

Capelli Sports Starter – Locker Room Mission (Season 1)

1. Category Identity

Age Group: 13–15 years old.

Competitive Style:

This category is about delivering the right kit to the field, unlocking the stadium gate, and distributing gear correctly under color-based constraints.

It is not “remote control driving.” It expects coded movement, decision logic based on random color, and precise sorting under pressure.

Narrative frame for Capelli Sports:

Locker room prep → coach approval → deploy the correct team color → stadium gate opens → full equipment distribution → team is match-ready. This storyline is part of the sponsor value.

2. Mission Story

Right before kickoff, all the gear is still inside the locker room.

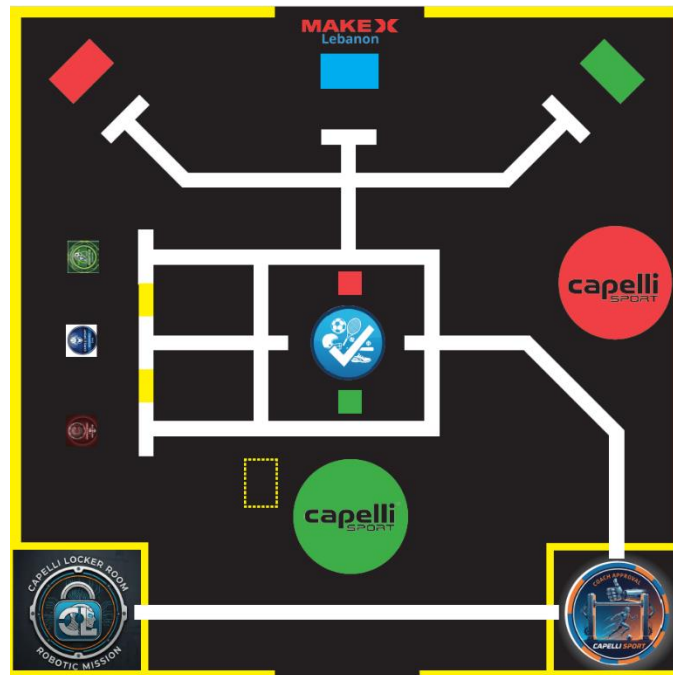
Your robot is the logistics runner for Capelli Sports.

Your job:

1. Take the Capelli Team Box out of the locker room.
2. Present it to the coach for approval. The coach declares which team color plays this round (RED or GREEN).
3. Deliver that team’s color kit to the correct field circle.
4. Unlock the stadium gate.
5. Distribute the rest of the colored equipment (RED / GREEN / BLUE) into the correct stations on the field, based on live randomization.
6. Park and wait for match start.

That entire story is the match.

3. Field Layout (zone definitions)



3.1 Locker Room (START ZONE)

- Location: bottom-left of the field, marked with the “Capelli Locker Room Robotic Mission” badge.
- This is the official start area.
- At $T=0$, the robot starts fully inside this zone.
- The robot must already be in contact with / carrying / pushing the **Capelli Team Box** when the match begins. Exiting this area with the box is scored.

3.2 Scan Station / Coach Approval

- Location: bottom-right of the field, marked with the “Coach Approval / Capelli Sport” badge.
- This is the Scan Station.
- The robot must drive from the Locker Room to this Scan Station while transporting the Team Box.
- At this station:
 - The round’s team color (RED or GREEN) is confirmed.
 - The referee/coach “scans” that color.
 - The referee lifts the Team Box using the approval mechanism (the lift is part of the mission design).

- Arriving with the box and getting it lifted are both scored.

3.3 Color Pickup Zones

After approval, the robot now knows which team color is “live” this round:

- **RED pickup zone:** top-left of the upper field, marked red.
- **GREEN pickup zone:** top-right of the upper field, marked green.

Each pickup zone contains a single color cube/token for that color.

Cube physical size:

Each color cube/token is **5 cm × 5 cm × 7 cm**.

