Missions and Points Group Presentation
2014-2015 FLL Challenge
Based on FIRST® LEGO® League’s Information at
http://www.firstlegoleague.org/challenge/2014fllworldclass#
Critical Warning

While it's obvious that everyone needs to become an expert on the details of the Missions below, it's also EXTREMELY IMPORTANT for everyone, veteran teams as well as rookies, to read the OTHER THREE CRITICAL ROBOT GAME PAGES: Field Setup + Rules + Updates, and go back to them repeatedly. Look at the benefits.

TEAMS WHO HAVE READ EVERYTHING
- have fewer questions
- have less rework
- have fewer surprises at tournaments
- score higher
- have more fun

TEAMS WHO DON'T
- operate in a fog
- start over and lose time
- learn a lot from... referees
- lose points
- get stressed
World Class Robot Game
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VIDEO: FLL World Class Learning Unleashed Robot Game
Adapting to Changing Conditions

Required condition visible at the end of the match:

- The model is rotated 90° counter-clockwise from its setup position as shown here.

Required methods, constraints:

- None.

Value: 15
Apprenticeship

Required condition visible at the end of the match:

- The people are both bound (any way you like) to a model you design/supply, which represents a skill, achievement, career, or hobby that has meaning for your team.
- The model is touching the white circle around the scale.
- The model is not in Base.
- Binding mission models is usually not allowed under Rule 39, but we make an exception here.
- The model can be simple or complex, primitive or realistic – it’s up to you.

Required methods, constraints:

- None.

Value/Model: **20**
Value/Model Touching Circle: **35**
(Possible Scores = 20 or 35)
Cloud Access

**Required condition visible at the end of the match:**
- The SD card is up.

**Required methods, constraints:**
- The correct “key” was inserted in the cloud.

**Value:** 30
Community Learning

Required condition visible at the end of the match:
  — The knowledge & skill (loop) is no longer touching the community model.

Required methods, constraints:
  — None.

Value: 25
Door  
(Setup is with the door open all the way and the handle lifted)

Opening Doors
Required condition visible at the end of the match:
— The door must be open enough for the referee to notice.

Required methods, constraints:
— The handle was pushed down.

Value: 15
Engagement

**Engagement**

Required condition visible at the end of the match:

- Yellow section is moved south.
- Dial is obviously clockwise of its setup position; see chart for score.

Required methods, constraints

- The dial may only move as a result of the robot turning the pinwheel.
- Between any two starts/restarts (see Rules 39 & 40), the pinwheel may be turned 180° maximum.

The referee will undo any extras turns.

**Value/Engage:** 20
Engagement (cont’d)

Value/90° Pinwheel Turns: See Chart For Percentage Added To Your Non-Engagement Mission Score Total

EXAMPLE: If your score from all other missions is 350, and the robot does one 90° turn, that’s worth 35.

EXAMPLE: If your score from all other missions is 300, and the robot does six 90° turns, that’s worth 45.
Project-Based Learning

Required condition visible at the end of the match:

--- The scale holds loops (representing knowledge and skill) as shown.

Required methods, constraints:

--- None.

Value/1st Loop: 20
Value/More Loops: 10 EACH
Remote Communications/Learning

Required condition visible at the end of the match:
   — None.

Required methods, constraints:
   — The referee has seen the robot pull the slider west.

Value: 40

Screen And Camera - There are three up-front things to say about this system of models:
1) Both teams (you and your opponent) need to operate this system for it to work.
2) This system’s full setup takes added care and patience (but really, for anyone doing robotics, it’s no big deal).
3) You only really need to set up part of the system in order to practice.

Here’s how the operation works: Your robot pulls a “camera” model, and by string, it activates a remote “screen” model
If the other team ALSO participates. When both teams participate, both teams score. Since you can’t guarantee your
opponents will participate and succeed, all you can do is: Get good at pulling your camera model.

Here’s how the setup goes: Step 1 = secure the screen model, Step 2 = secure the camera model, Step 3 = secure the string
guides, Step 4 = tie the string, and Step 5 = adjust the system…
Reverse Engineering

Required condition visible at the end of the match:

- Your basket is in Base.
- You have built a model “identical” to the one the other team put in your basket. Connections need to be the same, but where rotation is a factor, “close” is okay.
- The model is in base.

Required methods, constraints:

- None.

Value/Basket: 30
Value/Basket + Model: 45
(Possible Scores = 30 or 45)
Robotics Competition

Required condition visible at the end of the match:

- The robotics insert is installed in the place shown.
- The loop is no longer touching the robotic arm model.

Required methods, constraints:

- No team supplied object is touching the robotics insert.
- The loop was released due to movement of the slider only.

Value/Insert: 25
Value/Insert + Loop: 55
(Possible Scores = 25 or 55)
Search Engine

Required condition visible at the end of the match:

- The color wheel has spun at least once.
- If a single color appears in the white frame, its matching loop is no longer touching the model.
- If two colors appear in the white frame, the remaining color’s loop is no longer touching the model.
- Both “not desired” loops must be touching the model, in their holes.

Required methods, constraints:

- Nothing has caused the color wheel to spin except the slider being pushed.

Value/Slider: 15
Value/Slider + Loop: 60
(Possible Scores = 15 or 60)
Sports

Required condition visible at the end of the match:
   - The ball is touching the mat in the net.

Required methods, constraints:
   - All equipment involved with the shot was completely east/north of the “Shot Lines” while sending the ball to the net.

Value/“Took A Shot”: 30
Value/Shot + Goal: 60
(Possible Scores = 30 or 60)
Thinking Outside the Box

Required condition visible at the end of the match:
- The idea model is no longer touching the box model.
- If the idea is no longer touching the model, the bulb faces up.

Required methods, constraints:
- The box model was never in Base.

Value/Idea Out, Bulb Down: 25
Value/Idea Out, Bulb Up: 40
(Possible Scores = 25 or 40)
Using the Right Senses

Required condition visible at the end of the match:
- The loop is no longer touching the senses model.

Required methods, constraints:
- The loop was released due to movement of the slider only.

Value: 40
Penalties

If a Robot, Sprawl, or Junk penalty earned (as described in the Rules), the referee keeps account by obvious placement of these penalty markers in some manner as to stay out of the way of you and your robot. Loss of cargo is its own penalty.

**Robot, Sprawl, or Junk Penalty: -10 EACH**

(Max Penalties Of These Types = -80)

**Cargo Penalty: Loss Of Cargo**