



## FACT SHEET: Extended Robotics Experience

*for after school/extended day programs and day camps*

Mindsurfers' mission is to advance science, technology, engineering and math skills for children by providing access to educational, collaborative and engaging robotics experiences.

Mindsurfers' extended programs are based on LEGO Education resources and FIRST LEGO League Challenges. Each challenge includes a variety of independent missions, so we can offer you a program that meets the scheduling and logistical needs of your organization. Our programs provide youth with the opportunity to guide their own experience under the trained guidance of our facilitators – every program and set of outcomes will be unique because of the creativity and curiosity of the participants.

Topic	Details
<b>Program Length and Schedules</b>	<ul style="list-style-type: none"> <li>• After School: 1.5 to 3 hours a day</li> <li>• Day Camp: 6 to 8.5 hours a day</li> <li>• Total Time: 30 to 60 hours</li> <li>• After School Schedule: meet once a week for 10+ weeks, or daily after school for two weeks</li> <li>• Day Camp Schedule: meet five days a week for 1 to 2 weeks</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• We bring the program to you – schools, community centers, etc.</li> <li>• An open room with surfaces for laptops (or with computers already in place) and room for the mission table will be needed.</li> <li>• Access to multiple electrical outlets is also necessary.</li> <li>• Lastly, you need storage for any program using a room also used for other activities in between robotics sessions (you need to store the table, rolled mat, storage box for playing field components, and one storage box per team for robot and parts).</li> </ul>
<b>Participants</b>	<ul style="list-style-type: none"> <li>• Up to 25 students per group</li> <li>• Ages 8 to 16</li> <li>• Grouping by age and/or experience level is recommended</li> </ul>
<b>Team Size</b>	<ul style="list-style-type: none"> <li>• 3 to 5 students per team</li> <li>• Older students can prefer smaller sized groups</li> </ul>
<b>Facilitators</b>	<ul style="list-style-type: none"> <li>• 1 per 5 teams, for a very experienced facilitator</li> </ul>

	<ul style="list-style-type: none"> <li>Facilitators can be provided or we can train your own staff</li> </ul>
<b>Materials Provided</b>	<ul style="list-style-type: none"> <li>Per team: <ul style="list-style-type: none"> <li>NXT equipment kit and add-on kit</li> <li>NXT software</li> <li>Computer</li> </ul> </li> <li>Per group: <ul style="list-style-type: none"> <li>Instructions for building a basic robot, and chosen Challenge instructions</li> <li>Table (4ft x 8ft) and playing field mat</li> </ul> </li> <li>Extra robot components will be provided if needed</li> <li>Certificates, medals or other celebratory items</li> </ul>
<b>Program Costs</b>	<ul style="list-style-type: none"> <li>Per Group (up to 24 participants, 30 hour program): \$5,100</li> </ul>
<b>Funding</b>	<ul style="list-style-type: none"> <li>Mindsurfers is equipped to help you secure a grant to fund all or part of the cost of the program.</li> <li>Contact Heather at <a href="mailto:hfreeman@mindsurfers.org">hfreeman@mindsurfers.org</a> to start this process.</li> </ul>
<b>Materials Not Provided</b>	<ul style="list-style-type: none"> <li>Paper products and writing utensils for planning and brainstorming</li> </ul>
<b>Expected Outcomes</b>	<ul style="list-style-type: none"> <li>Positive attitudes about and interest in STEM education and careers</li> <li>Creativity in combining science, technology, engineering and imagination</li> <li>Teamwork and communications techniques</li> <li>Problem solving and information processing skills</li> <li>An understanding that many problems have multiple solutions</li> <li>Independently follow step-by-step instructions</li> <li>A motivation to learn and engage in hands-on activities</li> </ul>
<b>Challenges (Themes)</b>	<ul style="list-style-type: none"> <li>Options include: Power Puzzle, Nano Quest, Ocean Odyssey, No Limits, Mission Mars, City Sites, Arctic Impact, Volcanic Panic, First Panic</li> <li>Each challenge has a scientific and engineering theme and comes with a selection of independent missions within it.</li> <li>The participants can work on as many of the missions as they choose, and in any order they choose. The more they do the longer it will take, and older or more experienced participants will accomplish missions faster.</li> <li>Each mission has multiple ways to be accomplished – there is no one right way.</li> </ul>
<b>Logistical Considerations</b>	<ul style="list-style-type: none"> <li>Drop-in after school programs will face the challenge of students missing sessions and coming back to a robot at a new stage of development. We encourage participants to attend every session of their program.</li> <li>Storage space and the set up and break down time for each session is also a challenge for any program sharing space with other activities.</li> <li>Using a school's computers can pose a software problem as there are often locks on software installation. Planning ahead for the one-time installation is essential.</li> </ul>