

Team Coordinator Guide

RVR Sphero Robotics Missions

Welcome to the **TEAM Alliance Team Coordinator Guide for RVR Missions**! This guide is designed to help you confidently lead your team through the competition season.

IN THIS GUIDE:

- Register and Manage Your Team
- Introduce the RVR Missions
- Guide Productive Working Sessions
- Register and Prepare for Competitions



Team Coordinator Guide

RVR Sphero Robotics Missions

Table of Contents

SRM Event Formats	3
SRM Event Types	3
How to use this Guide	4
SRM In-Person Season Checklist	5
Tips for In-Person Competitions	7
SRM Online Submission Season Checklist	8
Tips for Online Submissions	10
Team Roles	11
Mission Field	12
Competition Materials	13
Blueprint Key Building Practices	14
Meeting Agendas	15
Welcome to the Sphero Robotics Missions	16
Team Building with a Blueprint Challenge	20
Competition Ready: Movements	22
Competition Ready: Lights & Sounds	24
Competition Ready: Event-Based Programming	26
Competition Ready: Loops & Functions	28
Competition Ready: Sensors and Controls	30
Competition Ready: Variables	33
Example Mission Session Agenda	35
Support	37

Welcome to Sphero Robotics Missions

Dear Team Coordinator,

Thanks for leading a team with this year's Sphero Robotics Missions (SRM)!

At [TEAM Alliance](#), we believe in a global community (you!) where students have a lifelong sense of confidence and excitement in technology. Each of the Mission Objectives are carefully designed to encourage your students to become better coders, problem solvers, and teammates.

SRM events provide an opportunity for student teams to compete against other students at Qualifying Events in their region, with the top teams qualifying to participate in a Championship Event.

[RVR Missions](#) is a U15 program so students must be under the age of 15 as of August 31 of the year the season starts.

SRM Event Formats

- **In-Person Events:** Teams, volunteers, and officials are present at the same physical venue to participate in completing Mission Objectives.
- **Live Remote Events:** Teams participate from separate locations and perform Mission Objectives live under the supervision of event volunteers using video conferencing. This format is *included in the **In-Person team registration*** for teams that cannot attend a physical venue.
- **Online Submission Events:** Teams work on their Mission Objectives at home, school, or in their extracurricular club and submit them to be evaluated online by Evaluators within a specified window of time. This format is included in the Online Submission team registration only.

Here is a [handy guide for comparing the In-Person/Live Remote and Online Submission event formats](#), or feel free to contact TEAM Alliance if you have questions.

SRM Event Types

There are two types of Events that are included in your season registration:

1. **Qualifying Events:** An SRM event that qualifies teams for Championship Events.
2. **Championship Events:** An SRM state, regional, or national event that serves as the culminating competition for teams that qualify through designated Qualifying Events. In the U.S., Championship Events are typically state-level, but may include multiple Championship Events within a single state or combining multiple states into a regional Championship Event. Internationally, regional or national Championship Events are used where geographic considerations apply.

Review the *Championship Advancement Criteria* in the [RVR Mission Manual](#) for more information on how to qualify for a Sphero In-Person or Online Submission Championship Event.

As a Team Coordinator, you do not need to be a programmer or a teacher to support students through the event. Instead, you'll act as a facilitator as the [Student-Powered™](#) teams work to explore, solve problems, and tap into their creativity. This Team Coordinator Guide gives you the tools and structure to support your students in preparing for the *Mission Objectives*.

How to use this Guide

This Team Coordinator Guide is designed for **In-Person and Online Submission SRM teams**. Most of the information is relevant to both event formats, but there are some sections customized to each event format type. Keep an eye out for these two icons for sections that are specific to either In-Person or Online Submission Formats.



Pages 4 - 6



Pages 7-9

1. Season Checklist - Print out the Season Checklist and it becomes a great resource so nothing is dropped.
2. Team and Competition Tips - The Team Roles and Competition Resources sections give you best practices on how to coordinate the student roles, get the equipment you need, lay out the field, and what to expect while competing this season.
3. Your First Robot Meetings - Remove the guesswork and follow the plans laid on in this Guide.
 - a. *Intro Sessions* - Fun ways to introduce the season's Missions and learn the robot
 - b. *Learning Sessions* - Based on the Intro Sessions, pick the Learning Sessions that your team needs. This is an opportunity to skip around if you have experienced students!
 - c. *Mission Sessions* - Tips on how to break down the steps to success for a Mission and prepare for competitions.
4. Competition - The team made it this far, time to compete!



SRM In-Person Season Checklist

Use the following checklists to stay on top of the competition requirements and timeline for In-Person and Live Remote Events.

Registering for the Sphero Robotics Missions

- ☐ Log into your account on myTEAMEvents.org. If this is your first time as a Team Coordinator, you may need to [create an account](#) and add your organization.
- ☐ [Register](#) and [pay](#) for your team(s), and select the In-Person option.
- ☐ **In-Person SRM Season Registration:** [Register](#) for an In-Person or Live Remote SRM Qualifying Event.

Preparing for the Sphero Robotic Mission

- ☐ Review the details of each *Mission Objective* in the [RVR Mission Manual](#).
- ☐ Identify and recruit students to form a team. The recommended team size is three to five students. Once students for each team are selected, add them to the [Student Roster](#) and send the required digital TEAM Alliance Participation Waivers to their parent/guardian.
- ☐ Gather your robot. The team needs one RVR or RVR+ robot for the Missions.
- ☐ Designate a coding device.
- ☐ Install the Sphero Edu app on the coding devices or use the Sphero Edu Web app. Learn more at edu.sphero.com/downloads
- ☐ Get to know the parts in the [Blueprint Snap SRM Kit](#).
- ☐ Identify a room that students can use for team meetings and to set up the *Mission Field* on the [Code Mat](#).
- ☐ Keep an eye out for an email about our Team Coordinator webinar that will take place in the fall.

