2025

SNRG سنرجكس

فرص للتعاون و خدمة المجتمع

Collaboration & community service opportunities

برامج و فعاليات غير ربحية في التميز بالابتكار التكنولوجي لفئة الناشئة و الشباب

محليا و عالميا

Non profit excellence Programs and events in tech innovation for youth

Locally and Globally

شركة سنرجكس
About SNRGX

since
2014

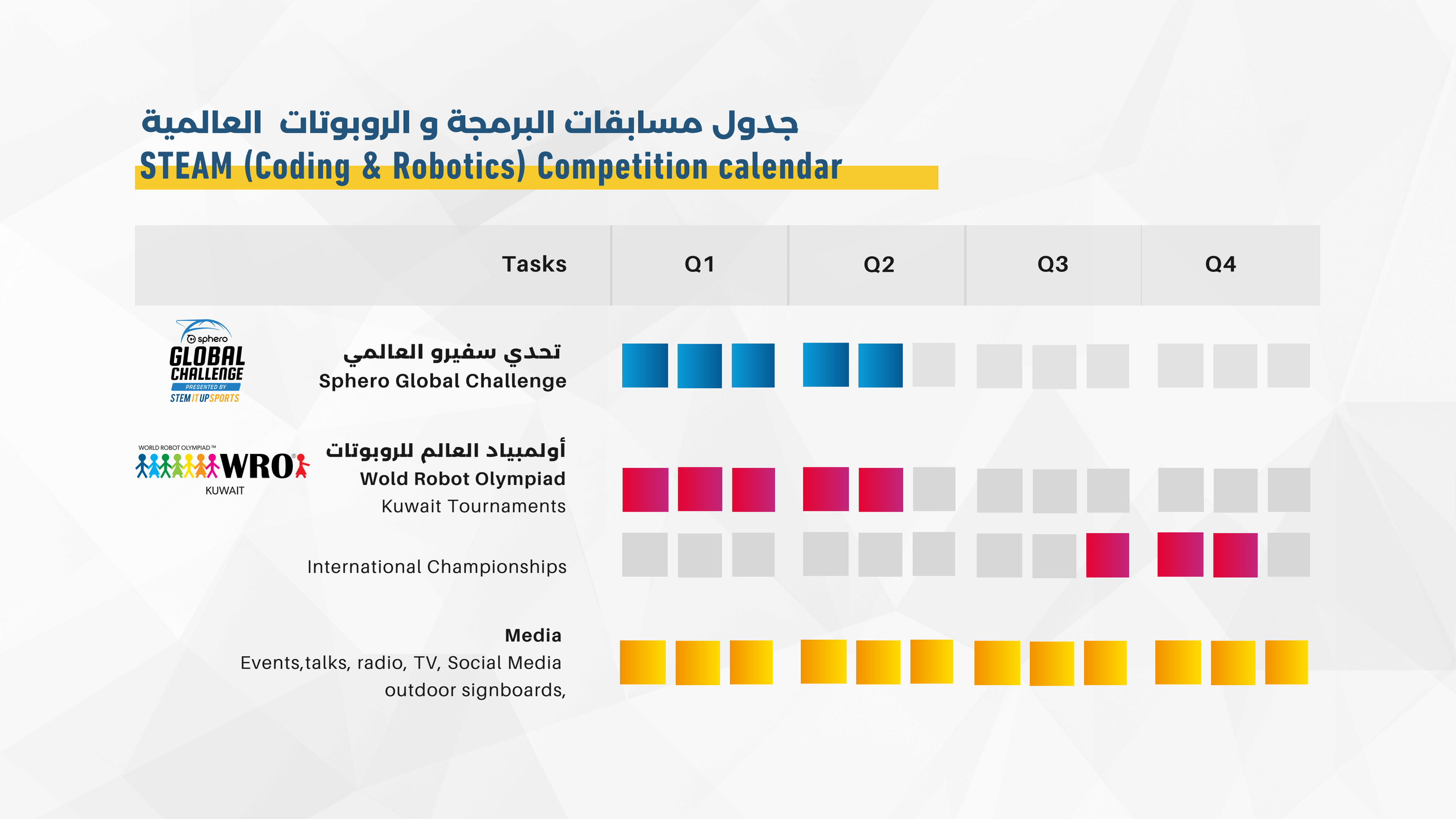
شركة إدارة مشاريع و تنظيم
معارض و مؤتمرات

Projects and events
management company

المنظم الرسمي لعدد من المسابقات
العالمية في مجال البرمجة و الروبوتات

National Organizer for global
multiple STEAM compeition

جدول مسابقات البرمجة و الروبوتات العالمية
STEAM (Coding & Robotics) Competition calendar




تحدي سفيرو العالمي
sphero
GLOBAL CHALLENGE
PRESENTED BY
STEM IT UP SPORTS
Invitation to Participate
SNRG سنرجكس
ارجان بداية
ARGAN Bedaya

الفئات العمرية Age Groups	4 to 14
موضوع المسابقة Theme	رحلة عبر الزمن Time Travel
المسارات Tracks	Sphero indi (4 to 7 yrs) Sphero bolt (8 to 14 yrs)
التكنولوجيا Technology	Sphero indi- bolt
تصفيات الكويت Kuwait's Tournament	18th of February 2025 (Argan badaya) Last day or registration 1st Feb 2025 Kuwait Registration fee: KD 10 per member
نهائيات العالم Global Finals	21 April 2025

sphero
GLOBAL CHALLENGE
PRESENTED BY
STEM IT UP SPORTS

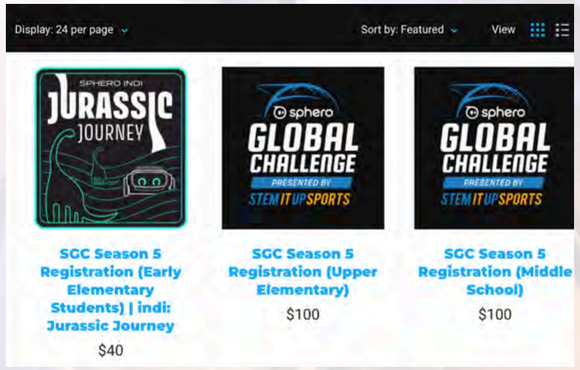
2023 - Kuwait Second Globally
2024 - Kuwait Third Globally

خطوات التسجيل
Registration Steps

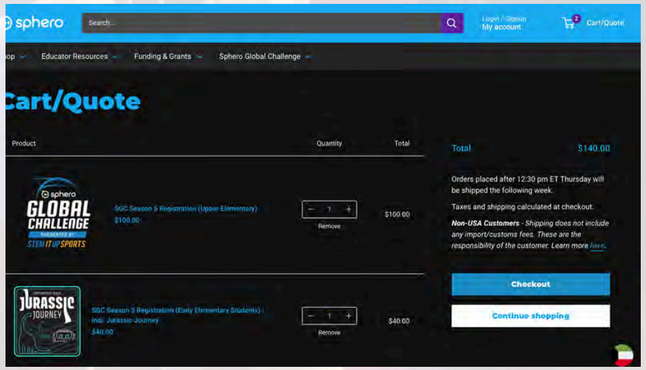
18th of February 2025
(Argan badaya)
Last day or registration 1st Feb 2025

