ozobot®

Grades 3–4 Pacing Guide

Overview

The **Ari Pacing Guide** is a resource designed to guide educators as they integrate Ari into their classrooms or programming.

Within each grade band, you will find a curated selection of lessons aligned to the corresponding content standards. We recommend starting with our 'Meet Ari' lessons, included in each grade, to build a foundational understanding of the coding and programming concepts used with Ari.

From there, use your grade-level guide as a lesson playlist. We've arranged the lessons in a suggested order based on their progression in coding and robotics skills, but you can choose the ones that best align with your instructional goals and content focus.

Lesson	Objective	Standard
1 Meet Ari: Hardware, Software, and Apps (K-4)	Students will learn the basic functions of Ari and demonstrate their ability to use the software for learning applications. Students will understand the capabilities of 9 hardware components on Ari and identify the location of each on a diagram.	**CSTA.1A-CS-02** Use appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).
2 Meet Ari: Color Codes (K-4)	Students will learn how to use Color Codes with Ari using the Color Codes app, by filling in the missing Color Codes and running Ari on 8 different tracks. Students will use the language of observation to describe what they see and document their findings.	**ISTE.1.1d** Students understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies.
3 Meet Ari: The Ozobot Editor (K-4)	Students will learn how to navigate and use the Ozobot Editor, including selecting, editing, deleting, duplicating, and customizing blocks to create block-based programs. Students will demonstrate their understanding of coding concepts by programming Ari to perform a sequence including movement, light effects, and sounds.	**CSTA.1A-AP-10** Develop programs with sequences and simple loops, to express ideas or address a problem.
4 Ari's Pollination Garden	Students will learn how animals and insects contribute to pollination, by programming Ari to follow a track that simulates a pollinator's movement. Students will use Ari to input data on which color flowers were pollinated and use comparative and superlative adjectives to describe their pollination data. Students will accurately add two-digit and one-digit numbers, then compare their results using the symbols >, =, and < to demonstrate understanding of measuring data.	**NGSS.2-LS2-2** Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Lesson	Objective	Standard
5 **Animal Life Cycles**	Students will use drawings and labels to show the stages of two different life cycles. Students will use Color Codes to program their bot to demonstrate two different life cycles. Students will Use a diagram to compare and contrast the two life cycles by completing a Venn Diagram.	**NGSS.3-LS1-1** Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
6 **Moon Phases with Ari Level 2**	Students will identify eight phases of the moon. Students will program Ari to recognize a color to indicate each phase.	**NGSS.5-ESS1-2** Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.
7 **Area and Perimeter Everywhere**	Students will measure the side lengths of rectangular shapes using the Ari distance application. Students will calculate the area and perimeter of rectangular shapes.	**CCSS.MATH.CONTENT.4.MD.A.3** Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
8 **Shadow Shifts**	Students will measure the lengths of shadows. Students will compare shadow lengths at different times of the day.	**CSTA.1B-DA-07** Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.

Lesson	Objective	Standard
9 How to Make a Sandwich	Students will analyze, break down, and describe the process of making a sandwich (real or imagined). Students will program Ari to walk through the steps of making their sandwich.	**CCSS.ELA-LITERACY.W.3.2** Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
10 What's the Word Relay	Students will write a sentence using a given word to show its meaning. Students will program Ari to randomly choose a word. Students will add Color Codes to complete multiple pathways.	**CCSS.ELA-LITERACY.L.4.1.g** Correctly use frequently confused words (e.g., to, too, two; there, their).
11 Katherine Johnson the Human Robot	Students will learn about the accomplishments of Katherine Johnson and her contributions to NASA landing astronauts on the moon. Students will program a track for Ozobot to land on the moon using point counter codes.	**CSTA.1A-AP-12** Develop plans that describe a program's sequence of events, goals, and expected outcomes.
12 Mix It Up Multiplication	Students will input numbers and Color Codes to complete the Mix It Up Multiplication Map. Students will program Ari to follow the lines and the Color Codes to prompt a number. Students will create and solve multiplication problems applying the commutative property using the numbers prompted by Ari.	**CCSS.MATH.CONTENT.3.OA.C.7** Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.