CSTA Student Standards

View the K-12 CSTA Standards and CSTA Standards Progression Chart.

Rover Kit - Summary

Mission	Security Zone	Ultrasonic Drum	Resistor Piano	Runaway Rover	Rover Sensor Steering
Key Skills & Competencies	Build a circuit with an ultrasonic range finder; Code with loops, comparison operators, and conditionals; Graph ultrasonic data	Use the ultrasonic sensor to create air music" based on distance; map distance values to notes in a scale; code with loops, conditionals, and comparison operators	Create a panel of resistors and play notes with a jumper wire; map sounds to a list	Build a rover robot and a circuit to control 2 servo motors and an ultrasonic sensor; Calibrate servo motors; Write an algorithm to navigate the rover through a maze	Build a rover robot and a circuit to control 2 servo motors and an ultrasonic sensor; map ultrasonic distance to servo motor speeds; Refine algorithm to turn wheels accurately
Vocabulary	Conditionals, sensor, ultrasonic, echolocation, comparison operators	Variables, sensor, ultrasonic,	Resistor, voltage, lists	Servo motors, calibration, functions	Ultrasonic sensor, variables, mapping input and output values,
Build Difficulty	Intermediate	Intermediate	Intermediate	Advanced	Advanced
Code Difficulty	Beginner	Intermediate	Advanced	Intermediate	Intermediate

ROVER KIT - CSTA LEVEL 1B (Grades 3-5) ALIGNMENT

Mission	Security Zone	Ultrasonic Drum	Resistor Piano	Runaway Rover	Rover Sensor Steering
Computing Systems					
Devices in a system 1B-CS-01	✔	✔	✔	✔	✔
Hardware & software 1B-CS-02	✔	✔	✔	✔	✔
Troubleshooting 1B-CS-03	✔	✔	✔	✔	✔
Data & Analysis					
Use data to predict 1B-DA-07	✔		✔		
Algorithms & Programming					
Variables 1B-AP-09		✔	✔		✔
Sequence, loops, conditionals 1B-AP-10	✔	✔	✔	✔	✔
Decomposition 1B-AP-11	✔	✔	✔	✔	✔
Modify & remix programs 1B-AP-12		✔			
Test & debug 1B-AP-15	✔	✔	✔	✔	✔

Note: There are 21 CSTA standards in Level 1B. For better readability, the standards in the table show only the standards covered by the Rover Kit.

ROVER KIT - CSTA LEVEL 2 (Grades 6-8) ALIGNMENT

Mission	Security Zone	Ultrasonic Drum	Resistor Piano	Runaway Rover	Rover Sensor Steering
Computing Systems					
Hardware & software 2-CS-02	✔	✔	✔	✔	✔
Troubleshooting 2-CS-03	✔	✔	✔	✔	✔
Data & Analysis					
Data encoding 2-DA-07			✔		
Transform data 2-DA-08	✔	✔	✔		
Refine models 2-DA-09	✔	✔	✔		
Algorithms & Programming					
Variables 2-AP-11		✔	✔		✔
Compound conditionals 2-AP-12	✔	✔	✔		
Decomposition 2-AP-13	✔	✔	✔	✔	✔
Functions 2-AP-14				✔	

Note: There are 23 CSTA standards in Level 2. For better readability, the standards in the table show only the standards covered by the Rover Kit.