



indi Illinois Computer Science Standards Alignment

This document shows the standards addressed in the 20 indi lessons. These lessons were designed for K-2 students but can be adjusted to address 3-5 learning needs. Each lesson is aligned to the [Illinois Computer Science Standards](#).

Meet Sphero indi	2
Directions	3
Patterns & Sequences	4
Measuring	5
Mixed Bag	6
Sphero Edu Jr	7



Meet Sphero indi

	Objectives	Illinois Computer Science Standards
Lesson 1: Meet Sphero indi	I can identify key parts of indi and explain what they do. I can teach someone else about indi and how it works.	K-2.CS.03 - Describe basic hardware and software problems using accurate terminology. K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.
Lesson 2: Stops and Celebrations	I can use my senses to describe what I see. I can teach indi when to stop rolling using red and purple color tiles.	K-2.DA.06 - Collect and present the same data in various visual formats. K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.
Lesson 3: Left or Right	I can show indi how to turn left or right. I can design a route around obstacles for indi to follow.	K-2.DA.06 - Collect and present the same data in various visual formats. K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information. K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.
Lesson 4: Left or Right Part 2	I can show indi how to turn slightly left or slightly right. I can design a route around obstacles for indi to follow.	K-2.DA.06 - Collect and present the same data in various visual formats. K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information. K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.



Directions

	Objectives	Illinois Computer Science Standards
Lesson 1: Routines	<p>I can help indi move through the classroom at different speeds.</p> <p>I can explain why we move in the classroom, the hallways, and the playground in different ways.</p>	<p>K-2.AP.08 - Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.</p> <p>K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 2: Transitions	<p>I can help indi turn and move through the classroom.</p> <p>I can explain how to get to different places in our school from our classroom.</p>	<p>K-2.AP.08 - Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.</p> <p>K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 3: Mini City	<p>I can identify the parts of a map.</p> <p>I can create my own map and incorporate indi's color tiles to create routes for indi to follow.</p>	<p>K-2.DA.06 - Collect and present the same data in various visual formats.</p> <p>K-2.AP.08 - Model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks.</p> <p>K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>



Patterns & Sequences

	Objectives	Illinois Computer Science Standards
Lesson 1: Identifying Patterns	<p>I can identify patterns around me.</p> <p>I can correctly identify what comes next in a pattern.</p> <p>I can complete a pattern to successfully guide indi.</p>	<p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs to make predictions.</p> <p>K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 2: Looping Patterns	<p>I can identify patterns that repeat or loop.</p> <p>I can make patterns that loop.</p>	<p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.</p> <p>K-2.AP.10 - Develop programs with sequences and simple loops, to express ideas or address a problem.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 3: Sequences in Nature	<p>I can identify cycles in nature.</p> <p>I can correctly identify what comes next in a pattern.</p> <p>I can demonstrate my understanding of natural cycles by creating a looping sequence for indi.</p>	<p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.</p> <p>K-2.AP.09 - Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>



Measuring

	Objectives	Illinois Computer Science Standards
Lesson 1: Simple Distances	<p>I can measure distances using indi's color tiles.</p> <p>I can express distances in terms of color tiles.</p> <p>I can accurately predict how far indi will travel.</p>	<p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 2: Measuring a Maze	<p>I can measure distances using indi's color tiles.</p> <p>I can express distances in terms of color tiles.</p> <p>I can explain the intended path indi will follow.</p>	<p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p>
Lesson 3: Where Are You Going?	<p>I can measure distances using indi's color tiles.</p> <p>I can express distances in terms of color tiles.</p> <p>I can describe a sequence of events with pictures and my own words for others to follow.</p>	<p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p> <p>K-2.AP.14 - Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p> <p>K-2.AP.15 - Using correct terminology, describe steps taken and choices made during the iterative process of program development.</p>



Mixed Bag

	Objectives	Illinois Computer Science Standards
Lesson 1: Story Path	<p>I can create a path for indi that represents a story arc.</p> <p>I can represent the setting of a story with things I make.</p> <p>I can develop a plan to retell a story.</p>	<p>K-2.AP.11 - Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p> <p>K-2.AP.15 - Using correct terminology, describe steps taken and choices made during the iterative process of program development.</p>
Lesson 2: Marathon	<p>I can iterate on my path to include as many color tiles as possible.</p> <p>I can collaborate with other groups and combine ideas.</p>	<p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p> <p>K-2.AP.15 - Using correct terminology, describe steps taken and choices made during the iterative process of program development.</p>



Sphero Edu Jr

	Objectives	Illinois Computer Science Standards
Lesson 1: Meet the App	<p>I can connect indi to the Sphero Edu Jr app.</p> <p>I can drive indi in a controlled manner around the classroom.</p> <p>I can send a new program to indi.</p>	<p>2.CS.01 - Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.</p> <p>K-2.DA.05 - Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.</p>
Lesson 2: Sing to me	<p>I can change indi's code so that each color represents a note in a song.</p> <p>I can space color tiles so that the timing and tempo of the song are correct.</p>	<p>K-2.CS.01 - Select and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.</p> <p>K-2.DA.05 - Store, copy, search, retrieve, modify, and delete information using a computing device and define the information stored as data.</p>
Lesson 3: Reverse the Loop	<p>I can create a looping pattern with indi</p> <p>I can use the Sphero Edu Jr app to program indi to perform different actions on color detection</p> <p>I can remix a puzzle</p>	<p>K-2-AP-11 - Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p> <p>K-2.DA.06 - Collect and present the same data in various visual formats.</p> <p>K-2.DA.07 - Identify and describe patterns in data visualizations, such as charts or graphs, to make predictions.</p>
Lesson 4: indi Adds	<p>I can add one-digit numbers, including zero.</p> <p>I can solve missing number problems.</p>	<p>K-2-AP-11 - Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p>
Lesson 5: Puzzle Races	<p>I can determine the new instructions for each color tile.</p> <p>I can work with my team to complete the puzzle as quickly as possible.</p>	<p>K-2.AP.11 - Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p> <p>K-2.AP.12 - Develop plans that describe a program's sequence of events, goals, and expected outcomes.</p> <p>K-2.AP.14 - Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.</p>