3.4 Big Delivery Circles

- There is a **big RED Capelli circle** on the right side of the field.
- There is a **big GREEN Capelli circle** near the lower middle of the field.

After the scan reveals the active color:

- If the round color is RED:
 - Robot must collect the RED 5×5×7 cm cube from the RED pickup zone (top-left),
 - And deliver it into the big RED Capelli circle on the right.
- If the round color is GREEN:
 - Robot must collect the GREEN 5×5×7 cm cube from the GREEN pickup zone (top-right),
 - And deliver it into the big GREEN Capelli circle near the bottom-middle.

This “correct color → correct big circle” delivery is required to open the gate.

3.5 Stadium Gate / Barrier

- On the left entrance of the maze / distribution area, you can see a short yellow-block barrier.
- At the start of the match, the stadium gate is considered **closed**.
- The gate is only considered **open** if the robot successfully delivered the correct color cube into the correct big circle.
- When the gate is declared open by the referee, the robot can proceed to the final distribution step. The opening of the barrier is scored.

3.6 Distribution Zones A / B / C

- On the left edge of the maze (center part of the map), there are three pickup slots stacked vertically:
 - **Zone A**
 - **Zone B**
 - **Zone C**

These zones contain three colored tokens: RED, GREEN, BLUE.

Color placement rules:

- **BLUE is ALWAYS in Zone B** (middle slot).
- RED and GREEN are assigned to A and C by live randomization just before the match:
 - Either “RED in Zone A / GREEN in Zone C”
 - Or “GREEN in Zone A / RED in Zone C.”
 This assignment is revealed before the match begins.

Inside the maze there are three color targets:

- A RED target rectangle,
- A GREEN target rectangle,
- A BLUE target area (blue badge/marker in the center of the maze).

The robot must:

1. Collect each token from Zones A, B, C.
2. Drop each token fully inside the matching color target in the maze:
 - Red token → red rectangle,
 - Green token → green rectangle,
 - Blue token → blue target.

4. Pre-Match Randomization

To keep the mission unpredictable and fair, there are TWO random elements generated **right before each round starts**, in front of the referee:

4.1 Team Color Card

- The student draws one card: **RED** or **GREEN**.
- That color is “the active team” for this run.
- That decides:
 - Which pickup zone the robot must visit (red pickup zone top-left, or green pickup zone top-right),
 - Which big circle must receive the color cube (big RED circle on the right, or big GREEN circle bottom-middle).

4.2 Zone Assignment Card

- The student draws a second card that decides which color is stored in Zone A and which in Zone C.
- The card will say either:
 - “RED in Zone A / GREEN in Zone C,” or
 - “GREEN in Zone A / RED in Zone C.”
- **BLUE is always in Zone B** (never changes).
- This affects the sorting phase: the robot must know (or be coded to handle) where RED and GREEN tokens physically are this match.

After both cards are drawn:

- Referee places the tokens accordingly in Zones A/B/C,
- Confirms the active team color for the match,
- THEN the countdown starts.

5. Match Flow (official sequence)

This is the exact order teams must execute:

Phase 1 — Locker Room Departure

1. Robot starts fully inside the Locker Room (bottom-left), already in contact with the Capelli Team Box.
2. At match start, the robot leaves the Locker Room while transporting that box.
3. Leaving the Locker Room with the box earns points.

Phase 2 — Scan Station / Coach Approval (bottom-right)

4. Robot navigates along the lower path to the Scan Station in the bottom-right corner, still transporting the box.

5. At the Scan Station:

- The referee acknowledges the Team Color Card (RED or GREEN) drawn for this round.
- That color is “scanned.”
- The referee lifts the box using the approval/lift mechanism to simulate inspection and approval by the coach.