Participating at an In-Person Event

- ☐ Review the [SRM Competition Day overview](#) to become familiar with the event flow.
- ☐ Assign team roles or make a plan for switching roles periodically during the *Event*.
- ☐ Use the meeting agendas in this Team Coordinator Guide to develop student coding and engineering skills.
- ☐ Develop and refine solutions for each *Mission Objective* your team needs to complete; you will showcase your *Mission Objectives* live at the tournament.
- ☐ Create a backup plan for *Mission Objectives* in case your code doesn't work as intended at the tournament.
- ☐ Prepare materials to bring to the event (robot, coding device, creative elements, Blueprint kit(s), etc.).
- ☐ Create a gameplan for your team to set up each *Mission Objective* at the Mission Field. The Event Host will be providing the Code Mat, so it's recommended to develop a strategy to set up your field components on the Code Mat in three minutes or less, and a plan to remove these components after the Mission is completed.

- ☐ Consider how to transport the field components to the Mission Field, which may include bringing a small, rolling cart.
- ☐ Qualifying In-Person / Live Remote Events will include Missions 1 - 3.
- ☐ Championship In-Person Events will include Missions 1 - 4.
- ☐ If the Mission includes a timed scoring element, create a plan for a Student to record the time at the Mission Field. Teams are responsible for bringing their own timing device.
- ☐ Create a team chant, cheer, and/or t-shirt for your team.

Competing in Sphero In-Person Championship Event

- ☐ Review the *Championship Advancement Criteria* in the [RVR Mission Manual](#) for more information on how to qualify for a Sphero In-Person Championship Event.
- ☐ [Register](#) for the Sphero In-Person Championship Event for your region **once you receive notification that your team has qualified.**
- ☐ Develop and refine solutions for all of the *Mission Objectives*, including the Championship Mission 4.
- ☐ Book travel arrangements and get school approval for travel, if required.
- ☐ Plan a team event to celebrate your results and success!



Tips for In-Person Competitions

The Sphero Global Challenge started as an exclusively virtual event, allowing teams to participate from all corners of the globe. However, starting in the 2026-2027 season, the **Sphero Robotic Mission** competitions will include numerous opportunities to participate in-person at Qualifying and Championship events. These events offer fun and collaborative opportunities to compete against other teams. To find in-person competitions near you, visit our growing list at myTEAMevents.org. You can even inquire about hosting an in-person competition!

If your team is participating in an in-person event, TEAM Alliance staff will work with the in-person tournament Event Host to provide information about the Sphero Robotic Mission tournaments. The Event Host will contact all registered teams about details leading up to the event, and include important information on the event page on myTEAMevents.org. All communication about the tournament will come from the Event Host to help you prepare.

Consider the following when supporting your team with preparing for an In-Person Competition

1. **Practice the Competition Format** — Run several timed practice sessions so students know what to expect and feel comfortable completing their Missions within the allotted time, including the setup and transportation of the Mission field elements.
2. **Prepare, but Don't Chase Perfection** — Help students focus on reliable strategies and achievable Mission Objectives rather than feeling like everything must work perfectly on the competition day.
3. **Let Students Take the Lead** — Encourage students to troubleshoot, make decisions, and understand their programs and strategies so they can confidently work together at the event.
4. **Plan for the Unexpected** — Talk through what students should do if a robot behaves differently than expected, a program doesn't work, or they need to adjust their strategy during a Mission.
5. **Make the Experience Bigger Than the Score** — Encourage students to cheer for other teams, meet new people, explore other teams' creative solutions, and celebrate everything they accomplished throughout the season.



TEAM COORDINATOR TIP:

Competition Day is about **much more than your team's final score!** Encourage students to enjoy the experience, cheer on other teams, make new friends, and take time to see the creative ideas and solutions other students have developed. Every team will approach the *Mission Objectives* differently, and seeing those different approaches is part of what makes an In-Person Event exciting. Help your students arrive ready to do their best, learn from others, celebrate their accomplishments, and most importantly—**have fun!**

SRM Online Submission Season Checklist

Use the following checklists to stay on top of the competition requirements and timeline.

Registering for the Sphero Robotic Missions

- ☐ Log into your account on myTEAMevents.org. If this is your first time as a Team Coordinator, you may need to [create an account](#) and add your organization.
- ☐ [Register](#) and [pay](#) for your team(s), and select the In-Person and/or Online Submission option.
- ☐ **Online Submission Season Registration:** [Register](#) for an Qualifying Online Submission SRM event.

Preparing for the Sphero Robotic Mission

- ☐ Review the details of each *Mission Objective* in the [RVR Mission Manual](#).
- ☐ Download the Online Submission presentation template: sphero.cc/SRM-rvr-template
- ☐ Identify and recruit students to form a team. The recommended team size is three to five students. Once students for each team are selected, add them to the [Student Roster](#) and send the required digital TEAM Alliance Participation Waivers to their parent/guardian.
- ☐ Gather your robot. The team needs one RVR or RVR+ robot for the Missions.
- ☐ Designate a coding device.
- ☐ Install the Sphero Edu app on the coding devices or use the Sphero Edu Web app. Learn more at edu.sphero.com/downloads
- ☐ Get to know the parts in the [Blueprint Snap SRM Kit](#).
- ☐ Identify a room that students can use for team meetings and to set up the *Mission Field* on the [Code Mat](#).
- ☐ Keep an eye out for an email about our Team Coordinator webinar that will take place in the fall.

Participating with SRM Online Submissions

- ☐ Set up a team meeting schedule.
- ☐ Assign team roles or make a plan for switching roles periodically during the *season*.
- ☐ Use the meeting agendas in this Team Coordinator Guide to develop student coding and engineering skills.
- ☐ Develop and refine solutions for each *Mission Objective*.
- ☐ Film your team's solution to each *Mission Objective*. Encourage your students to submit their best attempts, even if they are not perfect!
- ☐ Prepare materials for submission using the Online Submission instructions in the [RVR Mission Manual](#) and the "Tips for Online Submissions" section of this guide.
- ☐ Focus on completing tasks instead of perfection.

- ☐ Reach out to support@teamalliance.org for support and answers to any questions you may have. You can also check out the Sphero Robotics Programs [Facebook page](#) for support from the community.
- ☐ Each Online Submission Event on myTEAMEvents.org will include the submission deadline and submission instructions in the General Information section. Review this carefully to ensure your materials are submitted on-time.
- ☐ Qualifying Online Submission Events will include Missions 1 - 3.
- ☐ Championship Online Submission Events will include Mission 4 only.
- ☐ The top teams from each Qualifying Online Submission event will be invited to their Online Submission Championship for their region. Look for an invitation (email and in myTEAMEvents) to see if your team qualified.
- ☐ Regardless if you qualify or not, plan a team event to celebrate your success!

