☀️Cooling Quest☀️
FLL Game

Olympia Robotics Federation 4450

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1. Synopsis

Welcome to the 2024 Cairo FLL Game~ Cooling Quest
There are two missions to complete in this game.

- The first mission is to help cool Cairo by getting snowballs from Mt. Rainier to the Great Pyramid
- The second mission is to return stolen artifacts to the pyramids.

2. Mission Overview

- **Cooling the pyramids**: The first mission is to Cool Cairo! In the middle of the game field, Allancies will discover Mount Rainier, a very popular mountain in Washington State, USA covered in snow. Inside the mountain, the alliances will find snowballs. The robots will take snowballs from the mountain and store them in their respective great pyramids.

- **Artifact Retrieval:** Oh no! Artifacts have been stolen from the pyramid, and it's the team's job to restore the artifacts to the robots' small pyramids. These artifacts will be found on either side of the game field, known as the sand pits, accessible to both teams. But, be careful!
    - Artifacts and snowballs can be taken from the opposing team. This will take away points from the team who lost the snowball or artifact.

3. Description

- Three pyramids will be on each side of the field, with a red alliance and a blue alliance
    - Each side of the field will have The Great Pyramid, Khufu,
    - There will be two small pyramids on each alliance field, Khafre and Menkaure

- The two small pyramids are the starting spot for both the red alliance and the blue alliance. There will be a great pyramid between each robot's pyramid. The robots start in front of their respective small pyramid on the starting pad.

The game has three phases:

1. **Autonomous Period (first 30 seconds)**: The robot is preprogrammed and completes missions without manual control.
    - Teams will create a line follower program using a color sensor to detect the **roads** on the ground to one of two specific artifact locations.
        - The line follower will allow the robot to collect the artifacts placed in specific spots on the field
    - Each robot will be preloaded with a snowball to put in its respective great pyramid.
        - Teams can score the following ways:
            - Snowballs: 2 points
            - Artifact: 4 points
            - Parking: 2 points
        - During autonomous the color sensor has to be at the start of one side of the color sensor line. After the snowball or artifact is inside the small pyramid (home base), you can pick up the robot and place it on the other side for the other snowball/ artifact
        - For the snowballs at the corners of the mountain your robot has to be touching the starting line to be able to receive the points

2. **Tele-op (Driver Controlled) period (2 minutes)**: Using controllers, teams can choose to retrieve snowballs or artifacts and get them to their respective areas to earn points.
    - Snowballs: 3 points
    - Artifact: 2 points

3. **Endgame (last 30 seconds of game time)**, Alliances will be able to do anything that can be done in Tele-op, but extra n will be increased. Alliances will get points by returning to their starting pad.
    - Snowballs: 5 points
    - Artifact: 5 points
    - Parking: 3 points
    - Human Player
    - (talk about endgame squares and how it works)

- Stealing Game Pieces
    - Artifacts and snowballs can be taken from the robot by the opposing team. This will take away points from the team who lost the artifact while helping the other team:
        - -2 points points to artifacts and/or snowballs stolen
        - +2 points to artifacts and/or snowballs stolen and put into respective places

	Autonomous	TeleOp	Endgame
Parked	2	1	3
Snowball	2	2	5
Artifact	4	2	5

4. Game Specifics

- **Game Materials Needed:**
  - https://www.amazon.com/gp/product/B0C8NH5SQZ/ref=ewc_pr_img_1?smid=A3FESA8GVUGG41&psc=1Artifacts -



