



Charon Challenge The Game

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Section 2 – The Game

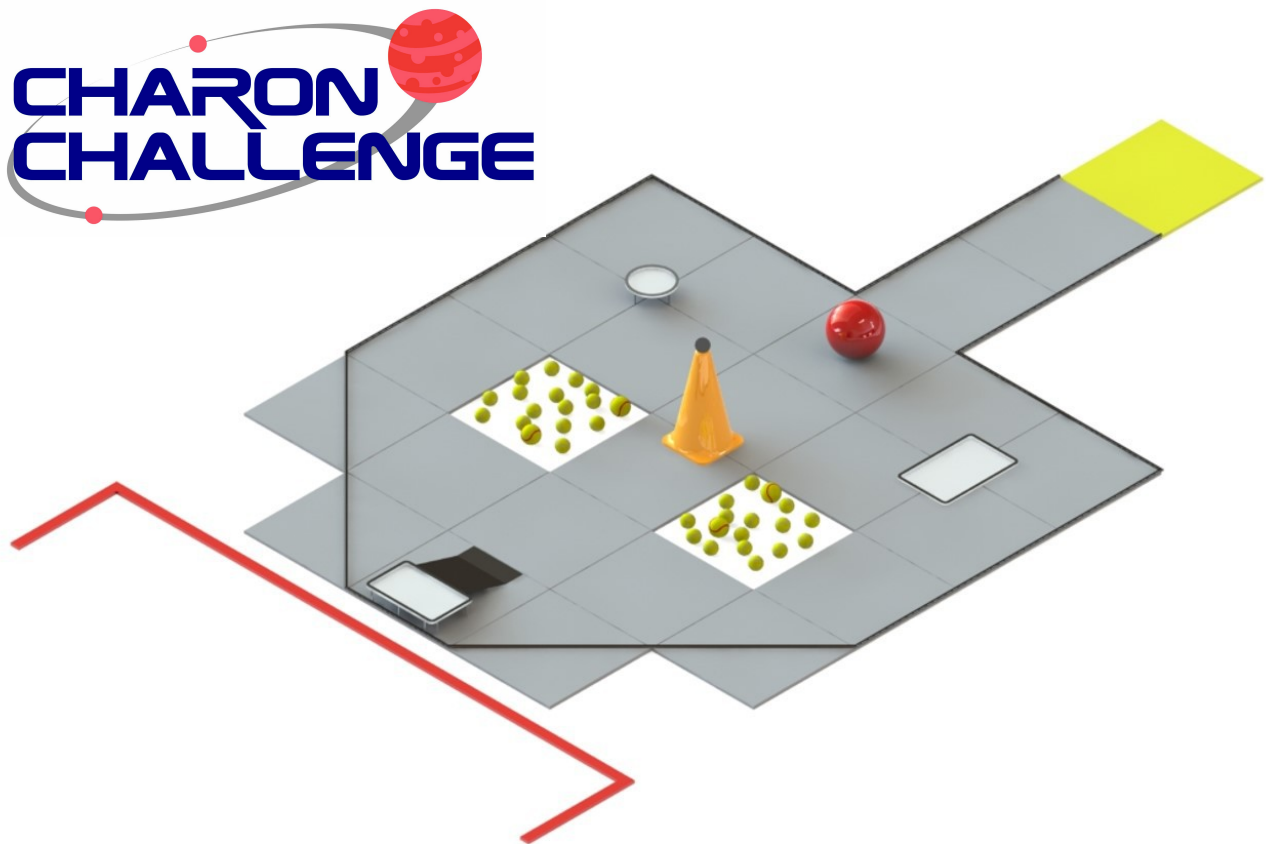
2.1 – Overview

This section describes the CREATE Junior game called *Charon Challenge*. It also lists the game definitions and game rules.

