshooting • Keyboarding practice
	Earth & Physical Science	PROTECT OUR SNOWPACK States of Matter Students explore why snowpack is a better water source than rain in Colorado. They investigate snowpack decline in the Colorado Rocky Mountains and experiment with states of matter to understand the various factors involved in melting rates and phase changes. They conduct snow science experiments and advocate for ways to protect Colorado's snowpack. • States of matter • Phase changes • Observable properties • Heating and cooling • Water on earth	Game Design	ANIMATION FUNDAMENTALS Sequencing, Loops, and Interactive Scenes Students develop computational thinking skills by building interactive 3D worlds using CoBlocks. They focus on foundational concepts like sequencing actions to create simple algorithms and using loops to simplify repetitive tasks and improve code efficiency. Students enhance user engagement by making objects clickable and integrating info panels and text to create dynamic, animated virtual scenes. • Sequencing and simple algorithms • Loops • Interactive elements • Info Panels • Troubleshooting
	Life Science	ZOO ENCLOSURES Endangered Species Students become conservation biologists and investigate various endangered species and the complex conditions affecting their survival. They learn how the Denver Zoo designs enclosures that help endangered species with recovery and reproduction. Students work together to design and transform their classroom into various life-size habitat enclosures. • Biodiversity • Habitats • Endangered species	Robotics	LEGO ROBOTICS Motors and Machines Students develop robotics building skills by designing, building, and coding working models of amusement park rides. They focus on figuring out the steps needed to control their machine's movement. Students use code to test and fix how the motor works so the movement is smooth and right. Students learn about the recent challenges facing Elitch Gardens in Denver and the discussion surrounding relocation of the park. Students work together to build a working prototype of a new Elitch Gardens. • Engineering Design Process • Sequencing and simple loops • Creative design • Visual or text-based block coding

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	Physical Science	WILDERNESS RESCUE Light & Sound Students investigate reasons why people in Colorado may not be able to receive help if they are lost or injured in nature. They explore creative ways to use light and sound to communicate for help in situations where cell phones and satellite devices aren't available. • Light • Sound • Communicating over a distance	Coding and Programming	OBSTACLE COURSES Sequencing, Geometry, and Sensor Logic Students advance their robotics skills by programming Dash and Dot robots to navigate complex obstacle courses and complete missions. They move beyond simple distance commands to integrate geometry and sequencing of multiple actions. Students use sensors to detect objects and lines to handle unexpected changes in the course, promoting advanced computational thinking and real-world problem-solving through physical computing challenges. • Sequencing • Turns and angles • Sensors • Troubleshooting

	Life Science	ARTIFICIAL POLLINATORS Plants & Pollinators Students explore the critical food security crisis caused by declining natural pollinators and the plants' needs for reproduction. They design, build, and code an artificial pollinator. Students integrate biological understanding with robotics, programming a precise machine that mimics an insect's function to compensate for loss and help secure our food supply. - Artificial pollinators - Plants' needs - Engineering design process	Coding and Programming	ANIMATION STORYLINES Sequencing and Character Actions Students become digital storytellers using block-based programming tools. They master sequencing blocks to build step-by-step algorithms that control sprite actions, movement, and dialogue. Students learn to create storylines with animated characters developing computational thinking through explicit instruction in action sequencing, and utilizing the block-based environment for foundational programming skills. - Algorithms - Sequencing - Event-Driven programming - Character control - Block-based programming
	Earth Science	TERRAIN DEFENSE Changes to Earth Students investigate how areas change as a result of disastrous events (floods, wildfires, landslides). They explore how the forces of wind and water drive these events, conducting hands-on simulations to model wildfire spread and soil saturation. They ultimately engineer and design real-world solutions to help communities reduce hazards from these powerful natural occurrences. - Erosion - Wind and water - Landforms - Events on earth	Coding and Programming	DIGITAL ART Visual Art and Algorithms Students explore digital art to create and enhance artwork on the computer. They then transition to visual coding tools to draw pictures, shapes, and complex patterns. Students apply sequencing and simple algorithms to control digital drawing tools, using loops to create efficient repetition and utilizing variables to dynamically change elements like color, size, and line length. - Digital drawing and creation - Sequencing and simple algorithms - Repetition and patterns - Variables (controlling color, size, and angle) - Debugging code
		CELESTIAL NAVIGATION Sun, Moon, & Stars Students engage in a simulated quest across the ocean, building various observation tools and learning to navigate their surroundings using the sun, moon, and stars. They track patterns and create guidebooks throughout their quest, understanding how ancient civilizations harnessed		LEGO ROBOTICS Sequencing and Loops Students develop robotics building skills by designing, building, and programming models to help story characters. They focus on computational thinking skills like sequencing, using simple loops, and identifying cause and effect in their code. Students also develop literacy skills by recounting and

	Earth & Space Science	celestial navigation to expand their knowledge of the world, laying the groundwork for modern astronomy and scientific exploration. • Patterns of the sun, moon, and stars • Direction and distance • Land and water	Robotics	sequencing experiences and collaborate to test and debug their programs. They use robotics for creative storytelling using visual or text-based blocks. • Sequencing and simple loops • Cause and effect • Testing and debugging programs • Visual or text-based block coding
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