LEGO Robotics Event Plan

https://9000-firebase-studio-1754318386603.cluster-joak5ukfbnbyqspg4tewa33d24.cloudworkstations.dev/hub?monospaceUid=983811

Phases:

- P0: System Check
  - Computer update
  - Spike downloaded
  - Connect robots to the computers

- P1: Vehicle Preparation
  - Familiarize all components
  - Build a vehicle.

- P2: Testing and revision
  - Challenges
  - Script (block or python)
  - Update vehicle as needed

- P3: Competition
  - Recon of obstacles
  - Build script
  - Execution

Time Line:

P0 - 1 hr prior
P1 - < 1 hour
P2 - < 2 hours
P3 - < 1 hour
(Event should be 4 - 6 hours long)

Tasks:

- Simplify python learning and User
  - (Drag and drop python script)

- Obstacle course track
  - Objects, Bounderie with colors

- Power point
  - Describe components
  - Programing guidance (block or python)
  - Competition break down expectations
  - Picture of obstacle course in power point

- Make 3D printed trophies (challenge coins)

Awards:

- Top Performer
  Least amount of tries to complete everything.

- Wackiest Design
  Crazy cool looking robot

- Future developer
  Most simplified and smallest script used for programming
  (least amount of data used)

- Speed Demon
  The fasted robot to complete the obstacle course

- Best Engineering
  Most mechanically sound and well-built robot
  Emphasis on structural stability, clever mechanics, or modularity

Comm:

https://education.lego.com/en-us/lessons/prime-competition-ready/training-camp-3-react-to-lines/

https://tuftsceeo.github.io/SPIKEPythonDocs/SPIKE3.html - Documentation for all Commands

https://primelessons.org/en/PyLessons.html - Programming Lessons

https://community.legoeducation.com/library/item/12/102 - Sample Robots with Code

https://www.facebook.com/photo/?fbid=10161334406644412&set=pcb.2287154701662749

https://primelessons.org/en/ProgrammingLessons/SP3BlockGuide.pdf - Block Coding Guide

.txt Format

LEGO Robotics Event Plan
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Phases

P0: System Check
- Computer software updated
- SPIKE Prime software downloaded
- Robots connected to computers

P1: Vehicle Preparation
- Familiarize with all components
- Build a functional vehicle

P2: Testing & Revision
- Complete mini challenges
- Write scripts (Block-based or Python)
- Test and revise vehicle as needed

P3: Competition
- Recon the obstacle course
- Finalize script
- Execute robot challenge

Event Timeline

Total Duration: 4 – 6 hours

Phase	Time Allocation
P0	~1 hour before start
P1	< 1 hour
P2	< 2 hours
P3	< 1 hour

Key Tasks

- Simplify Programming
  - Use drag-and-drop Python scripting for easier learning

- Obstacle Course
  - Design includes clear object boundaries using colored zones

- Presentation (PowerPoint)
  - Describe LEGO components
  - Programming guidance (Block & Python)
  - Competition breakdown & expectations
  - Include image or map of the obstacle course

- Trophies & Rewards
  - Create 3D-printed trophies or custom challenge coins

Award Categories

🏆 Top Performer
- Best overall execution across all phases

🔁 Fewest Attempts
- Successfully completed all tasks with the least number of tries

🎨 Wackiest Design
- Most creative and visually unique robot design

🧠 Future Developer
- Simplest and most efficient script
- (Least code or data used to achieve functionality)

⚡ Speed Demon
- Fastest robot to complete the obstacle course

🛠️ Best Engineering
- Most mechanically sound and well-built robot
- Emphasis on structural stability, clever mechanics, or modularity

The LEGO® Education SPIKE™ Prime Set, combines colorful LEGO building elements, easy-to-use hardware, and an intuitive drag-and-drop coding language based on Scratch. Students will be engaged through playful learning activities to think critically and solve complex problems, regardless of their learning level. Participants will build, upgrade, and code software for their own LEGO vehicle, and will compete against each other's vehicles in an obstacle course. Participants will also have the option to explore coding with Python.

This guide outlines and provides details on what participants and their guardians can expect throughout the day. The day will be split into three phases: 1) Vehicle building, 2) Code & Challenge 3) Obstacle course race.

Link to Vehicle build instructions: here
Link for Prime set inventory: https://assets.education.lego.com/v3/assets/blt293eea581807678a/blt28cad37f1f002fd3/5f8801b982eaa522ca601c89/le_spike_prime_element_overview.pdf?locale=en-us

https://9000-firebase-studio-1754318386603.cluster-joak5ukfbnbyqspg4tewa33d24.cloudworkstations.dev/?monospaceUid=744976

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OBSTACLE COURSE KEY

- PERMANENT OBSTACLE
- PILLAR
- PUSHABLE WALL
- TUNNEL
- BRIDGE
- PATHS