Competing in Sphero Online Submission Championship Event

- ☐ Review the *Championship Advancement Criteria* in the [RVR Mission Manual](#) for more information on how to qualify for a Sphero Online Submission Championship Event.
- ☐ [Register](#) for the Sphero Online Submission Championship Event for your region **once you receive notification that your team has qualified.**
- ☐ Develop and refine solutions for the Championship Mission 4.
- ☐ Review the submission deadline and instruction in the General Information section of the Sphero Online Championship event page on myTEAMEvents.org.
- ☐ Plan a team event to celebrate your results and success!

Tips for Online Submissions

Your team's performance is determined by Evaluators according to scoring associated with each *Mission Objective Rule* in the *Competition Rules* document. Closely adhering to the submission guidelines outlined in the *Competition Rules* document will position your team to receive their highest possible score.

Consider the following when supporting your team with their Online Submission

1. Review the submission guidelines closely in the *Competition Rules* document.
2. Use the provided [slideshow template](#) to document your work. Ask students to use it and the Submission Guidelines in the *Competition Rules* document as a guide for what should be included in their submission.
3. **Capture clear video footage** for each *Mission Objective*. **Videos:**
 - should be in .mp4, .mov, or .avi format
 - should show the *Mission Field* and the robot for the duration
 - should be taken from a top-down perspective
 - must be embedded in the slideshow template, and **make sure the videos are viewable by anyone with the link**
4. Include close-up images from multiple perspectives (birdseye, sideview, etc.) to show your team's engineering and design solutions. Clearly indicate in the presentation your **"Theme Story Points" Field and Robot Design Features**.
5. Include slides that capture **"Implementation Points" Mission Strategy and Coding Features**. Take screenshots of program files to include in your team's submission. Encourage your team to be as thoughtful as possible so Evaluators can understand your team's primary obstacles, solutions, strategies process, and overall growth.



TEAM COORDINATOR TIP:

A perfect score may be your team's goal for each *Mission Objective*, but **perfection is definitely not a criteria for submission**. The scoring system is designed to reward teams for all successes in each *Mission Objective*, even if they are not able to finish the objective completely. **Sphero encourages all teams to submit their best work** and not get hung up on perfection.

Team Roles

We recommend teams of **three to five students** so everyone has opportunities to participate, contribute, and build teamwork skills. Teams may include more than five students; however, awards are provided based on the recommended maximum of five students per team, so additional awards may not be available.

We encourage students to take on a role for the competition (or switch them for each *Mission Objective*) so that they feel like they have specific responsibilities. Suggested roles could include, but are not limited to the following:



Programmers

A programmer is responsible for making sure the robot does exactly what the team wants it to do. Programmers work with their teammates to develop, test, and improve the code needed to complete each Mission Objective.



Engineers

An engineer is responsible for the building of competition objects and placing them in the field based on the *Competition Rules*.



Debuggers

A debugger is an expert at troubleshooting. They are responsible for asking questions and coming up with procedures for solving problems with the code and/or engineering.



Designers

A designer gives your *Mission Objectives* that extra flair! They have an eye for making things beautiful and awesome, and ensure they are aligned with the season theme. The designer can also be the videographer and help with coordinating the materials for Online Submissions.



Mission Manager

A mission manager is a leader. They are great at bringing the team together to come up with plans and lead brainstorming sessions on how to approach each *Mission Objective*. Mission managers should also be experts in the *Competition Rules* to ensure the team is in compliance with all of the rules and regulations. They may also be tasked with controlling a timer for Missions that include timed scoring elements.

Mission Field

The *Mission Field* is a 2.25 × 1.5 meter (7.38 × 4.92 feet) mat with grid lines forming 25 × 25 centimeter (9.8 × 9.8 inch) squares. Grids are labeled A-I on the X axis, and 1-6 on the Y axis.

6								
5								
4								
3								
2								
1								
	A	B	C	D	E	G	H	I

In-Person Events must use the [Sphero RVR+ Code Mat](#) as the Mission Field for the RVR Missions. **Event Hosts** will supply the Mission Fields at In-Person Events.

Live Remote Events and **Online Submissions** can use any RVR+ Code Mat or a homemade Mission Field with the correct dimensions.

You have two options for your *Mission Field*:

1. Purchase the Sphero [RVR+ Code Mat](#). One side of the Mat is a blank *Mission Field*. The other side is a Martian map for a bit of fun while developing accuracy and control.
2. Use tape to mark lines every 25 centimeters and make your own *Mission Field*. You can construct it directly on the floor or on a transportable surface like a piece of plywood, tarp, or shower curtain.

Note: *Mission Objectives* will refer to grid coordinates in order to allow anyone with or without a Code Mat to compete.

Competition Materials

In order to complete all of the Mission Objectives, you will need the following items:

Required Materials for Competition

- One (1) Sphero [RVR+ or RVR robot](#)
- Access to the [Sphero Edu app](#) or [Web App](#) and a coding device
- A 2.25 x 1.5 meter hard, flat surface for a Mission Field
- (1) [Sphero Blueprint Snap SRM Kit](#)
- Video recording device (Online Submissions Only)

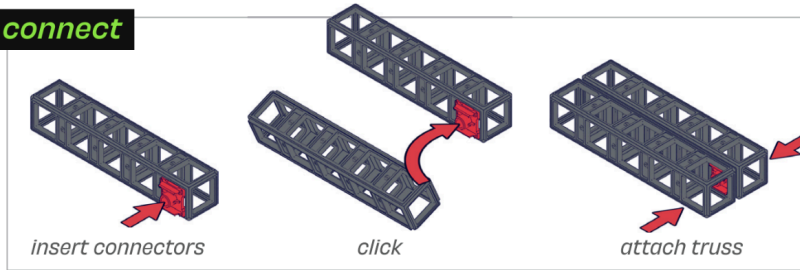
Recommended Materials for Competition

- [RVR+ Code Mat](#)
- [Sphero Craft Pack](#)
- [RVR+ Blueprint Plate](#) (If you do not have this you can attach Blueprint 5x Pitch trusses using cable ties to other RVR+ Plates and build on that)

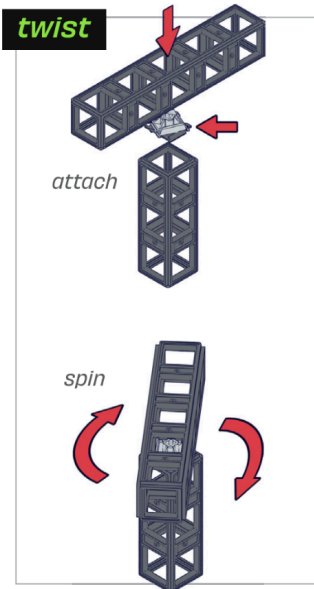
Blueprint Key Building Practices

Blueprint was designed to make building complex structures and mechanical systems intuitive. The best way to learn is to take it out and play!