1- Visit the Sphero Global Challenge official website to register

https://sphero.com/pages/global-challenge



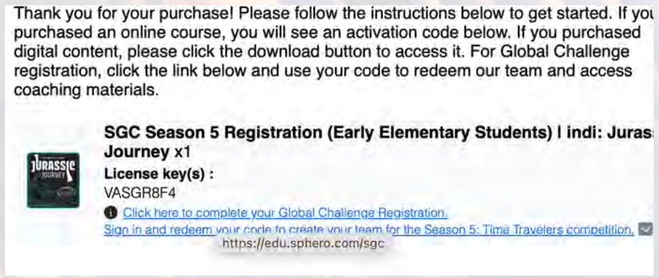
2- Select the age group of your team



3- Update the number of teams and process payment online

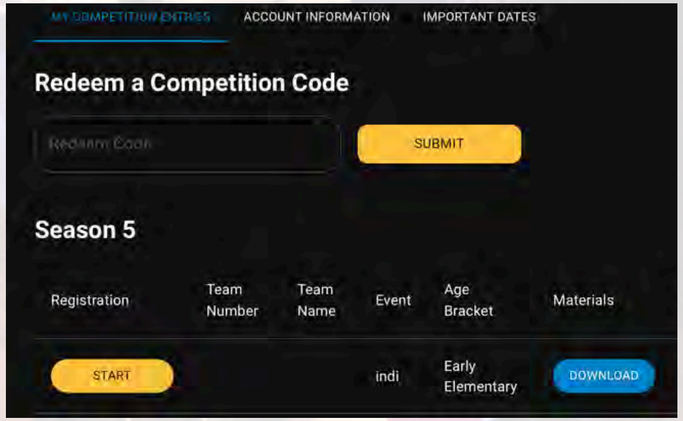
خطوات التسجيل
Registration Steps

18th of February 2025
(Argan badaya)
Last day or registration 1st Feb 2025



4- You will receive an email with information to login and register team

5- Access the teams platform



6- Select the registration token in enter your teams details. dont forget to select Kuwait for your participation

sphero GLOBAL CHALLENGE
PRESENTED BY STEM IT UP SPORTS

SPHERO
TIME TRAVELERS
SPHERO GLOBAL CHALLENGE

SPHERO GLOBAL CHALLENGE SEASON 5

EVALUATION RUBRICS

TABLE OF CONTENTS

A perfect score may be your team's goal for each ***Mission Objective***, but it is not a criteria for submission. The ***Evaluation Rubric*** was created to reward teams for their successes, no matter how small. Sphero encourages all teams to submit their best work and not get hung up on perfection.

BOLT: TIME TRAVEL ODYSSEY EVALUATION RUBRIC

	Developing	Improving	Accomplished	Exemplary
Mission Objective #1: Ready, Set, Pack!	Five points will be deducted for each BOLT robot that does not pick up (roll over) two ***Supplies***. Five points will be deducted for each BOLT robot that picks up (rolls over) more than two ***Supplies***. Five points will be deducted if either BOLT robot crosses a ***Competition Field Boundary Line***.			
	0-20 ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. ***Competition Field*** not set up accurately; and/or BOLTs don't start in ***Starting Area***; and/or BOLTs don't end in ***Portal***; and/or BOLTs didn't pass through ***Tunnel***; and/or program time(s) exceeded 30 seconds.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. Lights and sounds are programmed creatively; and/or team submitted detailed explanation for their choice of ***Supplies***; and/or team clearly went above and beyond.
Mission Objective #2: Strivin' for Survivin'	Five points will be deducted for each time a BOLT encounters (rolls over) an ***Obstacle***. For each ***Food Station***, 10 bonus points will be awarded if the ***Food*** is pushed all the way out of the ***Food Station*** footprint.			
	0-20 ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. ***Food Stations*** are constructed incorrectly; and/or BOLTs don't start in the ***Starting Area*** or end in the ***Shelter***; and/or BOLTs do not use ambient light sensor; and/or BOLTs do not show images on their matrix at end of ***Mission Objective***.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. Lights and sounds are programmed creatively; and/or team clearly went above and beyond.
Mission Objective #3: Going Ancient	**0-20** ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. BOLTs do not share 5 facts about an ancient civilization; and/or programs do not use blocks from all listed categories; and/or Blueprint builds do not include at least one moveable part; and/or BOLTs don't start in the ***Starting Area*** or end in the ***Portal***.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. BOLT programs and Blueprint builds show extensive research and knowledge about ancient civilization; and/or lights and sounds are programmed creatively; and/or team clearly went above and beyond.

	Developing	Improving	Accomplished	Exemplary
Mission Objective #4: Timeless Messages	10 bonus points will be awarded if the ***Art Machine(s)*** leaves an understandable message with words or pictures.			
	0-20 ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. ***Art Machine(s)*** and BOLT robots do not remain on ***Competition Field*** for the duration of the ***Mission Objective***; and/or ***Art Machine(s)*** are not powered by BOLT robots; and/or ***Art Machine(s)*** do not leave art on ***Competition Field***.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. ***Art Machine(s)*** is effective at making art; and/or team clearly went above and beyond.
Mission Objective #5: Lost in Time	**0-20** ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. ***Obstacles*** not placed in the ***Obstacle Zone*** in accordance with rules; and/or BOLT 1 does not start in A1 and end in S9, S10, T9, or T10; and/or BOLT 2 does not remain in T10 for the entire ***Mission Objective***; and/or BOLT 2 does not send messages to BOLT 1 to control its movement; and/or lights and sounds not programmed according to the ***Competition Rules***.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. Lights and sounds are programmed creatively; and/or team clearly went above and beyond.
Slide Presentation	Video Submitted in proper format: **Y** or **N**			
	0-20 Slide presentation not submitted or largely incomplete.	**21-50** Deliverables for each ***Mission Objective*** are mostly complete. Up to one deliverable per ***Mission Objective*** may be missing; and/or some deliverables are unclear.	**51-80** All deliverables are included and clearly articulated for each ***Mission Objective***.	**81-100** All deliverables included for each ***Mission Objective***. Clearly articulated reflection on Sphero Global Challenge is included; and/or presentation includes creative elements beyond the original template.

