



Gears 2 Robots and Perris Union High School District

Present:

MINERAL MANIA!

April 27, 2019

9am-4pm

Heritage High School

Game Description

The game starts with a 30-second Autonomous Period. Alliances earn points by: (1) Landing – Robots lower themselves from the *Lander* onto the Playing Field; (2) Placing *Mobile Cargo Bay* in alliance specific *Depot*, (3) Placing *Gold Minerals* in alliance *Cargo Hold* (4) Placing *Silver Minerals* in alliance *Mobile Cargo Bay* (5) Placing *Silver Minerals* in alliance *Wall Deposit* and (6) Parking – Robots that end the Autonomous Period in Crater earn points.

The Driver Controlled period follows the Autonomous Period. Teams earn points for their alliance by: (1) Placing *Gold Minerals* in alliance *Cargo Hold* (2) Placing *Silver Minerals* in alliance *Mobile Cargo Bay* (3) Placing *Silver Minerals* in alliance *Wall Deposit* (4) Placing *Minerals* in alliance *Depot*

During End Game, the final 30 seconds of the Driver Controlled Period, teams earn points for their alliance by (1) Parking robot completely in crater, (2) Moving *Mobile Cargo Bay* into alliance specific *Depot*, and (3) Placing *Team Marker* into opposing alliance's *Mobile Cargo Bay* (4) Robot latching onto *Lander* off the playing field

The Field

The challenge will be played on a 12 foot by 12 foot playing field. In the center of the field is the *Lander* where each team will score *Gold Minerals* into corresponding side. There is a crater on each alliance side containing the *Gold and Silver Minerals*. On the opposite side of the field, from the craters, is a *Depot* for each alliance. On the walls of the field perimeter, within the *Depot* boundaries, the *Wall Deposit* is located. Centered on the field, located directly in front of the driver boxes, the *Mobile Cargo Bay* for each alliance is placed.

Game Elements

- 60 Silver Minerals
- 90 Gold Minerals
- 2 Mobile Cargo Bays
- 2 Craters
- 2 Wall Deposits
- 1 Lander/Cargo Hold

Mobile Cargo Bay

The Mobile Cargo Bay is a 9" x 7 7/8" x 6 1/8" mini crate on caster wheels. Silver Minerals scored in the Mobile Cargo Bay will count for points, Gold Minerals will not. The Mobile Cargo Bay can be accessed during all times of the match. During the Autonomous Period an alliance may gain points by moving Mobile Cargo Bay into its alliance specific *Depot*. At each *Depot* there is a white line to help guide the robots into *Depot*. During the Driver Controlled portion of the match, alliances may continue to score Silver Minerals into the Mobile Cargo Bay. During the End-Game the opposing alliance is allowed to drop their *Team Marker* into the other team's Mobile Cargo Bay to steal the points scored in Mobile Cargo Bay and Depot. For example, Alliance **A** can place their marker into the Mobile Cargo Bay of Alliance **B** to steal the points from Alliance **B** scored in the Mobile Cargo Bay and Depot. The Marker may only be placed into Mobile Cargo Bay during the Autonomous period. The Mobile Cargo Bay may be placed into the Alliance Specific Depot for a 15 point bonus. If a marker is placed into an alliance Mobile Cargo Bay the team will not be eligible for the Depot bonus.

Wall Deposit

The Wall Deposit is a 9" x 7 7/8" x 6 1/8" mini crate mounted onto the wall of the playing field perimeter within the Depot boundaries. Only Silver Minerals count for points in the Wall Deposit.

Depot

The Depot is located at the opposing sides of the Craters. An alliance may score Silver or Gold Minerals into the Depot. The Minerals scored in the Depot can be de-scored. At each *Depot* there is

a white line to help guide the robots into *Depot* during autonomous mode. Inside of the Depot Boundaries there is a Wall Deposit for each alliance on the perimeter wall.

Lander/Cargo Hold

The Lander is located on the center of the playing field with the Cargo Hold scoring areas for each alliance. Gold Minerals scored in the Cargo Hold will count for points, Silver Minerals will not. During the Autonomous Period robots that lower themselves from the Lander onto the Playing Field Floor will receive points. Each Robot that is in contact with the Playing Field Floor and not in contact with the Lander Support Bracket will earn 35 points for their Alliance. During the Driver Controlled portion of the match, alliances may continue to score Gold Minerals into the Lander. During the End-Game each robot that deployed during pre-Match setup or in the course of game play and is Latched onto either of their own Alliance-specific Lander Support Brackets at the end of the match earns 50 points for their alliance. If a robot did not deploy off of the Lander prior to the End-Game and is still attached to the Lander Support Brackets it will not count for points.

