



## Ready, Set, Go!

### Materials:

- Charged Sphero SPRK+ or Bolt
- Time penalty objects (water bottle, block, action figure etc.)
- One compatible device per Robot
- Sphero Edu app
- Painters tape
- Ruler (1 per team)
- Protractors (1 per team)
- Stopwatch or timer

**Description:** In the spirit of friendly competition students will run time trials with their Sphero. This activity will give students to opportunity to practice measuring angles and straight lines as well as code troubleshooting.

**Teacher Technology Skills:** Sphero SPRK+ or Bolt, Sphero Edu

**Standards:** NY-4.MD Geometric measurement: understand concepts of angle and measure angles:

5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand concepts of angle measurement.

a. Recognize an angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through  $\frac{1}{360}$  of a circle is called a "one degree angle," and can be used to measure angles.

b. Recognize an angle that turns through  $n$  one-degree angles is said to have an angle measure of  $n$  degrees.

6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure

### Procedure: Rules:

- All participants will be able to see the course before the challenge to prepare.
- Each team will be given 20 minutes to build their code.
- All participating teams will be given 3 chances to run their code. The best of 3 times will be recorded.
- You can alter your code between runs but cannot be late to your next scheduled run or you forfeit your turn.
- Completed codes must be block coding, if the code is not in block at the time of run your run will be forfeited.
- A time penalty of 1 second will be added each time the robot goes out of bounds or comes in contact with a time penalty obstacle.
- Out of bounds is considered anything outside of the taped-out path.
- If the team is not able to get the robot to enter the gate a penalty of 5 seconds will be added.

### The Course:

- The course will measure roughly 10x10.
- The pathways will be anywhere from 6 inches to 24 inches and will be indicated by boundary lines made of tape.
- The course will be mapped out with tape.
- There will be no less than 3 turns.
- There will be no less than 3 and no more than 8 penalty obstacles.
- Time penalty obstacles will be the accessories supplied with the Sphero Mini.
- The course will finish with the robot moving through a gate.