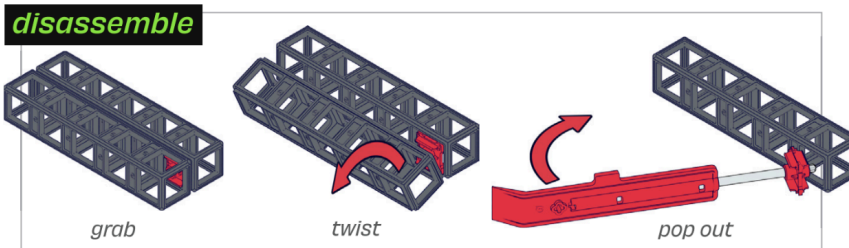
connect



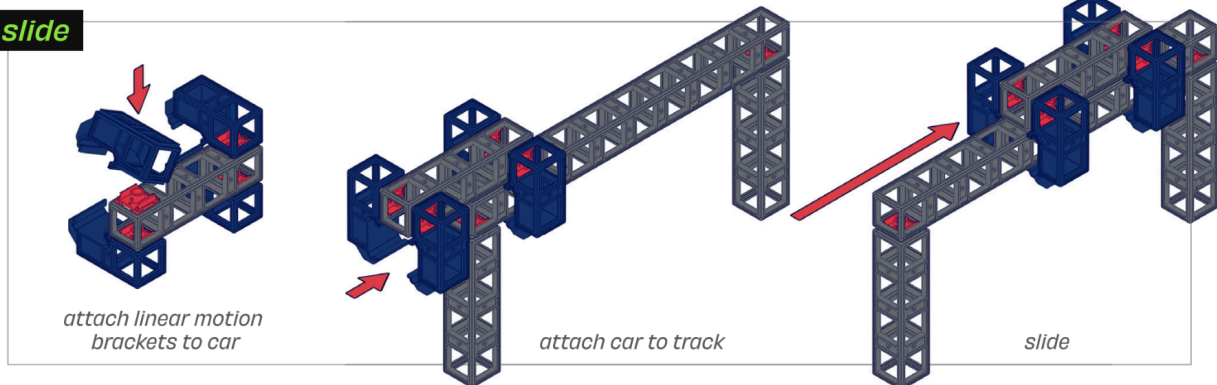
twist



disassemble



slide



TEAM COORDINATOR TIP:

Meeting agendas 1 and 2 **introduce students to Blueprint pieces** through hands-on challenges. Refer to the *Competition Rules* for instructions on what to build with Blueprint for each of the *Mission Objectives*.

Meeting Agendas

The nine meeting agendas in this Team Coordinator Guide will help familiarize your students with RVR, coding, and prepare your students for tackling the Mission Objectives.

There are three types of agendas in this coordinator guide:

- In **Intro Sessions**, students get comfortable with RVR.
- In **Learning Sessions**, students are introduced to key coding concepts that will help them tackle the Mission Objectives.
- In **Mission Sessions**, students are given dedicated time to apply what they have learned to completing the Sphero Robotic Mission Objectives.

<i>Intro Sessions</i>	<i>Learning Sessions</i>	<i>Mission Sessions</i>
Agenda 1: Welcome to Sphero Robotics Missions Agenda 2: Team Building with a Blueprint Challenge	Agenda 3: Movements Agenda 4: Lights & Sounds Agenda 5: Events Agenda 6: Loops & Functions Agenda 7: Sensors & Controls Agenda 8: Variables	Agenda 9: Example Mission Session

Every team starts with different skills and knowledge bases. Pick and choose from the meeting agendas to meet the needs and timeline for your team. If your team is new to the Sphero Robotics Missions and RVR, you might choose to complete every agenda. However, you do not need to complete them in order.

Mission Sessions

Mission Sessions give students dedicated time to apply what they have learned and prepare for the competition. Unlike Intro and Learning Sessions, these meetings can be more flexible and should be Student-Powered, with Team Coordinators serving as facilitators rather than leading a structured lesson. Encourage students to set goals for each session and divide their time among coding and testing their robot, developing and building field elements that connect to the season's theme, and practicing the Missions under competition-like conditions. Build in plenty of opportunities for students to test their ideas, identify what is and isn't working, make adjustments, and try again.

Welcome to the Sphero Robotics Missions

Meeting Agenda #1

SESSION TYPE: INTRO SESSION

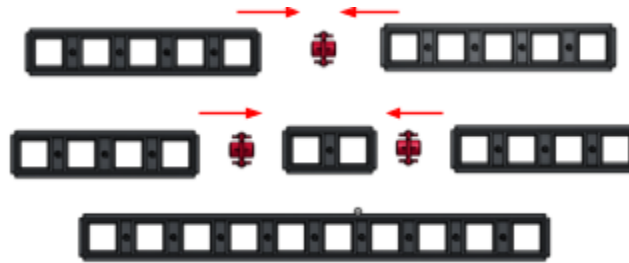
TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR+ or RVR robot • Sphero Edu installed app or Web app • Blueprint Snap Sphero Robotics Mission Kit	LEARNING OBJECTIVES: Students will be able to: • Build with Blueprint trusses • Program RVR to roll through a truss maze • Identify the goals of the Sphero Robotics Mission
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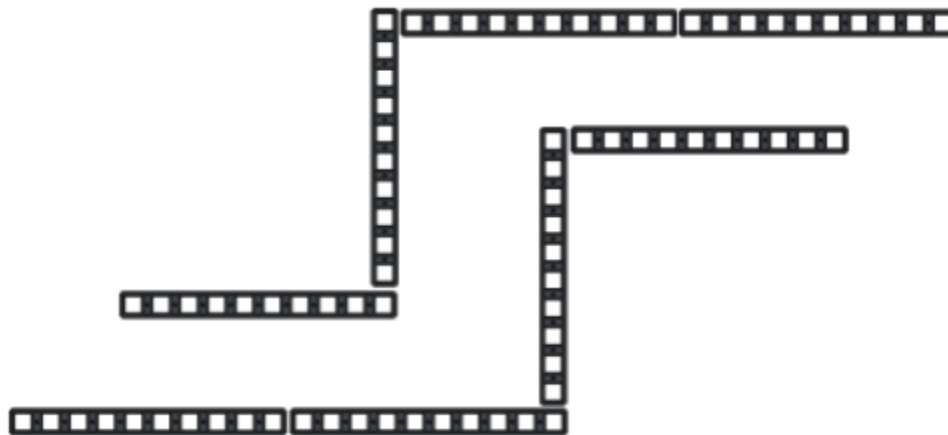
WARM - UP

