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 ETS1-3	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

Second Grade STEM Lessons   Minutes

CODE HOPPER	
Code Hopper	60-120
INDI	
indi Basics (part 1 & part 2)	100-120
indi Card Challenge	50-60
indi Algorithm Detectives	50-60
indi Maze Race	50-70
BEE-BOT	
Bee-Bot and/or Bee-Bot Diorama Storyboard	60-120
SPHERO	
Sphero Bolt Long Jump	60
Bridge Challenge	120-240
Light Painting	60-120
Hydro Hypothesis	120-240
Maze Mayhem	60-120
Draw 1: Shapes	60
Draw 2: Spelling	60
Sphero City	240-360
MAKEY MAKEY	
Makey Makey Introduction Lesson K-2 Basic Circuitry	60
Makey Makey K-2 Block Coding	60-120
Makey Makey Music and Fun!	60-120
ROK BLOCKS, FOUNDATIONAL FLUENCIES, AND STEM PATHWAYS	
Introduction to ROK Blocks	60
Making Things Move	180
See Like a Designer, Think Like an Engineer	120
Make Things Strong	60
Design Perspectives	60
OZOBOTS	
OzoBlocky Basic Training	40
Basic Training Color Code Lessons	50-200

Mission to Mars	45
100 cm Ozo-Dash	30-60
President's Parade	30
Ozobot Dance Off	60
OzoBlocky Skills 1	45-55
OzoBlocky Skills 2	45-55
OzoBlocky Skills 3	50
OzoBlocky Skills 4	35-50
OzoBlocky Skills 5	35-50
SQUISHY CIRCUITS	
Sculpting Your First Circuit	35-60
Series & Parallel Circuits	35-60
Challenge Time	35-60
3D PRINTING	
Introduction to 3D Printing Concepts	60+
SNAP CIRCUITS	
Snap Circuits Electric Bingo	60
	2320-3585

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.2.1 Participate in collaborative conversations with diverse partners about grade 2 topics.
L.2.5a Identify real-life connections between words and their use.
Math-
2.MD.3 Estimate lengths using units.