TOTAL SCORE:

COMMENTS:

(OUT OF 600)

INDI: JURRASIC JOURNEY EVALUATION RUBRIC

	Developing	Improving	Accomplished	Exemplary
Mission Objective #1: Know Your Dinosaur	**0-20** ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. Model dinosaur is < 6 inches tall; and/or research is incomplete.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. More than one model dinosaur was created; and/or research was completed on more than one dinosaur; and/or team clearly went above and beyond the objective.
Mission Objective #2: Design for Time	**0-20** ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. Habitat is < 5" x 5" (1.5m x 1.5m); and/or time machine is partially built; and/or habitat is incomplete.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. Habitat exceeds 5" x 5" (1.5m x 1.5m); and/or habitat includes elaborate elements such as real water or sand; and/or team clearly went above and beyond.
Mission Objective #3: A Day in the Life...Of a Dinosaur	**0-20** ***Mission Objective*** not attempted or mostly incomplete.	**21-50** ***Mission Objective*** mostly complete. Path has < 8 tiles; and/or little or no narration as indi travels; and/or indi doesn't return to the original starting point.	**51-80** ***Mission Objective*** is complete.	**81-100** ***Mission Objective*** is complete. More than 8 tiles are used; and/or narration includes facts from ***Mission Objective 1*** on more than one dinosaur; and/or team clearly went above and beyond.
Slide Presentation	Video Submitted in proper format: **Y** or **N**			
	0-20 Slide presentation not submitted or largely incomplete.	**21-50** Deliverables for each ***Mission Objective*** are mostly complete. Some deliverables are unclear or incomplete.	**51-80** All deliverables are included and clearly articulated for each ***Mission Objective***.	**81-100** All deliverables included for each ***Mission Objective***. Clearly articulated reflection on Sphero Global Challenge is included; and/or presentation includes creative elements beyond the original template.

TOTAL SCORE:

COMMENTS:

(OUT OF 400)

sphero.com/pages/global-challenge

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SPHERO
TIME TRAVELERS
SPHERO GLOBAL CHALLENGE

SPHERO GLOBAL CHALLENGE SEASON 5

COMPETITION RULES

BOLT: TIME TRAVEL ODYSSEY

EVENT DESCRIPTION

Have you ever wished that you could experience a different time in human history? Well, there's no time like the present to time travel. Grab your friends, two BOLT robots, and your Sphero Global Challenge Blueprint Kit and get ready for an adventure. Don't forget to bring your best teamwork, problem solving, and communication skills so that you can accomplish the ***Mission Objectives*** and make it safely back home!

The Mission Objectives will challenge you to take your BOLT programming skills to the next level:

- Use problem solving skills to creatively find solutions to programming and engineering challenges.
- Program two BOLT robots to move with accuracy around the ***Competition Field***.
- Design and build mechanisms with your Sphero Global Challenge Blueprint Kit.
- Create programs that allow your BOLT robots to gather information from their environments and communicate with one another.

BOLT: TIME TRAVEL ODYSSEY
GENERAL RULES

BOLT-G1 Teams may have up to five total students.

BOLT-G2 Teams considered ***Upper Elementary School Teams*** will be scored on three ***Mission Objectives*** and their Slide Presentation for a total of 400 points (300 from ***Mission Objectives***, and 100 from the presentation). See the ***Evaluation Rubric*** for more information on scoring.

a. ***Upper Elementary School Teams*** must complete one ***Mission Objective*** from each difficulty category:

- **Beginner:** Mission Objective #1,
- **Intermediate:** Mission Objective #2 OR #3
- **Advanced:** Mission Objective #4 OR #5.

b. Teams may choose to submit all five ***Mission Objectives***. If you choose to do this, your submission will still be scored on a scale of 400 points (300 from ***Mission Objectives***, and 100 from the presentation). However, in this case, the judges will score all five ***Mission Objectives*** and your final score will consist of points from ***Mission Objective #1***, the highest score from ***Mission Objective #2*** and ***#3***, the highest score from ***Mission Objective #4*** and ***#5***, and the Slide Presentation.

BOLT-G3 Teams considered ***Middle School Teams*** will be scored on five ***Mission Objectives*** and their Slide Presentation for a total of 600 points. (500 from ***Mission Objectives***, and 100 from their Slide Presentation.)

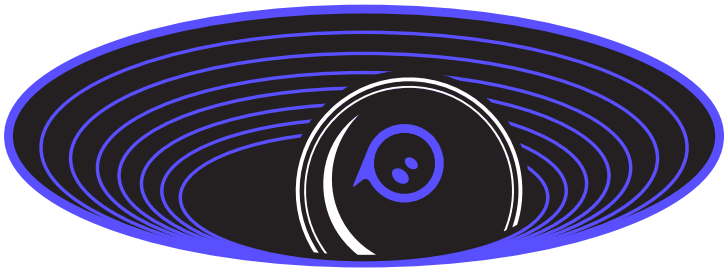
BOLT-G4 Teams will need to use parts from the Sphero Global Challenge Blueprint Kit to complete the ***Mission Objectives*** as outlined in the rules. The Kit includes the following parts:

- (6) 10x Pitch Trusses
- (8) 5x Pitch Trusses
- (12) 4x Pitch Trusses
- (12) 3x Pitch Trusses
- (8) 2x Pitch Trusses
- (40) Connectors
- (2) Turntables
- (6) Linear Motion Brackets
- (2) 45mm Pulleys
- (2) 3x Pitch Shafts
- (8) 0.5x Pitch Shaft Collars
- (4) 1x4 Plates
- (1) Removal Tool

Teams do not need to purchase the Sphero Global Challenge Blueprint Kit if they already have Blueprint parts from other kits. However, they may not use any parts in excess of the quantities listed above.

BOLT-G5 Coaches are to participate in a supervisory role and handle the registration, submission, and management of Team meetings. They are not allowed to actively participate alongside Students in the planning or completion of any ***Mission Objective***.

BOLT-G6 Once “Start” is pressed on any BOLT program, no human interaction can take place for the remainder of the program unless otherwise indicated in the ***Mission Objective*** rules.



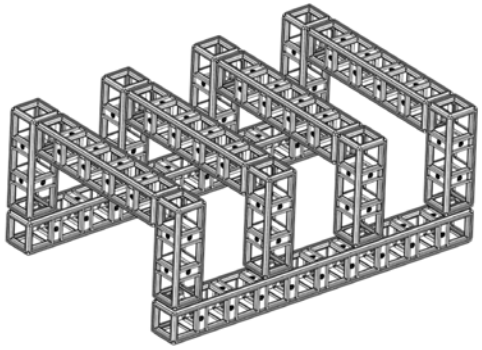
MISSION OBJECTIVE #1: READY, SET, PACK!