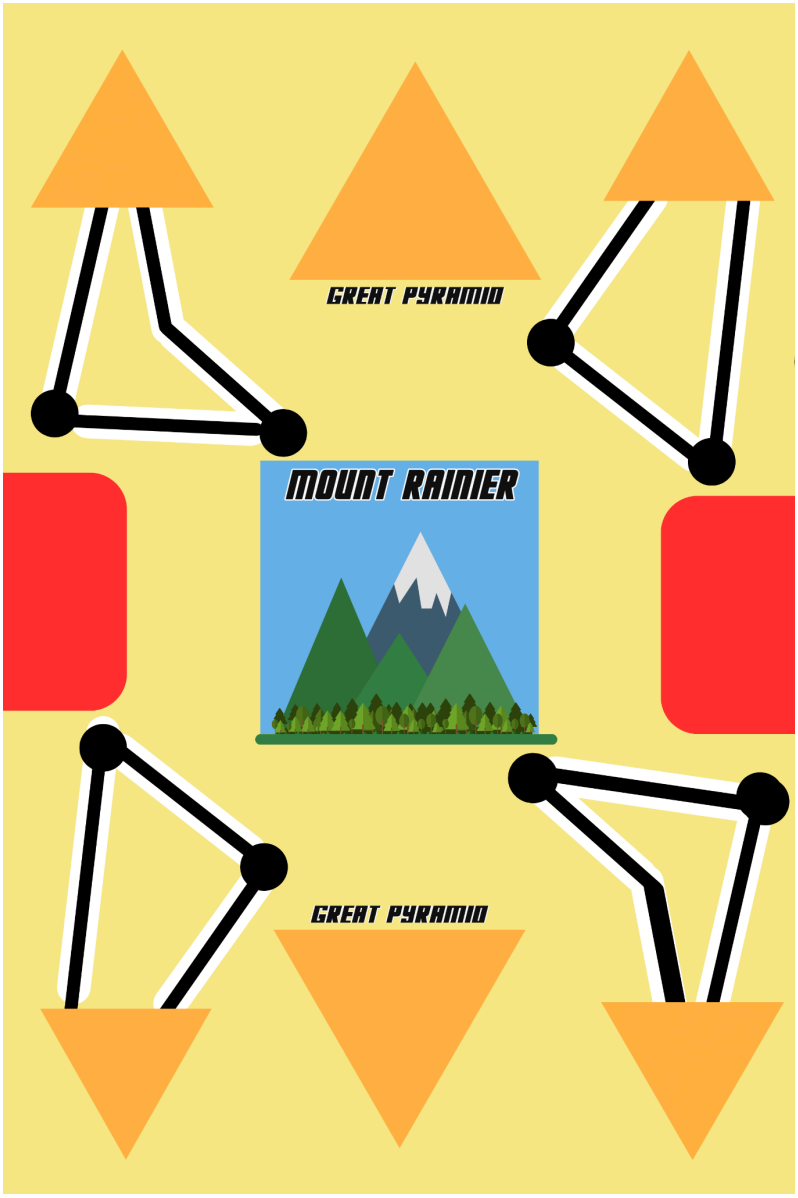
  - Gaffers tape, Red tape, blue tape (2 rolls each)
  - Small snowball balls(100)



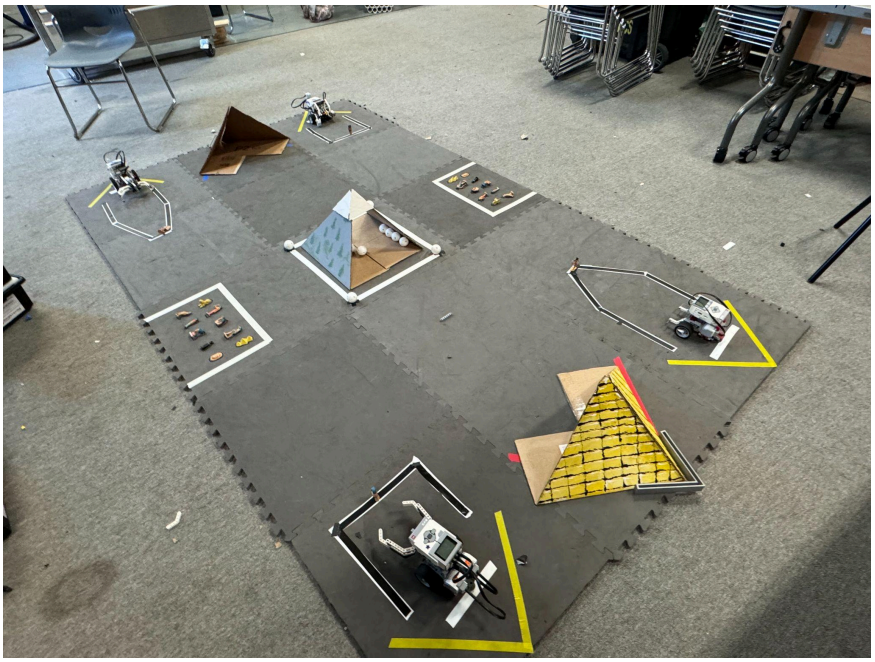
  - Teleop controls (4)
  - Small pyramids (4) (most likely be custom-made)

