

# ozobot<sup>®</sup>

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## 4th 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
<p><b>1</b> <a href="#">Introduction to Ozobot: Get to Know Evo</a></p> <p>✦ This is a review lesson!</p>	<p>Students will be able to demonstrate understanding of powering on/off and calibration.</p> <p>Students will be able to program Ozobot by drawing lines of color code.</p>	<p><b>CSTA.1A-CS-02:</b></p> <p>Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).</p>
<p><b>2</b> <a href="#">Introduction to Color Codes 05: Skills Check 1</a></p> <p>✦ This is a review lesson!</p>	<p>Students apply the concepts and skills they learned in all lessons to program their bot to complete a challenge.</p>	<p><b>CSTA.1B-AP-15</b></p> <p>Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>
<p><b>3</b> <a href="#">Introduction to Ozobot Blockly 06: Conditionals</a></p>	<p>Students learn to program with conditionals to play a game of tag.</p>	<p><b>CSTA. 1B-AP-10</b></p> <p>Create programs that include sequences, events, loops, and conditionals.</p>
<p><b>4</b> <a href="#">Introduction to Ozobot Blockly 07: Skills Check 2</a></p>	<p>Students apply the concepts and skills they learned in previous lessons to program their bot to complete a challenge.</p>	<p><b>CSTA.1B-AP-09</b></p> <p>Create programs that use variables to store and midify data.</p>
<p><b>5</b> <a href="#">Puddle-jumping with Conditionals</a></p>	<p>Students apply the concept of conditionals with block-based coding to complete different actions according to the color their robot senses.</p>	<p><b>CSTA. 1B-AP-10</b></p> <p>Create programs that include sequences, events, loops, and conditionals.</p>

Lesson	Objective	Aligned 3-5 Standard CSTA
<p><b>6</b> <a href="#">Exploring Functions in Ozobot Blockly Part 1 of 3</a></p>	<p>Students will name and define functions within a program that mimics multiple behaviors.</p> <p>Students will learn to call the functions they create.</p>	<p><b>CSTA. 1B-AP-11</b></p> <p>Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.</p>
<p><b>7</b> <a href="#">Exploring Functions in Ozobot Blockly Part 2 of 3</a></p>	<p>Students will program Ozobot to move accurately using functions.</p>	<p><b>CSTA 1A-AP-15</b></p> <p>Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.</p>
<p><b>8</b> <a href="#">Exploring Functions in Ozobot Blockly Part 3 of 3</a></p>	<p>Students will call functions to move their Ozobot to complete a game of “snake”.</p>	<p><b>CSTA.1B-CS-03</b></p> <p>Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.</p>
<p><b>9</b> <a href="#">Code to Touchdown</a></p>	<p>Code Ozobot to run a touchdown! Create a randomization code and see how many points your Ozobot can score in a modified game of football.</p>	<p><b>CSTA 1B-AP-08</b></p> <p>Compare and refine multiple algorithms for the same task and determine which is the most appropriate.</p>
<p><b>10</b> <a href="#">Exploring Solstices and Equinoxes</a></p>	<p>Students will create a program on Blockly for Ozobot to orbit around the sun while they present facts about the year’s solstices and equinoxes.</p>	<p><b>CSTA.1B-AP-10:</b></p> <p>Create programs that include sequences, events, loops, and conditionals.</p>

Lesson	Objective	Aligned 3-5 Standard CSTA
<b>11</b> <a href="#"><u>Ozobot Goes Ice Skating</u></a>	Students will learn to program using conditionals based on the feedback from Ozobot's sensors.	<b>CSTA 1B-AP-08</b> Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
<b>12</b> <a href="#"><u>Robotics Game Design Deconstruction Part 1</u></a>	Ozobot moves around a map by itself, 'bounces' off of colors, and 'wins' on the color red using conditional statements to find the winning spot.	<b>CSTA. 1B-AP-10</b> Create programs that include sequences, events, loops, and conditionals.
<b>13</b> <a href="#"><u>Robotics Game Design Deconstruction Part 2</u></a>	Students program Ozobot using blocks from Line Navigation to follow a maze until it sees the red line-end and breaks out of a loop.	<b>CSTA.1B-AP-12</b> Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.
<b>14</b> <a href="#"><u>Robotics Game Design Deconstruction Part 3</u></a>	Aim Ozobot toward the winning color while avoiding the losing color in a game that teaches how to program winning and losing game mechanics using the Deconstruction method.	<b>CSTA 1B-AP-13</b> Use an iterative process to plan the development of a program by including others' perspectives and considering
<b>15</b> <a href="#"><u>Robotics Game Design Deconstruction Part 4</u></a>	Ozobot bounces off teammates' colored paper in a race against time until it reaches red. Students learn variables for tracking time and have Ozobot report the total.	<b>CSTA.1B-AP-09:</b> Create programs that use variables to store and modify data.

## Content Integration Options

STEAM	ELA	Math	Holiday	Seasonal
<a href="#"><u>Energy Road Trip</u></a>	<a href="#"><u>Ozobot's Trip With Prepositions</u></a>	<a href="#"><u>Division Maze</u></a>	<a href="#"><u>New Year's Resolutions</u></a>	<a href="#"><u>Girls Innovating Change</u></a>
<a href="#"><u>Patterns and Waves Part 1</u></a>	<a href="#"><u>ID the Structure</u></a>	<a href="#"><u>Division Race</u></a>	<a href="#"><u>Decode the MLK Quote</u></a>	<a href="#"><u>Snowflake Conditionals</u></a>
<a href="#"><u>Patterns and Waves Part 2</u></a>	<a href="#"><u>What's the Word Relay</u></a>	<a href="#"><u>Division Race with Remainders</u></a>	<a href="#"><u>Lunar New Year Red Envelope Sdventure</u></a>	<a href="#"><u>OzoSlopes</u></a>
<a href="#"><u>Patterns and Waves Part 3</u></a>	<a href="#"><u>Ozobot's Day of Similes</u></a>	<a href="#"><u>All About Symmetry</u></a>	<a href="#"><u>Black History: Influential People</u></a>	<a href="#"><u>Winter Scavenger Hunt</u></a>
<a href="#"><u>Light Up the Sky With Auroras</u></a>	<a href="#"><u>My Own Vowel Story</u></a>	<a href="#"><u>Fact Families</u></a>	<a href="#"><u>Black History: Katherine Johnson the Human Robot</u></a>	<a href="#"><u>Countdown to the New Year</u></a>
<a href="#"><u>Stargazing with Ozobot: Recreate a Constellation</u></a>		<a href="#"><u>Bowling for Fractions - Comparing Fractions</u></a>	<a href="#"><u>Send Your Valentines</u></a>	<a href="#"><u>President's Parade - Abraham Lincoln</u></a>
<a href="#"><u>Trash Sorter</u></a>		<a href="#"><u>Bowling for Fractions - Add and Subtract</u></a>	<a href="#"><u>President's Parade - Abraham Lincoln</u></a>	<a href="#"><u>Ozobot for President! (Advanced)</u></a>
			<a href="#"><u>Who Can Find the Pot of Gold?</u></a>	<a href="#"><u>Seasons Changing</u></a>
			<a href="#"><u>The Easter Bunny Hop</u></a>	
			<a href="#"><u>April Fool's Debugging Challenge</u></a>	
			<a href="#"><u>Ozobot Trick or Treat</u></a>	
			<a href="#"><u>Haunted Mansion Escape</u></a>	

## Content Integration Options (continued)

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