CodesSnaps - Psyched for STEAM Short Course Outline

**Schedule**

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| **Time** | **Activity** | **Type** | **Leader(s)** |
| 12:35 – 12:50 | Introduction | Talk | Tim |
| 12:50 – 1:20 | Getting to know SPRK+ | Team Activity | Team Mentors |
| 1:20 – 1:50 | Extend Your Knowledge | Team Activity | Team Mentors |
| 1:50 – 2:00 | Break & City Setup |  |  |
| 2:00 – 2:50 | City Challenge | Team Activity | Team Mentors |
| 2:50 – 3:00 | Wrap-Up | Group Discussion | Tim |

**Details**

**Part 1. Introduction**

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| **Content** | **Logistics** |
| * Introduction * Purpose * Introduce Mentors * Sphero SPRK+ Overview * How it works * Accuracy (First team activity will demo this) * CodeSnaps Overview * Commands used for coding * Look through Command Box, point out: * Left/Right Turn has two types * Repeat has End Repeat * Set Color To & Spin * Places for numbers (numbers on team table) * Activity Overview  1. Getting to know Sphero SPRK+ – basic movements 2. Extending your knowledge – obstacle course 3. City Challenge – use what you’ve learned to navigate a city  * Mentors Role * Explain objective * Answer questions * Scan Code * Orient SPRK+ * Narrate SPRK+ movements on course | * All gather around the big table   + Pull up chairs   + Teams stay together * Materials/Equipment   + Sphero for each team (3)   + CodeSnaps Command box (3) |

**Part 2. Getting to know SPHERO SPRK+**

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| **Content** | **Logistics** |
| * CodeSnaps Review * Mentor: * addresses any question from intro * demo attaching numbers * First activity - Test accuracy by running 1 meter  1. Mentor: explains objective 2. Discussion: Lessons learned  * Mentor explains that later activities will be affected by the SPRK+’s accuracy factor. You will probably need to allow for this when determining how far to go before turning a corner. * Second activity - Make 1-meter square  1. Mentor: explains objective  * Make SPRK+ travel in a 1-meter square  1. Discussion: Lessons learned   **TIME CHECK – What time is it? Is there time to run the Bonus Activity and be done by 1:20 (+- 5 minutes). If not, do not run the Bonus Activity.**   * Bonus activity (time allows) - Loop to make 1-meter square  1. Mentor: explains objective  * Shorten the code to make SPRK+ travel in a 1-meter square * Let students explore command box and see what could work  1. Discussion: Lessons learned | * Each team gathers in their team spot to start * Materials/Equipment   + SPRK+   + CodeSnaps Box   + 1-meter stick   **For each activity:**  NOTE: No special setup is needed. The teams sharing the big table will each work on one side of the center dividing noodle.     1. Mentor: explains objective 2. Students: write code 3. Mentor:    * Scans and reads back code – students check code    * Gets SPRK+ from charging station    * Orients SPRK+    * Runs code    * Narrates SPRK+ movements 4. Students: Assess results    * If changes to the code are needed, start back at Step 2 5. Mentor: Put SPRK+ back in charging station |

**MENTORS: Prior to starting Part 3, lay out Obstacle Course using** [**Diagram 3.1**](#g45m701mphw) **on the SPRK+ table.**

