

Primary (K-2) Scope & Sequence

The primary scope and sequence provides a recommended sequence of SmartLab HQ projects for kindergarten through second 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 Activity Cards 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.



Kindergarten

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
Geometric Shapes (Kit)	K.MS.1.GS.1	2D Shapes	Your challenge is to build and classify 2D shapes.	I CAN build one or more 2D shapes. I CAN classify shapes based on their properties.	2D shapes, properties of shapes
Geometric Shapes (Kit)	K.MS.1.GS.2	Letters and Numbers	Your challenge is to model letters and numbers.	I CAN model letters and numbers. I CAN problem-solve to find the answers to difficult problems.	letter and number modeling, problem solving
Let's Go Code (Kit)	K.SE.1.LGC.1	Robot Maze	Your challenge is to code a robot to move through a maze from start to finish.	I CAN design a maze using mats. I CAN program a robot to move through a maze from start to finish.	programming, coding, problem solving
Code & Go Colby (Kit)	K.RCT.1.CGC.1	Get the Cheese with Colby	Your challenge is to program a robot to retrieve a block of cheese.	I CAN design and build a maze. I CAN program a robot to move through a maze and retrieve a block of cheese. I CAN troubleshoot (debug) my program if it does not work as expected.	programming, coding, debugging, problem solving
Pixie (Software)	K.DC.1.P.1	Good Neighbors	Your challenge is to create a diagram using Pixie that shows what a good neighbor looks like.	I CAN describe the characteristics of a good neighbor. I CAN create a diagram that explains what a good neighbor looks like.	community, graphic design
Snap Circuits Green Energy (Kit)	K.C.1.SCGE.1	Powerful Paths	Your challenge is to build a closed circuit.	I CAN build a closed circuit. I CAN identify a closed path.	circuitry, open/closed circuits, electricity
Primary Physics (Kit)	K.MS.2.PP.1	Lever Launch	Your challenge is to use a lever to help you launch boxes.	I CAN identify the parts of a lever. I CAN describe how effort (push) helps the lever do work.	simple machines, levers, work, push and pull
Primary Physics (Kit)	K.MS.2.PP.2	Lifting Levers	Your challenge is to use a lever to help you lift weights.	I CAN identify the parts of a lever. I CAN describe how effort (push) helps the lever do work.	simple machines, levers, work, push and pull
Animation-ish (Website)	K.DC.2.A.1	Wiggledoodle-ish	Your challenge is to draw three pictures and bring a doodle to life using Animation-ish.	I CAN put drawings together to create an animation.	Animation, sequencing
Animation-ish (Website)	K.DC.2.A.2	Alphabet Soup	Your challenge is to use Flipbook-ish to draw a bowl of alphabet soup and move the letters to create words.	I CAN animate letters. I CAN use letters to make new words.	animation, phonological awareness, alphabet
Code & Go Colby (Kit)	K.RCT.1.CGC.2	Maze Masters with Colby	Your challenge is to design a maze with one rule and program a robot to retrieve a block of cheese.	I CAN design a maze with one rule. I CAN program a robot to move through the maze and retrieve a block of cheese. I CAN troubleshoot (debug) my problem if it does not work as expected.	programming, coding, conditions, debugging, problem solving

Kindergarten

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
Ozobot (Kit)	K.RCT.2.O.1	Ozobot Adventure	Your challenge is to draw a path for Ozobot to follow.	I CAN control a robot using the language it is programmed to understand. I CAN create a path that I want my robot to follow. I CAN troubleshoot (debug) my program if it does not work as expected.	programming, coding, debugging, problem solving
Snap Circuits Green Energy (Kit)	K.S.1.SCGE.1	Solar Energy	Your challenge is to power a circuit with a solar panel.	I CAN build a circuit. I CAN use solar energy to power a circuit.	solar power, energy, electricity, circuitry, closed circuit, renewable energy, sustainability
Squishy Circuits (Kit)	K.C.2.SC.1	Basic Circuit	Your challenge is to build a circuit and light an LED bulb.	I CAN build a basic (closed) circuit. I CAN add a load to my circuit.	circuitry, electricity, loads, closed circuit, short circuit
Tinkercad (Website)	K.CG.1.T.1	2D and 3D Shapes (Cookie Cutter)	Your challenge is to use Tinkercad to design a cookie cutter.	I CAN identify characteristics of 2D and 3D shapes. I can design a 3D shape using a digital workspace.	3D design, 2D and 3D shapes, closed shapes

