Extra Robotic Hackathon Challenges

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CuteBot Rules:

1. Only run bots on designated mats
2. Limit speed to < 75% (unless otherwise specified)
3. Unplug batteries when not in use
4. Do not drop the CuteBots

If you break any of these rules, you can choose:

A. Do 3 burpees
B. Sing "I'm a Little Teapot" song
C. Do 10 jumping jacks

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Top 5 Coding Strategies

1 Debugging with Testing

- Use prints statement, lights, or sounds to find errors.
- Change one thing at a time to see the effect.
- Ask: “What did I expect? What happened?”

2 Breaking Problems into Steps

- Plan your goal into steps before you code.
- Tackle one problem at a time.
- Use flowcharts or pseudocode to organize ideas.

3 Finding Patterns & Reusing Solutions

- Reduce repeating code into smaller loops or function.
- Use available libraries or templates for a help start.
- Spot common errors like missing brackets or semicolons.

4 Working Together & Asking Questions

- Rubber Duck Method – Explain your problem to someone (or duck!).
- Ask: What’s working/not working/changed before the issue?
- Search online smartly for solutions.

5 Experimenting & Improving

- Try different approaches if one doesn’t work.
- Save code versions (e.g., copy one, two) before major changes.
- Make small changes and test them, don’t rewrite everything.

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Hackathon: Knock Over

Program CuteBot to knock over your opponent's ball first.

- In this player vs player game, each player has a ball on a cup and the goal is to knock the opponent's ball off their cup to win.

- How can you use Cutebot/Micro:Bit features to aggressively navigate toward the ball or defensively protect your own ball?

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Hackathon: To the Drawing Board!

Program CuteBot to create a drawing using a marker.

- Each Cutebot must create shapes, patterns, or a drawing using a marker — get creative!

- What creative movements can you program your Cutebot to make your drawing stand out?

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Hackathon: CuteBot Soccer

Program Cutebot to grab, pass, and score the ball.

- In this player vs player game, each player will remotely control a Cutebot to play a game of soccer. First player to score wins!

- How can you use Cutebot/Micro:Bit features to grab the ball to score or position defensively protect your own goal zone?

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Hackathon: Dance Party

Program Cutebot to a dance-off. Include costumes, dance moves, and music!

- Each Cutebot must have a costume, dance(s), and music — get creative!

- How can you use Cutebot/Micro:Bit features to make your Cutebot unique?

Hackathon: Clear the Table

Program Cutebot to push all objects off a table.

- The Cutebot that pushes most objects off the black boundary without leaving it the boundary within a time limit completes the challenge!

- How can you use Cutebot/Micro:Bit features to navigate within the table's boundaries?

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Hackathon: Sumo Wrestling

Program Cutebot to push an opponent out of the arena.

- In this player vs player game, two Cutebot are put on inside a small zone, first player Cutebot to completely off the zone will lose!

- How can you use Cutebot/Micro:Bit features or other attachments that will push the opponent off the zone?

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