Fall Season CoderZ League 2021

Table of Contents

CoderZ^{TM} reserves the right to update this user guide at any time. Updates to this guide will be distributed to each team's teacher via email.

1. Introducing CoderZ League

CoderZ League is an international virtual competition designed to engage students, regardless of coding experience, with exciting challenges and opportunities to work collaboratively in teams. Register for CoderZ League at https://coderzleague.com/.

2. Important Terms

The following are key CoderZ League terms that are critical to understanding the League structure, regulations, and scoring system:

- *Team:* A collection of participants (students) from the same age group and institution working together to achieve the common goal of advancement in the League.

- *Mission:* Activities in which all team members program a virtual robot to complete a task and acquire points.

- *Contribution:* The number of points contributed to a team by a team member for each mission or challenge.

- *Challenge:* A summative, open-ended activity, in which members of a team program the virtual robot to traverse an arena and acquire as many points as possible.

- *Leaderboard:* Visible ranking of teams or individuals for a given mission or challenge.

- *Division:* Conference or league to which CoderZ League is divided. There are three CoderZ League divisions, Novice, Junior and Pro, based on age group and difficulty of missions and challenges.

- *Region:* Geographical areas into which teams of the same division are sorted.

3. League Structure

3.1. *Objective*

CoderZ League is a virtual competition where teams complete a series of activities called missions and challenges, in which they program a robot in a virtual simulation. The goal of every team is to earn the most points and advance through the stages to become the champions.

3.2. *Divisions*

CoderZ League is comprised of three divisions based on age group:

	Age Group	Coding Language(s) Used
Novice Division	Grades 4-6	Blockly
Junior Division	Grades 4-12	Blockly and Python
Pro Division	Grades 7-12	Blockly and Python

3.3. *Regions*

3.3.1. What are Regions?

Regions are geographic segments of teams participating in CoderZ League. The regions existing in CoderZ League are one for every US state (e.g. Texas region, California region) and one for every country (e.g. Japan, Russia, China). Teams play against other teams in their region throughout the competition. The winner of each region advances to the world finals where they play against all other region winners.

3.3.2. How to join a region

On November 10th, every team will be placed in a region, depending on the geographic location of the school. Teams are automatically assigned to the region that they belong to.

3.3.3. Exceptions

Regions that do not have at least 32 teams or 2 different organizations participating (school / club = organization) will not be opened. The teams from that region will instead be placed in one of the open regions: For US teams, the open region is the *US Open* region, for non-US teams, the open region is the *International* region.

3.4. *Stages of Competition*

3.4.1. Overview

The League is comprised of the following stages.

Stage	Summary	Duration
Preliminaries	Teams complete a series of missions and challenges. The 64 teams with the highest overall score from every region move on to the group stage.	5 weeks
Group	Teams are grouped into groups of four and play versus the CoderZ Bot. The top two scoring teams from every group move on to the playoffs.	1 week
Playoffs	A series of knockout rounds. Half of the teams are eliminated after each successive round until a single world champion emerges.	1 week
World Finals	The winners from every region play against each other in a similar fashion to the region finals. The games will be broadcast on Twitch.tv/gocoderz	3 weeks

3.4.2. Preliminary Stage

In the preliminary stage, teams complete a series of Missions and Challenges to gain points.

3.4.2.1. Scoring

To advance to the group stage, teams must place in the top 64 of the overall rankings of their region. Missions will earn you points immediately but challenges will place you on a leaderboard that only at the end of the stage will give you a bonus depending on your position in comparison to other teams.

3.4.2.1.1. Missions

Each individual team member contributes points to their team by completing missions. The maximum number of points that can be contributed per mission is 100. Completing a mission multiple times is permitted. However, points obtained for each time a specific mission is completed is not accumulated. Rather, a team member's **highest score** for that mission is contributed to their team. Multiple students can give contribution for the same mission.

3.4.2.1.2. Challenges

Challenges are summative activities similar to missions but on a larger scale. All team members may participate in the challenges. However, unlike missions, only the highest-scoring team member contributes their score to the team. Challenges may be attempted multiple times. The highest score for a team is always the one contributed to the final ranking.

