smartlab LEARNINGHUB

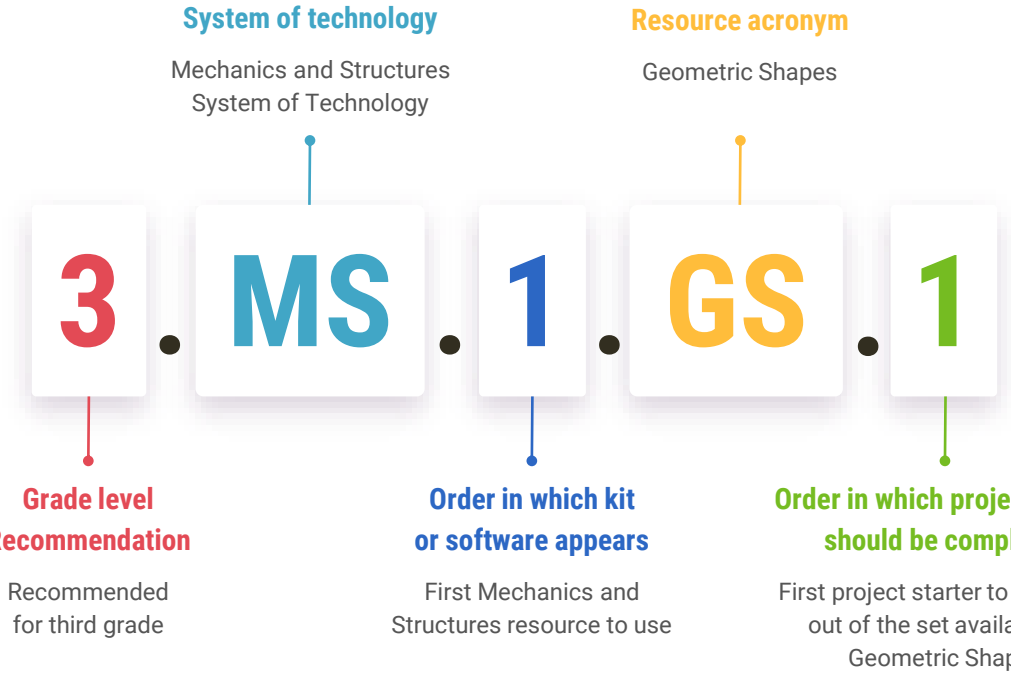
Elementary (3-5) Scope & Sequence

The elementary scope and sequence provides a recommended sequence of SmartLab HQ projects for third through fifth grade learners.

Purpose of the SOT Articulation Code: The SOT Articulation Code indicates the order in which each activity should be completed within a System of Technology (SOT). The complexity of the tool, concepts addressed, and developmental appropriateness for the learner is considered to determine the order.

Note: This does not indicate the overall order of all project starters for a specific grade band. See the table below for the grade level sequence.

Understanding the SOT Articulation Code: The SOT Articulation Code is made of five parts.



Third Grade Overview

The overview below can help you plan the rotations for your third-grade classes in the SmartLab HQ.

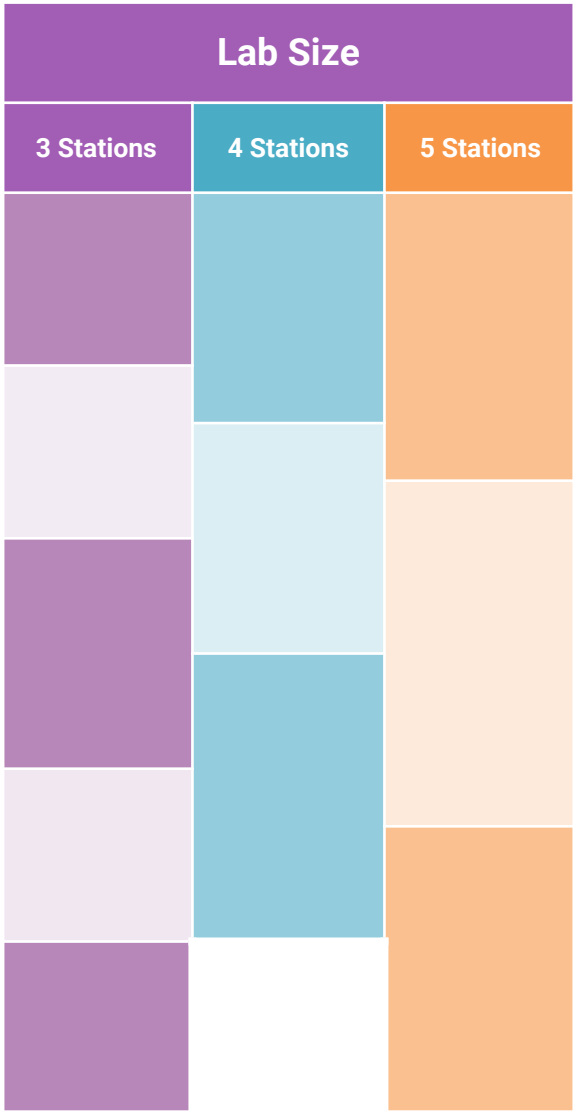
The colored bands to the right of the table provide the recommended set of projects to include in each rotation based on the number of stations in your SmartLab HQ.

Example: If you have four stations in your lab, the four projects that students should rotate through first are Spinning Tops, Wiggledoodle and Flipbook, Maze Exchange, and Make a Computer Game with Play Lab.

Suggested Scope and Sequence

Resource	SOT Code	Project Starter
Geometric Shapes (Kit)	3.MS.1.GS.2	Spinning Tops
Animation-ish (Website)	3.DC.1.AI.1	Wiggledoodle and Flipbook
Ozobot (Kit)	3.RCT.1.O.1	Maze Exchange
Code.Org (Website)	3.SE.1.CO.2	Make a Computer Game with Play Lab
Snap Circuits (Kit)	3.C.1.SNC.2	Making Connections
Vernier Elementary Sensing Science Collection (Kit/Software)	3.SDA.4.VESSC.1	Protect the Animals!
Climate Kids (Website)	3.S.2.CK.2	Sharing Weather and Climate Data
Goobi (Kit)	3.MS.2.G.1	2D Shapes
Pixie (Software)	3.DC.3.P.2	Exploring Patterns
Wixie (Website)	3.DC.3.W.1	Exploring Polygons and Patterns
Snap Circuits (Kit)	3.C.1.SNC.1	Getting into the Flow
Scratch (Website)	3.SE.3.S.1	A Code of Your Own
Ozobot (Kit/Website)	3.RCT.1.O.2	Program a Lawn Mower
K'NEX STEM Simple Machines (Kit)	3.MS.3.KSSM.1	Levers
iMovie (Software)	3.DC.7.IM.1	All About us
VEX GO (Kit/Website)	3.RCT.2.VEXG.1	A Day in My Ecosystem