First Grade

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
Let's Go Code (Kit)	1.SE.1.LGC.1	Maze Mania	Your challenge is to code a robot to move through a simple maze from start to finish.	I CAN design a maze and program a robot to move through a simple maze using code cards. I CAN troubleshoot (debug) my program if it does not work as expected.	programming, coding, debugging, problem solving, sequences
Let's Go Code (Kit)	1.SE.1.LGC.2	Mega Maze	Your challenge is to code a robot to move through a complex maze from start to finish.	I CAN design a maze and program a robot to move through a maze with obstacles using code cards. I CAN troubleshoot (debug) my program if it does not work as expected.	programming, coding, debugging, problem solving, sequences
Choose Your Presentation Tool (Software)	1.DC.1.CYPT.1	My Hero	Your challenge is to create a presentation about someone you think is a hero.	I CAN describe the characteristics of a hero. I CAN share my ideas.	presentation, character traits
Geometric Shapes (Kit)	1.MC.1.GS.1	Polygons	Your challenge is to use Geometric Shapes to build polygons.	I CAN identify characteristics of a polygon. I CAN classify shapes based on their attributes.	polygons, 2D shapes, closed shapes, characteristics of shapes, shape classification
Pixie (Software)	1.DC.3.P.1	Exploring Patterns	Your challenge is to use Pixie to create a pattern.	I CAN create a pattern with repeated shapes. I CAN identify symmetry in my pattern.	symmetry, patterns, shapes, rotation
Primary Physics (Kit)	1.MC.2.PP.1	Fixed Pulley	Your challenge is to use a pulley to lift a weight.	I CAN use a pulley to help make work easier.	simple machines, pulley, work, effort, push/pull
Exploring Gears (Kit)	1.MC.3.EG.1	Gears in Motion	Your challenge is to build a machine and explore how gears create pushes and pulls.	I CAN build a simple machine using gears. I CAN describe what a gear is. I CAN create and identify examples of pushes and pulls. I CAN explain what happens when a gear pushes and pulls on another gear.	force, push, pull, gears
Code & Go Colby (Kit)	1.RCT.2.CGC.1	Add with Colby	Your challenge is to use Code & Go Colby to solve an addition problem.	I CAN use a number line to help solve addition problems. I CAN program a robot to move along a number line. I CAN troubleshoot (debug) my program if it does not work as expected.	addition, number line, programming, debug
Code & Go Colby (Kit)	1.RCT.2.CGC.2	Subtract with Colby	Your challenge is to use Code & Go Colby to solve a subtraction problem.	I CAN use a number line to help solve addition problems. I CAN program a robot to move along a number line. I CAN troubleshoot (debug) my program if it does not work as expected.	subtraction, number line, programming, debug
Animation-ish (Website)	1.DC.2.A.1	Express Yourself	Your challenge is to use Flipbook-ish to show a change in emotion.	I CAN describe an emotion caused by a specific event. I CAN illustrate an emotion.	emotions, animation, cause and effect
Primary Physics (Kit)	1.MC.2.PP.2	Wheel and Axle	Your challenge is to use a wheel and an axle to move a cart.	I CAN use a wheel and axle to make work easier. I CAN describe how a wheel and axle makes work easier.	simple machines, wheel and axle, work, effort, push/pull

First Grade

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
Primary Physics (Kit)	1.MC.2.PP.3	Friction	Your challenge is to determine whether a car will travel farther on a smooth or bumpy road.	I CAN make a hypothesis and test it. I CAN describe how friction slows objects down.	friction, work, push/pull, ramps/inclined plane, hypothesis
Laser Maze (Kit)	1.C.1.LM.1	Investigating Light	Your challenge is to use a laser to light a goal.	I CAN use a laser to light a goal. I CAN use a mirror to change the direction light (laser) is traveling.	reflection, laser, light, wavelength, energy
Snap Circuits Green Energy (Kit)	1.C.2.SCGE.1	Switches	Your challenge is to make a circuit with a switch.	I CAN build a closed circuit. I CAN add a switch to my circuit to control the flow of electricity.	electricity, circuit, closed circuit, slide switch, push switch
Ozobot (Kit)	1.RCT.1.CGC.1	Four Seasons	Your challenge is to show weather patterns found in different seasons using Ozobot.	I CAN control a robot using the language it is programmed to understand. I CAN create a path that I want my robot to follow. I CAN use a color sequence to tell Ozobot what to do. I CAN troubleshoot (debug) my program if it does not work as expected.	seasons, weather, programming/coding, debugging
Vernier Go! Temp Sensor (Kit/Software)	1.SDA.1.V.1	A Hot Hand and the Scientific Method	Your challenge is to do an experiment using the scientific method.	I CAN use the scientific method to plan and do an experiment. I CAN collect and analyze data using a temperature sensor.	scientific method, data, scientific sensors, experiment

