

Slam Poetry

In this lesson, students create their first program in the Block Programming Environment. They plan an acrostic poem and use roll and **speak blocks** to turn their poetry into a live Sphero robot performance. Students decorate cards for each beginning letter and their Sphero robot rolls its way through the poem, reading the student's poem out loud as it goes.

By the end of the lesson, students will have a firm grasp of how to use heading, speed, and duration to control their bot's movement with **roll blocks**.

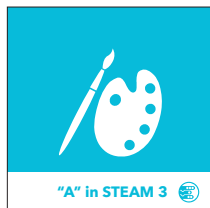
Learner-Facing Overview

Spoken word is art too! Use blocks to program your Sphero robot to bring to life an acrostic poem about you.

Learner Objectives

1. I can use a computer program to express my creativity.
2. I can program inputs in **roll blocks** to control my robot's movement.

Learner-Facing Lessons



Compatible Robots



BOLT



SPRK+



Mini

CS Practices

P3. Recognizing and Defining Computational Problems

P5. Creating Computational Artifacts

P7. Communicating about Computing

Content Connections

Art

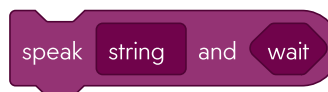
Language Arts

Featured Blocks

Movements



Sounds



Controls



Preparation

- Preview the steps, the educator tips, and any associated programs and handouts (if present) by working through the lesson yourself.
- Students will need the Slam Poetry Planner (bit.ly/2OGznPr) to plan their poems and their programs. Decide whether you will print and photocopy this for students or will have students complete it digitally.
- Each group will need at least a 3' by 4' area of floor space. Plan for a large enough space, such as a gymnasium, cafeteria, or multi-purpose room.

Supplies

- Slam Poetry Planner (bit.ly/2OGznPr)
- 8.5 x 11 paper
- Pencils
- Crayons
- Markers
- Colored pencils

Vocabulary

Execute

To run or complete a program command or block

Block Canvas

The space provided in the Sphero Edu app for crafting Block Programs

Blocks

Graphical programming elements that can be used in place of text-based programming languages

Input

A place to add numeric or text values into a programming block or text statement



Slam Poetry Planner

bit.ly/2OGznPr



Lesson Steps

1 Exploration—Slam Poetry



Students watch a video of a Sphero robot performing Slam Poetry (bit.ly/2YCw2pg) of an acrostic poem.

Share with students that acrostic poems use the first letter in each descriptive line to spell out a vertical word like in the example.

2 Skills Building—The Block Canvas



Students open, modify, and run a Block Program for the first time.

Students used the Draw Canvas in the first two activities in this collection, and this may be the first time they have seen the programming blocks. Consider giving your class a brief tour. Demo the key features including some of the following:

1. Blocks are organized by category in the Sphero Block Library at the bottom of the screen.
2. Drag and place blocks on the canvas. Blocks that are close to each other snap together.
3. Delete a block by dragging it to the trash icon that appears at the bottom of the screen when a block is selected.
4. Long press or right-click on a block to duplicate, copy, delete, leave a comment, or learn more about a block.
5. Select the three dots in the upper right corner of the canvas to load Sensor Data, view the JavaScript code, or get help.

3 Skills Building—The Roll Block

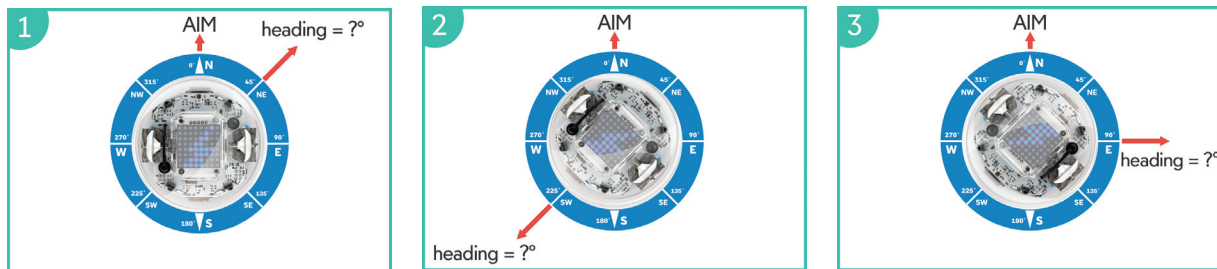


Students explore the roll block, including heading, speed, and duration, and try to guess roll headings from given images.

Zero degrees is the forward direction set by AIM before running the program. Once the robot makes a turn, the robot will rotate, but the bot still remembers that 0° is the direction set by AIM.

A common misconception is that 0° is always the direction that the Sphero robot is pointed during a program. Students will often use the change in degrees from their previous heading as their new heading input.