Lab Size



Third Grade Core

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Geometric Shapes (Kit)	3.MS.1.GS.2	Spinning Tops	Your challenge is to build a spinning top using Geometric Shapes Building Set pieces that will spin for the longest time possible. You will record your data, redesign your spinning top and retest, and then create a graph to share and analyze your data.	I CAN build a spinner that spins for the longest possible time. I CAN use a stopwatch to record the length of time that each spinner spins. I CAN create a bar graph to compare the times of each spinner.	CCSS.MATH.CONTENT.3.MD.B.3, NGSS.3-PS2-1	Graphing, Forces
Animation-ish (Website)	3.DC.1.AI.1	Wiggledoodle and Flipbook	Your challenge is to tell a story by animating quadrilaterals such as squares, rhombuses, and rectangles.	I CAN create an animation that uses quadrilaterals with Animation-ish. I CAN identify shapes and their attributes, including quadrilaterals. I CAN sort shapes by their attributes. I CAN show that squares, rectangles, and rhombuses are quadrilaterals. I CAN create quadrilaterals such as parallelograms and trapezoids.	CCSS.MATH.CONTENT.3.G.A.1	2D Shapes
Ozobot (Kit)	3.RCT.1.O.1	Maze Exchange	Your challenge is to challenge a team to create YOUR maze. Use shapes to design a maze that Ozobot can follow. Use a ruler to measure the lines of the maze. Collect data about the lengths of the lines and organize the data on a line plot. Then write clear, detailed instructions so another team can recreate and guess your design.	I CAN write clear, detailed instructions to help others complete a task. I CAN use a ruler to measure length. I CAN collect data and use it to create a line plot. I CAN categorize shapes by their attributes.	CCSS.MATH.CONTENT.3.MD.B.4, CCSS.MATH.CONTENT.3.G.A.1	Line Measurement, 2D Shapes
Code.Org (Website)	3.SE.1.CO.2	Make a Computer Game with Play Lab	Your challenge is to complete ten Play Lab puzzles and then create your own computer game that explores perimeter.	I CAN use block coding to create a game. I CAN program actors to move in a rectangular shape and calculate the perimeter.	CCSS.MATH.CONTENT.3.MD.D.8	Linear Measurement
Snap Circuits (Kit)	3.C.1.SNC.2	Making Connections	Your challenge is to test different materials to see if they conduct enough electricity to make a light glow. Then, write and test multiplication or addition expressions using odd and even numbers. This will be done to make predictions about whether the sums or products will be odd or even.	I CAN test materials to see if they conduct electricity. I CAN explain the difference between conductors and insulators. I CAN look for patterns with numbers and use them to make predictions. I CAN use operations to explain how I made predictions. I CAN find a way to test my mathematical predictions.	CCSS.MATH.CONTENT.3.OA.D.9	Factors and Multiples
Vernier Elementary Sensing Science Collection (Kit/Software)	3.SDA.4.VESSC.1	Protect the Animals!	Your challenge is to design an adaptation to help the animals by keeping them warm during the cold winter months at your local zoo. You will use the Vernier Go Direct Temperature Probe to test and measure the success of your adaptation creations. The goal is to help protect the animals!	I CAN measure changing temperature and graph various temperatures. I CAN make and analyze a scaled bar graph by comparing temperatures from different tests. I CAN determine if there is a change in temperature between the habitat with and without an adaptation I CAN make an argument supported with evidence to justify how the animal adaptation I created will help animals survive.	CCSS.MATH.CONTENT.3.MD.B.3	Graphing, Inheritance and Variation

Third Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Climate Kids (Website)	3.S.2.CK.2	Sharing Weather and Climate Data	Your challenge is to research recent and annual weather to make scaled graphs for your local area. Then, analyze facts and data on climate change and create a presentation to suggest ways we can help.	I CAN find arithmetic patterns in numbers. I CAN create scaled graphs to show patterns in the weather. I CAN write a message about climate change and use data to support my message.	CCSS.MATH.CONTENT.3.OA.D.9, CCSS.MATH.CONTENT.3.MD.B.3, NGSS.3-ESS2-1, NGSS.3-ESS2-2	Addition and Subtraction, Multiplication and Division, Graphing, Weather and Climate, Earth's Systems, Earth and Human Activity
Goobi (Kit)	3.MS.2.G.1	2D Shapes	Your challenge is to use Goobi pieces to build and explore two-dimensional (2D) shapes. You will construct different sized rectangles and squares, and partition them into equal parts. Then, you will find the fraction of each partitioned part.	I CAN make a rectangle and square using Goobi. I CAN partition a rectangle and a square into equal parts. I CAN write a fraction for each part of the partitioned rectangle and square. I CAN make other 2D shapes.	CCSS.MATH.CONTENT.3.G.A.2, CCSS.MATH.CONTENT.3.NF.A.1	2D Shapes, Fractions
Pixie (Software for PC and Mac)	3.DC.3.P.2	Exploring Patterns	Your Challenge is to use Pixie to create intricate patterns. Learn about rotation, reflection, and symmetry.	I CAN create a pattern. I CAN model rotation, reflection, and symmetry with a pattern.		
Wixie (Website for Chromebook)	3.DC.3.W.1	Exploring Polygons and Patterns	Your challenge is to use Wixie to draw polygons including rectangles and calculate their perimeter and area. Then make patterns by rotating and reflecting rectangles with polygons.	I CAN draw and measure the lengths of the sides of rectangles. I CAN find the perimeter and area of rectangles. I CAN draw rectangles with the same perimeters, but different areas. I CAN draw rectangles with the same areas, but different perimeters. I CAN use rotations and reflections to make patterns.	CCSS.MATH.CONTENT.3.MD.D.8	Linear Measurement, 2D Shapes
Snap Circuits (Kit)	3.C.1.SNC.1	Getting into the Flow	In this challenge, you will learn the basics of electricity. You will also learn how to control it in different ways by building electrical circuits. For your math challenge, you will identify a pattern using the values of the Snap Circuit connectors and explain the pattern using the properties of addition and multiplication.	I CAN create a complete circuit. I CAN identify patterns. I CAN explain patterns using properties of addition and multiplication.	CCSS.MATH.CONTENT.3.OA.D.9	Addition & Subtraction, Multiplication & Division

Third Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Scratch (Website)	3.SE.3.S.1	A Code of Your Own	Your challenge is to use Scratch to program a computer animation that teaches math. You will use Operator blocks in your script in order to include multiplication or division in your code. The script you create will help you practice writing and solving word problems, and find unknown whole numbers in multiplication and division equations.	I CAN design an animation on Scratch that uses Operator blocks in the script. I CAN create a code that incorporates multiplication or division.	CCSS.MATH.CONTENT.3.OA.A.3, CCSS.MATH.CONTENT.3.OA.A.4	Multiplication and Division
Ozobot (Kit/Website)	3.RCT.1.O.2	Program a Lawn Mower	Your challenge is to program a robot lawn mower to go over a whole lawn and to use light effects to show when it is mowing. Then, count how many passes the robot takes to mow the lawn to identify the fractional value of each pass.	I CAN program a robot using block coding. I CAN identify and count fractional parts.	CCSS.MATH.CONTENT.3.NF.A.1	Fraction Equivalencies
K'NEX STEM Simple Machines (Kit)	3.MS.3.KSSM.1	Levers	Your challenge is to learn how simple machines work by building levers with the K'NEX STEM Building Solution kit. Use K'NEX to build a pan balance model, and use the model to determine the weight of five objects.	I CAN describe how simple machines work. I CAN describe how a lever makes work easier. I CAN identify the parts of a lever. I CAN define different classes of a lever. I CAN determine the weight of objects using only a ten-gram weight and a pan balance.	CCSS.MATH.CONTENT.3.OA.D.9, NGSS.3-PS2-2	Addition and Subtraction, Multiplication and Division, Forces and Interactions
iMovie (Software)	3.DC.7.IM.1	All About us	Your challenge is to use iMovie to create two short videos, one about you and one about your partner. Once your videos are complete, plan a movie viewing party with the class.	I CAN use different camera angles and explain why I chose a specific angle. I CAN create a video to clearly communicate information to an audience. I CAN use the editing tools and explain how I used them to make my video better. I CAN use multiplication to solve word problems. I can use equations and drawings to determine the unknown number and solve the problem.	CCSS.MATH.CONTENT.3.OA.A.3	Multiplication and Division
VEX GO (Kit/Website)	3.RCT.2.VEXG.1	A Day in My Ecosystem	Your challenge is to build or create an ecosystem for the animal of your choice. Once your ecosystem is created, you will then build your animal using VEX GO Code Base.	I CAN distinguish between different types of ecosystems and the animals that live there. I CAN program my robot using sequences, events, loops, and variables. I CAN build an animal using VEX GO. I CAN recreate an ecosystem using my desired materials.	NGSS.3-LS4-3	Interactions and Ecosystems