At the end of the preliminary stage, team scores for each challenge are ranked on a leaderboard. The following point totals are awarded based on final ranking:

Place	Points Awarded
1	5,000
2	3,500
3	2,500
4	2,000
5	1,500
6 - 10	1,000
11-15	800
16-20	700
21-25	600
26-30	500
31-40	400
41-50	300
51+	0

Multiple teams cannot share a place on the leaderboard, meaning two teams cannot both be placed 2nd, for example. In the event of a tie, the team to first acquire the tied score will supplant any other teams with that same score.

Example:

Team A is a team in the Novice division:

The team has 3 students; Student A, Student B and Student C, all of whom completed the Robogolf challenge. Student A got 300 points for the challenge, students B got 400 points and student C got 500 points.

On the Robogolf challenge leaderboard, Team A has 500 points thanks to student C.

Team A is placed 3rd on the leaderboard at the end of preliminaries, with 500 points right after Team B with 750 points and Team C with 900 points. Team A will receive 2,500 points for the Robogolf challenge, Team B will receive 3,500 points and Team C will receive 5,000 points.

3.4.2.1.3. Overall Score

The overall score is the sum of all points of a team, comprising both the points from missions and the points from challenges. The overall score is the one determining whether teams advance to the group stage or not. The top 64 teams with the highest score from every region advance to the group stage.

The **Overall Score** tab is only revealed after the calculation of the bonus from the challenges, which happens two days after the preliminaries are over.

Examples of calculations for overall score:

	Total Mission Score	Robogolf challenge placement	Discoblocks challenge placement	Moon Base challenge placement	Overall Score calculation	Overall Score
Team A	6,400	3rd	10th	7th	6,400 +2,500 +1,000 +1,000	10,900
Team B	5,900	2nd	24th	40th	5,900 +3,500 +600 +400	10,400
Team C	7,700	1st	5th	60th	7,700 +5000 +1,500 +0	14,200

3.4.3. Group Stage

3.4.3.1. Overview

In the group stage, teams are arranged in groups of four and seeded according to the amount of points acquired in the preliminaries. Each region will consist of approximately 16 groups. Two teams (and if necessary, in cases where a region has less than 64 teams, the highest scoring third-place team) will advance from each group to make up a playoff field of 32 teams per region.

	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K	Group L	Group M	Group N	Group O	Group P
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
64 Teams	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49

	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K	Group L	Group M	Group N	Group O	Group P
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
63 Teams	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
		63	62	61	60	59	58	57	56	55	54	53	52	51	50	49

	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K	Group L	Group M	Group N	Group O	Group P
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
62 Teams	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
			62	61	60	59	58	57	56	55	54	53	52	51	50	49

	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K	Group L	Group M	Group N	Group O	Group P
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
61 Teams	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
				61	60	59	58	57	56	55	54	53	52	51	50	49

	Group A	Group B	Group C	Group D	Group E	Group F	Group G	Group H	Group I	Group J	Group K	Group L	Group M	Group N	Group O	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Top 2 3rd places go up as well
60 Teams	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	
	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	

Example group stage seedings for various fields

3.4.3.2. Group Stage Competition

Competition in the group stage involves games between teams and AI robots, competing in the final challenge (only a more difficult version than that of the preliminaries).

The group stage is essentially just like the preliminaries but there's only one challenge available and no missions.

In the same fashion challenges work in the preliminaries, the group stage also relies on the highest scoring student in a team but since there's only one challenge, the team must come together and think of a powerful solution to earn the highest possible score against the CoderZ Bot.

When the group stage ends, the top two highest scoring teams from every group move on to the region finals where they'll play the same exact challenge, except against an enemy team instead of CoderZ Bot.

3.4.3.3. Submitting the Solutions

Similar to the preliminaries, to record a solution, a student must click the play button versus the CoderZ Bot and wait for the results to show. Once the results are shown, the score is recorded.

> ⓘ **Note:** *Multiple solutions can be sent as many times as needed by all students of the team. Only the highest score counts towards placement on the leaderboard.*

3.4.4. Playoffs

3.4.4.1. Overview

The playoffs are a knockout tournament. 32 teams from each region compete in head-to-head games. Half of the teams are eliminated after each round until a single team, the regional champion, remains. Regional champions play each other in the CoderZ League World Championship. The structure for each regional playoff tournament is shown here:

3.4.4.2. Playoff Competition

Playoff competition involves teams playing each other in head-to-head games, where each team programs a robot in advance. The winner of each game advances to the next round, while the losing team is eliminated.

