**Robotics Social Club – Program Planning Template**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Program Phase & Session #** | **Personal and Social Capability (Teamwork Skill)** | **Robotics Challenge** | **Programming****& Building** | **Parent Involvement** | **Proposed Date**  |
| **BEGINNING PHASE** | **Pre** | **Communicate effectively** Learning intention: to be able to use our words and body language to politely listen to others, and explain our ideas to others. | *OPTIONAL, DELETE ROW IF UNNECESSARY***Starter Challenge**Welcome and Introduction to Robotics Club. Form teams and decide on team names. In your teams, build your LEGO® MINDSTORMS® EV3 Edubot. | **Building:** Edubot & Driving Base* Brick
* Motors
 | N/A |  |
| **Pre** | **Communicate effectively** Learning intention: to be able to use our words and body language to politely listen to others, and explain our ideas to others. | *OPTIONAL, DELETE ROW IF UNNECESSARY***Starter Challenge**Continue to build LEGO® MINDSTORMS® EV3 Edubot in teams. Teams who finish early offer help to other teams. Name robots and test connectivity to software. | **Building:** Edubot & Driving Base* Brick
* Motors
 | N/A |  |
| **1** | **Make decisions**Learning intention: to be able to make decisions as a group, in a way that is fair for all group members. | *IF NOT ALREADY COMPLETED, INCLUDE HERE:***Welcome and Introduction to Robotics Club. Form teams; name teams and robots.****Challenge: Silly Walks** Create a robot that moves without wheels. Move the silly walk robot over 1m in the fastest time possible.  | **Programming:** Straight Move* Rotations/Seconds
* Steering – Forward

**Building:** Driving Base* Brick
* Motors
 |  |  |
|  | **Make decisions**Learning intention: to be able to make decisions as a group, in a way that is fair for all group members. | *OPTIONAL, DELETE ROW IF UNNECESSARY***Challenge: Silly Walks continued**Create a robot that moves without wheels. Move the silly walk robot over 1m in the fastest time possible. Test your robot and make improvements. | **Programming:** Straight Move* Rotations/Seconds
* Steering – Forward

**Building:** Driving Base* Brick
* Motors
 | Invited to end of session: Demonstration  |  |
|  | **Communicate effectively** Learning intention: to be able to use our words and body language to politely listen to others, and explain our ideas to others. | **Challenge:** **Maze Runner** Working with your team, program your robot to safely maneuver through the maze. | **Programming:** Curved Move * Degrees/Rotations
* Steering – Forward

**Building:** Driving * Wheels
 |  |  |
|  | **Communicate effectively** Learning intention: to be able to use our words and body language to politely listen to others, and explain our ideas to others. | *OPTIONAL, DELETE ROW IF UNNECESSARY***Challenge: Maze Runner continued**Working with your team, program your robot to safely maneuver through the maze – *backwards.* | **Programming:** Curved Move * Degrees/Rotations
* Steering – Backwards
 | Invited to end of session:Demonstration  |  |
|  | **Work collaboratively** Learning intention: to be able to work together as a team to achieve a goal. | **Challenge:** **Mexican Wave** Work with your team and the whole Robotics Club to create a robot Mexican wave. You can only use *forward*, *backward* and *wait for* commands. Film the finished product.  | **Programming:** Wait For* Seconds
* Steering – Forward

**Building:** Driving * Wheels
 |  |  |
|  | **Work collaboratively** Learning intention: to be able to work together as a team to achieve a goal. | *OPTIONAL, DELETE ROW IF UNNECESSARY***Challenge: Mexican Wave continued** Work with your team and the whole Robotics Club to create a more complex robot Mexican wave. Discuss what each group wants to add (e.g. movement or sound).Film the finished product. | **Programming:** Add Sound* + Pre-recorded/from file
	+ Recording voice

**Building:** Driving * Wheels
 | Invited to end of session: Demonstration, and opportunity to teach parents |  |
| **DEVELOPING PHASE** | **1** | **Work collaboratively** Learning intention: to be able to work together as a team to achieve a goal. | **Option to FORM NEW TEAMS; name teams and robots.****Challenge:** **Escape from the City**Program your robot to stay within the city walls using the colour sensor. Identify the tape, move backwards, turn and then move forwards. Escape from the city first.  | **Programming:** Add Sensor – Colour * Colour Sensor – Light

**Programming:** Iterations and Branching * Loop Block
* Switch Block

**Building:** Sensor* Attach Colour Sensor
 | Invited to end of session:Demonstration, and opportunity to teach parents |  |
| **2** | **Negotiate & resolve conflict**Learning intention: to be able to listen, make compromises, and reach a solution when there is a disagreement. | **Challenge: Sumo Building**Design an attachment that will push your opponent off the sumo mat. Build the attachment to your sumo robot.  | **Building:** Add Arms* Attachment – Push or Pull
 |  |  |
| **3** | **Negotiate & resolve conflict**Learning intention: to be able to listen, make compromises, and reach a solution when there is a disagreement. | **Challenge: Sumo Programming & Testing**Program your robot to stay in the ring using the colour sensor, and perhaps to charge at opponents using the ultrasonic sensor. Test your programming and attachment, then redesign and make improvements.  | **Programming:** Sensor – Ultrasonic * Loop Block
* Switch Block
* Ultrasonic Sensor
 |  |  |
| **4** | **Negotiate & resolve conflict**Learning intention: to be able to listen, make compromises, and reach a solution when there is a disagreement. | **Challenge: Sumo Battles**Compete against other teams in a sumo wrestling competition. Can your team’s robot push your opponent out of the ring? | **Programming:** Sensor – Ultrasonic continued.**Building:** Add Arms continued. | Invited to whole session: Sumo Event and Celebration  |  |
| **CULMINATING PHASE** |  | **Teacher-selected Teamwork Skill based on student needs****OR****Student self-selected Teamwork Skill based on identified areas to improve on** | **Option to FORM NEW TEAMS; name teams and robots.**FOR REMAINING 4 – 6 SESSIONS, CHOOSE TWO FROM:* Celebrate Challenge (2-3 sessions)
* Space Challenge (2+ sessions)
* Create Your Own Challenge (3-4 sessions)
* Robot Creation Challenge (2+ sessions)
 | Open-ended. |  |  |
|  | **Teacher-selected Teamwork Skill based on student needs****OR****Student self-selected Teamwork Skill based on identified areas to improve on** | *OPTIONAL, DELETE ROW IF UNNECESSARY* | Open-ended. |  |  |
|  | **Teacher-selected Teamwork Skill based on student needs****OR****Student self-selected Teamwork Skill based on identified areas to improve on** |  | Open-ended. | Invited to end of session: Opportunity to teach parents |  |
|  | **Develop leadership skills** Learning intention: to be able to teach other members of the school community, by planning and carrying out a project. | *START FINAL CHALLENGE* | Open-ended. |  |  |
|  | **Develop leadership skills** Learning intention: to be able to teach other members of the school community, by planning and carrying out a project. | *OPTIONAL, DELETE ROW IF UNNECESSARY* | Open-ended. | Potential opportunity to invite *other students* to Robotics Club: Club students teach new students about their creation. |  |
|  | **Develop leadership skills** Learning intention: to be able to teach other members of the school community, by planning and carrying out a project. |  | Open-ended. | Invited to whole session: Showcase/teaching, Celebration, and Presentation of Student Certificates |  |
| CONGRATULATIONS, YOU HAVE COMPLETED THE ROBOTICS SOCIAL CLUB PROGRAM!See additional ideas and links under “Culminating Phase” for further activities to continue your school’s Robotics Social Club. |