1. Introduce the Sphero Robotics Missions for the current season.
 - Review the Mission Objectives for the current competition season. Below is an overview of the 26-27 SRM Smart City Missions:
 - i. “Welcome to Smart City! This season, your team will take on the role of engineers and robotics specialists working to solve some of the challenges that keep a modern city running. Using a RVR robot, you’ll design and build custom mechanisms, develop autonomous programs, and put your problem-solving skills to the test. You’ll sort waste after a storm, engineer a public transportation route, deploy air-quality sensors, and tackle other challenges inspired by real-world city systems. Each Mission will challenge your team to combine coding, engineering, strategy, and creativity to develop your own solution. There’s no single right way to solve these challenges—experiment, iterate, and see what your team can engineer for the Smart City of the future!”
 - Remind teams that they only need to complete three Mission Objectives: Mission Objective #1, Mission Objective #2, Mission Objective #3 for Qualifying Events. Mission Objective #4 will be added for Championship Events.
 - Explain that this activity will get them started with learning how to assemble Blueprint Snap parts and program their RVR robot.
2. Give students the Sphero Blueprint Snap Sphero Robotics Mission Kit.
 - Ask students to experiment with the parts.
 - As needed, show some of the key building practices.

3. Ask students to make ten trusses that are 10x pitches in length. Some trusses are already 10x pitches. Others can be made by connecting 5x, 4x, and/or 2x Pitch Trusses.



4. Ask students to make a short “trail” with at least one turn with their 10 Pitch Trusses.



WORK TIME

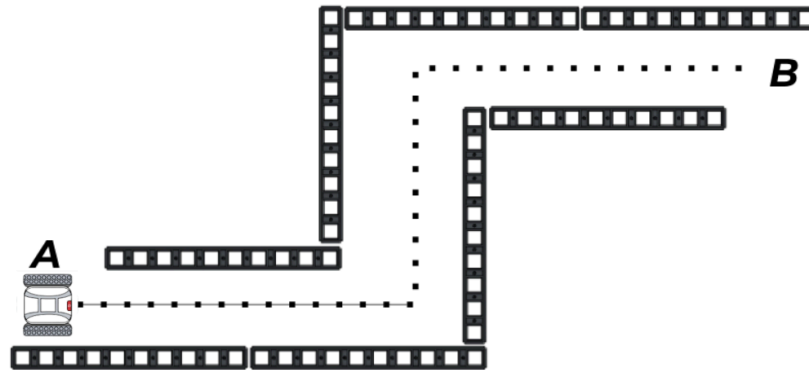
1. Have students drive their RVR robot through the maze.
 - Open the Sphero Edu app.
 - Pair your coding device to a RVR robot.
 - Open the Drive controls and go!
2. Tell students that in the Sphero Robotics Missions, they'll need to program their robots to move around the Mission Field instead of drive.



TEAM COORDINATOR TIP:

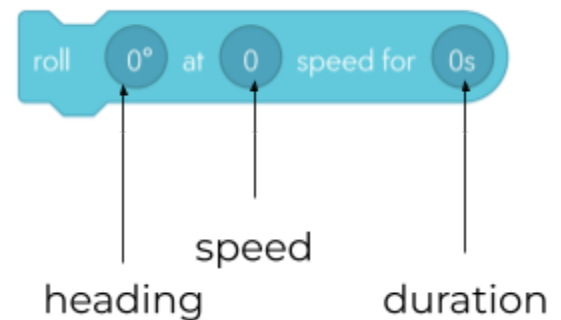
If your team is new to coding RVR robots with the Sphero Edu app, you may choose to complete one or more introductory activities like Introduction to Sphero Edu (sphero.cc/edu-intro), RVR+ Challenge Cards (sphero.cc/RVR+-cc) or RVR+ Blocks 1: Movement (sphero.cc/RVRblocks1).

3. Challenge students to create a new block program in the Sphero Edu app and program RVR to drive from point A through the trail to point B.



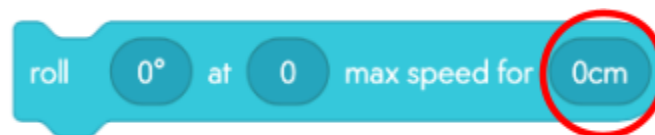
4. Discuss the inputs on a **roll block**.

- Which input controls the direction RVR rolls? **[first input]**
- Which input controls the RVR's speed? **[second input]**
- Which input controls the duration of RVR's roll? **[third input]**



TEAM COORDINATOR TIP:

RVR is Sphero's most accurate robot! Show students the **roll to distance block**. Ask students to use these blocks to program RVR+'s path through custom "mazes" on the backside of the RVR Code Mat. To make grid calculations simple, each grid square is 25 cm x 25 cm.



5. Discuss the following questions with your team:
 - Which block can you use to make RVR stop and pause at each corner to stay in control? **[delay block]**
6. Give students time to play with roll and delay blocks so they can program RVR to move accurately around the *Mission Field*.

WRAP-UP

1. Together with students, read through the rules for Mission Objective 1 in the SRM Mission Manual. Ask students to list some of the skills they have learned that will help them complete this Mission.
2. As time allows, preview the other Mission Objectives to build excitement.
3. Reserve a few minutes to clean up and put away materials.

