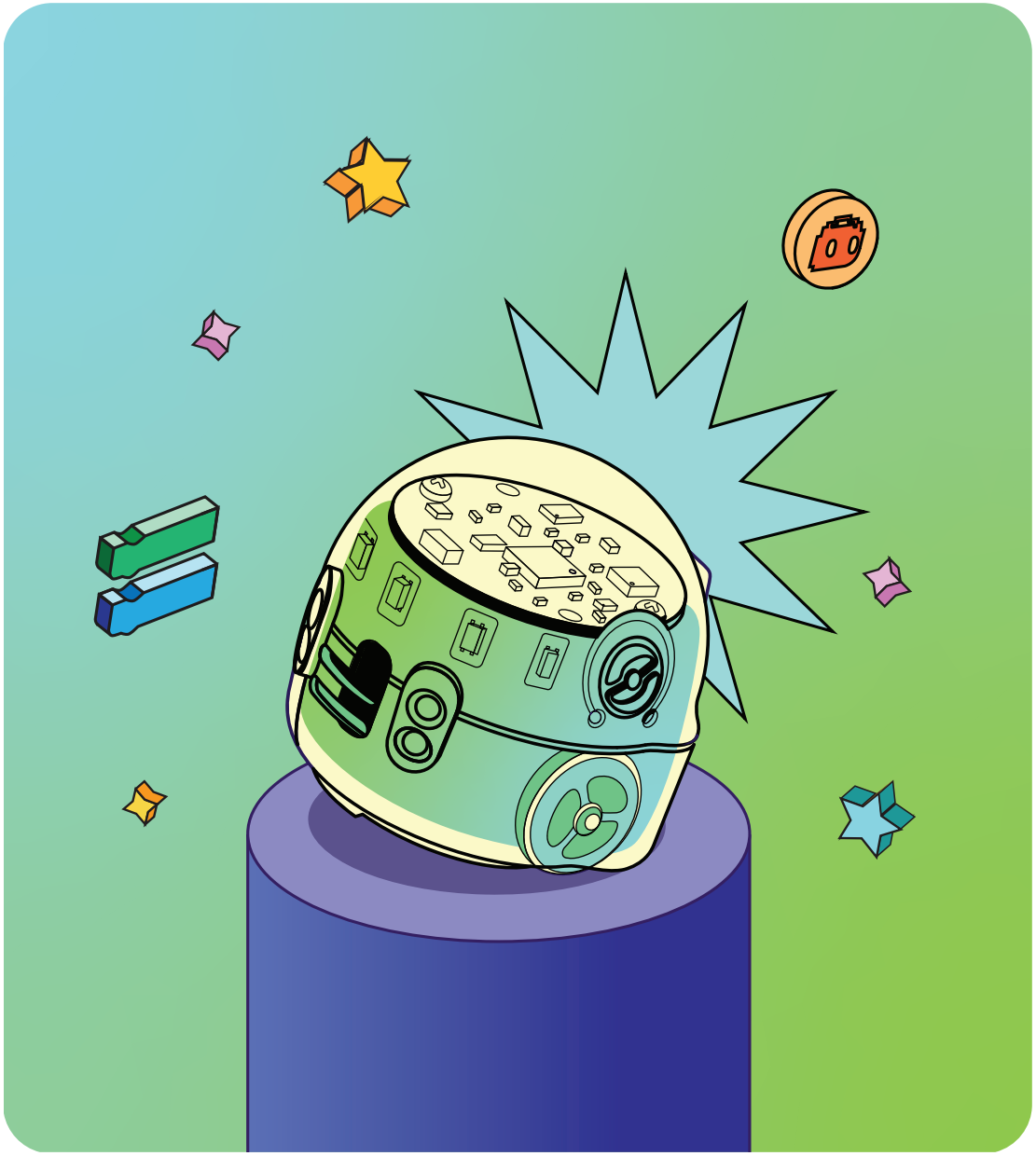
5th Grade Pacing Guide



Overview

The **Elementary Vertical Pacing** is a simplified guide to the hundreds of free lessons available for you and your students. We created it for two primary purposes:

- A guide for schools and programs that plan on using Ozobot year-over-year with their students and need to pace out concepts and lessons. Coding skills build on one another each year to expose students to new content at increasing levels of complexity.

- A “playlist” of our best lessons, curated for you! This guide is a one-stop-shop for anyone looking to browse our most engaging lessons aligned to each grade-level.

A few notes:

- We have included **Color Codes** as the focus for Kinder, 1st and 2nd grade and **Blockly** as the focus for 3rd, 4th, and 5th grade for the purpose of pacing over several years of instruction with Ozobot. We have spread the introductory lessons for each coding type across two grade levels (Kinder and 1st for Color Codes; 3rd and 4th for Blockly) and provides additional skill-building for each coding type in 2nd (Color Codes) and 5th (Blockly).

- This progression is a suggestion for the purpose of pacing only; we know you know your students best! We believe Kindergartners can access Blockly in the same way we believe 5th graders can be engaged with Color Codes.