The nature of the games is similar to those of the group stage.

3.4.4.3. Code Submission

Codes for the playoff games are not submitted before every game. Rather, they are submitted only once, until the time window closes.

The code will be submitted by the captain, a student appointed by the teacher.

Only the captain can see the **Submit Code** button. Submitting the code makes the code that is currently written in the captain's editor *the* code that represents the team.
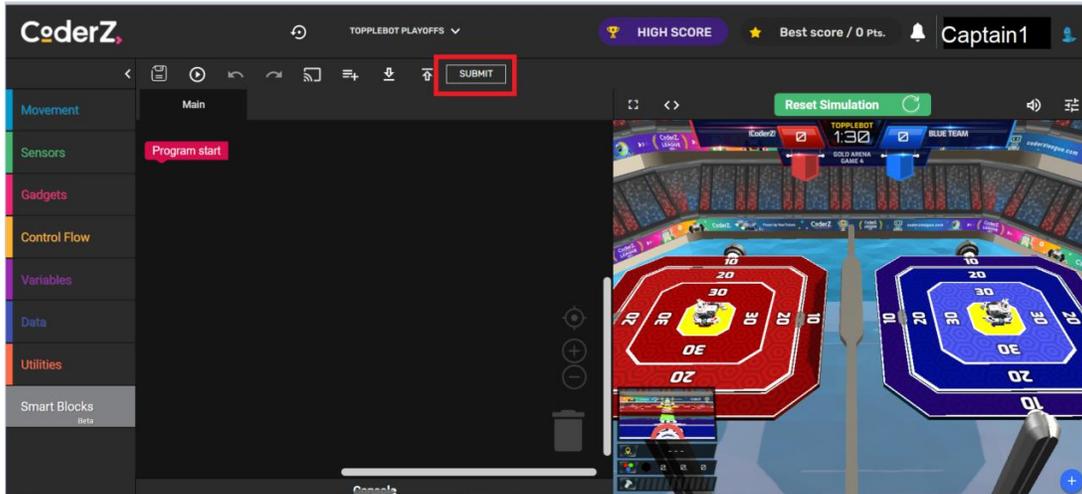
Captains may re-submit their code any number of times but only the latest submission is used in the games.

3.4.5. World Finals

3.4.5.1. Overview

The World Finals is the last stage of the competition. In this stage, all region winners play against each other in a similar fashion to that of the region finals. The winners will be crowned *World Champions*. Winners of the Junior and Pro division will be added to the **Hall of Fame** tab on the CoderZ League website.

3.4.5.2. World Finals Competition

All regional winners move into a new bracket where they will meet all other regional winners. The teams will then play against each other in a series of knockout matches until a single team remains. All matches will be streamed live on Twitch.tv/gocoderz and later uploaded to the CoderZ YouTube channel.

3.4.5.3. World Finals submission

Captains will have a new window to submit their team's code. If no code is submitted, the last code that has been submitted (while the Regional Finals window is still open) will be used by default.

3.4.6. Training Camp

3.4.6.1. Overview

Every division has its own unique training camp. The training camps are special missions whose only purpose is to help ease the students into the competition. Completing the training camp missions does **not** grant points towards the team score.

3.4.6.2. Availability

The training camp will become available about a month before the league begins (See schedule for exact dates) and remain available throughout the competition until it is fully concluded.

4. League Schedule

Date	Time (EST)	Event
October 1st	8:00 AM	Training camp is available
October 6th	8:00 AM	Creating teams is possible
October 23rd	1:00 AM	Registration is closed
October 25th	8:00 AM	Teams are assigned to regions and the leaderboard becomes available
October 27th	8:00 AM	League begins, preliminary missions become available
November 10th	8:00 AM	Challenges become available (Not including the final challenges)
November 24th	8:00 AM	The final challenges become available
December 2nd	1:00 AM	Last day of preliminaries, and access to content of Novice division is no longer available
December 3rd	8:00 AM	Bonus for challenges is given and the overall tab becomes available
December 6th	8:00 AM	Group Stage begins
December 13th	1:00 AM	Group Stage end
December 13th	8:00 AM	Region finals begin
December 21st	1:00 AM	Submission deadline for region finals
December 22nd	8:00 AM	Games of Top 32 and Top 16 of the region finals are available to watch
December 23rd	8:00 AM	Games of Quarter, Semi and Finals of the region finals are available to watch
December 24th	1:00 AM	Region finals are over
January 3rd	8:00 AM	World finals begin
January 7th	1:00 AM	Submission deadline for World finals
January 17th	1:00 AM	The league is concluded and all access to the content for Junior and Pro is no longer available

