

NRC CoderZ Challenge Document

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Introduction

Robotics is a wonderful platform for learning 21st century skills. Solving robotic challenges encourages innovation and develops creativity and problem-solving skills in students. Because robotics crosses multiple curricular subjects, students must learn and apply their knowledge of science, technology, engineering, math, and computer programming.

The most rewarding part of designing robots is that students have fun. They work together as a team, discovering their own solutions. Coaches guide them along the way, then step back to allow them their own victories and losses. Students thrive in this supportive and immersive environment, and learning occurs as naturally as breathing air.

In this challenge, teams will be using the **CoderZ** platform. CoderZ is a powerful, award-winning online platform through which students learn valuable STEM skills such as **coding**, **robotics**, and **physical computing**. CoderZ is **highly flexible** and designed for use **in the classroom** or through a wide range of **remote learning** environments.

CoderZ Requirements

Teams will have to undergo four challenges, **where they must code their virtual robots to accomplish a task**. The team that scores the highest points (in their respective category) will win!



- 1) For both the Primary Category and Secondary Category, coding is done via a block-based interface. (Figure 1.1)

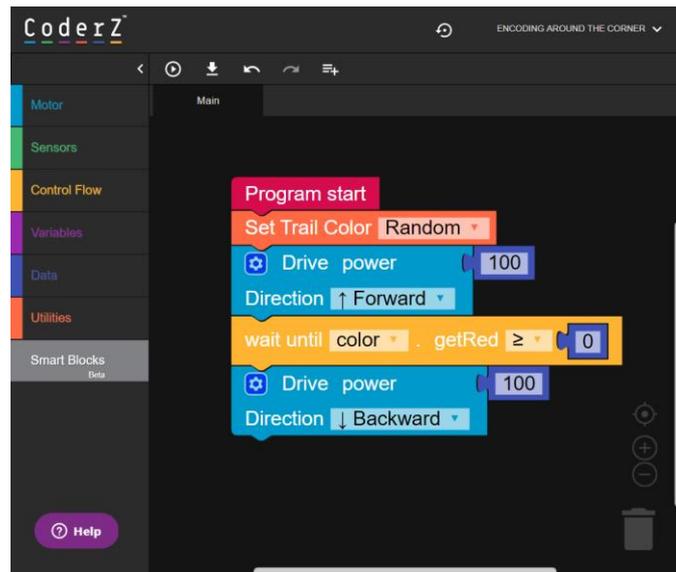


Figure 1.1: Example of Blockly for Primary Category & Secondary Category

Competition Format

Schedule

The following schedule will be followed for the competitions on the 9th of Nov 2020 and the 10th of Nov 2020.