2.2 – Game Description and Field Drawings

Matches are played on a field initially set up as illustrated in the figure below. Two teams, making up an Alliance, collaborate in each match. The object of the game is to attain the highest score possible by working together to position, push, and place the Rocks (tennis balls), Boulders (softballs) and Meteorits (black/dark tennis ball) on the lab analysis sites. Point can also be gained by knocking the Meteorite off the Volcano, knocking over the Volcano and by activating the Communication Orb (10" red ball) by both robots touching the Orb at the same time for 3 continuous seconds. Finally, points can be gained by parking on the Launch Pad (colored tile) before time expires on your excursion.

There are a total of thirty (30) Rocks, four (4) Boulders and one (1) Meteorite. Together with the Volcano and Communication Orb they make up all the game pieces. Points are awarded for putting Rocks, Boulders and Meteorite in the three Lab Analysis Sites. There is one rectangular ground level Site, one raised rectangular Site with an access ramp and one circular raised Site.



2.3 – Game Definitions

Alliance – Two randomly paired teams that work together for a match.

Communication Orb – 10” red ball.

Coach - A student or adult designated as the team adviser during the tournament.

Driver - A team member responsible for operating and controlling the Robot. Only the two drivers from a team are allowed to be in the Driver’s Station during a match.

Driver Change – Changing from the first to the second driver in the middle of the match. The change must occur between :30 and :60 seconds.

Driver’s Station – The designated region where the drivers stand during any match.

Excursion - A match consisting of a one minute and thirty second driver controlled period. A match starts when the referee says “Go”.

False Start – A robot moving before the match begins will be considered to have false started. A five (5) point penalty will be assessed for each robot that false starts. If the false start is severe, at the discretion of the referee, the robot may be disqualified.

Lab Analysis Site – Any one of the three black and white goals where Rocks, Boulders and the Meteorite may be placed to earn points.

Launch Pad – The 24”x24” colored tile.

Meteorite – The black/dark tennis ball. It starts each excursion atop the Volcano.

Parked – A robot is considered to be parked when it is in contact with the Launch Pad and is not in contact with anything else.

Pre-placement of Robots – Each team is allowed to place their robot anywhere on the simulation floor as long as it is not in contact with any game element, scoring object, within 2' of the Communication Orb or touching the rope perimeter. The robot must be placed inside the simulation field.

Removed from the field – Any game object that leaves the field stays out the duration of the excursion.

Robot – Anything (which has passed inspection) a team places on the field prior to the start of a match.

Scored –

- A Rock, Boulder or Meteorite is considered scored if the majority of the object is inside the lip of any Lab Analysis Site and is NOT touching a robot.
- A Volcano is scored if it is knocked over.
- The Meteorite may be scored twice, once if knocked off the Volcano (5 points) and once if placed inside one of the Lab Analysis Sites (3, 6, or 9 points).

Team Member – Any of the participants that make up the team. Team members may assist the drivers with the *pre-placement of the robot*. Only the drivers are allowed in the Driver’s Station for the match.

Volcano – 18” tall orange traffic cone. Knocking over the Volcano is worth 5 points.

2.4 – Game Rules

2.4.1 – Scoring

- A Rock is scored if the majority of its mass is within the borders of a Lab Analysis Site and not in contact with a robot. The point values are...
 - Low Lab Analysis Site - one (1) point
 - Medium Lab Analysis Site - two (2) points
 - High Lab Analysis Site - three (3) points
- A Boulder is scored if the majority of its mass is within the borders of a Lab Analysis Site and not in contact with a robot. The point values are...
 - Low Lab Analysis Site - two (2) points
 - Medium Lab Analysis Site - four (4) points
 - High Lab Analysis Site - six (6) points
- The Meteorite is scored if the majority of its mass is within the borders of a Lab Analysis Site and not in contact with a robot. The point values are...
 - Low Lab Analysis Site - three (3) points
 - Medium Lab Analysis Site - six (6) points
 - High Lab Analysis Site - nine (9) points
- The Meteorite is also considered scored when knocked off the Volcano and is worth five (5) points.
- The Volcano is scored if it is knocked over and it is worth five (5) points.
- The first robot that is parked on the Launch Pad prior to the end of the match is worth five (5) points.
- The second robot that is parked on the Launch Pad prior to the end of the match is worth an additional ten (10) points for a total parking bonus of fifteen (15) points.
- If a robot false starts, a five (5) point penalty will be assessed. The match continues and is NOT restarted. If the false start is severe, by the judgment of the referee, a robot may be disqualified.
- Activating the Communication Orb by having both robots touch it at the same time continuously for 3 seconds is worth ten (10) points.

