

Tech Tool:	Sphero Bolt
Grade:	4th
Tool to student ratio:	1:2
Activity Objective:	<p>What do we want students to know? How to gauge distance and speed needed to knock an object over.</p> <p>How will we teach it? The students will have to code a sphero that can knock over bowling pins/cups/water bottles.</p> <p>How will we know they learned it? When they successfully knock over the objects</p>
Key Skills & Vocabulary:	<p>Computational Thinking Skill: Algorithm Design: creating an ordered series of instructions for solving similar problems or for doing a task</p> <p>Computational Thinking Approach: Debugging: finding and fixing errors or mistakes</p>
Pre Activity Prep:	<p>Collect cups or water bottles (or bowling pins if included in the kit). Painters tape or butcher paper or chalk to create lanes. Paper and pencils for each group to keep score. Create as many bowling lanes as desired, recommended 5-6</p>
Charging:	<p>Put Spheros in the charging case overnight and in between each class. Make sure that the case is plugged in and turned on.</p>
Tech Tool Rules:	<p>Teacher hands out the Sphero and iPad to students. Sphero needs to remain on the ground at all times. No throwing, hitting, kicking or dropping the Sphero.</p>
Activity Introduction:	<p>Code Spheros to go down the bowling lane and knock over as many bowling pins as possible.</p>
Activity:	<p>Set up the bowling lanes and have the students work in teams, and each bowling lane will have 2 teams. The goal is to get the sphero to make it down the lane and hit over as many pins as possible. Each team has 2 tries before the next team has a turn. The game ends when each team has been up 10 times. They can keep score (aka how many pins they have knocked over each turn). Students will have to use block coding to move Sphero. This should take about 20 min or tell the students they have 15 minutes and can complete as many games as possible in this time. Then use the last 5 minutes to add up their scores.</p>
Clean Up:	<p>10 minutes. Have the students return the Sphero to the teacher. They will need to exit out of the app on the iPad and then return them to the teacher. Have the students pick up and put away the bowling pins. They can keep or throw away their score sheet and then return the pencils.</p>
Reflection:	<p>Vocabulary Algorithm</p> <p>Ask the students if their algorithms worked perfectly the first time or if they needed to debug it to get it to work correctly. What worked well and what did they improve as they went.</p>