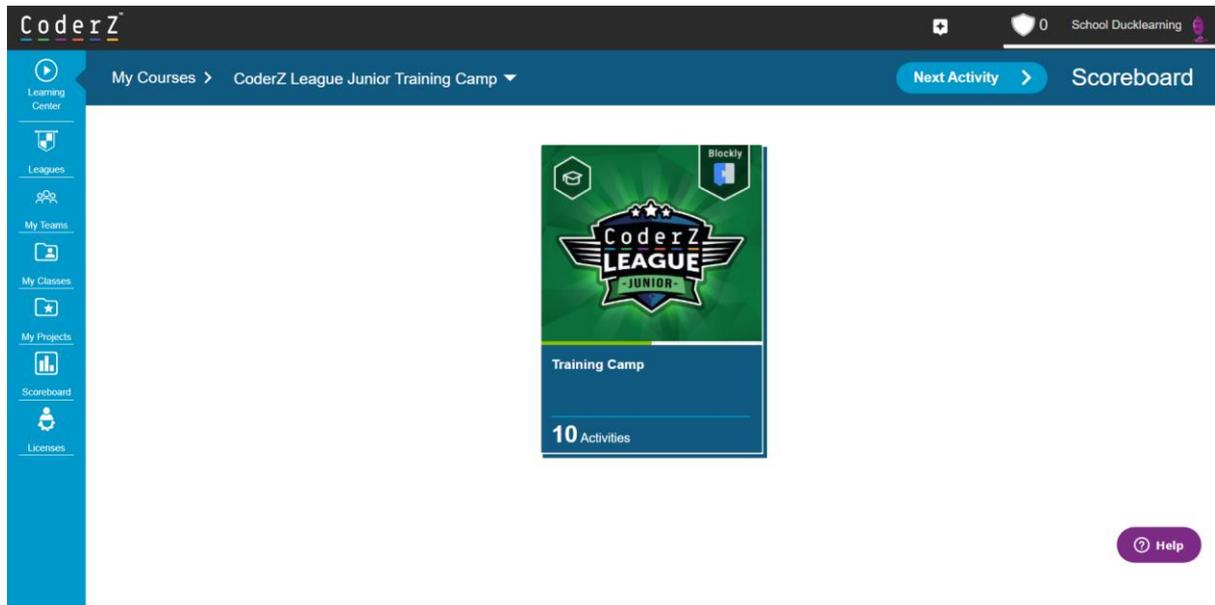
Time	Activity
8:00am – 9:30am	Participants to attend the Opening Ceremony via a zoom link (Teams to remain in the zoom call for the whole day) Teams will be briefed on the proceedings of the day by Gamemaster
9:30am – 10:30am	Teams will join the breakout rooms in zoom for CoderZ League Junior Training Camp
10:30am – 10:45am	Break
10:45am – 12:00pm	Continue training
12:00pm – 1:00pm	Lunch Break
1:00pm – 4:00pm	Teams will attempt the challenges.
4:00pm – 5:00pm	Closing Ceremony Declaring the winners

Training

After the Opening Ceremony, teams will be pushed into breakout rooms. In these breakout rooms, trainers will lead the participants through the CoderZ League Junior Training Camp.

The Training Camp consists of 10 activities. These activities simulate what the participants will see in the four Challenges.

Participants will also be able to ask trainers for help if needed throughout the day.



Challenges

After teams have undergone the training, they will access the CoderZ League platform to attempt the Missions/Activities for each of the challenges. There are four challenges. Namely, Robo Golf, Disco Blocks, Farm Fever and Lasers Vs. Balloons.

It is not compulsory for each team member to attempt all 4 challenges.

The number of Missions vary according to the challenges. Refer to Figure 2.1.



Figure 2.1 The four challenges

Teams may attempt the Activities and Challenges as many times as they want. **Each participant's highest score achieved will be recorded. The team's score will be represented by the participant whose score is the highest amongst the members in the team by the end of the day (4pm).**

Age group Definition

Primary Category: Ages 9 – 12 at year of competition

Secondary Category: Ages 13 – 16 at year of competition

Team Definition

While each participant will be given an individual account to log into the Coderz platform, we want to emphasize that this competition is a team-based competition.

The organisers will create teams of up to 30 Participants. As such, Participants may end up working with other Participants from other institutions.

In the Zoom call, teams will be in their respective breakout rooms and will be given the opportunity to discuss and strategize on how to solve the challenges for maximum points with their fellow team mates.

Material

All coding and competition related materials will be presented to Participants on the day of the challenge.

An account to CoderZ League will be given to each participant a few days before the actual competition day. The login details for each participant will be emailed to the respective Teacher/Parent in charge (email is based on the registration details given)

Participants do not need to submit any physical materials for the challenge.

Regulations

- 1.1 Each participant must be logged in to the CoderZ League platform during the day of the challenge.
- 1.2 Each student will require a computer for himself/herself on the day of the challenge
- 1.3 Participants will be required to join our Zoom call and be online throughout the day.**

Computer Requirements

Each team member will require a computer. Specifications of the computer can be found in Annex A

Awards and Judging Criteria

Scoring is based on strategy and code quality. This will be represented by the points that you get.