**Part 3. Extend Your Knowledge**

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| **Content** | **Logistics** |
| * First activity – Run an Obstacle course with 1 obstacle  1. Mentor: explains objective  * There is an obstacle course on the table. * SPRK+ is sitting at the Start position, facing forward. * The finish position is marked with four small metal cups with bells inside. * There is one obstacle on the course that you must go around. * You have a meter stick and CodeSnaps box. * Your objective is to move SPRK+ around the obstacle and get to the finish line.  1. Discussion: Lessons learned   **TIME CHECK – What time is it? Is there time to run the Second Activity and be done by 1:50? If not, do not run the Second Activity. If there is a little time, consider changing the Finish position on the first course and having the students run that.**  **xx**  **MENTORS – Change the Course to match Diagram 3.2, either** [**3.2 Option 1**](#i2th71c21whp) **or** [**3.2 Option 2**](#ah7wphi6vx1t)  **xx**   * Second activity - Run another obstacle course.  1. Mentor: explains objective  * There is an obstacle course on the table. * SPRK+ is sitting at the Start position. * The finish position is marked with four small metal cups with bells inside. * There are one/two obstacles on the course. * You have a meter stick and CodeSnaps box. * Your objective is to move SPRK+ around the obstacles and get to the finish line.  1. Discussion: Lessons learned   **TIME CHECK – What time is it? Is there time to run the Bonus Activity and be done by 1:50? If not, do not run the Bonus Activity.**  **xx**  **MENTORS – Switch the Start and Finish positions of the 3.2 course**  **xx**   * Bonus activity - Run an Obstacle course with 2 obstacles  1. Mentor: explains objective  * The obstacles are still in the same places but the Start and Finish have been moved.  1. Discussion: Lessons learned | * Each team gathers at their SPRK+ table **and stands at the front edge.** * Materials/Equipment   + SPRK+   + CodeSnaps Box   + 1-meter stick   **For each activity:**  NOTE: **Special setup is needed.** See diagrams 3.1 and 3.2     1. Mentor: explains objective 2. Students: write code 3. Mentor:    * Scans and reads back code – students check code    * Gets SPRK+ from charging station    * Orients SPRK+    * Runs code    * Narrates SPRK+ movements 4. Students: Assess results    * If changes to the code are needed, start back at Step 2 5. Mentor: Put SPRK+ back in charging station |

**VERY IMPORTANT: Return SPRK+ to a charging station before going on break.**

**During the break, the two tables will be set up with a City layout. Each team will also get a Graphics Board which has a scale layout of the City they will use. Two teams will share the large city. One team will use the small city.**

**Part 4. City Challenge**

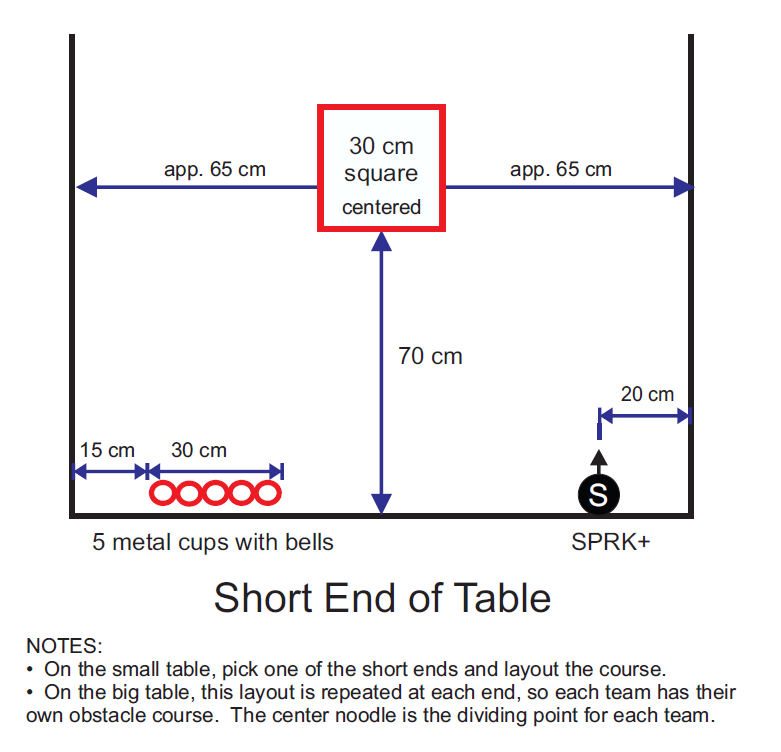
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| **Content** | **Logistics** |
| * Preparation – Understand the scale layout * Mentor: explains layout * Legend/Buildings * “No driving zones” marked by bells in city * Scale * Students: familiarize themselves with layout * Determine distance between two buildings   When students are ready, proceed to the first scenario.  **xx**   * Activities * Run through as many scenarios as time permits. * If students finish all the pre-planned scenarios, they can develop their own.   **TIME CHECK – Plan to finish by 2:45 so students can be gathered around the table by 2:50 for the Wrap-Up.**  **xx** | * Each team gathers at their team table**.** * Materials/Equipment   + SPRK+   + CodeSnaps Box   + 1Graphics Board with City Layout   + Scenario Sheet for each team member   **For each activity:**  NOTE: **The tables each have a city layout.**     1. Students:    * read scenario    * write code 2. Mentor:    * Scans and reads back code – students check code    * Gets SPRK+ from charging station    * Orients SPRK+    * Runs code    * Narrates SPRK+ movements 3. Students: Assess results    * If changes to the code are needed, go back to Step 1 4. Mentor: Put SPRK+ back in charging station |