LEVEL: BEGINNER

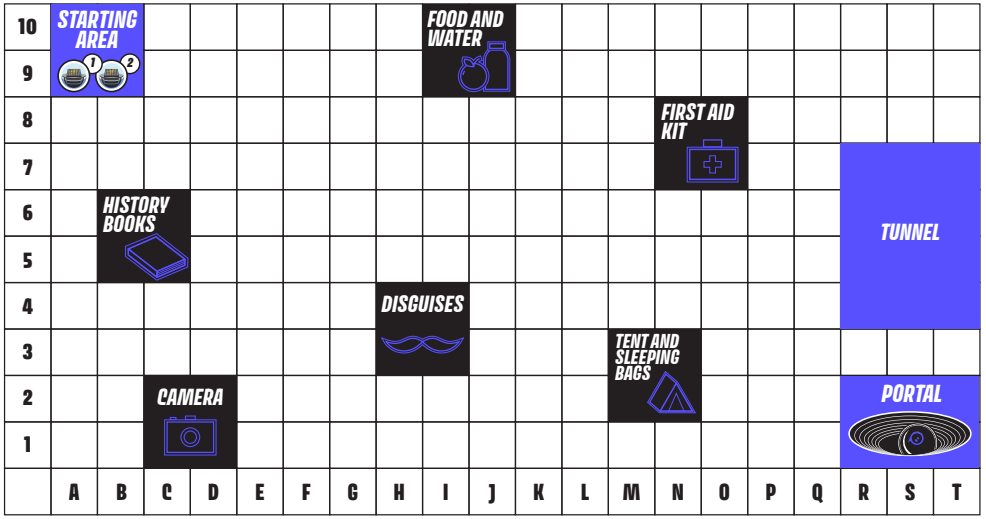
If you are going on a time travel adventure, you will need some ***Supplies***! What will you pack? Program your BOLT robots to race around the ***Competition Field*** and roll over your desired ***Supplies***. But hurry! You must make it through the ***Tunnel*** and to the ***Portal*** before it closes.

SET-UP

1. Use a printout or Code Mat as the ***Competition Field***. You can also create your own ***Competition Field*** using another method.
2. Build a time travel ***Tunnel*** that you'll program both BOLTs to pass under before stopping in the ***Portal***. To build the ***Tunnel***, you'll need:
   - (2) 10x Pitch Trusses
   - (4) 5x Pitch Trusses
   - (8) 3x Pitch Trusses
   - (16) Connectors



3. Place the ***Tunnel*** in the ***Competition Field's*** coordinates R4-T4, R5-T5, R6-T6, R7-T7. The ***Tunnel*** can be attached to the ***Competition Field*** with tape or other adhesive.
4. Mark the areas for ***Supplies*** on the ***Competition Field*** with markers, painter's tape or other method according to the following coordinates:
   - **camera:** C1, C2, D1, D2
   - **history books:** B5, B6, C5, C6
   - **disguises:** H3, H4, I3, I4
   - **food and water:** I9, I10, J9, J10
   - **tent and sleeping bags:** M2, M3, N2, N3
   - **first aid kit:** N7, N8, O7, O8



MISSION OBJECTIVE #1
RULES & DELIVERABLES

BOLT-M1-1 BOLT 1 and BOLT 2 must begin in the ***Starting Area***: A9, A10, B9, and B10.

BOLT-M1-2 Execution of the programs for BOLT 1 and BOLT 2 must begin at the same time.

BOLT-M1-3 BOLT 1 and BOLT 2 must travel around the ***Competition Field*** and pick up exactly two ***Supplies*** that they wish to bring with them on their time travel journey. To pick up a ***Supply***, a BOLT robot needs to roll over the associated coordinates on the ***Competition Field***. Once a ***Supply*** has been picked up by one BOLT, it cannot be picked up by the other BOLT. Five points will be deducted for each BOLT robot that does not pick up two ***Supplies***.

BOLT-M1-4 Once a ***Supply*** has been picked up, it can not be discarded. Five points will be deducted for each BOLT robot that picks up more than two ***Supplies***.

BOLT-M1-5 BOLT 1 and BOLT 2 must pass through the ***Tunnel*** and end the ***Mission Objective*** in the ***Portal***: R1, R2, S1, S2, T1, and T2.

BOLT-M1-6 The programs for BOLT 1 and BOLT 2 may take no longer than 30 seconds.

BOLT-M1-7 A one time penalty of five points will be deducted if a BOLT robot crosses the ***Competition Field Boundary Lines*** at any point during the program.

BOLT-M1-8 According to the ***Evaluation Rubric***, points may be added for creative use of lights and sounds, especially lights and sounds that represent the ***Supplies*** that the BOLT robots picked up.

DELIVERABLES

The ***Mission Objective*** will be scored according to the ***Evaluation Rubric***. Submit the following evidence of completion in the Google Slide Submission template (sphero.cc/SGC5-bolt-template).

1. **Video:** Submit a video of the ***Mission Objective***. The video must:
   a. be submitted in a .mp4, .mov, or .avi format
   b. be captured from top down perspective
   c. show both BOLTs for the entire ***Mission Objective***
2. **Code:** Submit a screenshot or image of the programs for both BOLT 1 and BOLT 2.
3. **Commentary:** Submit a written explanation for why your team chose the ***Supplies*** that it did for the time travel adventure.

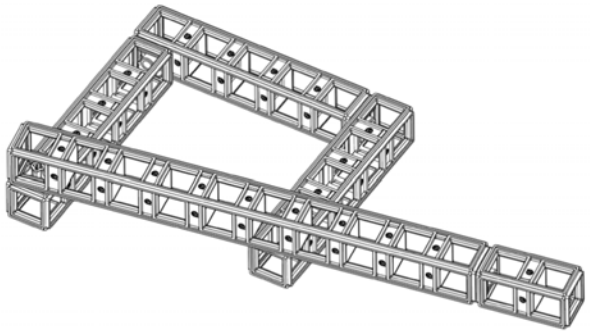
MISSION OBJECTIVE #2: STRIVIN' FOR SURVIVIN'

LEVEL: INTERMEDIATE

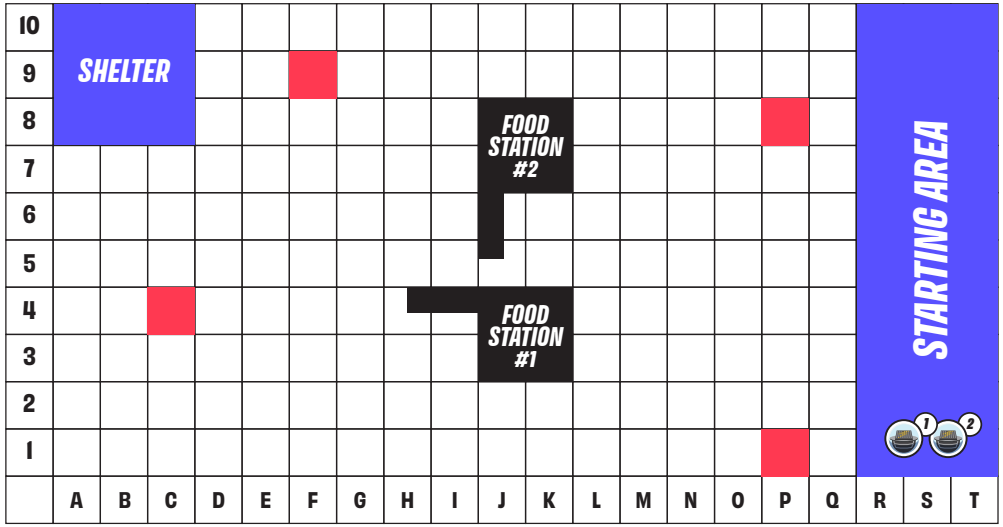
Your first stop in your time travel adventure is before the time of large civilizations, circa 50,000 years ago. You'll have to use your wits and your collaboration skills to survive the day and make it to your ***Shelter*** when night falls.