Additional Third Grade Project Starters

The additional third grade project starters below can be used to support differentiation in the SmartLab HQ.

The project starters with a white background are particularly suited for whole-class introductory or more guided projects. The project starters with a shaded background can serve as extension projects or projects for groups needing additional challenges.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Pixie (Software)	3.DC.3.P.1	Fairy Tale Ending	Your challenge is to use Pixie to create a new ending to an old fairy tale.	I CAN create a new ending to an old fairytale.		
Geometric Shapes (Kit)	3.MS.1.GS.1	Exploring 2D Shapes	Your challenge is to build and explore the properties of 2D shapes. Then, build different sized rectangles and find the area of each one.	I CAN make a 2D shape with Geometric Shapes. I CAN make polygons with Geometric Shapes. I CAN measure the lengths of the sides of rectangles to the nearest whole inch and whole centimeter. I CAN find the area of a rectangle by multiplying the side lengths.	CCSS.MATH.CONTENT.3.MD.C.7.A, CCSS.MATH.CONTENT.3.MD.C.7.B	2D Shapes, Area
Climate Kids (Website)	3.S.2.CK.1	Design a Message	Your challenge is to come up with a plan to excite your schoolmates to learn about climate change. Design your own game or activity to teach about global climate change, clean energy, or another topic found on NASA's Climate Kids website.	I CAN use multiplication to help me learn division. I CAN use patterns in the multiplication table to learn math facts. I CAN use patterns and strategies to create a game about global warming	CCSS.MATH.CONTENT.3.OA.C.7, NGSS.3-ESS2-2	Factors and Multiples, Earth's Systems, Earth and Human Activity
Code.Org (Website)	3.SE.1.CO.1	Block Programming with Flappy	Your challenge is to learn to program using block code, then program a Flappy computer game to help your friends practice their multiplication facts.	I CAN use block coding to create a game. I CAN use what I know about multiplication facts and properties to program a game that helps my friends practice their multiplication facts.	CCSS.MATH.CONTENT.3.OA.C.7	Multiplication and Division
Animation-ish (Website)	3.DC.1.AI.2	Learning to Animate	Your challenge is to use Animation-ish to model the Commutative and Associative Properties of Multiplication.	I CAN use Wiggledoodle-ish and Flipbook-ish to animate drawings. I CAN show how to multiply by grouping objects. I CAN use Wiggledoodle-ish and Flipbook-ish to animate the grouping of objects to model multiplication.	CCSS.MATH.CONTENT.3.OA.A.1	Multiplication & Division
Goobi (Kit)	3.MS.2.G.2	Towers	Your challenge is to research a famous tower and recreate it using Goobi building materials and write word problems to describe your tower.	I CAN design and build a tower. I CAN identify the shapes that make up a tower design. I CAN write and model division sentences. I CAN write word problems to describe my tower.	CCSS.MATH.CONTENT.3.OA.A.2	Multiplication and Division
Animation-ish (Website)	3.DC.1.AI.3	Animate Word Problems	Your challenge is to use Animation-ish (Flipbook-ish) to solve and animate two-step word problems.	I CAN solve two-step word problems. I CAN create an animation to show the solution to the word problem.	CCSS.MATH.CONTENT.3.OA.D.8	Addition and Subtraction, Multiplication and Division

Fourth Grade Overview

The overview below can help you plan the rotations for your fourth-grade classes in the SmartLab HQ.

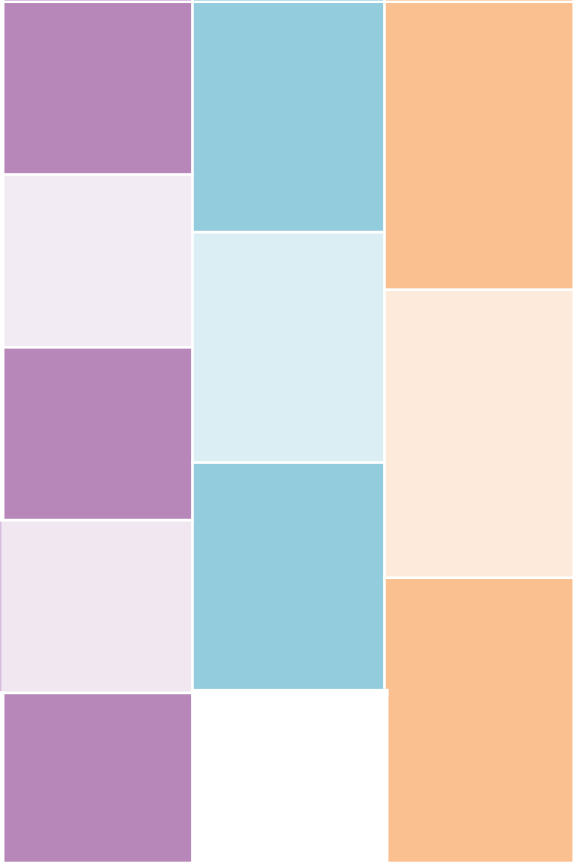
The colored bands to the right of the table provide the recommended set of projects to include in each rotation based on the number of stations in your SmartLab HQ.

Example: If you have four stations in your lab, the four projects that students should rotate through first are Speed Racing, Wheels and Axles, Create Your Own Character Art, and Solar Energy.

Suggested Scope and Sequence

Resource	SOT Code	Project Starter
Ozobot (Kit)	4.RCT.1.O.3	Speed Racing
K'NEX STEM Simple Machines (Kit)	4.MS.3.KSSM.2	Wheels and Axles
Vectr (Website)	4.CG.2.V.1	Create Your Own Character Art
Snap Circuits Green Energy (Kit)	4.S.1.SCGE.2	Solar Energy
Google Maps (Website)	4.SDA.3.GGM.2	Mapping My Area
Snap Circuits (Kit)	4.C.1.SNC.3	Series and Parallel Circuits
Comic Life (Software)	4.DC.4.CL.2	This or That?
Tinkercad (Website)	4.CG.1.T.1	Create a Stamp
iMovie (Software)	4.DC.7.IM.2	Let's Make a Change
VEX GO (Kit/Website)	4.RCT.2.VEXG.2	Protect Your Garden
Stellarium (Software)	4.SDA.2.ST.2	Planet Search
Snap Circuits Green Energy (Kit)	4.S.1.SCGE.1	Hand Crank
Google Maps (Website)	4.SDA.3.GGM.1	National Parks Brochure
Skoog (Kit/App)	4.DC.2.SK.1	Compose
Vernier Elementary Sensing Science Collection (Kit/Software)	4.SDA.4.VESSC.2	Lever Up!

