Color Walk: Roots & Prefixes

Using the color sensor, students will program the RVR to read a list of words related to the **Roots & Prefixes** category and associated to each specific color tile. This activity encourages students to use the movement and control blocks to drive over the color tiles, pause, and list words that fit the category. This also uses speech blocks as well as the "On Color" event block.

Materials

- Sphero RVR robot
- Color squares, included with the RVR
- Index cards or label stickers
- Floor Space

Student Objectives

- Students will show understanding of root words and prefixes that come from Greek and Latin origins in our language. These include those studied in class such as:
    - root words: graph, body and script
    - prefixes: auto-, anti-, pre-
- Students will demonstrate understanding of movement blocks, control blocks and use of the RVR color sensor with Sphero EDU programming.
- In building their program, students will think like a programmer. That is, they will troubleshoot what is happening and debrief, debug and correct their mistakes.

Teacher Technology Skills Needed

- Understanding of the Sphero RVR color sensor and movement headings
- Understanding of the control blocks to add delays and pauses in the speech blocks of the robot

Standards

NYED ELA Standards

- 4L4b: Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).

Procedure

1. Start the lesson by reviewing the idea of root words and prefixes in our language. Have students come up with a list of words they know that come from

auto   script   graph   pre-   manu   body

2. Review with the Sphero RVR the movement blocks and the heading degree chart. Demonstrate a Sphero program you have built where the robot uses the color sensor to react to a color tile and speak out loud some content.

3. In this lesson, students will program the robot to pause after sensing a color, say the word part ("graph") and list at least four words from our language that use that word part as a prefix or root word.

4. Explain that the students are now going to program their robots to go on a Color Walk. That means that the robot must do the following after sensing a color block on the floor:

- Stop moving
- Say the title or category ("graph")
- Say with the word part means ("it means writing, or to write")
- Say a list of 4 example words that follow this pattern ("autograph, biography, graphic and graphite")
- Move forward again to the next color block (at least three in total)

5. After they have tested their program, they share it with their teacher and present it to the class with their RVR robot.

Extension Activity

This basic programming challenge can be enhanced by having students add the following ideas to their program (assuming it works and follows the teacher's criteria):

- ✓ Add LED programming so that when the RVR stops on a color block on the floor, it flashes its lights or uses the strobe block.

✓ More movement blocks can be added so that the color squares on the floor can be in a pattern shape such as an equilateral triangle or square. This way, students will have to figure out the change of heading for each movement.
✓ At the end of the Color Walk, students can use the movement blocks and LED blocks to program a celebration dance after reading the last color.