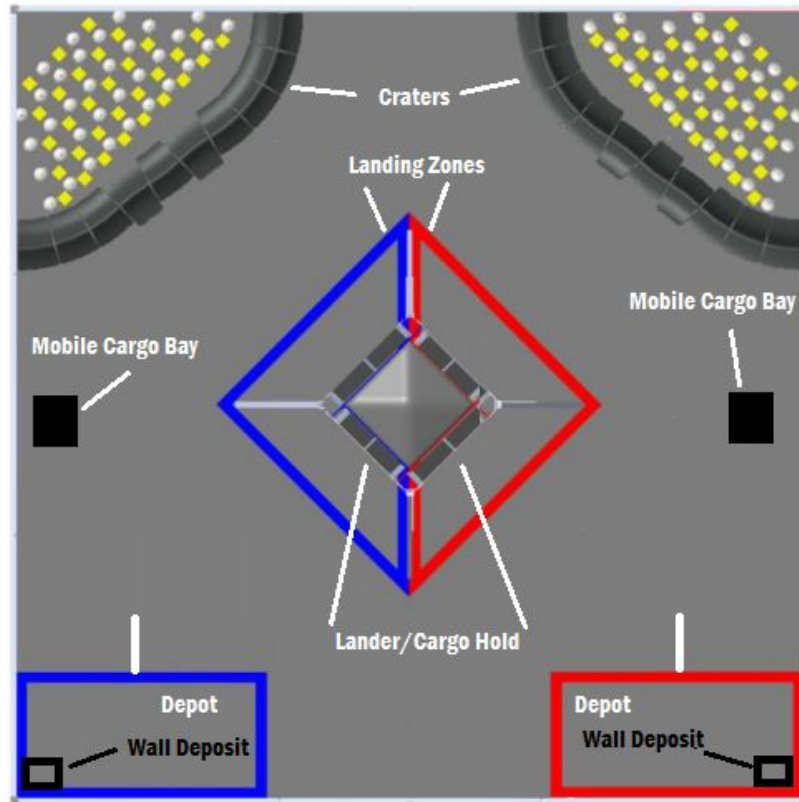
Crater

There is a Crater for each alliance containing the Silver and Gold Minerals. During the Autonomous Period, a robot fully parked inside of any crater will receive 12 points. During the Driver Controlled portion of the match a robot may collect minerals from the Crater. During the End-Game a robot fully parked into the Crater will receive 10 points for their alliance.

Minerals

There are 60 Silver and 90 Gold Minerals total on the field located in the Craters. Each robot may preload two minerals of their choice prior to the start of the match. There is no limit as to how many minerals a robot may possess at a time. Each Mineral has a designated scoring area.

Overhead Field View



Points:

Autonomous:

- (15) Mobile Cargo Bay in Alliance Specific Depot
- (10) Gold in Cargo Hold
- (5) Silver in Cargo Bay
- (3) Silver in Wall Deposit
- (12) Full Park in Crater
- (35) Deploying from Lander

Driver Control:

- (6) Gold in Cargo Hold
- (3) Silver in Cargo Bay
- (3) Silver in Wall Deposit
- (1) Minerals in Depot

End Game:

- (12) Mobile Cargo Bay in Alliance Specific Depot
- (6) Gold in Cargo Hold
- (3) Silver in Cargo Bay
- (3) Silver in Wall Deposit
- (1) Minerals in Depot
- (10) Full Park in Crater
- (50) Latching onto Lander
- Marker placed into opposing alliance's Mobile Cargo Bay steals points scored in Depot and Mobile Cargo Bay

Penalties

- (-10) No movement during autonomous
- (-5) Pinning- per occurrence every 5 seconds
- (-10) Preventing alliance from scoring or parking in Crater

Rules:

- All FTC robot rules apply. (size, allowed materials, etc.)
- Robot must start against alliance specific wall.
- Robots that damage the field will be disqualified.
- A robot may not block another robot from scoring marker into Mobile Cargo Bay but it may move Mobile Cargo Bay throughout the field.
- A robot may not prevent a team from scoring in designated areas or parking in safe zones.
- Drive team must stay inside of driver box at all times during the match.
- The head referee makes the final call on each match.

Awards

- Best in Design
 - Robot shows an innovative and creative design.
 - Robot is built robustly and can achieve intended goal.
 - Robot Design goals are reflected in Engineering Notebook through sketches, CAD, and/or more.
- Control Systems
 - The robot uses sensors to navigate the field.
 - Autonomous program is reliable but does not need to work every time.
- Engineering Notebook
 - Notebook shows a clear and concise design process.
 - Notebook shows all aspects of the team, not just the robot.
 - Notebook is organized and follows FTC Engineering Notebook format requirements.
- Model of Excellence
 - This award is given to the team that exemplifies that of a 'Model Team'. The winner of this award displays excellence on and off the field. The team shows exceptional outreach, fundraising, and connection throughout the community. The team also displays their problem solving skills with the design, strategy, and performance of their robot.

Perris Union High School District and Gears 2 Robots

Presents:

Mineral Mania!

Saturday, April 27, 2019

9:00 AM – 4:00 PM

Heritage High School

26000 Briggs Rd. Sun City, CA 92585

Itinerary

8:30 AM – Early Team Arrival

9:00 AM – Team Arrival and Check-in

9:15 AM – Judging Begins

9:30 AM – Inspection Begins

10:30 AM – Judging Ends

10:45 AM – Driver Meeting

11:00 AM – Matches Begin

12:00 PM – Lunch

12:45 PM – Matches Resume

3:30 PM – Awards Ceremony

4:00 PM – Event Ends