SET-UP

1. Use a printout or Code Mat as the ***Competition Field***. You can also create your own ***Competition Field*** using another method.
2. Build two ***Food Stations***. For each ***Food Station***, you'll need:
   - (1) 10x Pitch Truss
   - (3) 5x Pitch Trusses
   - (1) 2x Pitch Truss
   - (3) Connectors
   - (1) Turntable



3. Place the ***Food Stations*** on the ***Competition Field*** as shown in the image. The base of the ***Food Stations*** can be attached to the ***Competition Field*** with tape or other adhesive. Place one ping pong or golf ball in the center of each ***Food Station***.
   - ***Food Station #1:*** J3, J4, K3, K4 with the arm extending through I4 and into H4.
   - ***Food Station #2:*** J7, J8, K7, K8 with the arm extending through J6 and into J5.
4. Mark four ***Obstacles*** on the ***Competition Field***: Snake: F9, crocodile: C4, sabertooth tiger: P8, and poisonous berries: P1.



MISSION OBJECTIVE #2
RULES & DELIVERABLES

BOLT-M2-1 BOLT 1 and BOLT 2 must begin in the ***Starting Area***: rows R, S, and T.

BOLT-M2-2 Execution of the programs for BOLT 1 and BOLT 2 must begin at the same time.

BOLT-M2-3 BOLT 1 and BOLT 2 must work in coordination to open both ***Food Stations***.

BOLT-M2-4 For each ***Food Station***, 10 bonus points will be awarded if the ***Food*** is pushed all the way out of the ***Food Station*** footprint by the end of the ***Mission Objective***.

BOLT-M2-5 After releasing the ***Food***, both BOLT robots should pause and wait for dusk. When the light level is dimmed, the BOLTs should sense the change and move to the ***Shelter***. Ambient light levels can be controlled with room lights, lamps, and/or flashlights.

BOLT-M2-6 The BOLT+ robots must avoid grid squares marked as ***Obstacles*** on the ***Competition Field***. Five points will be deducted for each time a BOLT encounters an ***Obstacle***.

BOLT-M2-7 Upon reaching the ***Shelter***, both BOLT robots should display petroglyph art on their matrix.

BOLT-M2-8 The programs for BOLT 1 and BOLT 2 may take no longer than 60 seconds.

BOLT-M2-9 BOLT 1 and BOLT 2 must end the ***Mission Objective*** in the ***Shelter***: A8, A9, A10, B8, B9, B10, C8, C9, and C10.

DELIVERABLES

The ***Mission Objective*** will be scored according to the ***Evaluation Rubric***. Submit the following evidence of completion in the Google Slide Submission template (sphero.cc/SGC5-bolt-template).

1. **Video:** Submit a video of the ***Mission Objective***. The video must:
   - **a.** be submitted in a .mp4, .mov, or .avi format
   - **b.** be captured from top down perspective
   - **c.** show both BOLTs for the entire ***Mission Objective***
2. **Code:** Submit a screenshot or image of the programs for both BOLT 1 and BOLT 2.

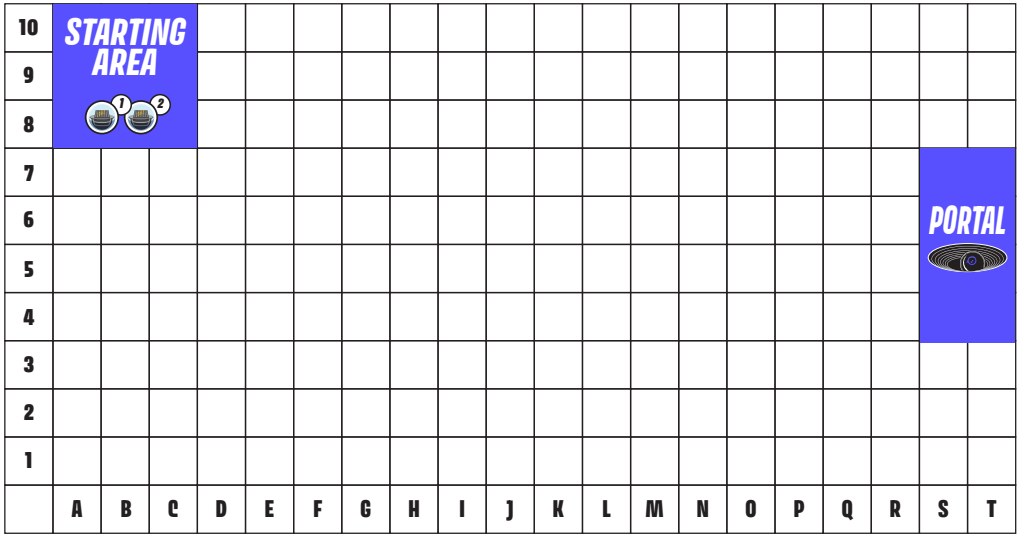
MISSION OBJECTIVE #3: GOING ANCIENT

LEVEL: INTERMEDIATE

Throughout human history, ancient civilizations have flourished in all corners of the globe. Choose one that your team is most passionate about, do research, and then design the ***Competition Field*** and build with Blueprint to represent some of the most important historical and cultural information. Then program your BOLT robots to travel through your model and give a tour!

SET-UP

1. Use a printout or Code Mat as the ***Competition Field***. You can also create your own ***Competition Field*** using another method.
2. Decorate the ***Competition Field*** with your Sphero Global Challenge Blueprint Kit and craft supplies to represent an ancient civilization of your choice.



MISSION OBJECTIVE #3
RULES & DELIVERABLES

BOLT-M3-1 BOLT 1 and BOLT 2 must begin in the ***Starting Area***: A8, A9, A10, B8, B9, B10, C8, C9, and C10.

BOLT-M3-2 Execution of the programs for BOLT 1 and BOLT 2 must begin at the same time.

BOLT-M3-3 BOLT 1 and BOLT 2 must be programmed to together share at least 5 facts about an ancient civilization. The programs must use blocks from the movement, light, sound, control, communication, and event categories.

BOLT-M3-4 Teams must use the Sphero Global Challenge Blueprint Kit to build objects and models that represent the ancient civilization. The Blueprint build(s) can be placed anywhere on the ***Competition Field*** and must include at least one moving part that a BOLT interacts with at some point during its program.

BOLT-M3-5 Teams may also use other craft supplies and materials to decorate the ***Competition Field*** for their ancient civilization.

BOLT-M3-6 BOLT 1 and BOLT 2 must end the ***Mission Objective*** in the Portal: S5-7 and T5-7.

BOLT-M3-7 The programs for BOLT 1 and BOLT 2 may take no longer than 90 seconds.

BOLT-M3-8 According to the ***Evaluation Rubric***, points may be added for creativity in both engineering design and programming.

DELIVERABLES

The ***Mission Objective*** will be scored according to the ***Evaluation Rubric***. Submit the following evidence of completion in the Google Slide Submission template (**sphero.cc/SGC5-bolt-template**).