Team Building with a Blueprint Challenge

Meeting Agenda #2

SESSION TYPE: INTRO SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • RVR+ Blueprint plate • Sphero Edu installed app or Web app • Blueprint Snap Sphero Robotics Mission Kit • Plastic Cups	LEARNING OBJECTIVES: Students will be able to: • Build a collection device with Blueprint parts • Program a RVR robot to move objects.
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WARM-UP

1. Give your team the **Blueprint Snap Sphero Robotics Mission Kit**.
2. Explain that in the last meeting agenda, they were told exactly what to build, but for the Sphero Robotics Mission competition they'll have more flexibility to customize designs for their Missions.
3. Tell your team that they are going to build a collection device with their Blueprint kits. The collection device should:
 - be built entirely from Blueprint parts attached the the RVR+ Blueprint plate
 - be large enough to hold 2 plastic cups when pushing them on the ground
4. Give students a few minutes to play with Blueprint parts and discuss the constraints.

WORK TIME

1. Provide 10 minutes for your team to work on their Blueprint Snap collection devices.

IF YOU SEE STUDENTS...

Unsure how to attach Blueprint parts to their RVR,

THEN...

Suggest they use the RVR+ Blueprint Plate and connectors to have trusses that go past the front of the RVR

2. Pause your students to discuss the following:
 - How could they modify their collection device to hold different sizes of objects?
 - How can they ensure the cups stay in the collection device when RVR turns?
3. Give your team 10 more minutes to work on their collection devices.
4. Optional: If you have more time, students can try to program the RVR to navigate a maze with the collection device to deliver the two cups.

WRAP UP

1. Have the team(s) demonstrate their collection devices and how their RVR held the cups while the RVR moved. If they created a story, they can set the scene and narrate RVR's movements as it completes the challenge.
2. Explain that this activity helped prepare your team for the Sphero Robotics Mission because in each Mission they will need to build field structures and RVR attachments to complete Mission Objectives.
3. Read through the different team role descriptions. Lead a discussion on how the team will contribute to the challenges:
 - As a team, how do you want to handle different roles and responsibilities for the Competition?
 - Is there a role that you are excited about? Is there a role that you aren't as enthusiastic about?
 - Does your team want to keep the same roles the whole time, or do you want to switch roles periodically during the Competition?

Competition Ready: Movements

Meeting Agenda #3

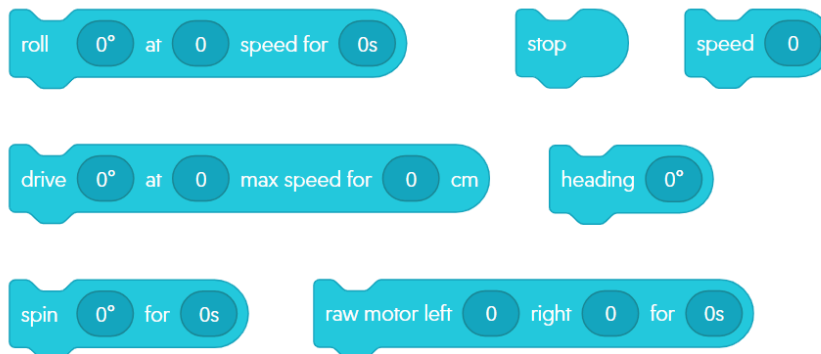
SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Control RVR's movements with accuracy and precision • Use movement blocks to effectively address challenges in <i>Mission Objectives</i>
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WARM UP

1. Open the Sphero Edu app and show students the blocks in the movement category of the Sphero Blocks Library.



2. Discuss:
 - Which blocks are familiar?
 - Which blocks are new to you?
 - How do you think the new blocks work? What do they do?
3. Tell students that they will spend the session developing proficiency with all of the movement blocks so that they can **control RVR's movements accurately**.



TEAM COORDINATOR TIP:

If your students have experience programming RVR, you may be able to skip this learning session or combine it with the next learning session.

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 1: Movements lesson](#). Use the Lesson Code 72429 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section of the lesson.

WRAP UP

1. Review one or more Mission Objectives with students. Discuss how they will apply their learning to the Mission Objectives.
2. Optional: Have students start to brainstorm initial strategies or design ideas for one or more of the Missions.

Competition Ready: Lights & Sounds

Meeting Agenda #4

SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

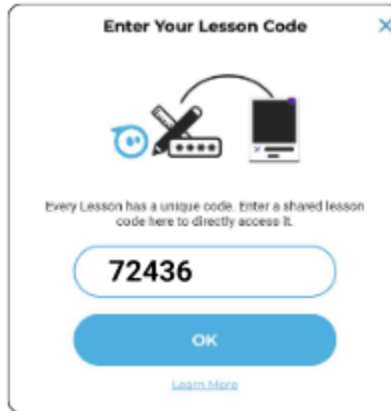
REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Control RVR's lights and sound to add creativity to their coding
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WARM UP

1. Review specific Mission scoring that requires audio or lights for that season, or have the students review the Missions and identify them.
2. Also review the "Theme Story Points" and "Integration Points" that can be earned in each Mission. Have the students share where lights or sounds can be used to earn these types of points.
3. Point out that the RVR robots are supposed to celebrate with movement, light, and sound. Adding light and sound to programs add creativity and shows Evaluators that you went above and beyond in the *Mission Objective*.

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 2: Lights and Sounds lesson](#). Use the Lesson Code 72436 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section of the lesson.

WRAP UP

1. Review the Mission objectives discussed during Warm Up related to lights and sounds, and have the students start brainstorming ideas on how to incorporate them into one or more Missions.
2. If you have more than one team, consider having each team develop a quick example of one of their ideas.

Competition Ready: Event-Based Programming

Meeting Agenda #5

SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Use programming events to trigger blocks in a RVR program • Incorporate programming events into their <i>Mission Objective</i> submissions
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WARM UP

1. Review the concept of cause and effect and have students fill in the table with their own cause and effect relationships.

Cause	Effect
The dog ate my homework.	I was late to school.
We worked really hard on Mission 1.	We completed our highest score of the season so far.