4.1. *Teams and Rosters*

Teams consist of a maximum of 6 students from the *designated age group* and include:

- At least one teacher
- A team captain (For Junior and Pro teams who made it to the regional playoffs)

The teacher is responsible for the registration of all team members and for the appointment of a captain. Team captains may be reassigned.

4.1.1. Responsibilities of the Captain

The captain is responsible for submitting team codes in the playoffs.

4.1.2. Team Members

The following are rules with respect to team members:

- The age limit for each division will be strictly enforced.
- Students may only participate using their own personal username assigned to them by the teacher. Once a username is assigned, the student may not code using a different username unless permitted by CoderZ Administration.
- A student may participate in both CoderZ League divisions but may not participate on multiple teams in the same division.
- Adding or removing students from a team to manipulate the team score is not allowed and will result in severe penalties.

4.1.3. Logos and Sponsorship

- Copyrighted and trademarked images may not be used as team logos. CoderZ is not liable for the representation and use of these images.
- Teams may be sponsored and change their names and logos to reflect that sponsorship.
- Businesses dealing in tobacco / smoking, pornography, alcohol, and/or gambling may not sponsor teams in CoderZ League.

4.2. *Honesty and Integrity*

CoderZ League is a fully virtual competition, and thus the League's administration relies on the honesty of the teams, students, and teachers. Should a team perform any form of misconduct, CoderZ League Administration holds the right to disqualify said team.

- Teachers, parents, mentors, or any sort of outside help to the teams is allowed. It is, however, forbidden that said parties will write, change, or modify any of the team's solutions to the Missions and Challenges. Teams whose solutions seem suspicious to CoderZ League Administration will be investigated.

- A student may not solve a teammate's Mission for that teammate, but may help, advise, and suggest solutions.

4.3. *Code Submission*

The deadlines for submitting the teams' codes are **final**. Teams must make sure they submit their programs on time. CoderZ will not make any exceptions regarding this matter, and thus teams must ensure they have a stable Internet connection before submitting. Codes may be resubmitted, as long as this is performed before the submission deadline.

5. The CoderZ League Platform

5.1. *Access to CoderZ League*

Participation in CoderZ League requires the CoderZ League platform. Access to CoderZ and CoderZ League is provided after completion of the registration and payment process on the CoderZ League website http://www.coderzleague.com or via an official representative of CoderZ League.

5.2. *Using the Platform*

5.2.1. General

Visit the CoderZ Knowledge Base to learn about:

- Creating your team (class) and managing your roster, including adding and removing students
- Troubleshooting
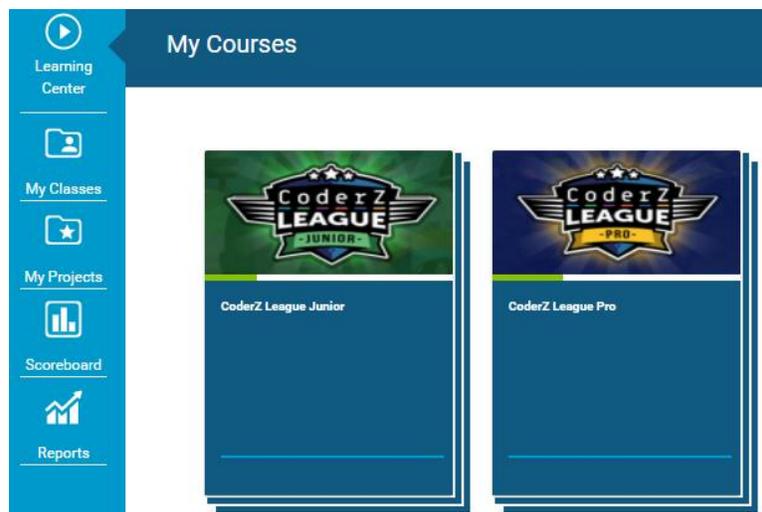- Minimum computer requirements

5.2.2. Missions and Challenges

5.2.2.1. Access

See League Schedule on page 14 to learn when access to Missions and Challenges becomes available.