1. **Video:** Submit a video of the ***Mission Objective***. The video must:
   a. be submitted in a .mp4, .mov, or .avi format
   b. be captured from top down perspective
   c. show both BOLTs for the entire ***Mission Objective***
2. **Code:** Submit a screenshot or image of the programs for both BOLT 1 and BOLT 2.
3. **Blueprint Builds:** Submit close up pictures of your Blueprint builds with explanations of how they represent your chosen ancient civilization.

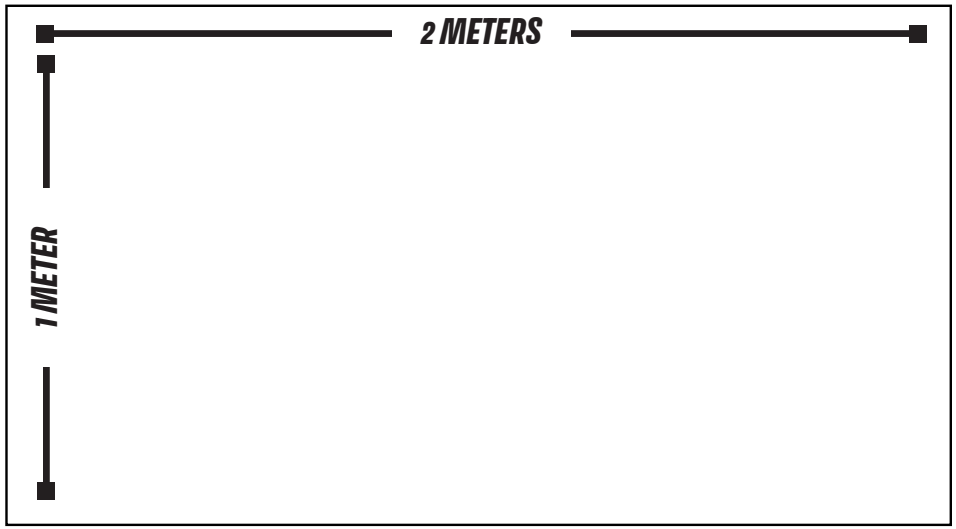
MISSION OBJECTIVE #4: TIMELESS MESSAGES

LEVEL: ADVANCED

Humans have long left messages for each other, whether words written on paper or pictures carved into wood or stone. Now on your time travel adventure, it's your turn. You have to design and build one or more ***Art Machines*** with Blueprint that your BOLT time travelers can operate. What message do you want to etch permanently in time? What will you build with Blueprint to make it happen?

SET-UP

1. The ***Competition Field*** from the other ***Mission Objectives*** is not required for this ***Mission Objective***. Instead use a piece of butcher paper that is at least 2 meters x 1 meter.
2. Build one or more ***Art Machines*** with your Blueprint Kit in accordance with BOLT-M4-1.



MISSION OBJECTIVE #4
RULES & DELIVERABLES

BOLT-M4-1 Teams must design and build one or more ***Art Machines*** to draw, paint, or otherwise record a message on the ***Competition Field***. The ***Art Machine(s)*** must be built according to the following constraints:

- **a.** The ***Art Machine(s)*** must be built with Blueprint parts from the Sphero Global Challenge Blueprint Kit.
- **b.** Pencils, markers, paint brushes and other tools can be attached to the ***Art Machine(s)*** with tape, rubber bands, or other adhesives.
- **c.** BOLT 1 and BOLT 2 should fit inside the ***Art Machine(s)*** so the ***Art Machine(s***) can be moved and manipulated.

BOLT-M4-2 BOLT 1, BOLT 2, and the ***Art Machine(s)*** may start the ***Mission Objective*** anywhere on the ***Competition Field***.

BOLT-M4-3 BOLT 1 and BOLT 2 must be programmed to operate the ***Art Machine(s)*** to record a message that is recognizable to others. The message may include words, letters, or pictures.

BOLT-M4-4 The Programs for BOLT 1 and BOLT 2 must take no longer than 60 seconds.

BOLT-M4-5 BOLT 1 and BOLT 2 may end the ***Mission Objective*** anywhere on the ***Competition Field***.

BOLT-M4-6 According to the ***Evaluation Rubric***, points may be added for the creativity and meaning of the message left on the ***Competition Field***.

DELIVERABLES

The ***Mission Objective*** will be scored according to the ***Evaluation Rubric***. Submit the following evidence of completion in the Google Slide Submission template (sphero.cc/SGC5-bolt-template).

1. **Video:** Submit a video of the ***Mission Objective***. The video must:
   - **a.** be submitted in a .mp4, .mov, or .avi format
   - **b.** be captured from top down perspective
   - **c.** show both BOLTs for the entire ***Mission Objective***
2. **Code:** Submit a screenshot or image of the programs for both BOLT 1 and BOLT 2.
3. **Art:** Submit a picture of your art along with an explanation of the message.

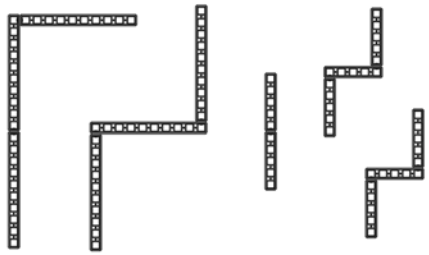
MISSION OBJECTIVE #5: LOST IN TIME

LEVEL: ADVANCED

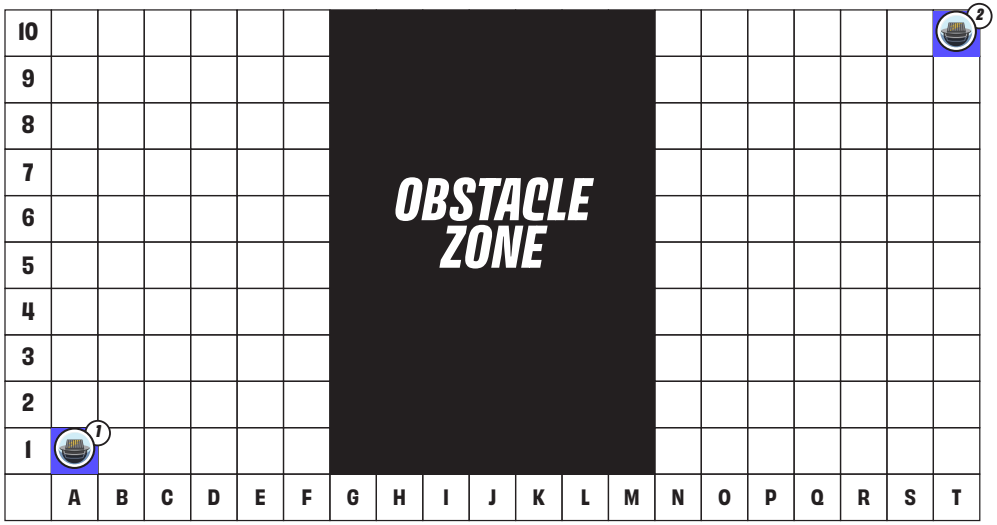
Your time travel journey is almost over but there has been a major hiccup on the journey home. BOLT 2 has made it safely, but BOLT 1 is still lost in the time travel continuum. BOLT 2 must send IR messages to BOLT 1 to guide it safely through the time jump avoiding ***Obstacles*** that threaten to keep the robot lost in time FOREVER!