Lab Size



Fourth Grade Core

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Ozobot (Kit)	4.RCT.1.O.3	Speed Racing	Complete the Triple Crown Challenge with Ozobot, a mini-robot that follows lines and color codes. Your challenge is to create three fun, fast tracks for Ozobot to speed through while doing turns, zig-zags, and more.	I CAN describe different types of machines. I CAN program a robot to complete a specific task. I CAN use addition, subtraction, multiplication, and division to solve problems involving distance and intervals of time. I CAN express measurements given in a larger unit in terms of a smaller unit and smaller units in terms of larger units. I CAN represent quantities using diagrams that feature a measurement scale.	CCSS.MATH.CONTENT.4.MD.A.2	Volume and Area, Conversions, Forces and Interactions
K'NEX STEM Simple Machines (Kit)	4.MS.3.KSSM.2	Wheels and Axles	Your challenge is to build wheel and axle machines to learn more about how they make work easier. First you will build a machine of your choice from the K'Nex instruction manual. Then you will build the trundle wheel and use it to measure objects. You will display the data you collect on a line plot.	I CAN build a wheel and axle machine. I CAN explain the work that a simple machine performs and the parts that perform the work. I CAN explain how different wheel and axle machines make work easier. I CAN measure to the nearest ¼ of an inch and create a line plot to display data.	CCSS.MATH.CONTENT.4.MD.B.4, NGSS.4-PS3-2	Graphing, Forces and Interactions
Vectr (Website)	4.CG.2.V.1	Create Your Own Character Art	Your challenge is to create your own character using shapes and other tools in Vectr. Then you will analyze your design in order to determine which parts have line symmetry. You will describe how the symmetry or lack of symmetry adds to the style of your character.	I CAN describe how different shapes and colors affect the style of a character. I CAN use Vectr to create simple art. I CAN recognize and draw a line of symmetry in a two-dimensional figure. I CAN describe how symmetry affects the style of a character.	CCSS.MATH.CONTENT.4.G.A.3	Angles, 2D Shapes
Snap Circuits Green Energy (Kit)	4.S.1.SCGE.2	Solar Energy	Your challenge is to design, build, and test electrical circuits that use a solar cell. You will collect and store energy using solar power. Then, test to see if the energy you collect can power a motor, lights, and more. After testing your solar model, you will apply the concept of solar cells to solar panels. You will design a roof and draw a plan for covering the roof with solar panels.	I CAN build circuits that are powered by solar energy. I CAN determine the dimensions of a rectangular roof with a given area. I CAN determine the area of a rectangular solar panel. I CAN determine the perimeter of a rectangular solar panel.	CCSS.MATH.CONTENT.4.MD.A.3, NGSS.4-PS3-2, NGSS.4-PS3-4, NGSS.4-ESS3-1	Volume and Area, Conversions, Energy, Earth and Human Activity
Google Maps (Website)	4.SDA.3.GGM.2	Mapping My Area	Your challenge is to use Google My Maps to find your house, school, and other places that you visit often. You will find the area and perimeter of each place and create a presentation to share with your class.	I CAN use Google Maps to find the length and width of a location. I CAN find the area and perimeter of a real-world location using the length and width. I CAN create a presentation showing the location, measurements, area, and perimeter of 5 locations I visit often.	CCSS.MATH.CONTENT.4.MD.A.3, NGSS.4-ESS2-2	Volume and Area, Earth Systems

Fourth Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Snap Circuits (Kit)	4.C.1.SNC.3	Series and Parallel Circuits	Your challenge is to learn about parallel and series circuits as you build and test different types of circuit designs. Then, build circuits to fit specific measures of perimeter and area, and learn how to convert unit measurements for the circuits you build.	I CAN build and test series and parallel circuits. I CAN describe how a light bulb works. I CAN design a model to show how voltage changes between series and parallel circuits. I CAN determine the perimeter and area of different circuits built on the snap grid. I CAN convert measures from a larger unit to a smaller unit when finding the perimeter and area of circuits built on the snap grid.	CCSS.MATH.CONTENT.4.MD.A.1,CCSS.MATH.CONTENT.4.MD.A.3	Volume and Area, Conversions
Comic Life (Software)	4.DC.4.CL.2	This or That?	Your challenge is to create a comic about you and a friend who can't agree on something. Then, determine how much it will be to print and ship 150 copies of your comic to a newspaper company.	I CAN create a comic including two different opinions. I CAN use the internet to research information on where and how much it costs to print documents. I CAN use adding and multiplication to find the cost of printing documents, shipping costs, overall total, and payout amount.	CCSS.MATH.CONTENT.4.OA.A.2, CCSS.MATH.CONTENT.4.NBT.B.4, CCSS.MATH.CONTENT.4.NBT.B.5	Addition and Subtraction, Multiplication and Division, Time and Money
Tinkercad (Website)	4.CG.1.T.1	Create a Stamp	Your challenge is to design a Stamp in Tinkercad using 2D and 3D images and drawings.	I CAN create a stamp from 2D and 3D images. I CAN convert an image file to a .svg file to use in Tinkercad. I CAN save a 3D project to the Tinkercad gallery.		
iMovie (Software)	4.DC.7.IM.2	Let's Make a Change	Your challenge is to encourage positive change within your school by editing video clips using iMovie. Conduct a survey to strengthen your argument. You will create a video using different camera angles and use iMovie to add text and sound effects to create an engaging video to motivate others to support your opinion.	I CAN share my opinion about something at school using examples and data in a video. I CAN conduct a survey to strengthen my argument. I CAN create and solve multi-step word problems to draw conclusions about the survey. I CAN film using different camera angles. I CAN add text to the video using iMovie. I CAN input sound effects to match the theme of the video using iMovie.	CCSS.MATH.CONTENT.4.OA.A.2, CCSS.MATH.CONTENT.4.OA.A.3	Addition and Subtraction, Multiplication and Division, Factors and Multiples
VEX GO (Kit/Website)	4.RCT.2.VEXG.2	Protect Your Garden	Your challenge is to create a garden using your choice of materials. Then, you will build a "farmer" with VEX GO and program him/her to secure the perimeter and area of your garden.	I CAN find the area and perimeter of my garden. I CAN build a "farmer" using VEX GO. I CAN program my "farmer" to secure the garden perimeter and area using sequences, loops, events, and variables.	CCSS.MATH.CONTENT.4.MD.A.3	Addition and Subtraction, Multiplication and Division, Area and Volume