Second Grade

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
City Engineering & Design (Kit)	2.MS.1.CED.1	City Problem	Your challenge is to build a solution for a city problem.	I CAN use the Engineering Design Process to solve a problem.	engineering, Engineering Design Process, spatial relationships
Code & Go Colby (Kit)	2.RCT.1.CGC.1	Colby's Big Adventure	Your challenge is to create your own maze using the Code & Go Colby.	I CAN design a maze and program a robot to complete the maze. I CAN troubleshoot (debug) my program if it does not work as expected.	planning and organization, coding/programming, problem-solving, estimation and units of measurement
Ozobot (Kit)	2.RCT.2.O.1	My Favorite Place	Your challenge is to program Ozobot to follow a path to your favorite place.	I CAN draw a path Ozobot can read. I CAN use Ozocodes to tell Ozobot a command. I CAN make predictions about my robot's movements and test my hypothesis. I CAN troubleshoot (debug) my program if it does not work as expected.	coding/programming, debugging, sensors
Pixie (Software)	2.DC.2.P.1	Habitats	Your challenge is to create a Pixie book about animals and their habitats.	I CAN describe how various kinds of habitats provide various kinds of food, shelter, and water to the plants and animals that live there. I CAN create drawings to illustrate animal habitats.	habitats, basic needs, illustration
Circuit Maze (Kit)	2.C.1.CM.1	Closed Circuits	Your challenge is to use Circuit Maze to build a circuit that turns on a light.	I CAN describe open and closed circuits. I can build a circuit to power a light.	circuitry, electricity, closed/open circuit, load/resistance
Animation-ish (Website)	2.DC.1.A.1	Flipbook-ish	Your challenge is to create a complex animation with many frames.	I CAN describe the cause and effect of several events. I CAN illustrate a series of events.	series of events, animation, cause and effect
Hour of Code (Website)	2.SE.1.HC.1	Code.org	Your challenge is to write computer code for an hour.	I CAN use visual code blocks to write computer code. I CAN use programming concepts to change my program including commands, repeated loops, repeat until, if, and if/else statements.	programming, programming concepts (commands, repeated loops, repeat until, if, and if/else statements)
Primary Physics (Kit)	2.MS.2.PP.1	Archimedes Screw	Your challenge is to use an Archimedes screw to move material.	I CAN use a simple machine (Archimedes screw) to make work easier.	simple machines, complex machines, Archimedes screw, work, effort, push/pull
Primary Physics (Kit)	2.MS.2.PP.2	Pendulum	Your challenge is to use a pendulum to knock over boxes.	I CAN explore force using a pendulum. I CAN describe how a push and a pull produce different forces.	force, push/pull, energy, pendulum, potential/kinetic energy
Google Earth (Website)	2.SDA.1.GE.1	Exploring Google Earth	Your challenge is to use Google Earth to find a famous place.	I CAN identify a location using an address. I CAN find locations on a map using an address or landmark name.	location types, maps, address, landmarks
Pixie (Software)	2.DC.2.P.2	The Air We Breathe	Your challenge is to find one fact about air from the poem The Air We Breathe and illustrate the fact with Pixie.	I CAN identify fact from opinion. I CAN illustrate information.	fact vs. opinion, ozone, molecule, atmosphere, illustration

Second Grade

Resource	SOT Code	Activity Card	Your Challenge	I CAN Statements	Topics Addressed
Snap Circuits Green Energy (Kit)	2.C.2.SCGE.1	Lots of Loads	Your challenge is to use many loads in a circuit using Snap Circuits Green Energy.	I CAN build a circuit. I CAN add loads to my circuit. I CAN test how loads work based on their placement in a circuit.	circuitry, circuit, electricity, loads/resistors
Comic Life (Software)	2.DC.3.CL.1	Introduction to Comic Life	Your challenge is to use Comic Life to tell a story.	I CAN use a comic to communicate my ideas and tell a story. I CAN use a comic to sequence the events in my story.	comics, storytelling, sequencing events
Primary Physics (Kit)	2.MS.2.PP.3	Conservation of Energy	Your challenge is to explore how the angle of a ramp affects how far a car can travel.	I CAN adjust a ramp to change how far a car can travel. I CAN collect data on how far my car traveled. I CAN make a hypothesis about how far a car will travel and test my hypothesis.	inclined planes, simple machines, potential energy, kinetic energy, weight, mass, gravity
Ozobot (Kit)	2.RCT.2.O.2	Rollercoaster Thrill	Your challenge is to turn Ozobot into a rollercoaster car. Draw a rollercoaster path with Color Codes.	I CAN control a robot using the language it is programmed to understand. I CAN create a path that I want my robot to follow. I CAN compare and use different speed codes. I CAN explain the choices I made in my program.	algorithm, program, command, debug
Hour of Code: Code.org (Website)	2.SE.1.HC.2	Make a Computer Game with Play Lab	Your challenge is to complete all of the Play Lab puzzles to create your own computer game.	I CAN use visual code blocks to write computer code. I CAN use programming concepts to change my program including commands, repeated loops, repeat until, if, and if/else statements.	programming, debug, block programming
*Provide learners with a choice OR introduce a two-station rotation.	2.SE.1.HC.3	Block Programming with Flappy	Your challenge is to code your own Flappy computer game.	I CAN use visual code blocks to create a program. I CAN use programming concepts to change my program including commands, repeated loops, repeat until, if, and if/else statements.	programming, debug, block programming
Hour of Code: Tynker (Website)	2.SE.1.HC.4	Tynker	Your challenge is to write computer code to solve puzzles.	I CAN break down a problem and create an algorithm to solve it. I CAN sequence steps in a program. I CAN use loops in my programming for repetition.	algorithm, program, command, debug