- Large pyramids (2) (most likely be custom-made)
- Ev3 kits (20)
- Grip Material
- Art Materials (posters, papers, markers, etc.)

- **Game Field**
  - The game field will be 5 tiles by 3 tiles









5. Penalties

- Safety Penalties
    - Teams may not push, pin, or hit robots with the intent to influence the opposing robot's position
        - Minor Penalty (5-point deduction)
            - Unintentionally damaging any part of the field
            - Stealing game pieces from robot itself
                - Stealing game pieces from other teams' bases is ok!
            - Carrying more than one of the same game piece
        - Major Penalty (10-point deduction)
            - Intentionally damaging the opponent's robot
        - Minor Penalty (5-point deduction)
    - All penalties will be determined by the refs

6. Competition Structure

(to be continued, its gonna be double elimination though)

7. Awards

- **Winner**
  The Cooling Quest Winners are the alliance This award is given to the team that has competed with respect and passion and outperformed all the other robots to win the final match of the playoff competition.
- **Finalist**
  The Finalist Award is given to the alliance that has persevered through all matches of the competition to make it to the final match of the playoff competition.
- **Robot Performance Award**
  The Robot Performance Award is given to the team that has constructed a robot that consistently performs to its capable functionalities throughout the competition.
- **Autonomous Award**
  The Autonomous Award is given to the team that best displays unique, efficient, and consistent play in the autonomous period of the game throughout the competition.
- **Spirit Award**
  The Spirit Award is given to the team with the most enthusiasm in supporting teams and competing with passion. They demonstrate spirit as an excited and unified team.
- **Gracious Professionalism Award**

The Gracious Professionalism Award is given to the team that exhibits the most Gracious Professionalism throughout the camp. Gracious Professionalism (GP) is a *FIRST* core value that is a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community. Through GP, fierce competition and mutual gain coexist.

- **Success in STEAM Awards (Participation Award)**
  The Success in STEAM Award is given to all the teams who have yet to receive an award. It recognizes all these teams' hard work throughout the camp and rewards them for all the STEAM skills they've learned.

8. Schedule

No prior prep needed

- Day 1: Introductions, Game Context, Make Teams, and Build Training
  - Introduction: Team Overview/ "Opening Ceremony" (1 hour)
  - Build Overview: FLL Overview,Game Overview Part Overview, Gear Overview (1 hour)
    - Sub-mentors will be presenting to their respective team
  - Make Teams (10 mins)
  - Inventory/ Build Training(Rest of the Day)
- Day 2: Build Training and Building the Robots
  - Sensor Overview Training (1 hour)
  - Build Time (rest of day)
- Day 3: Building and Programming
  - Programming Training (1 hour)
  - Get Familiar with programming (1 hour)
  - Finish Building (Finish up all of the Robot parts) (rest of day)
- Day 4: Testing, and Practice Matches
  - Finishing programming (2 hours)
  - Testing (2 hours)
  - Practice Matches (Rest of the day)
- Day 5: Matches and Award
  - Game Overview (again) (30 minutes)
  - Matches (2 hours)
  - Award Ceremony (30 minutes)