Fourth Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Stellarium (Software)	4.SDA.2.ST.2	Planet Search	Your challenge is to discover the many planets in our solar system as seen from Earth. Use a protractor to determine the angles between interesting objects in our solar system, and then use that information to write directions your partner can follow to locate your solar system objects.	I CAN locate celestial objects using Stellarium. I CAN measure the angles between objects using a protractor. I CAN sketch angles of a specified measure. I CAN estimate angle measures by using benchmark angles.	CCSS.MATH.CONTENT.4.MD.C.6	Angles
Snap Circuits Green Energy (Kit)	4.S.1.SCGE.1	Hand Crank	Your challenge is to produce and store energy using human power. Then, test to see if the energy you produce can power a fan, motor, lights, and more. As you test your circuits, you will collect and analyze the data to find factor pairs and decide whether a number is prime or composite.	I CAN produce energy using a hand crank. I CAN find all of the factor pairs for a whole number. I CAN decide whether a given whole number is prime or composite. I CAN decide whether a given whole number is a multiple of a given one-digit number.	CCSS.MATH.CONTENT.4.OA.B.4, NGSS.4-PS3-2, NGSS.4-PS3-4, NGSS.4-ESS3-1	Factors and Multiples, Energy, Earth and Human Activity
Google Maps (Website)	4.SDA.3.GGM.1	National Parks Brochure	Your challenge is to create a brochure for a family trip to five national parks in the United States. Your brochure will include distance and time between locations, cost of gas, and any additional information you would like to include.	I CAN identify Earth's features at national parks. I CAN draw conclusions about Earth's features. I CAN solve problems involving multiplication using number lines to calculate the cost of gas. I CAN communicate relevant travel information in a brochure.	CCSS.MATH.CONTENT.4.MD.A.2, NGSS.4-ESS2-2	Addition and Subtraction, Multiplication and Division, Conversions, Volume and Area, Earth Systems
Skoog (Kit/App)	4.DC.2.SK.1	Compose	Your challenge is to use Skoog to play musical notes, then compose a song using whole number and fractional beats. You will add the whole number and fractional beats, and then decompose each line of music into a sum of fractions. Skoog is a customizable electronic musical instrument and programmable control device.	I CAN use Skoog to compose my own song. I CAN count beats represented as whole numbers and fractions in musical notes. I CAN compare two fractions. I CAN add fractions with like and unlike denominators. I CAN decompose a fraction as a sum of fractions with the same denominator.	CCSS.MATH.CONTENT.4.NF.A.2	Fraction Equivalencies
Vernier Elementary Sensing Science Collection (Kit/Software)	4.SDA.4.VESSC.2	Lever Up!	Your challenge is to find materials and create a lever that you can run tests on. You will use the results of the tests and collected data, to determine how to build the ultimate lever to lift objects.	I CAN create a simple machine that includes a fulcrum and arm. I CAN apply different amounts of physical force to determine how much force is needed to lift a book. I CAN place the fulcrum and sensor in different locations to see if more or less force is needed to lift a book. I CAN create a data table that shows the change in amount of force needed when I changed the position of the sensor and fulcrum.	NGSS.4-PS3-1	Forces and Interactions, Forces, Energy

Additional Fourth Grade Project Starters

The additional fourth grade project starters below can be used to support differentiation in the SmartLab HQ.

The project starters with a white background are particularly suited for whole-class introductory or more guided projects. The project starters with a shaded background can serve as extension projects or projects for groups needing additional challenges.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Animation-ish (Website)	4.DC.1.AI.4	Advanced-ish	Your challenge is to create an advanced animation with Advanced-ish that follows a pattern.	I CAN create advanced animation with Animation-ish. I CAN generate a shape pattern that follows a rule.	CCSS.MATH.CONTENT.4.OA.C.5	Factors and Multiples
Comic Life (Software)	4.DC.4.CL.1	Storytelling	Your challenge is to create a comic strip with Comic Life where you illustrate the problem and solution for a made-up multi-step word problem.	I CAN solve multistep word problems created with whole numbers. I CAN create a comic strip. I CAN create a comic strip to solve a multi-step word problem.	CCSS.MATH.CONTENT.4.OA.A.3	Factors and Multiples
Pixie (Software)	4.DC.3.P.3	Introducing... Your Family and State	Your challenge is to use a graphics program called Pixie to teach about your home state. You will research fun facts about your state, and at least three of them should include measurement details (e.g. height, weight, distance, or even age.) You will convert the measurements to different units and decide which units to include on your reference map.	I CAN use Pixie to create a reference map about my home state. I CAN express measurements in a larger unit in terms of a smaller unit. I CAN generate a conversion table for converting between units. I CAN understand relative sizes of measurement units.	CCSS.MATH.CONTENT.4.MD.A.1	Conversions
Snap Circuits Green Energy (Kit)	4.S.1.SCGE.3	Wind Power	Your challenge is to learn about alternative energy systems and wind power. Then build your own wind powered circuits! You will keep track of the voltage your windmill generates in different positions and record the data on a line plot. Then you will use the plot to analyze your results.	I CAN create and record data on a line plot. I CAN use a line plot to interpret data and find interesting outcomes.	CCSS.MATH.CONTENT.4.MD.B.4, NGSS.4-PS3-2, NGSS.4-PS3-4, NGSS.4-ESS3-1	Graphing, Energy, Earth and Human Activity

Additional Fourth Grade Project Starters (continued)

The additional third grade project starters below can be used to support differentiation in the SmartLab HQ.

The project starters with a white background are particularly suited for whole-class introductory or more guided projects. The project starters with a shaded background can serve as extension projects or projects for groups needing additional challenges.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Pixie (Software)	4.DC.3.P.4	Safety Video	Your challenge is to create a public service announcement video using Pixie.	I CAN communicate an important safety message to an audience.		
Google Slides (Website)	4.DC.6.GGS.1	Describe a Mystery Object	Your challenge is to create a Google Slides presentation that describes a mystery object of your choosing. You will give clues using your five senses to help people try to determine what the mystery object is before the big reveal.	I CAN use my five senses to describe an object. I CAN use descriptive language to describe an object. I CAN use collected data to create a line plot. I CAN solve "how many more/less" questions using graphed collected data.	CCSS.MATH.CONTENT.4.NF.B.4.A	Fractions, Factors and Multiples
Stellarium (Software)	4.SDA.2.ST.1	Constellation Exploration	Your challenge is to explore constellations and their stars using Stellarium. Then, use place value to describe and compare distances between stars and Earth. Create a presentation to share your findings.	I CAN explore constellations using the Stellarium software. I CAN research a constellation and create a presentation to share my information. I CAN recognize that a digit in one place represents ten times what it means in the place to its right in multi-digit whole numbers.	CCSS.MATH.CONTENT.4.NBT.A.1	Place Value

