Lesson 1.1: Introduction to Programming With Karel

https://codehs.com/course/10140/lesson/1.1

Description	In this lesson, students are introduced to Karel the Dog and how Karel can be given a set of instructions to perform a simple task.
Objective	Students will be able to: • Recognize, explain, and use the commands that Karel can be given. These commands are: `move()`, `putBall()`, `takeBall()` and `turnLeft()`.
Activities	[1.1.1 Video: Introduction to Programming With Karel](#) [1.1.2 Check for Understanding: Quiz: Karel Commands](#) [1.1.3 Example: Our First Karel Program](#) [1.1.4 Exercise: Your First Karel Program](#) [1.1.5 Exercise: Short Stack](#) [1.1.6 Debugging: Dancing Karel](#)
Prior Knowledge	• CodeHS page navigation
Planning Notes	• Review the slides and the exercises in the lesson. • There is a handout that accompanies this lesson. It can be used as an in-class activity or a homework assignment. Teacher can determine how and if this handout will be used and make the appropriate number of printouts prior to the class period.
Standards Addressed	
Teaching and Learning Strategies	**Lesson Opener:** • Complete the *Backseat Pictionary* handout activity. [10 mins] • Have students brainstorm and write down answers to the discussion questions listed below. Students can work individually or in groups/pairs. Have them share their responses. [5 mins] **Activities:**

	- Watch the lesson video and complete the corresponding quiz. [6-10 mins] - Let students play around with the *Our First Karel Program* example. Encourage students to experiment with the results of writing the instructions in various order. Have students view their code in Code View to see the correct indentation and syntax. [10-15 mins] *Break the Page:* What happens if you mess with the syntax of the code? Lead the students through the "mistakes" below. Have students explore and discuss what happens. Students will need to be in Code View for this activity. [10 mins] - What happens if a command is capitalized? - What happens if a parenthesis is left off? - What happens if a semi-colon is not present? - Complete the *Your First Karel Program* exercise. [5 mins] - Complete the *Short Stack* exercise. [5 mins] - Complete the *Dancing Karel* exercise. [5 mins] **Lesson Closer:** - Have students reflect and discuss their responses to the end of class discussion questions. [5 mins] - Complete the associated *Karel Commands* worksheet.
Discussion Questions	**Beginning of Class:** - What is a computer? What are they used for? *A computer is an electronic device used for storing and processing data.* - What is the difference between a computer and computing? *A computer is the device and computing is the action of using the device.* **End of Class:** - What can Karel teach us about computing? *Karel needs commands in order to perform tasks. The commands are very specific and need to have the correct syntax.* - What commands can Karel execute? `move(), putBall(), takeBall(), turnLeft()`
Resources/Handouts	[Backseat Pictionary (teacher version)](#) [Backseat Pictionary (student version)](#) [Karel Commands (student version)](#) [Karel Commands (teacher version)](#) [AP CSP Resources](#)

Vocabulary

Term	Definition

Modification: Advanced	Modification: Special Education	Modification: English Language Learners
• Encourage students to discover what else Karel can do by directing them to the Docs tab.	• Instruct students to identify the objective of the exercises by looking at the left-hand side of the screen • Provide the exercise solutions. Have students type the solution and describe step by step descriptions of what Karel does. • Supply a printed out list of Karel's commands. Have students circle or mark which commands Karel will perform before it is typed. • Review the concept of north, east, west, and south.	• Provide a predefined list of vocabulary • KWL (Know, Want to know, Learn) Chart - Computers/Computing/Karel the Dog. Pair similar students and have them share out their charts.