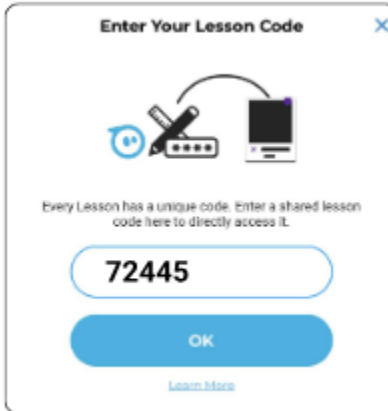
2. Explain that programming events trigger other things to happen in RVR programs, just like a cause and effect relationship.

Cause	Effect
RVR detects a color tile.	RVR reverses its heading.
RVR gyro senses it's going up a ramp.	RVR plays a sound.

3. Tell students that they will spend the session developing proficiency with event-based programming.

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 3: Event-based Programming lesson](#). Use the Lesson Code 72445 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section of the lesson.

WRAP UP

1. Review the *Mission Objectives* with students. Discuss how they will apply their learning to the *Mission Objectives*.
2. Have students pick one Mission Objective and have them demonstrate how they would apply one of their new event-based programming strategies. Have the students practice presenting how their coding feature works, as if they were presenting to an Evaluator at a Competition.

Competition Ready: Loops & Functions

Meeting Agenda #6

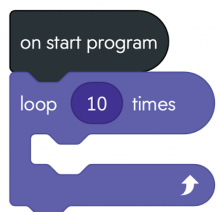
SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Compare and contrast loops and functions • Use loops and functions appropriately in their programs
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WARM UP

1. Show students a picture of the **loop 10 times block**. Ask:
 - How do you think blocks placed inside of the block will execute?



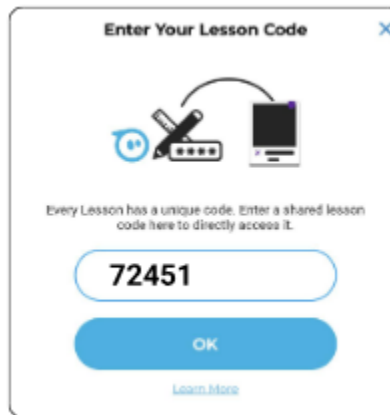
2. Show students a picture of a **function** in a block program. Ask:
 - What block will be executed when the program encounters function1?



3. Explain that programmers use loops when they wish to have a piece of code repeated in sequence. Programmers use functions when they want to reuse—or call—a piece of code anytime and anywhere they want in their program. Both loops and functions save programmers from having to duplicate lines of code over and over again.

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 4: Loops and Functions lesson](#). Use the Lesson Code 72451 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section step of the lesson.

WRAP UP

1. Review the *Mission Objectives* with students. Discuss how they will apply their learning in this lesson to the *Mission Objectives*.
 - Loops and functions are not a specific requirement of any of the *Mission Objectives*. However, they could save your programmers time and can also contribute to their Coding Feature points.

Competition Ready: Sensors and Controls

Meeting Agenda #7

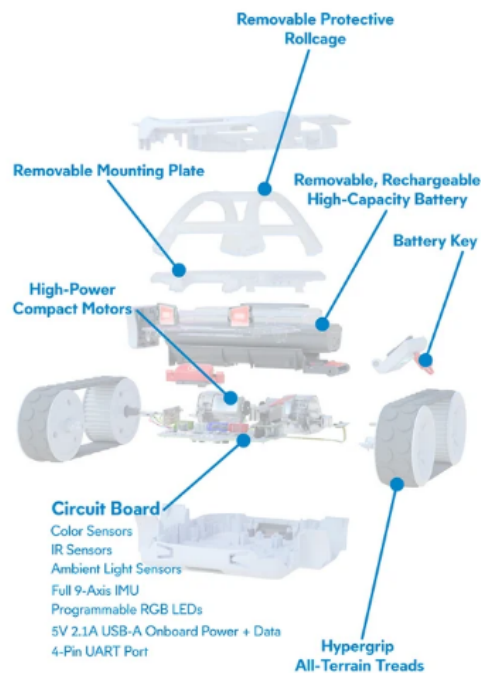
SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

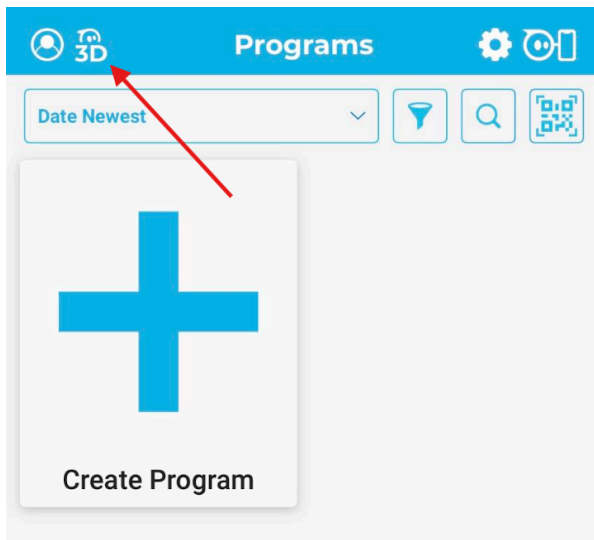
REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Demonstrate knowledge of all of RVR's onboard sensors • Use control structures and conditions to affect the execution of a program based on sensor values
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WARM UP

1. Show students a 3D exploded view of Sphero RVR in the Sphero Edu app. Ask students if they recognize any of the sensors or components inside of the robot.



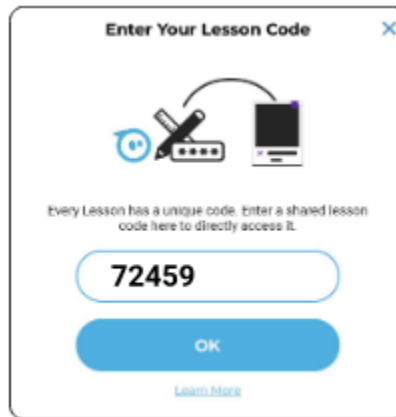
Select 3D in the Sphere Edu mobile app:



2. Review some of the most important sensors:
 - **Inertial Measurement Unit (IMU)** - measures the accelerometer and gyroscope data from RVR in 3 axes (X, Y, & Z)
 - **Ambient light sensor (ALS)** - measures the light intensity of the environment and returns the value in Lux (ambient light)
 - **Color sensor** - detects color when RVR drives over a color tile
3. Explain that all of these sensors produce data. This data can be used to control the execution of blocks in programs.
4. Tell students that, in this session, they will explore how to use this data in control structures.