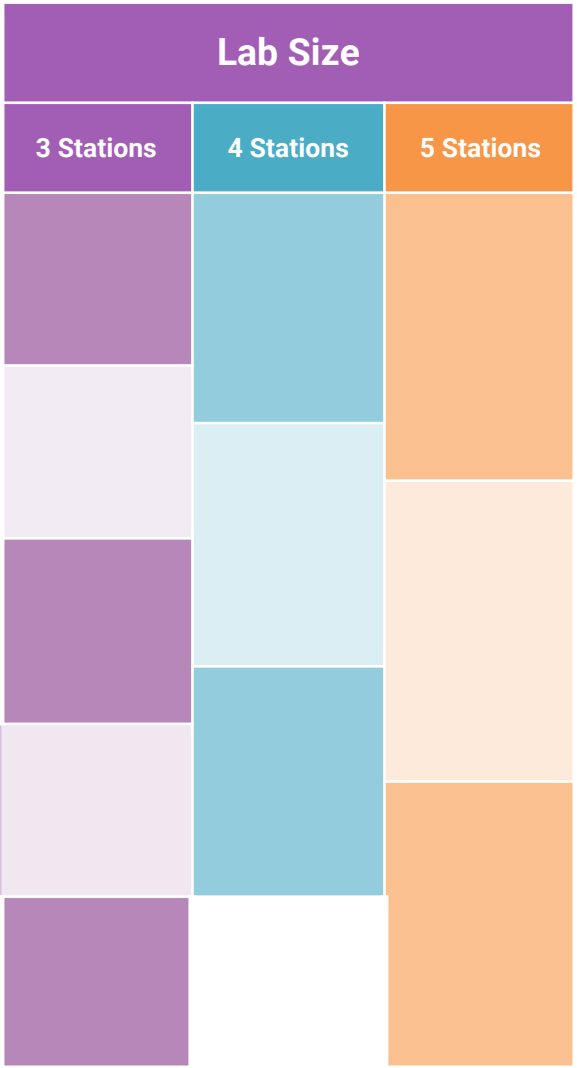
Fifth Grade Overview

The overview below can help you plan the rotations for your fifth-grade classes in the SmartLab HQ.

The colored bands to the right of the table provide the recommended set of projects to include in each rotation based on the number of stations in your SmartLab HQ.

Example: If you have four stations in your lab, the four projects that students should rotate through first are Create Your Own App, Stars on the Move, Gears, and Clean Up Your Community.

Suggested Scope and Sequence		
Resource	**SOT Code**	**Project Starter**
Google Slides (Website)	5.DC.6.GGS.2	Create Your Own App
Stellarium (Software)	5.SDA.2.ST.3	Stars on the Move
K'NEX STEM Simple Machines (Kit)	5.MS.3.KSSM.4	Gears
VEX GO (Kit/Website)	5.RCT.2.VEXG.3	Clean Up Your Community
Scratch (Website)	5.SE.3.S.2	Coding - It's a Snap!
Snap Circuits Green Energy (Kit)	5.S.1.SCGE.4	Liquid Battery
Vectr (Website)	5.CG.2.V.2	Basic Photo Editing
Tinkercad Circuits (Website)	5.C.3.TC.1	Introduction to Building Tinkercad Circuits
Google Maps (Website)	5.SDA.3.GGM.3	Exploring Your World
K'NEX STEM Simple Machines (Kit)	5.MS.3.KSSM.3	Inclined Planes
Tinkercad (Website)	5.CG.1.T.2	Introduction to 3D Drawing
GarageBand (Software)	5.DC.5.GB.1	Spooky Sounds
Makey Makey (Kit/Website)	5.C.2.MM.2	Interactive Board Games with Scratch
Code Combat (Website)	5.SE.2.CC.2	Introduction to Python
Vernier Elementary Sensing Science Collection (Kit/Software)	5.SDA.4.VESSC.3	Send It Rollin'



Fifth Grade Core

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Google Slides (Website)	5.DC.6.GGS.2	Create Your Own App	Your challenge is to create your own app using Google Slides. You will create a homepage that features icons that, when clicked, will lead you to other slides. After visiting the other slides, you will create a homepage button for easy return.	I CAN use Google Slides to create an interactive app with links between slides. I CAN use the steps of the engineering design process to design an app. I CAN design an app that features at least three different slides, or screens.	NGSS.3-5-ETS1-1, NGSS.3-5-ETS1-2, NGSS.3-5-ETS1-3	Engineering Design
Stellarium (Software)	5.SDA.2.ST.3	Stars on the Move	Your challenge is to use Stellarium to speed up time in order to see how different objects move across the sky. Use what you learn to draw your own model of our solar system and its motions. Then, collect data on the hours of visibility for the Sun, Moon, and planets, and use the data to create a line plot.	I CAN use Stellarium to view and learn about the solar system. I CAN speed up the passage of time in Stellarium to view the motions of planets and stars. I CAN draw the orbits of planets and moons. I CAN calculate the hours of visibility for the Sun, Moon, and planets from given rise and set information. I CAN create a line plot using data with fractional values.	CCSS.MATH.CONTENT.5.MD.B.2, NGSS.5-ESS1-2	Graphing, Space Systems
K'NEX STEM Simple Machines (Kit)	5.MS.3.KSSM.4	Gears	Your challenge is to use K'NEX STEM to explore gears and build your own gear machine. First, you will review attributes of shapes as you sort K'NEX pieces. Then, you will apply this concept to identify similar and congruent gears as you explore how the gears work—or won't work—together.	I CAN build a machine with gears that work similarly to a real machine. I CAN explain how different types of gears fit together to do work. I CAN describe the attributes of triangles and quadrilaterals. I CAN describe the difference between similarity and congruence.	CCSS.MATH.CONTENT.5.G.B.3, CCSS.MATH.CONTENT.5.G.B.4	2D Shapes
VEX GO (Kit/Website)	5.RCT.2.VEXG.3	Clean Up Your Community	Your challenge is to build a robot and program it to collect as much magnetic metal as possible.	I CAN design and program a robot to collect magnetic metal. I CAN distinguish between items that are metal and items that are not. I CAN identify ways to help my community and keep the earth healthy. I CAN decompose the programming task to help me create my program.	NGSS.5-ESS3-1	Earth and Human Activity
Scratch (Website)	5.SE.3.S.2	Coding - It's a Snap!	Your challenge is to create your own animation with Scratch. Then use the standard algorithm to solve multi-digit multiplication and then check your answers using a simple Scratch program.	I CAN create an animation using block coding. I CAN multiply multi-digit whole numbers using the standard algorithm to determine the product of various scenarios. I CAN use code to solve multi-digit multiplication problems.	CCSS.MATH.CONTENT.5.NBT.B.5	Factors and Multiples

