Probability Races

Use Root's Coding Level 2 Variable blocks for some hands-on introduction to probability and random number generation.

Code Level(s):
2-3

Subject(s):
Math
Computer Science

Time:
15 mins.

Grade Level(s):
6-8

 # Students:
2-20

Supplies:

- Root Robot
- Device with Root Coding App
- Dry Erase Marker
- Whiteboard or large, long smooth surface for Root to drive and draw on

Educational Standards:

CCSS.MATH.CONTENT.

- *6.SP.B.5*
- *7.SP.C.8*
- *8.SP.A.4 (with plotting data)*

Teacher Prep

- Draw a Start and Finish Line on either end of your whiteboard or drawing surface.

With the Class

- Create a program in Level 2 or 3 that tells Root to move a random number of centemeters, from one to thirty. If you'd like, you can download the program titled "Probability Races" from the Root Coding App instead.
- Divide the class into 2-4 teams, each with one Root. Start each "race" by placing all of the Roots on the Start Line. When the students each press play, their Root will begin to move along the "track" a random distance. Root's light should turn on when it's moving and turn off when it is finished to make it easier to tell when to press Play next.
- Have the student's team keep track of how many times their robot driver needs to press Play until their Root has crossed the Finish Line. Repeat until everyone has raced once.
- Once your class has collected all of it's data, it's time to analyze it! What was the average amount of times students needed to press play to drive Root across?
- Challenge students to find the average amount of distance Root travelled during each "Play." What was the median amount? Were there any outliers?