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 5: Sensors and Controls lesson](#). Use the Lesson Code 72459 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section of the lesson.

WRAP UP

1. Review the *Mission Objectives* with students. Discuss how they will apply their learning in this lesson to the *Mission Objectives*.
2. If time permits, have students demonstrate using a sensor to accomplish one of the *Mission Objectives*.

Competition Ready: Variables

Meeting Agenda #8

SESSION TYPE: LEARNING SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app	LEARNING OBJECTIVES: Students will be able to: • Create programs that use variables to store and modify data
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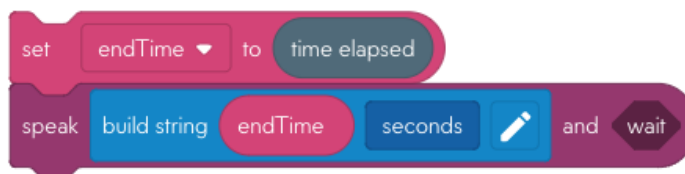


TEAM COORDINATOR TIP:

Variables are a more advanced programming concept and your team will likely be able to complete the *RVR Missions* without an in-depth knowledge about variables. If time is limited, you can skip this meeting agenda.

WARM UP

1. Make a connection between sensors and variables:
 - The time elapsed sensor starts a timer when a program is started. The value is equal to the number of seconds since the program has started.
 - Programmers can create their own pieces of information that can change in a program, called variables.



2. Explain that RVR programs can hold different types of variables:
 - **Number variables** consist of integer and decimals numbers
 - **String variables** consist of words and characters
 - **Boolean variables** consist of true or false values

WORK TIME

1. Have students navigate to the Sphero Edu app, and open the [Competition Ready 6: Variables lesson](#). Use the Lesson Code 72546 to launch the lesson.



2. Support students as they work through the steps. Encourage them to explore the blocks in each of the steps and attempt the suggested activities.
3. As a class, discuss student responses to questions in the Wrap-Up section of the lesson.

WRAP UP

1. Review the *Mission Objectives* with students. Discuss how they will apply their learning in this lesson to the *Mission Objectives*.
2. If time permits, have students demonstrate using a variable to accomplish one of the *Mission Objectives*.

Example Mission Session Agenda

Meeting Agenda #9

SESSION TYPE: MISSION SESSION

TIME REQUIRED: 45-60 minutes

REQUIRED MATERIALS: • RVR or RVR+ robot • Sphero Edu installed app or Web app • Blueprint Snap Sphero Robotics Mission Kit RECOMMENDED MATERIALS: • RVR+ Code Mat • Sphero Craft Pack	LEARNING OBJECTIVES: Students will be able to: • Apply coding and problem-solving skills to complete Mission Objectives. • Test, evaluate, and improve robot programs and field elements. • Build teamwork and confidence through competition practice.
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TEAM COORDINATOR TIP:

Mission Sessions should be flexible! Adjust the amount of time spent coding, building, testing, and practicing based on your team's progress and how close you are to competition day. If your students already have the fundamental skills covered in the Intro and Learning sessions, they can skip those and start with the Mission Sessions.

WARM - UP

Review Progress & Set Goals

Bring the team together to review where they left off during the previous session.

- Discuss what worked, what challenges remain, and what the team would like to accomplish today.
- Review any specific Missions and scoring objectives that they would like to work on that day.
- Have students identify one or two specific goals for the session.

WORK TIME

Create, Code, Test & Improve

Give students dedicated time to work toward their goals. Depending on where they are in the season, students may:

- Code and test their robot on the Mission field.
- Design and build field elements related to the season theme.
- Experiment with strategies for completing Mission Objectives.
- Troubleshoot problems and improve their programs.
- Practice team roles and responsibilities.
- Complete timed Mission practice runs.

Encourage students to use an iterative process: Try → Observe → Adjust → Try Again. Team Coordinators should guide students with questions and encouragement while allowing students to make the coding, design, and strategy decisions.

WRAP-UP

Practice, Reflect & Plan Ahead

Finish with a Mission practice run or have students demonstrate the progress they made during the session. Ask the team to reflect on what worked, what needs improvement, and what they want to tackle next time. Record next steps so students can quickly pick up where they left off at their next Mission Session.

Consider keeping a visual chart to record achievements to ensure the team is prepared to run their Missions on the Competition day.

Example Mission Readiness Tracker with three different SRM teams tracking their progress.

 MISSION READINESS TRACKER 							
★ Are we ready for Competition Day? ★							
SRM TEAM	1. PROGRAMMING COMPLETE  Robots are programmed	2. MISSIONS PRACTICED  Practiced all Mission Objectives	3. FIELD ELEMENTS BUILT  All required field elements built and ready	4. PRACTICE RUNS COMPLETED  Completed timed practice runs as a team	5. TEAM ROLES & STRATEGY  Team roles assigned and strategy set	6. COMPETITION READY!  We are ready to compete!	NOTES / NEXT STEPS 
 SRM EXPLORERS	✓ Complete	✓ All Missions Practiced	✓ All Built	✓ 3 Practice Runs Completed	✓ Roles Assigned	✓ READY!	• Improve Run #1 time • Fine tune autonomous
 SRM INNOVATORS	✓ Complete	✓ All Missions Practiced	✓ All Built	✓ 2 Practice Runs Completed	✓ Roles Assigned	○ ALMOST!	• Build two field elements • Practice Missions 1 & 2
 SRM BUILDERS	✓ Complete	✓ 2 of 3 Missions	○ Not Started	○ 0 Practice Runs Completed	✓ Roles Assigned	✗ NOT READY	• Finish building elements • Practice more Missions
 = Complete  = In Progress  = Almost There  = Not Started  = Not Ready							
GOAL: Work together, practice hard, and have fun on Competition Day! ★							

Support

We couldn't be more excited about your team's participation in Sphero Robotics Missions. For more information about Sphero Robotic Missions and to get involved in our community, you can find links to additional resources below.

Contact Us: support@teamalliance.org

RVR+ Resources: edu.sphero.com/edurobots/resources

Sphero Coding Wiki: sphero.cc/JS-help

Sphero Equipment or Coding Support: support.sphero.com