Fifth Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Snap Circuits Green Energy (Kit)	5.S.1.SCGE.4	Liquid Battery	Your challenge is to design and build an electrical circuit that is powered by a liquid battery. Then, test to see which liquids produce energy. You will use Snap Circuits to design, build, and test your ideas. Record how long each liquid battery works (in seconds) by testing each liquid three times, and round each to the nearest hundredth of a second.	I CAN design and build an electrical circuit that is powered by a liquid battery. I CAN identify alternate energy sources. I CAN round decimals to any place using place value understanding.	CCSS.MATH.CONTENT.5.NBT.A.4, NGSS.5-PS1-4, NGSS.3-5-ETS1-2	Place Value, Matter, Engineering Design
Vectr (Website)	5.CG.2.V.2	Basic Photo Editing	Your challenge is to use the website Vectr to crop and edit photos. You will first identify how a scale factor makes a product larger or smaller than one of its factors, just as cropping can make an image larger or smaller. Then, you will edit your own photos by scaling them up or down and applying filters.	I CAN use Vectr to crop and edit images. I CAN describe how cropping images is similar to scaling down two numbers. I CAN use factoring to compare two numbers. I CAN identify the scale factor for a number.	CCSS.MATH.CONTENT.5.NF.B.5.B	Fraction Equivalencies
Tinkercad Circuits (Website)	5.C.3.TC.1	Introduction to Building Tinkercad Circuits	Your challenge is to use Tinkercad Circuits to design and test circuits. Then, make two copies of your design: one larger and another larger still; you will do this so that you can use multiplication and addition to find the volume of the 3D prism in each copy of the design.	I CAN design working circuits. I CAN design 3D objects to house circuit assemblies. I CAN relate volume to multiplication and addition. I CAN compare the volume of 3D objects.	CCSS.MATH.CONTENT.5.MD.C.5, NGSS.3-5-ETS1-1	Volume and Area, Engineering Design
Google Maps (Website)	5.SDA.3.GGM.3	Exploring Your World	Your challenge is to create a custom map of any location in the world using Google Maps. Then, use a coordinate plane and coordinates to navigate your custom map.	I CAN use Google Maps to create a custom map. I CAN show how to graph ordered pairs in a coordinate plane using a map I created. I CAN explain what the numbers in an ordered pair represent and how I can use them to navigate my map.	CCSS.MATH.CONTENT.5.G.A.1, CCSS.MATH.CONTENT.5.G.A.2	Coordinate Planes
K'NEX STEM Simple Machines (Kit)	5.MS.3.KSSM.3	Inclined Planes	Your challenge is to build an inclined plane machine so you can show how inclined planes make work easier. You will use a protractor to measure the angles of your inclined planes. Then, you will compare the attributes of triangles to identify attributes of inclined planes.	I CAN make various inclined planes using K'NEX. I CAN relate inclined planes to triangles. I CAN make a coordinate plane using two number lines. I CAN use a protractor to measure angles.	CCSS.MATH.CONTENT.5.G.B.3	2D Shapes

Fifth Grade Core (continued)

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Tinkercad (Website)	5.CG.1.T.2	Introduction to 3D Drawing	Your challenge is to create your own 3D design using Tinkercad. It can be anything approved by your facilitator, but needs to include a rectangular prism in the design. At the same time, you will explore how scale factor affects the size of an object, and you will use powers of ten to convert metric measures to enlarge or shrink. Then, you could print your design on a 3D printer.	I CAN tell the difference between 2D and 3D. I CAN design my own 3D object using Tinkercad. I CAN make my design a physical object using a 3D printer. I CAN determine whether an object is getting bigger or smaller when a scale factor is applied, without actually multiplying. I CAN convert between measures in the metric system by moving the decimal point when multiplying or dividing by a power of 10.	CCSS.MATH.CONTENT.5.NBT.A.2, CCSS.MATH.CONTENT.5.NF.B.5.A	2D Shapes, Place Value, Factors and Multiples
GarageBand (Software)	5.DC.5.GB.1	Spooky Sounds	Your challenge is to create a spooky story from sounds in the GarageBand app on your iPad.	I CAN create a story that's told through sound only (no speaking). I CAN describe the basic elements of music: beat, tempo, rhythm, volume, and timbre. I CAN interpret the time signature as a sequence of mathematical operations. I CAN create numerical patterns using tempo to form ordered pairs. I CAN graph the ordered pairs on a coordinate plane to interpret the relationship between the tempos.	CCSS.MATH.CONTENT.5.NF.B.4.A, CCSS.MATH.CONTENT.5.OA.B.3	Fraction Equivalencies, Factors and Multiples
Makey Makey (Kit/Website)	5.C.2.MM.2	Interactive Board Games with Scratch	Your challenge is to design a board game that includes a circuit, and requires the player to add and subtract fractions with unlike denominators in order to make a move on the board. Then, use Makey Makey and Scratch to program sounds or actions that respond to spaces on the board game.	I CAN design an interactive board game using Makey Makey and Scratch. I CAN add and subtract fractions with unlike denominators.	CCSS.MATH.CONTENT.5.NF.A.1, NGSS.3-5-ETS1-3	Fraction Equivalencies, Engineering Design
Code Combat (Website)	5.SE.2.CC.2	Introduction to Python	Your challenge is to control a character in a computer game. Use Python Script coding language to program your hero in CodeCombat to defeat evil and collect gems.	I CAN use Python script to control characters in CodeCombat. I CAN find the quotient of a whole number divided by a unit fraction. I CAN find the quotient of a unit fraction divided by a whole number.	CCSS.MATH.CONTENT.5.NF.B.7.A, CCSS.MATH.CONTENT.5.NF.B.7.B	Fraction Equivalencies
Vernier Elementary Sensing Science Collection (Kit/Software)	5.SDA.4.VESSC.3	Send It Rollin'	Two vehicles are rolling downhill; one is fully loaded and the other is empty. Which one is going to get to the bottom of the hill first? Your challenge is to create a downhill ramp using the materials provided and roll a toy vehicle down the ramp while adding more weight each time. Using the Vernier Go Direct Motion Detector, you will measure the speed of a toy vehicle as it goes down the ramp.	I CAN create a hypothesis based on a real-world situation. I CAN use collected data to create a scaled line graph. I CAN determine the difference in how speed is affected by weight. I CAN evaluate my hypothesis to determine if I was correct or incorrect.	CCSS.MATH.CONTENT.5.G.A.1	Coordinate Planes

Additional Fifth Grade Project Starters

The additional fifth grade project starters below can be used to support differentiation in the SmartLab HQ.

The project starters with a white background are particularly suited for whole-class introductory or more guided projects. The project starters with a shaded background can serve as extension projects or projects for groups needing additional challenges.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Comic Life (Software)	5.DC.4.CL.3	Write a Review	Your challenge is to choose an experience that you want to write an overall honest review about. In the review, cover all aspects of the experience you had. Conduct a survey of other people who experienced the same product, restaurant, or event as you. Using Comic Life, turn the review of that experience into a comic.	I CAN conduct and synthesize a survey about how others have experienced an event. I CAN use information from a survey and convert it into fractions and ratios. I CAN use survey data to create a diagram or graph showing the information visually. I CAN link my opinion of an experience with facts.	CCSS.MATH.CONTENT.5.NF.B.3	Graphing, Fraction Equivalencies
Pixie (Software)	5.DC.3.P.5	3 R's Comic	Your challenge is to explore Recycle City online. Then use Pixie to create a comic book about a 3 R topic of your choice.	I CAN describe the difference between recycling, reducing, and reusing.	NGSS.5-ESS3-1	Earth and Human Activity
PowerPoint (Software)	5.DC.6.PPT.1	Teaching Preschoolers	Your challenge is to create a PowerPoint presentation to teach preschoolers (age 3-4) about numbers, shapes, colors, or letters.	I CAN teach a preschooler about a chosen topic.		
Observing With NASA (Website)	5.SDA.1.OWN.1	Astronomy	Your challenge is to use Observing with NASA telescopes to look at astronomical objects. Then, create a presentation about the objects you found.	I CAN describe the characteristics of different types of telescopes. I CAN use tools from NASA to search for images of astronomical objects. I CAN create a presentation about an astronomical object with information I have found on the internet.		

Additional Fifth Grade Project Starters (continued)

The additional third grade project starters below can be used to support differentiation in the SmartLab HQ.