**Part 5. Wrap-Up**

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| **Content** | **Logistics** |
| **TBD**  **xx** | * All gather around the big table   + Pull up chairs |

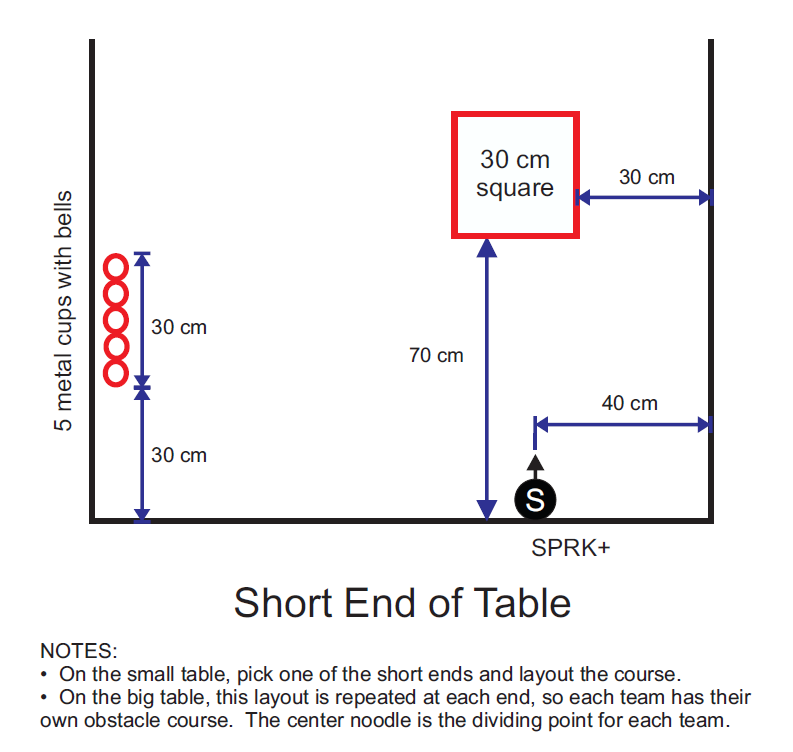
**Diagram 3.1**

Note: Two teams are sharing the big table for this exercise. The dividing noodle is in place, giving each team a 5’ x 5’ area. The third team has the smaller table all to themselves.

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**Diagram 3.2 Option 1**

Note: Two teams are sharing the big table for this exercise. The dividing noodle is in place, giving each team a 5’ x 5’ area. The third team has the smaller table all to themselves.

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**Diagram 3.2 Option 2**

Note: Two teams are sharing the big table for this exercise. The dividing noodle is in place, giving each team a 5’ x 5’ area. The third team has the smaller table all to themselves.