6. Reaching the Scan Station with the box + successful lift/approval earns points.

Phase 3 — Team Color Delivery to the Field

7. Based on the scanned team color:

- If the round color is RED:
 - Robot must go to the RED pickup zone (top-left),
 - Take/push the RED 5×5×7 cm cube,
 - Deliver that cube into the big RED Capelli circle on the right.
- If the round color is GREEN:
 - Robot must go to the GREEN pickup zone (top-right),
 - Take/push the GREEN 5×5×7 cm cube,
 - Deliver that cube into the big GREEN Capelli circle near the bottom-middle.

8. If the robot delivers the **correct color cube** into the **matching big circle**, the referee declares the **stadium barrier OPEN**.

- This correct delivery scores.
- The barrier opening also scores.

9. If the robot delivers the wrong color cube to the wrong big circle, no barrier opening and a penalty applies.

This step is “deploy the active team’s kit onto the field.”

Phase 4 — Gate / Barrier Open

10. After correct color delivery, the stadium gate (yellow-block barrier by the maze entrance) is considered “open.”

11. The robot is now allowed to proceed into the maze/distribution area.

Phase 5 — Distribution from Zones A / B / C

12. Robot goes to the three supply zones on the left edge of the maze:

- Zone A
- Zone B
- Zone C

(Remember: BLUE is always Zone B. RED and GREEN swapped between A and C based on the Zone Assignment Card.)

13. The robot collects each colored token:

- Red token,
- Green token,
- Blue token.

14. The robot must place each token in the correct color target INSIDE the maze:

- Red token → red rectangle target.
- Green token → green rectangle target.
- Blue token → blue target (blue badge in the maze center).

15. Each correctly sorted token scores. Each wrongly sorted token triggers a penalty.

6. Scoring

The scoring scheme follows the sponsor brief structure for Starter:

- score each mission phase,
- add a gate bonus,
- score correct color sorting,
- and penalize wrong-color actions.

Unless organizers publish modified values, use these base numbers for Season 1:

6.1 Locker Room Departure

- **+5 points**

Robot clearly exits the Locker Room while transporting the Capelli Team Box.

6.2 Scan Station / Lift (bottom-right)

- **+10 points**
Robot arrives at the Scan Station (bottom-right) still transporting the box.
- **+15 points**
Referee lifts the box using the mechanism (coach approval / inspection passed).

6.3 Team Color Delivery

After scan, we know this round's active color (RED or GREEN):

- **+20 points**
If the robot:
 1. Retrieves the correct 5×5×7 cm color cube from the correct color pickup zone (red zone top-left if RED, green zone top-right if GREEN),
 2. Delivers that cube into the correct big colored Capelli circle (big red circle on right if RED, big green circle lower-middle if GREEN).
- **-10 points penalty**
If the robot delivers the wrong color cube to the wrong big circle.

6.4 Barrier Open Bonus

- **+5 points**
Awarded only if the correct color delivery was made AND the referee declares the stadium barrier open.

6.5 Distribution / Sorting (Zones A / B / C)

Before the match, the Zone Assignment Card determined which color sits in Zone A and which sits in Zone C.

Blue is always Zone B.

For EACH token:

- **+10 points** if that token is delivered into its matching target (Red → red rectangle, Green → green rectangle, Blue → blue badge).
- **-10 points** if that token is clearly placed in the wrong color target.

6.6 Total Match Score

Total Match Score =

(+5 Locker Room Departure)

- (+10 Arrive at Scan Station bottom-right)

- (+15 Lift / Approval at Scan Station)
- (Team Color Delivery: +20 for correct OR –10 for wrong)
- (+5 Barrier Open Bonus if unlocked)
- (Sorting Tokens: +10 per correctly sorted token, –10 per incorrectly sorted token)

That final total is what goes to ranking.

7. Robot & Control Rules (13–15 standard)

Because this category is 13–15 years old, we tighten fairness and autonomy expectations.

7.1 Safety

- Robot must be a safe educational platform (battery powered, no blades, no launchers, no heat, no liquids).

7.2 Start Conditions

- Robot begins fully inside the Locker Room start zone.
- Robot must already be in contact with / transporting the Capelli Team Box at T=0.
- The 5×5×7 cm cubes/tokens must not already be pre-loaded anywhere else illegally.