The CoderZ system will calculate the score based on how long their virtual robots take to accomplish the tasks and how many tasks are completed in the Mission.

Teams will be able to view their teams top score anytime during the competition. Refer to Figure 5.1.

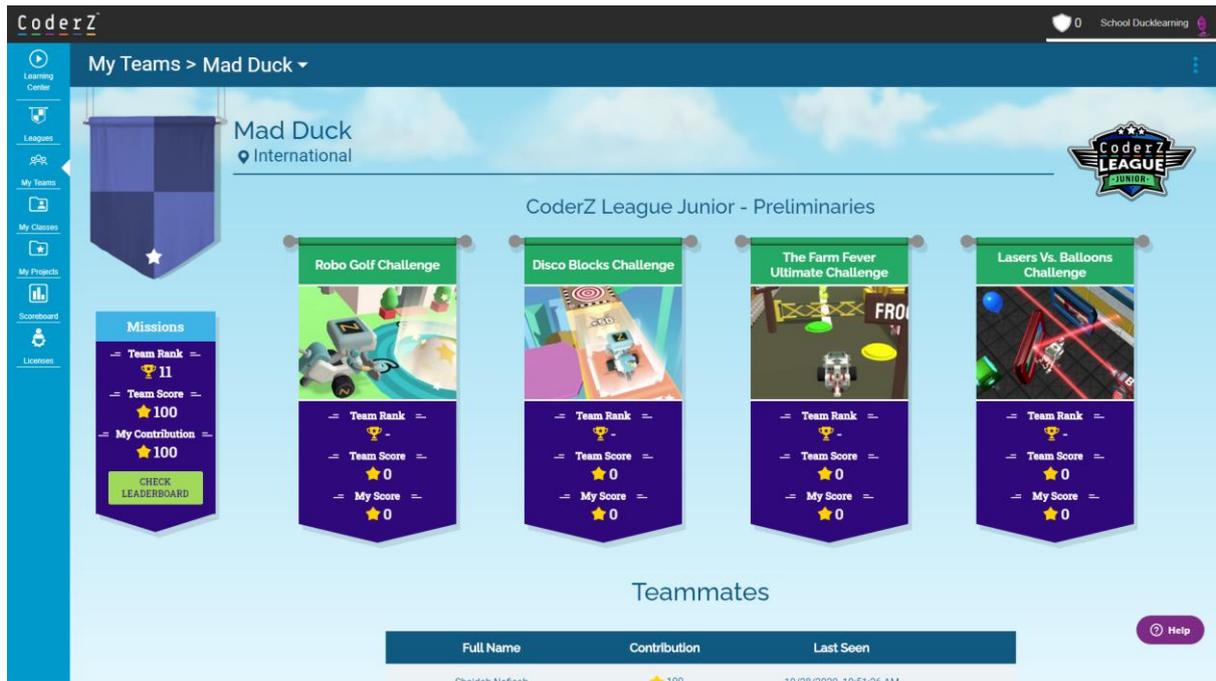


Figure 5.1: Scoring page

At the end of the day, the top 3 scoring teams of each category will be recognized.

Annex A

Minimum Requirements for CoderZ

OS

- Windows 7 and up
- OS X 10.9 Mavericks and Up
- Chrome OS (Chromebooks)
- Ubuntu 16 and up

Browser

- Latest Chrome browser (64 bit)

CPU

- i5 or similar
- Recommended 64 Bit architecture

RAM

- 4 GB minimum
- Recommended 8 GB for Windows/OS X

Screen Resolution

- 1280 pixels (width) or more

Internet Connectivity

- High Speed / broadband connection (15Mbps)
- Wired connections may help reduce load times

White lists

The following two domains should be white listed in both email servers and firewalls for optimal performance of CoderZ:

- CoderzWorld.com
- GoCoderz.com
- Zoom