2.4.2 – Safety Rules

<S1> If at any time the *robot* operation is deemed unsafe or has damaged the playing field, surface, barriers or wall, by the determination of the referees, the offending team may be disqualified. The *robot* will require re-inspection before it may take the field again.

<S2> If a robot gets hung up on the rope or drives out of the field, teams MAY place the controller on the ground. The **driver** may slowly walk around the field to the stranded robot to place it back into the field. The robot should be placed just inside the point that it got stuck and should follow the guidelines below. The driver may then walk back to the driver's station and pick up the controller to continue as before. If teams are not performing this action safely, the Alliance may be disqualified at the discretion of the referee.

- a. The robot should be placed in the field as near to where it became caught on the rope as possible.
- b. The robot cannot be touching any robot or any game elements that were not already captured by the robot at the time of getting stuck. An object is captured if the robot can be lifted straight up and the object stays with the robot.
 - a. Game elements include goals, balls, parking platforms, and the Volcano.

<S3> If a *robot* goes completely out-of-bounds (outside the playing field) and continues to move, clear intent of returning to the field MUST be demonstrated. If a robot is being driven with any other intent, the robot/Alliance may be disqualified or stopped and the match ended at the discretion of the referee. A robot may not re-enter the field in a scoring position. (i.e. on the launch pad).

2.4.3 – General Game Rules

<G1> At the beginning of a *excursion*, each *robot* must not exceed a volume of 13 inches wide by 13 inches long by 13 inches tall. An offending *robot* will be removed from the *match* at the Head Referee's discretion.

a. Alignment devices (templates, tape measures, lasers, etc.) that are not part of the *robot* may NOT be used to assist with the positioning of the *robot*.

<G2> For each match, teams shall include two *drivers*. The *drivers* may change from match to match.

<G3> During a *match*, the *drivers* are the only people allowed in the drivers station.

<G4> **Any** team member may assist in Pre-placement of the robot.

<G5> Scoring objects that leave the playing field are considered out of play. They will not be returned to the field for that *excursion*.

<G6> *Drivers* are prohibited from making intentional contact with any game or field object. The first instance of intentional contact will result in a warning, with any following instances resulting in disqualification.

<G7> During a *match*, *robots* may be remotely operated only by the *drivers*.

<G8> *Robots* may not intentionally detach parts during any *match*, or leave mechanisms on the field. Multiple infractions may result in disqualification for the entire competition.

<G9> *Robots* must be designed to permit easy removal of scoring objects from any grasping mechanism without requiring that the *robot* have power after the *match*.

<G10> Field tolerances may vary by as much as +/-1". Teams must design their *robots* accordingly.

2.4.4 – Charon Challenge Specific Game Rules

<SG1> At the beginning of each *match*, the *robot* must be placed such that they are inside the field perimeter but not touching the rope, or any field, game or scoring object. It also may not be within 2' of the Communication Orb.

<SG2> *Drivers* must change (*Driver change*) sometime between 30 and 60 seconds of the *match*. *Driver* one may hand the remote to *driver* two anytime between 31 and 59 seconds on the clock. If a team exchanges the remote too early or too late in a *match* the robot may be disqualified for that *match* at the discretion of the referee. If the remote is exchanged significantly outside of the designated time, the referee may disqualify the *alliance*, which will receive a zero score for that *match*.