7.3 Movement / Autonomy

- After the match starts, teams may only trigger pre-programmed routines (for example: Routine 1 = go to Scan Station, Routine 2 = deliver cube to big circle, Routine 3 = sorting run, etc.).
- Continuous manual joystick driving is **not allowed**.
- “Pick up the robot and move it forward by hand” is **not allowed**.
- Adult / coach physical interaction with the robot during the run is **not allowed**.

The only human physical action allowed during the run is:

- The referee at the Scan Station lifting the Team Box for inspection (that is part of the mission design).
- The referee announcing “barrier open” once correct color delivery is confirmed.

7.4 Object Handling

- The color cubes / tokens are all approximately **5 cm × 5 cm × 7 cm**.
- The robot may push, scoop, drag, guide, or carry them at floor level.
- The robot does NOT need to lift them fully off the ground.
- For a score to count, the token/cube must end clearly and fully inside the correct scoring zone:
 - inside the correct big circle for Team Color Delivery,
 - inside the correct color rectangle / blue badge zone for sorting.

7.5 Finish Pad

- For the +5 Finish Pad Park bonus, at STOP the entire robot body must be completely inside the dashed yellow Finish Pad (no wheel outside).

8. Refereeing, Ranking, Tie-breakers

8.1 Refereeing Procedure

At STOP, the referee freezes the field and records:

1. The Team Color Card drawn (RED or GREEN).
2. The Zone Assignment Card drawn ("RED in A / GREEN in C" or "GREEN in A / RED in C").
3. Did the robot exit the Locker Room with the Team Box? (+5)
4. Did it reach the Scan Station (bottom-right) with the box? (+10)
5. Did the referee lift/approve the box at Scan Station? (+15)
6. Did the robot deliver the correct color cube into the correct big circle?
 - If yes: +20, and +5 Barrier Open Bonus.
 - If no: -10 penalty, 0 for barrier.
7. Sorting:
 - For each token from Zones A/B/C:
 - Placed in the correct color target? (+10)
 - Placed in the wrong target? (-10)
8. Any illegal human interference (touching robot, placing tokens by hand, etc.)? If yes, run may be invalidated.

8.2 Ranking

- Each team gets 2 qualification runs.
- Your **best single Match Score** from qualification is used to seed you.
- Top-seeded teams advance to Finals.
- Finals are run using the exact same rules, with fresh Team Color Card and Zone Assignment Card draws per final run.
- The team with the highest Finals Match Score wins
Capelli Sports Starter Champion — Season 1 (Lebanon).

8.3 Tie-breakers in Finals

If two teams tie on Finals score:

1. The team that successfully delivered the correct color cube without the –10 penalty wins the tie.
2. If still tied: the team with more correctly sorted tokens in that Finals run.
3. If still tied: Head Ref / Technical Jury decision (path quality, control discipline, respect of the field).

9. Quick Cheat Sheet (for teams 13–15)

1. Before the match, you draw:
 - Team Color Card (RED or GREEN),
 - Zone Assignment Card (who's in Zone A and who's in Zone C; BLUE always in Zone B).
2. Start in the Locker Room bottom-left with the Capelli Team Box.
3. Drive to the Scan Station bottom-right with the box.
 - Ref scans your team color and lifts the box.
4. If it's RED this round:
 - Take RED cube (5×5×7 cm) from red pickup zone (top-left),
 - Drop it in the big RED circle on the right.
 If it's GREEN:
 - Take GREEN cube from green pickup zone (top-right),
 - Drop it in the big GREEN circle bottom-middle.
5. If correct, the barrier opens.
6. Go to Zones A, B, C:

- BLUE is always Zone B,
- RED / GREEN are in A or C depending on your Zone Assignment Card.
Drop each token into its same-color target in the maze:
- Red → red rectangle,
- Green → green rectangle,
- Blue → blue badge.

7. Score is calculated.

Eddy Bachaalany
11/1/2025

