

Welcome to Technology! Thank you for volunteering your time and sharing your talents.

Goal: In this module, the students will use a ROOT Robot to learn about coding. They will code their robot to move, draw, light up and play music.

Introduce yourself and briefly share your career/education background.

Opening Comments: Tell the students they will be using a ROOT Robot to learn about coding. They will work in teams to code their ROOT to do up to 3 different activities.

Divide the students into groups of 2 or 3 and have them go to their tables.

A few rules to keep in mind:

- Keep the ROOT on the white board.
- Handle the ROOT with care.
- Work together as a team.

Go over some basic guidelines for the ROOT (see *Root Robot Help Guide*):

- Turning ROOT On/Off
- Connecting to ROOT
- Running a Simulation on the iPad First
- Running a Project
- Stopping a Project
- Deleting Blocks
- Opening and Closing Editors
- Zooming in the Coding Screen

To begin, there is a screencast to watch on the iPad which shows how to get started. The video is located in the Photos App.

Activity #1 - Creating a Triangle (Whole Group)

Tell the students that by doing this activity, they will learn how to code their ROOT to draw a triangle. This will teach them some basics so that after they are finished, they can pick other coding activities to work on with their team. Student guides (with step-by-step instructions) are provided for each team. Monitor the students as they work through the activity. Once they have completed this, they can move on and try the other activities.

Teams can choose any or all activities from the options listed below:

Activity #2 - Creating a Song with Lights

Activity #3 - Writing Initials

Students will follow the guides for the activity they choose, or they can try coding on their own. Continue to monitor and assist the students as needed.

Discussion Points:

- Coding is the language of the computer that follows our command in the form of codes.
- Coding, in its most basic terms, is just assigning a computer a task to do based on the logical guidelines you have outlined.
- Highly complex tasks are essentially a collection of smaller operations once you break them down.
- Today, every business is digitalized. Smart phones, e commerce, e sports and games, accounting, bill paying, and numerous other avenues are performed through software development and web applications which are created through coding alone.

Feel free to discuss with students what they just learned through the activities.

At the end of each module, instruct students to:

1. Delete their code on the iPads.
 2. Turn off the Root by holding the yellow button for 3 seconds.
 3. Wipe off their whiteboards.
 4. Put lids on their whiteboard markers.
- You and the student helper should check that #1-#4 above were done between each group.
 - Have the student helper wipe off the iPads with a cleaning wipe between each group.

End of the Day:

- **A JA Staff member and student volunteers will clean up at the end of the day.**

Thank you for making a difference today!