To access a mission or challenge:

1. Go to https://play.gocoderz.com.

2. Navigate to **Learning Center > My Courses**.

3. Select your division.

4. Select the game you want to play.

5. Select your desired Mission or Challenge.

5.2.2.2. Mission Completion

Team members acquire points by performing tasks in the missions. Points are not contributed unless the mission is completed. Contributions are calculated automatically.

For a mission to be completed, the win condition must be met. The win condition is found at the top-right corner of the mission simulation screen.

In the example below, the team member must knock one ball into the hole to complete the mission.

5.2.2.3. Challenge Completion

Challenges are open-ended, and there is no limit to the amount of points that can be scored for a challenge. Rather, the highest score for each team is submitted (automatically), and that score is ranked.

To view the number of points awarded to a team based on this ranking, see Challenges on page 7.

5.2.3. Profiles

5.2.3.1. Overview

There are three types of profiles for CoderZ League, each with different levels of permission and access. They are:

- Student
- Team
- Teacher

To access your profile, click your name at the top-right corner of the CoderZ screen.

5.2.3.2. Student Profiles

Teams are made up of student team members. Student profiles include:

- Information about the student's team.
- The number of student contributions to his or her team.

5.2.3.3. Team Profiles

Team profiles are accessible to teachers and captains. These profiles include the team's name, flag, and score.

5.2.3.4. Teacher Profiles

In their profiles, teachers have access to:

- The team roster list.
- Details of their students, including number of contributions and last login time.

6. CoderZ League Awards

Aside from the CoderZ League World Champions, CoderZ League grants awards to teams and individuals at the various stages of the competition.

6.1. *How to submit your applications*

Submission deadlines are as follows: **Novice**, December 14th , 2021, and **Junior** and **Pro**, January 3rd , 2022. To submit your application, send an email to submitCoderZ@gocoderz.com. The winners will be announced live on the world finals broadcast that will happen on January (Final date TBD) on the CoderZ Channel: Twitch.tv/GoCoderZ.

6.2. *Awards list*

6.2.1. Creativity Award

6.2.1.1. About the Award
The **Creativity Award** is given for creative solutions of missions or challenges. A winner will be chosen from each division and the winning team will receive a certificate.

6.2.1.2. Application for the Award
Application for the award is via submission. A team that thinks they have submitted a unique solution to a mission or a challenge may submit their code, along with an explanation why they deserve to win.

6.2.1.3. Choosing a Winner
A team of judges from CoderZ will review the submissions and select a winner based on the following criteria:

- o Creative thinking - How different the solution is from the "average" solution that is the natural go-to for teams

- o Results - The creative solution must win its team results at least as good as the obvious solution

- o Efficiency - The code must showcase an efficient solution, as being creative to prolong the journey does not achieve much

6.2.2. Excellence in Programming Award

6.2.2.1. About the Award

The **Excellence in Programming Award** is given to teams which showed exceptional professionalism when writing code. A winner will be chosen from each division and the winning team will receive a certificate.

6.2.2.2. Application for the Award

Application for the award is via submission. A team that thinks they have created a unique solution to a mission, or a challenge may submit their code, along with an explanation why they deserve to win.

6.2.2.3. Choosing a Winner

A team of judges from CoderZ will review the submissions and select a winner based on the following criteria:

- Coherence and Readability -
  - Correct use of Smart Blocks: Finding repeated patterns and putting them into Smart Blocks / Functions (Python) as well as giving a set of instructions a meaningful name
  - Usage of suitable naming conventions for both variables and Smart Blocks / Functions (Python)
  - Well-structured and logical code
- Agnostic Solution -
  - Flexible code that is usable for any situation while completing the task it was created to do
  - Control - Use of two- or three-state (or more) based control, or even better: proportional control

6.2.3. MVP Award

6.2.3.1. About the Award

The **MVP (Most Valuable Player) Award** will be granted to the individuals with the highest contribution at the end of preliminaries, one in each division. These individuals will receive a personal certificate.