Lesson	Objective	Aligned 3-5 Standard CSTA
1 Introduction to Color Codes 01: Basic Training ✦ This is a review lesson!	Students will be able to demonstrate understanding of powering on/off and calibration. Students will be able to program Ozobot by drawing lines of color code.	**CSTA.1A-CS-02:** Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).
2 Introduction to Color Codes 09: Skills Check 2 (Grades 3-5) ✦ This is a review lesson!	Students apply the concepts and skills they learned in all lessons to program their bot to complete a challenge.	**CSTA.1B-CS-02** Model how computer hardware and software work together as a system to accomplish tasks.
3 Ozobot Cube Challenges	Students will be challenged to think critically in this activity where the roll of cubes contains the criteria of the maze they will create including a time constraint.	**CSTA. 1B-AP-15** Test and debug (identify and fix errors)a program or algorithm to ensure it runs as intended.
4 Count Down With the Pointer Counter	Students will use computational thinking to practice using the point counter Color Codes.	**CSTA.1B-AP-08** Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
5 A Year in Constellations	Students will program their Evo to follow the lines and the Color Codes to trace the shape of their constellation.	**CSTA. 1B-AP-10** Create programs that include sequences, events, loops, and conditionals.

Lesson	Objective	Aligned 3-5 Standard CSTA
6 What's the Speed?	Students will complete multiple tests with each Color Code to time how long it takes their bot to travel the same distance.	**CSTA. 1B-DA-07** Use data to highlight or propose cause-and-efect relationships, predict outcomes, or communicate an idea.
7 Introduction to Ozobot Blockly 05: Skills Check 1 ✦ This is a review lesson!	Students will apply the concepts and skills they learned in previous lessons to program their bot to complete a challenge.	**CSTA 1B-AP-15** Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.
8 Introduction to Ozobot Blockly 07: Skills Check 2 ✦ This is a review lesson!	Students will apply the concepts and skills they learned in previous lessons to program their bot to complete a challenge.	**CSTA.1B-AP-09** Create programs that use variables to store and modify data.
9 Light Up the Sky with Auroras	Students will use color sensor data to program Ozobot's lights based on the detected surface color of their art.	**CSTA.1B-AP-10:** Create programs that include sequences, events, loops, and conditionals.
10 Cookie Jar (Part 1 of 3)	Students will use loops to create an efficient program for Ozobot to count to 20.	**CSTA.1B-AP-08:** Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

Lesson	Objective	Aligned 3-5 Standard CSTA
11 Cookie Jar (Part 2 of 3)	Students will code a unique conditional statement using variables to store and modify data.	**CSTA.1B-AP-09** Create programs that use variables to store and modify data.
12 Cookie Jar (Part 3 of 3)	Students will create functions to repeat a set of insctructions and execute an efficient program.	**CSTA.2-AP-14** Create procedures with parameters to organize code and make it easier to reuse.
13 Introduction to Infrared Communications with Ozobot	Students will program Ozobot to react to objects in front and behind it. Students will demonstrate understanding of blocks in Levels 3 and 4 of OzoBlockly.	**CSTA.2-AP-10** Use flowcharts and/or pseudocode to address complex problems as algorithms.
14 Broadcast and Retrieve IR Messages with Ozobot	Students will program one Ozobot to send or emit an IR signal, and one Ozobot to receive that IR signal and perform an action.	**CSTA.2-AP-10** Use flowcharts and/or pseudocode to address complex problems
15 Basic Applications of IR Communication	Students will demonstrate understanding of the Communication blocks in Ozobot Blockly. Students will use a model to illustrate an everyday example of infrared communication.	**CSTA.2-AP-10** Use flowcharts and/or pseudocode to address complex problems as algorithms.

Content Integration Options

STEAM	ELA	Math	Holiday	Seasonal
A Year in Constellations	Triangle's Story	Number Randomizer	New Year's Resolutions	Snowflake Conditionals
What's the Speed?	Synonyms in Action	Ordered Pairs with Ozobot	Decode the MLK Quote	Girls Innovating Change
Energy Food Chain	Prepositions by Chance	Maze of Operations	Lunar New Year Red Envelope Adventure	Ozobot for President! (Advanced)
Stargazing with Ozobot: Recreate a Constellation	Conjunctions By Chance	Comparing Decimals	Black History: Influential People	
Trash Sorter	Interjections By Chance	Bowling for Fractions - Equivalent Fraction	Black History: Katherine Johnson the Human Robot	
Race to Recyle	President's Parade	Bowling for Fractions - Add and Subtract	Send Your Valentines	
		What's the Speed?	President's Parade - Abraham Lincoln	
		Triangle's Story	Who Can Find the Pot of Gold?	
			The Easter Bunny Hop	
			April Fool's Debugging Challenge	
			Ozobot Trick or Treat	
			Haunted Mansion Escape	

Content Integration Options (continued)				
STEAM	**ELA**	**Math**	**Holiday**	**Seasonal**
			Monster Mash Dance Off	
			Halloween Riddle	
			Dia de los Muertos: Honoring Ancestors	
			Dia de los Muertos Dance (Multiplication/Division)	
			Gratitude Party (Thanksgiving)	
			Let's Talk About Gratitude	
			Turkey Art with Ozobot	
			Giving Back to the Community	
			Deidel Bot (Hanukkah)	
			Reinbot Landing Practice (Christmas)	
			OzoClaus	
			Decorating the Kwanzaa Unity Cup	