SET-UP

1. Use a printout or Code Mat as the ***Competition Field***. You can also create your own ***Competition Field*** using another method.
2. Build five ***Obstacles*** with your Blueprint Kit. You'll need:
   - (6) 10x Pitch Truss
   - (8) 5x Pitch Trusses
   - (10) Connectors



3. Place these ***Obstacles*** in the ***Obstacle Zone*** in accordance with BOLT-M5-3. You may use tape or other adhesive to attach the ***Obstacles*** to the ***Competition Field***.



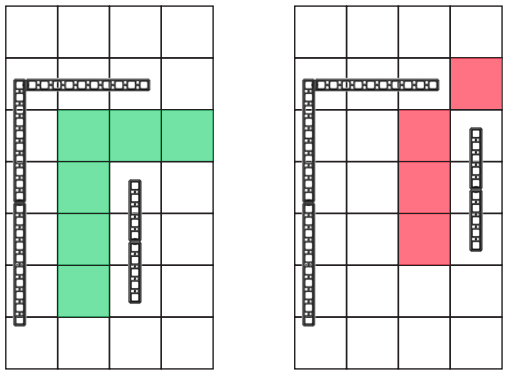
MISSION OBJECTIVE #5
RULES & DELIVERABLES

BOLT-M5-1 BOLT 1 must start in A1 and remain on the ***Competition Field*** for the entire program.

BOLT-M5-2 BOLT 2 must start in T10 and remain in T10 for the entire program.

BOLT-M5-3 The ***Obstacles*** must be placed within the ***Obstacle Zone***. They can placed anywhere within the zone according to the following constraints:

- **a.** ***Obstacles*** must be fully contained within the ***Obstacle Zone***.
- **b.** ***Obstacles*** may be flipped and rotated into any orientation but they must lie flat on the ***Competition Fied***.
- **c.** Each ***Obstacle*** must be at least 1 grid square from another ***Obstacle*** in every direction.



OK ***NOT OK***

- **d.** Each row on the ***Competition Field*** must be partially occupied by at least 1 ***Obstacle***.

BOLT-M5-4 This ***Mission Objective*** is complete when BOLT 1 rolls through the Obstacle Zone and stops in any of the squares adjacent to BOLT 2 (T9, S10, or S9).

BOLT-M5-5 BOLT 2's program must use the send message block to communicate with BOLT 1, and BOLT 1 must use those messages to move safely through the ***Obstacle Zone***.

BOLT-M5-6 BOLT 1's program must use a light block to indicate when it receives a message from BOLT 2.

BOLT-M5-7 BOLT 1's program can only use one movement block under each on message received event.

BOLT-M5-8 BOLT 2's program must use a variable to track how many messages it has sent to BOLT 1, and display that number on the LED matrix so that it counts up as messages are sent.

BOLT-M5-9 Both BOLTs must celebrate using lights and sounds when they reach each other.

BOLT-M5-10 ***Mission Objective*** points will be awarded based on the ***Evaluation Rubric***. Each time BOLT 1 leaves the grid area or rolls into an ***Obstacle***, 5 points will be deducted from the overall score.

DELIVERABLES

The ***Mission Objective*** will be scored according to the ***Evaluation Rubric***. Submit the following evidence of completion in the Google Slide Submission template (**sphero.cc/SGC5-bolt-template**).

1. **Video:** Submit a video of the ***Mission Objective***. The video must:
    a. be submitted in a .mp4, .mov, or .avi format
    b. be captured from top down perspective
    c. show both BOLTs for the entire ***Mission Objective***
2. **Code:** Submit a screenshot or image of the programs for both BOLT 1 and BOLT 2.

BOLT: TIME TRAVEL ODYSSEY

SUBMISSION REQUIREMENTS

BOLT-S1 Submissions should include all deliverables from each completed ***Mission Objective*** in a Slideshow, using the Google Slide template (**sphero.cc/SGC5-bolt-template**). The template is meant to help ensure you include all the submission requirements. You can get creative with layouts, fonts, number of slides, and details.

BOLT-S2 Videos for each ***Mission Objective*** may be embedded into the Slide Presentation, but also must be uploaded in the submission form. If you embed videos make sure the sharing permissions are changed to “anyone with the link”.

BOLT-S3 Submissions will be scored based on the ***Evaluation Rubric***.

INDI: JURASSIC JOURNEY

EVENT DESCRIPTION

indi can do a lot of amazing things–but can indi travel through time!? In this year's Sphero Global Challenge, teams will create a time traveling machine to transport indi to the past where indi will follow a dinosaur around for a day. Teams will tap into their creativity and collaborate with others to learn about dinosaurs, design a beautiful landscape, and apply their computational thinking skills.

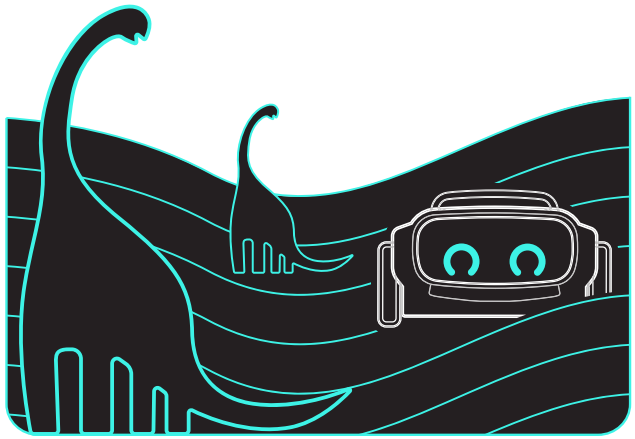
Designate an Android or iOS device that students can use as a programming device (optional). indi can be used in a screen-free environment and programming indi with the Sphero Edu Jr app is not a requirement for a successful solution to each ***Mission Objective***.

INDI: JURASSIC JOURNEY
GENERAL RULES

indi-G1 Teams may have up to five total students.

indi-G2 All participants must abide by the Sphero Global Challenge age requirements for ***Students*** and ***Early Elementary Students***.

indi-G3 ***Coaches*** are to participate in a supervisory role and handle the registration, submission, and management of ***Team*** meetings. Coaches can support ***Students*** in planning the ***Mission Objectives***, but ***Students*** should take on the primary role in completing them.



INDI: JURASSIC JOURNEY
MISSION OBJECTIVES & DELIVERABLES

MISSION OBJECTIVE #1: KNOW YOUR DINOSAUR

First things first: What dinosaur will indi see? In this ***Mission Objective***, students will select, research, and make a model of a dinosaur which will prepare them for their travel back in time.

indi-M1-1 Select a dinosaur and find answers to the following questions:

1. What did it eat?
2. Where might it sleep?
3. Did it live around other dinosaurs?
4. What type of environment did it live in?