The project starters with a white background are particularly suited for whole-class introductory or more guided projects. The project starters with a shaded background can serve as extension projects or projects for groups needing additional challenges.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Makey Makey (Kit/Website)	5.C.2.MM.1	You're In Control	Your challenge is to make a programmable circuit that produces sound or music using Makey Makey software and objects that conduct electricity. Then, explore how you can use your sounds to create patterns, and how these patterns make ordered pairs on a coordinate plane.	I CAN test objects for their ability to conduct electricity. I CAN construct simple circuits. I CAN program a circuit using Scratch block coding. I CAN make patterns that follow a rule. I CAN identify relationships between corresponding terms from patterns. I CAN form ordered pairs from the terms of the two patterns. I CAN graph ordered pairs on a coordinate plane.	CCSS.MATH.CONTENT.5.OA.B.3, NGSS.3-5-ETS1-1	Factors and Multiples, Engineering Design
Code Combat (Website)	5.SE.2.CC.1	Introduction to Java Script	Your challenge is to control a character in a computer game. Use JavaScript coding language to program your hero to defeat evil and collect gems.	I CAN code in JavaScript language using syntax, methods, parameters, strings, loops, and variables to program characters in a game. I CAN compare decimals to the thousandths place using symbols <, >, and =.	CCSS.MATH.CONTENT.5.NBT.A.3B	Place Value
iMovie (Software)	5.DC.7.IM.3	PSA - No Bullies Here!	Your challenge is to create an anti-bullying public service announcement (PSA). In this project, you will use information about bullying to create a video. You will edit the video using iMovie. You will use multiplication and fractions to support your PSA.	I CAN create a public service announcement to make people aware of the impacts of bullying. I CAN use multiplication to resize (scale) populations of students impacted by bullying. I CAN relate equivalent fractions to multiplying a fraction by 1 to support my PSA. I CAN apply different effects to my PSA to make it more engaging using iMovie.	CCSS.MATH.CONTENT.5.NF.B.4.a, CCSS.MATH.CONTENT.5.NF.B.6	Fraction Equivalencies
Snap Circuits (Kit)	5.C.1.SNC.4	Sensors and Chips	Your challenge is to design your own circuit that uses sensors and integrated circuits (chips). To prepare, you will build at least two circuits from the Snap Circuits Instruction Manual. Then, determine the grid area using fraction models.	I CAN create an integrated circuit using sensors and chips. I CAN describe what fraction of the circuit board is used. I CAN use a visual fraction model to find the product of two fractions. I CAN use a visual fraction model to solve a real-world problem.	CCSS.MATH.CONTENT.5.NF.B.4.A, CCSS.MATH.CONTENT.5.NF.B.6	Fraction Equivalencies, Factors and Multiples

Elementary Advanced Exploration Collection

The project starters below accompany the Elementary Advanced Exploration Collection kits and equipment.

Use the information below to help plan how you will incorporate these project starters into the rotations for your SmartLab HQ.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Lux Blox (Kit)	3.MS.1.LB.1	Finding Area	Your challenge is to build a two-dimensional (2D) shape and measure its surface area by counting unit squares using Lux Blox building blocks.	I CAN describe how to find the area of a two-dimensional polygon. I CAN find the area of a two-dimensional polygon. I CAN count unit squares to find the area of a two-dimensional polygon. I CAN build a 2D shape and measure its surface area using Lux Blox building blocks.	CCSS.MATH.CONTENT.3.MD.C.6	2D Shapes, Addition & Subtraction, Multiplication & Division
Lux Blox (Kit)	3.MS.1.LB.2	Marble Run	Your challenge is to build a marble run. Use a stopwatch to measure how long it takes the marble to reach the bottom of each design. Then make a scaled bar graph and picture graph to show which design allowed the marble to move the fastest.	I CAN measure time with a stopwatch. I CAN define and describe forces. I CAN describe how gravity and friction affect the motion of objects. I CAN apply the steps of the Engineering Design Process. I CAN make a graph to compare the time it takes the marble to reach the bottom.	CCSS.MATH.CONTENT.3.MD.B.3, NGSS.3-PS2-1, NGSS.3-5-ETS1-2	Graphing, Forces and Interactions, Engineering Design
Dash (Kit/App)	3.RCT.1.D.1	Dash Grocery Delivery	Your challenge is to program your Dash robot with Blockly to collect groceries for those in need. You will also program your Dash robot to travel to specific items based on the fraction value listed on a grocery list.	I CAN use block coding to program my robot to follow directions. I CAN express whole numbers as fractions. I CAN identify fractions that are equivalent to whole numbers. I CAN compare two fractions with the same numerator or the same denominator.	CCSS.MATH.CONTENT3.NF.A.3.C, CCSS.MATH.CONTENT.3.NF.A.3.D	Fractions
Dash (Kit/App)	4.RCT.1.D.2	Put On a Show	Your challenge is to create your own math number story or play and program Dash to act out and solve the math problem.	I CAN write a math number story and program Dash to act it out. I CAN write a script for the math number story in order to turn it into a performance. I CAN solve multiplicative comparison problems.	CCSS.MATH.CONTENT.4.OA.A.2	Factors and Multiples

Elementary Advanced Exploration Collection (continued)

The project starters below accompany the Elementary Advanced Exploration Collection kits and equipment.

Use the information below to help plan how you will incorporate these project starters into the rotations for your SmartLab HQ.

Resource	SOT Code	Project Starter	Your Challenge	I CAN Statements	Targeted Standards	Topics Addressed
Vernier Elementary Energy Efficiency (Kit/Software)	4.S.1.VEEE.1	Design an Expedition Suit	Your challenge is to choose a remote area in the world that you would like to visit on a science expedition. First, you will learn a little bit about the climate. Then, you will use the Vernier Light and Color Sensor to collect data on how much light is reflected by different colored fabrics. You will design an expedition suit that uses the sun's energy to keep you warm or cool.	I CAN collect data to show that energy can travel from place to place by sound, light, heat, and electric currents. I CAN make conclusions based on the data I collect. I CAN explain my design choices based on the data I collect.	NGSS.4-PS3-2, NGSS.3-5-ETS1-1	Energy, Engineering Design
Dash (Kit/App)	5.RCT.1.D.3	The Wonder Workshop Dog Show	Your challenge is to program Dash to perform pet tricks to get it ready for the Wonder Workshop Dog Show! Then, create an obstacle course for Dash to get through, and write numerical expressions to represent each of the commands required to make Dash move.	I CAN program a robot to accomplish different tasks using block code. I CAN use the "When" code block to program a robot to act in response to an event. I CAN write expressions using mathematical symbols and the order of operations. I CAN explain what an expression represents.	CCSS.MATH.CONTENT.5.OA.A.2	Factors and Multiples
PocketLab (Kit/Website)	5.SDA.1.PL.1	Crash Cushions	Your first challenge is to test how the acceleration of a cart changes with the height of the starting point on a ramp. Your second challenge is to use the available supplies to build a crash cushion that will reduce the force experienced by a cart as it crashes into the wall. After you complete your experiments, you will create a presentation to share your results and lessons learned.	I CAN test ramps of various heights by sending a cart down them and collecting acceleration data with the PocketLab sensor and app. I CAN determine ramp heights by converting provided measurements into different units. I CAN select a ramp height to use as a control value. I CAN run several trials to determine the best material for a crash cushion. I CAN record my collected data on a graph.	CCSS.MATH.CONTENT.5.MD.A.1, NGSS.3-5-ETS1-2	Conversions, Engineering Design