Consider having students use a protractor to help them determine headings for their **roll blocks**. If protractors are not available, ask students to make a simple compass rose on scrap paper and align it with AIM. Keeping the programming device aligned with the AIM direction will also help determine headings.




The answers to the headings in the images are 45°, 225°, and 90°.

✓ Assessment: Multiple Choice

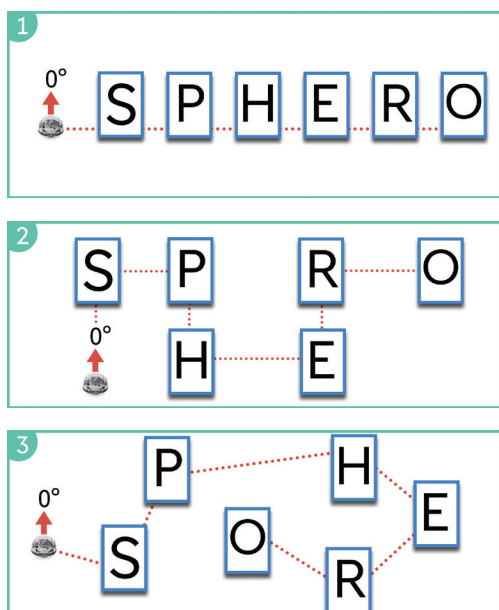
Zero degrees is set to _____.

- ☐ The north pole
- ☒ Your robot's AIM direction, set before starting a program
- ☐ Whichever direction your robot is pointed during a program
- ☐ Wherever your teacher is standing

4 Skills Building—Plan Your Poem


 *Students plan their acrostic poem card arrangement and think about their Sphero robot headings.*

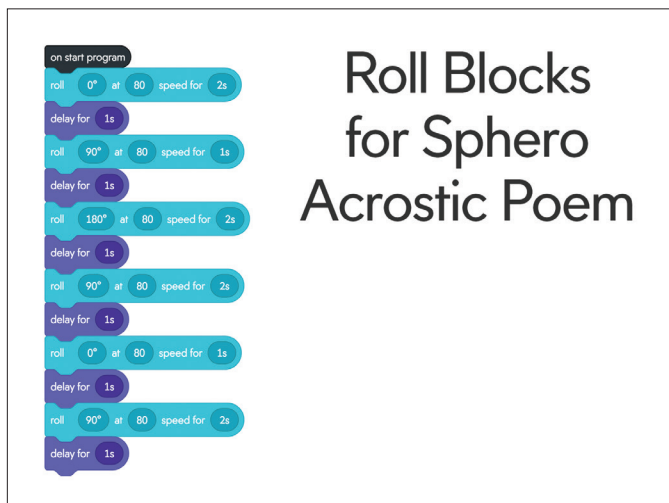
Letters should be drawn on 8.5 x 11 paper to give the robot a big target. You may suggest students to start with a simple layout that involves one or two different headings and then try more challenging layouts as they get more fluent with **roll blocks**.



Option 1 is the simplest because all the **roll blocks** will use the same heading: 90°. Option 2 is more difficult, but headings remain limited to 0°, 90°, 180°, or 270°. Option 3 is the most challenging because the headings may be any number between 0 and 360°.

5 Challenge—Program Your Rolls

 *Students use **roll** and **delay** blocks to program their Sphero robot to land on all of their decorated letter cards in the correct sequence.*




6 Challenge—Add Your Poetry

 *Student replace **delay** blocks with **speak** blocks to make their program read their acrostic poem.*

Note that if students toggle wait to continue in the **roll block**, the program will continue immediately to the next block in the program. This is called synchronous programming and is useful when you want your Sphero robot to do more than one thing at once. However, in this program, **speak blocks** are serving two purposes: reading the poem and allowing the bot to come to a complete stop. Therefore, students should leave it as wait.

7 Extended Challenge—Add Some Flair

 *Students explore the **Block Library** to try out other blocks in the **Movement**, **Light**, and **Sound** categories to add flair to their program.*

Consider giving students open-ended time to explore the Block Canvas so they can practice new skills and develop confidence. You may want to stop the class 10 minutes before the end of your learning period so that students can share and reflect on learning.

8 Sharing and Reflection—Poetry Slam



Students share their programming and poetry and consider the advantages and disadvantages to both the Draw and Block Canvases.

After students share their programs, you may want to reserve time to compare and contrast Draw and Block Canvases.

- The Draw Canvas is the most simple programming environment to use, but it is also the most imprecise. Draw also has a very limited set of features.
- The Block Canvas gives students much more control over their Sphero robot. They can be more exact with its movement and Blocks also unlock new abilities such as different types of movement, lights, and sounds.