Record the responses so they can be used in ***Mission Objective 2*** and ***Mission Objective 3***.

indi-M1-2 Use craft supplies, clay, playdough etc. to create a model of the dinosaur students selected.

- It must be at least 6 inches (15 cm) tall.

MISSION OBJECTIVE #2: DESIGN FOR TIME

With a dinosaur in mind, it's time to design a place for it to roam and a time machine for indi.

indi-M2-1 Design a habitat for the dinosaur. Depending on the type of dinosaur, this might be a desert, lake, jungle or something else.

1. Use whatever craft supplies you have available to create a place for your dinosaur to live and indi to drive around.
2. Your habitat should be at least 5 feet x 5 feet (1.5 x 1.5 meters).

indi-M2-2 Design a time machine. This might be a tunnel, portal, or phone booth indi drives through, or you might decorate indi itself to transform it into a mobile time machine.

MISSION OBJECTIVE #3: A DAY IN THE LIFE...OF A DINOSAUR

Finally, it's time for indi to make a leap in time. Create a path for indi to drive around the habitat to discover how dinosaurs lived.

indi-M3-1 indi should drive around the dinosaur habitat:

1. The path should include at least eight (8) tiles.
2. At least one team member should narrate what indi sees your dinosaur doing.

indi-M3-2 Once the day is over, travel back in time to the present. indi should return to the same spot it began.

DELIVERABLES

1. ***Mission Objective 1***: A picture of the dinosaur model.
2. ***Mission Objective 2***: A picture of the habitat
3. ***Mission Objective 3***: Video (.mp4, .mov, .avi) of indi traveling through the habitat and back to its starting position.
   a. Ensure indi is visible during the video.
   b. Ensure narration is audible in the video.
4. Optional: Pictures of any modifications made to indi in the Sphero Edu Jr. app, if applicable, is included in the submission.

INDI: JURASSIC JOURNEY
SUBMISSION REQUIREMENTS

indi-S1 Submissions should include all deliverables from the ***Mission Objective*** in a Google Slide Format, using the linked template (sphero.cc/SGC5-indi-template). The template is meant to help ensure you include all the submission requirements. You can get creative with layouts, fonts, add slides, etc.

indi-S2 Videos for each ***Mission Objective*** may be embedded into the Slide Presentation, but also must be uploaded in the submission form. If you chose to embed videos make sure the sharing permissions are changed to “anyone with the link”.

indi-S3 Submissions will be scored based on the ***Evaluation Rubric***.

GLOSSARY

Student — Anyone born after May 1, 2006.

Early Elementary School Student — Any Student born after May 1, 2016, meaning they will be 8 or younger when the Sphero World Championship is held.

Upper Elementary School Student — Any Student born after May 1, 2013, meaning they will be 11 or younger when the Sphero World Championship is held.

Middle School Student — Any student born after May 1, 2010.

Early Elementary School Division — ***Teams*** competing in this division must consist of only ***Early Elementary School Students*** and at least one ***Coach***.

Upper Elementary School Division — ***Teams*** competing in this division must consist of only ***Elementary School Students*** and at least one ***Coach***.

Middle School Division — ***Teams*** competing in this division must consist of ***Elementary School Students***, ***Middle School Students***, or both, and at least one ***Coach***.

Coach — An adult in a supervisory role for the students that will handle the registration, submission, and management of Team meetings. Teams may have more than one ***Coach***.

Event — Sphero Global Challenge Season 5 comprises three unique ***Events***:

- indi: Jurassic Journey
- BOLT: Time Travel Odyssey
- RVR+: Portal Through Time

Mission Objectives — Each Event is broken up into ***Mission Objectives*** that Teams will be evaluated on based on the ***Evaluation Rubric***.

Evaluation Rubric — ***Rubrics*** are the official evaluation criteria provided for each ***Event*** & ***Mission Objective*** so that Teams can accurately predict their performance and know how they are being evaluated.

Competition Field — A defined space for each ***Event's Mission Objectives***.

The Indi ***Event*** does not have a ***Competition Field***.

Any Sphero Code Mat can be used as the ***Competition Field*** for the BOLT ***Event***. You can also print out and assemble a ***Competition Field*** from the ***Event*** resources.

The RVR+ ***Event*** should be played on a 6 ft. x 9 ft. area divided into 1 ft. x 1 ft. grid squares. Available at sphero.com or teams can make their own from other supplies.

Boundary Lines — The area outside of the ***Competition Field*** dimensions of each ***Event*** as defined in the rules section of this document.

Competition Rules — Detailed rules specific for each ***Event***. ***Competition Rules*** are contained within this document.

Event Score — Team's score for an individual ***Event***.

Finalist — Team invited to participate in the Sphero World Championship.

Starting Area The area of the ***Competition Field*** where robots begin a ***Mission Objective***.

Supply An area of the ***Competition Field*** that BOLT robots must roll over in ***Mission Objective 1*** to bring the object on their time travel adventure.

Tunnel A Blueprint model that BOLT robots must roll through to finish ***Mission Objective 1***.

Portal The area of the ***Competition Field*** where BOLT robots end a ***Mission Objective***.

Food A ping pong or golf ball that must be retrieved from a ***Food Station*** in BOLT ***Mission Objective 2***.

Food Station A Blueprint enclosure that contains ***Food*** in BOLT ***Mission Objective 2***.

Shelter The area of the ***Competition Field*** where BOLT robots end ***Mission Objective 2***.

Art Machine A device built with Blueprint parts and powered by a BOLT robot that can make art in BOLT ***Mission Objective 4***.

Obstacles Defined as any object placed in the ***Competition Field*** as part of the setup for a ***Mission Objective*** that should be avoided as outlined in the rules.

Obstacle Zone An area of ***Competition Field*** in BOLT ***Mission Objective 5*** for placing ***Obstacles***.

Supply Station The areas of the ***Competition Field*** that RVR+ must drive through in RVR+ ***Mission Objective 1***.

Crop Area The areas of the ***Competition Field*** that RVR+ must drive through in RVR+ ***Mission Objective 2***.

Housing Area The areas of the ***Competition Field*** that RVR+ must avoid in RVR+ ***Mission Objective 2***.

Gate A structure built with Blueprint parts that is placed on the ***Competition Field*** in RVR+ ***Mission Objective 3***.

Supply Boxes Structure consisting of one Blueprint 3x truss that is placed on the ***Competition Field*** in RVR+ ***Mission Objective 5***.

Supply Collection Area The areas of the ***Competition Field*** that supply boxes are placed in and RVR+ must drive through in ***Mission Objective 5***.

Time Machine Lab The area of the ***Competition Field*** that RVR+ must deliver ***Supply Boxes*** to in ***Mission Objective 5***.

sphero.com/pages/global-challenge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Thank you For your time

Feel free to contact us to
discuss possible collaborations

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