

CUBETTO

Lesson 2 – Use Directions

Description: *In this activity, students are introduced to the directions associated with each command block and how they are used to program Cubetto.*

Objectives:

1. *To understand how to use directions to communicate instructions*
2. *To learn how to interact in a small group (take turns, share)*

Skills:

Learning to Code

Students will explore:

- *the basic commands: left, right, forward.*

Coding to Learn and Create

Students will learn about:

- *the importance of clear communication.*
- *interpreting a simple map.*
- *the use of basic directionality in daily activities.*
- *working together in a small group setting: sharing materials, turn taking and listening.*

Curriculum Connections

- Social Studies – People and Environments (mapping skills)
- Math – Geometry and Spatial Sense (directions, coordinates, grids), Number Sense (counting)

Vocabulary:

1. Review vocabulary: *robot*
2. New vocabulary: *turn left, turn right, go forward*



Required Materials:

NOTE: We recommend up to 4 students per Cubetto set

Introduce	Anchor	Model
<ul style="list-style-type: none"> Cubetto the robot CUBETTO – Vocabulary Cards (robot) 	<ul style="list-style-type: none"> GPS Videos for Anchor Activity [with or without captions] CUBETTO – Vocabulary Cards (turn left, turn right) 	<ul style="list-style-type: none"> CUBETTO – Vocabulary Cards (go forward, turn left, turn right)

Practice	Apply
<ul style="list-style-type: none"> Directional Arrows for Cubetto Colour coded stickers and/or bracelets (yellow, red) 	<ul style="list-style-type: none"> CUBETTO - Vocabulary Student Reference Page L-R-F Student Tip Sheet: We Collaborate Student Tip Sheet: Giving Feedback

Adapted Materials:

- Braille vocabulary list
- Communication displays and/or device overlays
- Velcro pictures and mounting surface, such as burfab board, E-Tran, etc.



Introduce

Say

Yesterday, we examined Cubetto the robot and we noticed many features. What did you notice about Cubetto yesterday?

1. Review the features of Cubetto: face, tail, wheels, etc.

Say

Today we are going to learn about the directions we use to program Cubetto.

Cubetto always needs to see where it is going. When we look where we are going, our body faces that direction. Your feet are like Cubetto's wheels.

Anchor

Say

When we travel in the car or bus, we need directions to help us get to where we want to go. Sometimes we use a GPS, which speaks and shows us directions. Have you seen or heard a GPS before? Let's watch a short video of how a GPS works. Listen for the directions that the GPS uses and try to remember them.

1. Show video of GPS.

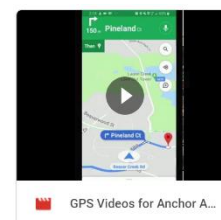
Say

What words did the GPS use to give directions?

2. As students name the directions from the video, show the corresponding vocabulary card (turn left, turn right)

Say

Notice each direction is a different colour. Turn left is yellow and turn right is red.



Model

Say

We are going to learn about directions for Cubetto today. First, we'll learn about the word **forward**. When we move in the direction our body is facing, we are moving forward.



1. Show the vocabulary card **go forward**.



Notice that go forward is green.

Say

*There are 2 other directions that we will need to know. When we want to change direction, we will need to **turn left** or **turn right**. IMPORTANT: We turn in place—we **do not** turn **and** go forward.*

2. Show the vocabulary cards **turn left** and **turn right**.

Say

Notice that turn left is yellow and turn right is red.

3. Ask for a student volunteer. Place a target on the floor in front of the student. Move the student forward to the target to demonstrate the command as it relates to the movement. Think out loud while the student is moving (i.e. Say *[Student] needs to go forward/turn left/turn right to reach the target.*)
4. Move the target to the left of the student. Think aloud while you turn the student left to face the target to demonstrate the command as it relates to the movement. Reinforce that a turn happens in place—they do not move forward.
5. Move the target to the right of the student. Think aloud while you turn the student right to face the target to demonstrate the command as it relates to the movement.

Practice

Scaffolding Tip: Consider creating a grid on the floor to emphasize a 90-degree turn.

Say

Let's practice together. Go forward one step. Go forward another step. Each time you go forward, it is one step.

1. Move the target to another location in the room.

Say

Find the target and turn your body to face the target. Now move forward to the target. Remember that moving in the direction your body is facing is always forward.

2. Repeat for turn left. (Note: emphasize that students are *turning left*, not *going left*.) Give left bracelet/sticker after you teach this word to assist students with remembering concept.



- Repeat for *turn right*. (Note: emphasize that students are *turning right*, not *going right*.) Give right bracelet/sticker after you teach this word to assist students with remembering concept.

Say

Let's look at Cubetto again. Help me put directions on top of Cubetto.



- Together place directional arrows on the top of Cubetto's head (left, right, forward) and a tail on his back. Say each vocabulary word and point to the vocabulary cards and matching bracelets and stickers.



Apply

Refer to Student tip sheets: *We Collaborate* and *Giving Feedback*. Display and discuss how to provide instructions and give feedback.

Provide instructions to get from a starting point to a destination within the classroom, school, or yard.



- Group students into pairs.
- Have Partner A choose a starting point and a mystery destination.
- Partner A directs Partner B to the mystery destination using the vocabulary **go forward**, **turn left** and **turn right**.

Scaffolding Tips:

- Have cue cards with directions available for reference.
- Repeat the activity and have the partners switch roles.

Reflect and Share

Provide vocabulary cards, display GPS video, Cubetto, bracelets/stickers.

Take some time to share the learning experiences from the day. Validate and reinforce each contribution. Write and display students' responses on a chart/concept map, etc. so that it can be used to activate background knowledge in future lessons.

Allow each student to share one thing they learned. Consider prompting group discussion with questions such as:

- What did you learn about directions?
- What problems did you encounter?



- Do you think what we learned today will help us with using Cubetto? Why or why not?
- Can you think of other experiences in our daily lives for which directions are useful?

Note: Some students may point or eye gaze toward a vocabulary card or other item. Use this attempt to validate their ideas. E.g. If student points to the turn right vocabulary card, say, "That's right, you turned right." If student eye gazes toward Cubetto, say, "We learned about Cubetto.")

Provide each student with a *Student Feedback Form* to determine how they felt about the day's activities.

Extend and Connect to Real Life

1. During the next few weeks, make a point of using the words left and right as students are seated in different places in the classroom.
2. Provide students with a chart of activities they do on a daily basis. Provide three columns: left, right and both. Ask students to fill in the chart based on which hand they use for the activity. Pull the class information into a bar graph.
3. Use a Google Map to chart the route for a field trip the class is taking. Look at the steps prior to going on the field trip and reinforce the steps as the bus turns left, right and travels forward. This activity could be done on a smaller scale while moving about the school as a class.