

Engineering And Robotics Learned Young

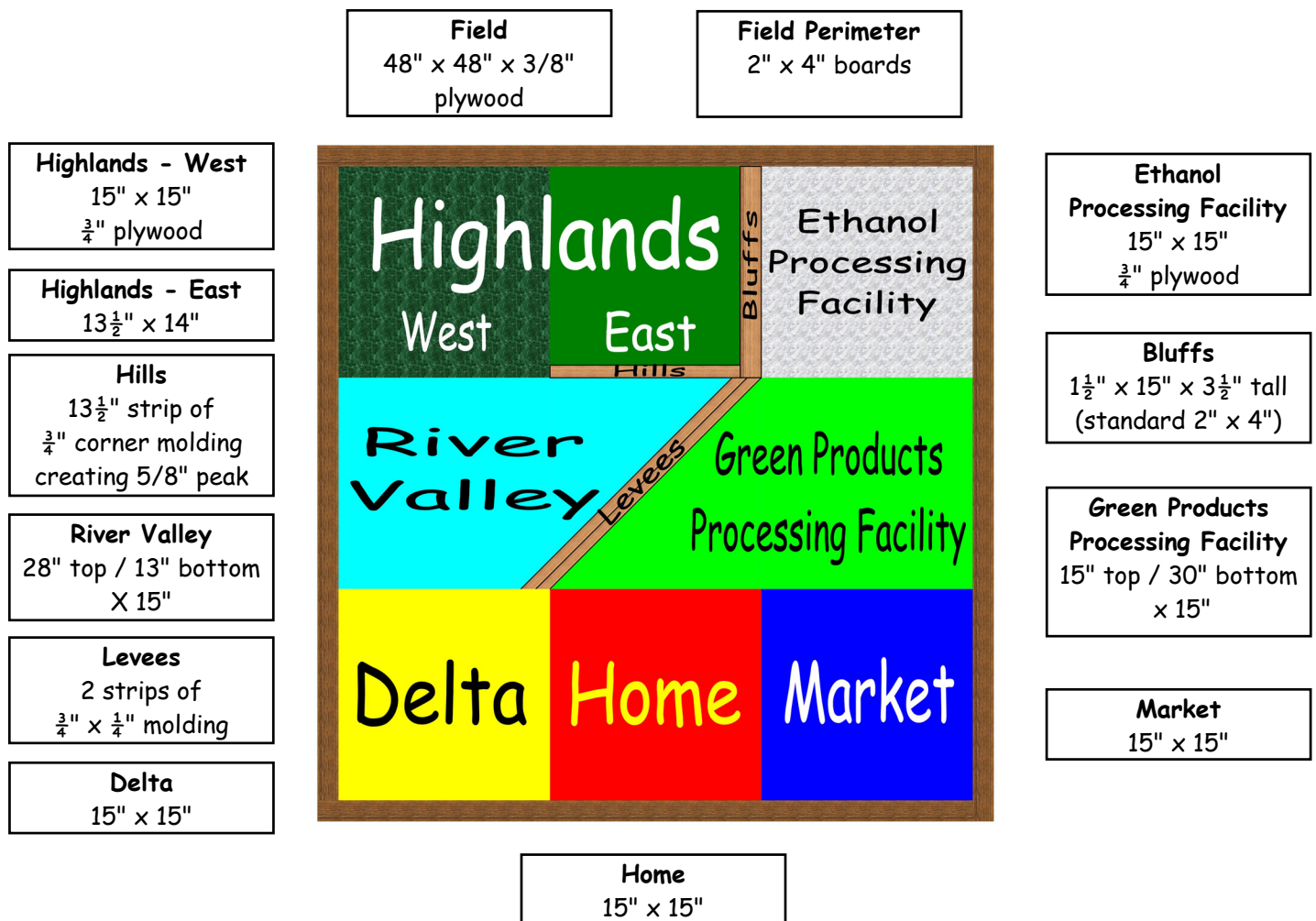
◆ EARLY ◆

Fall 2006 Robotics Competition

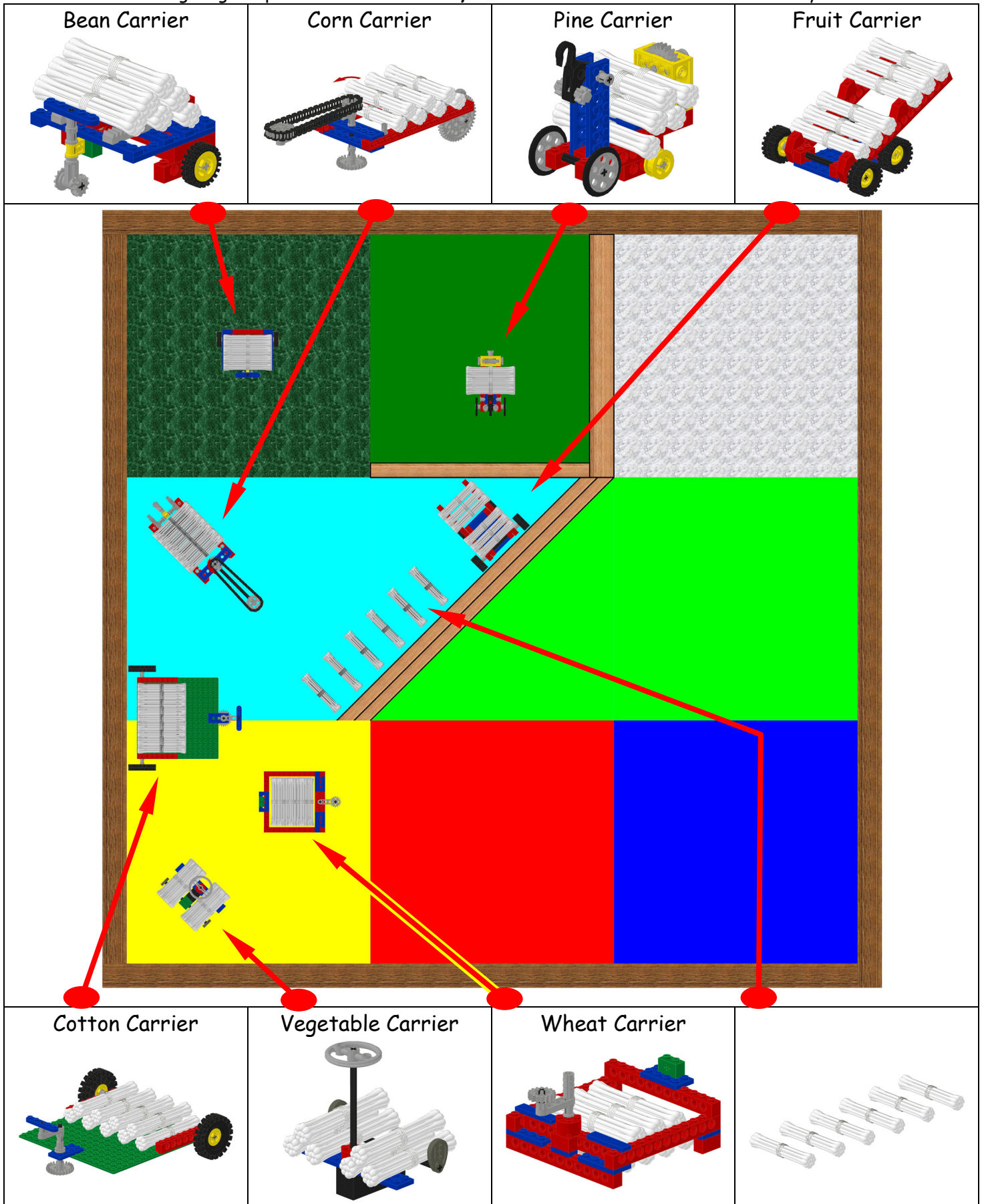
Roboticists, the Farmers of the Jack County Cooperative need your help! With the expanding need for farm crops, the farmers need your help by building a robot to harvest crops and transport them to the Market, Green Products Processing Facility, and Ethanol Processing Facility. Along with providing fresh wholesome produce, the crops will be transformed into food, clothing, construction materials, and alternative fuels to provide for our neighbors. Please help Jack County use its renewable resources to feed and fuel our neighbors around the World!

Below is everything that we know about the mission.

