

# ANNUAL IMPLEMENTATION PLANS FIRST GRADE

## K-2 Engineering Design Performance Expectations

K-2 ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
K-2 ETS1-2	Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
K-2 ET1-3	Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

## Science and Engineering Practices

K-2 ETS1-1	Asking Questions and Defining Problems
K-2 ETS1-2	Developing and Using Models
K-2 ETS1-3	Analyzing and Interpreting Data

## Disciplinary Core Ideas

K-2 ETS1.A	Defining and Delimiting Engineering Problems
K-2 ETS1.B	Developing Possible Solutions
K-2 ETS1.C	Optimizing the Design Solution

## Crosscutting Concepts

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

## First Grade STEM Lessons

## Minutes

First Grade STEM Lessons	Minutes
<b>CODE HOPPER</b>	
Code Hopper	60-120
<b>INDI</b>	
indi Basics (part 1 & part 2)	100-120
indi Card Challenge	50-60
indi Algorithm Detectives	50-60
indi Maze Race	50-70
<b>BEE-BOT</b>	
Bee-Bot and/or Bee-Bots Diorama Storyboard	60-180
<b>MAKEY MAKEY</b>	
Makey Makey Introduction Lesson K-2 Basic Circuitry	60
Makey Makey K-2 Block Coding	60-120
Makey Makey Music and Fun!	60-120
<b>OZOBOTS</b>	
OzoBlockly Basic Training	40
Basic Training Color Codes Lesson 3 & 4	100
Write Your Name with Ozocodes	30
Ozo Expedition	30-45
Create	60-300
<b>SPHERO</b>	
Sphero Bolt Long Jump	60
Light Painting	60-120
Draw 2: Spelling	60
Sphero City	240-360
Draw 1: Shapes	60
<b>ROK BLOCKS, FOUNDATIONAL FLUENCIES, AND STEM PATHWAYS</b>	
Introduction to ROK Blocks	60
<b>Kid Spark – Is It Strong?</b>	
How Much Load Can It Hold?	30
The Long Haul	30
Make Your Castle Strong	30
Free Build	30-40

<b>Kid Spark – Does It Move?</b>	
Pushes & Pulls	30-40
Exploring Gravity	30-40
Make Your Castle Strong	30-40
Free Build	30-40
<b>SQUISHY CIRCUITS</b>	
Squishy Circuits Conductive Creations	60
<b>3D PRINTING</b>	
Introduction to 3D Printing Concepts	60+
	<b>1710-2855</b>

*\*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-**

SL1.1 Participate in collaborative conversations with diverse partners about grade 1 topics.  
 SL1.5 Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

#### **Math-**

1.G.2 Compose two-dimensional shapes or three-dimensional shapes to create a composite shape, and compose new shapes from the composite shape.