

ANNUAL IMPLEMENTATION PLANS FIFTH GRADE

3-5 Engineering Design Performance Expectations

3-5 ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time or cost.
3-5 ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
3-5 ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Science and Engineering Practices

3-5 ETS1-1	Asking Questions and Defining Problems
3-5 ETS1-2	Planning and Carrying Out Investigations
3-5 ETS1-3	Constructing Explanations and Designing Solutions

Disciplinary Core Ideas

3-5 ETS1.A	Defining and Delimiting Engineering Problems
3-5 ETS1.B	Developing Possible Solutions
3-5 ETS1.C	Optimizing the Design Solution

Crosscutting Concepts

Patterns
Cause & Effect: Mechanism & Explanation
Scale, Proportion, and Quantity
Systems & System Models
Structure & Function

Fifth Grade STEM Lessons

Minutes

Fifth Grade STEM Lessons	Minutes
MAKEY MAKEY	
Makey Makey Introduction Lesson 3-5 Basic Circuitry	60
Makey Makey 3-5 Block Coding	60-120
Makey Makey Music and Fun Challenge	60-75
SNAP CIRCUITS	
Snap Circuits Electric Bingo	60
Get Snapped with Snapped Circuits 5	60-120
3D PRINTING	
Introduction to 3D Printing Concepts	60
ROK BLOCKS, FOUNDATIONAL FLUENCIES, AND STEM PATHWAYS	
Introduction to ROK Block (if needed)	60
ROK Creek Bridge	180
Kid Sparks-Applied Mathematics ROK Blocks	
Dimension & Measurement	60-90
Perimeter	60-90
Area	60-90
Volume	60-90
Ratios, Proportions, and Scale Drawings	60-90
OZOBOTS	
OzoBlockly Basic Training (if needed)	25-50
Basic Training Color Codes (if needed)	50-150
Space Exploration Game	180
EVO The Troll	55
Elementary School CS with Game Design	50-100
Game Design Supplementary Lesson	
LITTLEBITS	
Introduction to littleBits: Servo Circuits	60
Invent a Throwing Arm	60-120
Invent for Good	120+
Introducing the littleBits Invention Cycle	60

LITTLEBITS STEAM STUDENT SCIENCE LESSONS	
Keep It Cool	90
Ecosystem Dynamics	60
Snack Robot	45
Lunar Phases	60
EXTRA LITTLEBITS GENERAL LESSONS	
Turning Points (3 lessons)	135
VocaBilitary (2 lessons)	50-100
Let's Make a Techno Jungle (4 lessons)	200
Aesop's Fables (3 lessons)	135
SPHERO	
Sphero Bolt Long Jump	60
Bridge Challenge	120-240
Light Painting	60-120
Tractor Pull	120-240
Hydro Hypothesis	120-240
Organ Quiz	60
Planets Quiz	120-240
Blocks 1: Intro & Loops	60-120
Maze Mayhem	60-120
Blocks 2: If/Then/Else	60-120
Blocks 3: Lights	60-120
Blocks 4: Variables	60-120
Draw 2: Spelling	60
Sphero City	240-360
Swim Meet	60
Chariot Challenge	240-360
What a Character	60-120

Avoid the Minotaur	60-120
Draw 1: Shapes	60
Draw 3: Perimeter	60-120
Area of A Rectangle	60-120
	4195-6085

This is an estimated amount of time for these lessons, it could be more or less depending upon kids' needs. **Indicates Cal Ripken, Sr. Foundation STEM Lesson. All other lessons are created by the manufacturer of these STEM products.*

Common Core State Standard Connections

ELA/Literacy-

SL.5.1 Engage effectively in a range of collaborative discussion with diverse partners on grade 5 topics.

SL.5.1d Review the key ideas expressed and draw conclusion in light of information and knowledge gained from the discussions.

Math-

5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.