- The team must be ready to execute the mission for your EARLY Tournament.
- The equipment available for a team to build a robot or robots is 3 LEGO Motorized Simple Machines Kits.
- The following diagram presents the environment that will be encountered.



- The following diagram presents where the *Crop Bales* and *Carriers* will be in Jack County.



Mission Rules

1. The team has 2 minutes to complete the mission.
2. There will be 52 *Crop Bales* on the playing field at the beginning of each mission, represented by bundles of ten cotton swabs bound together tightly with a rubber band.
3. The team's score is determined at the end of the 2-minute mission.
4. If a *Crop Bale* is moving when time expires, the referee will wait until the *Crop Bale* has stopped moving before determining its scoring position.
5. The team scores 2 point for each *Crop Bale* in the MARKET.
6. The team scores 3 points for each *Crop Bale* in the GREEN PRODUCTS PROCESSING FACILITY.
7. The team scores 4 points for each *Crop Bale* in the ETHANOL PROCESSING FACILITY.
8. A *Crop Bale* counts as in the MARKET if it is breaking the plane of the MARKET.
9. A *Crop Bale* counts as in the GREEN PRODUCTS PROCESSING FACILITY if it is breaking the plane of the GREEN PRODUCTS PROCESSING FACILITY.
10. A *Crop Bale* counts as in the ETHANOL PROCESSING FACILITY if it is breaking the plane of the ETHANOL PROCESSING FACILITY.
11. The LEVEES are part of the RIVER VALLEY.
12. The BLUFFS and HILLS are part of the EAST HIGHLANDS.
13. Only the parts that are contained in three Motorized Simple Machine kits may be used to construct the robot (i.e. no other materials such as glue may be used on the robot). The kit parts may not be altered.
14. The team's robot/robots and all parts must start inside the HOME at the beginning of the 2-minute mission (i.e. no part of the robot may be off the playing field when the mission starts). However, the parts do NOT have to be assembled together. Parts can be removed and returned to the field during the 2-minute mission.
15. The HOME is the 15" x 15" boundary extended vertically (i.e. the robot can not hang over the line at the beginning of the mission).
16. The team can touch their robot without penalty when the robot is partially inside the HOME but after touching, the robot must be completely inside the HOME to continue the mission.
17. Any *Crop Bale* or *Carrier* that remains with the robot when the robot is retrieved without penalty remains in play. This rule is intended to eliminate the need for the referee to determine if a *Crop Bale* or *Carrier* is completely in the Home when a robot is retrieved after entering the HOME. It is NOT intended to allow teams to retrieve their robot in such a way as to drag *Crop Bale* into the Home; *Crop Bales* that are dragged into their base will be removed from play by the referee.

18. The team's robot/robots must start inside of the **HOME** every time it is returned to the **HOME** during the mission (i.e. no part of the robot can be breaking the plane of the **HOME** line after being touched by a team member).
19. A penalty of 10 points will be assessed if a team touches their robot, including parts that have become separated from the robot, that is outside of the **HOME**.
20. If a robot is touched, the robot must be returned to the **HOME** to continue the mission.
21. The controllers and wires are NOT considered part of the robot.
22. The robot shall not have any elastic stored energy (i.e. stretched rubber band) when the mission begins or when the robot is returned to the **Home** but elastic stored energy can be generated from activating a motor.
23. The controller and wire can ONLY be used to provide electrical power to robot motors (i.e. it can not be used to drag the robot, corral *Crop Bales* or *Carriers*, etc.).
24. If a controller or wire is used illegally (referee's call), the team will be required to immediately place the robot back in the **HOME** to continue the mission.
25. A team may touch any *Crop Bale* or *Carrier* COMPLETELY inside the **HOME** without penalty.
26. If a *Carrier* is illegally touched, the *Carrier* along with any *Crop Bales* it is holding will be removed from play for the remainder of the mission.
27. A *Carrier* is NEVER considered part of the robot.
28. *Crop Bales* are very valuable. A penalty of 5 points will be assessed for each *Crop Bale* that leaves the playing field.
29. All referees' rulings are final and may not be appealed.

Please visit the EARLY Neighborhood Forums at www.EARLYrobotics.org or contact Mission.Control@EARLYrobotics.org with any questions or comments.

Thank you for maintaining the spirit of the game!