6.2.3.2. Application for the Award

Application for the award is automated. Every CoderZ League participant is automatically eligible for the award.

6.2.3.3. Choosing a Winner

Automated: the highest scoring individual from every division is chosen.

6.2.4. MVTeam Award

6.2.4.1. About the Award

The **MVTeam (Most Valuable Team) Award** will be granted to the teams with the highest contribution at the end of preliminaries, one in each division. These teams will receive a certificate.

6.2.4.2. Application for the Award

Application for the award is automated. Every team participating in the CoderZ League is automatically eligible for the award.

6.2.4.3. Choosing a Winner

Automated: the highest scoring team from every division is chosen.

6.2.5. Inspiration Award

6.2.5.1. About the Award

The **Inspiration Award** will be awarded to the Mentor / Teacher / Coach who had the most significant impact on their team throughout the competition. Only a single individual is chosen out of all divisions. The winner will receive a certificate as well as an exclusive interview which will be live-streamed on CoderZ social media during the World Finals.

6.2.5.2. Application for the Award

Mentors / Teachers / Coaches must be nominated by their teams, along with a short essay should stating why this individual deserves the award.

6.2.5.3. Choosing a Winner

A team of judges from CoderZ will review the submissions and select a winner based on the following criteria:

o Dedication in teaching and coaching the students participating in the league

o Inspiring students to become involved in the STEM world

6.2.6. Best Team Flag

6.2.6.1. About the Award

The title of **Best Team Flag** will be handed to the team that created the best flag. Only a single team is chosen out of all divisions. The flag design must be entirely original and created by one of the team's students or Mentors / Teachers. The winning team will receive a certificate.

6.2.6.2. Application for the Award

Application for the award is via submission. A team that thinks they have a winning flag design may submit their flag.

6.2.6.3. Choosing a Winner

The winning design will be decided by popular vote on CoderZ social media.

6.2.7. ImpACT Award

6.2.7.1. About the Award

The **ImpACT Award** is the biggest award in the CoderZ League and is part of the ***Beyond of the Screen Challenge***, which was designed to promote, develop, and showcase students' 21st century skills throughout the CoderZ League 2021 season. This challenge gives students and educators an opportunity to practice communication skills, collaboration, planning, decision making, presentation and more.

The ImpACT Challenge was designed for all teams participating in CoderZ League who want to present the impact the CoderZ League has had on the team members, the class, the teacher, the school, and the broader community.

6.2.7.2. Guidelines:

- Teams are invited to share a video via our Facebook group – "Teachers of CoderZ"

- Teams may share more than one video

- The video must include the teams' name, location (school / org name / country) and CoderZ League Division

- Videos with inappropriate content be disqualified

- Video length: up to 90 seconds

- The video may be presented in English or in the team's spoken language with English subtitles

- Mentors must have parents' approval to publish the video in public

- Teams that do not have access to YouTube are invited to contact us at: support@gocoderz.com

6.2.7.3. Submission Dates

- CoderZ League Novice – October 25th, 7am EST – December 14th, 12am EST

- CoderZ League Junior – December 6th, 7am EST – January 3rd, 12am EST

- CoderZ League Pro   - December 6th, 7am EST – January 3rd, 12am EST

6.2.7.4. Submissions Evaluation:
Phase I

- Publish your team's video through YouTube / Facebook

- Include the following hashtags:
  - #coderzleague2021
  - #CoderZimpact
  - #CoderZLeagueNovice/#CoderZLeagueJunior/#CoderZLeaguePro

- Promote your video on social media

- The top 10 popular videos per division will be defined based on total number of viewers / Likes

- The announcement of the top 10 teams who will advance to Phase II will be published on:
  - Novice division – TBD
  - Junior division –   TBD
  - Pro division –   TBD

Phase II

The top 10 submissions per division will be reviewed by a panel of judges.

Each video will be evaluated and scored based on the following criteria:

	Great Evidence (More than 8 examples)	Some evidence (4-7 examples)	Poor evidence (up to 3 examples)	No evidence
Where we have been and what we gained from the CoderZ League process				
How we started as a Team and what has changed				
The impact we would like to create as a team in the future (our personal education, our school, our families, our community, etc.)				