Competition Overview

There are 3 divisions by grade level; elementary (grades 4-6), middle (grades 7-8), and high school (grades 9-12). Each student competitor may choose, with guidance from their teacher, coach, or mentor, the competition category in which they wish to compete.

Division	Category 1	Category 2
Elementary	Scratch "STEM Innovation"	-
Middle School	Web "STEM Innovation"	-
High School	Web "STEM Innovation"	Python "Tic-Tac-Toe"

Elementary Scratch Programming projects will be made using the Scratch computer programming platform.

Research scientific discoveries, inventions, and innovations achieved by people in science, technology, engineering or math (STEM) fields. Create an original, informative, and compelling game or web story reflecting on the innovation and its impact on society.

Important for Elementary Level Competition: A maximum of 10 project submissions from each category per elementary school will be accepted.

Middle School Web and **High School Web** projects will be written using HTML, CSS, and/or JavaScript in Codecraft Works' web editor.

Research scientific discoveries, inventions, and innovations achieved by people in science, technology, engineering or math (STEM) fields. Create an original, informative, and compelling web project or web story reflecting on the innovation and its impact on society.

High School Tic-Tac-Toe projects will be written using the Python programming language in Codecraft Works' Tic-Tac-Toe editor.

2021 - 2022 General Competition Rules

1. The competition is open to elementary (grades 4-6), middle (grades 7-8), and high school (grades 9-12) students.

2. Projects must be created using the specified languages and platforms:

    a. **Elementary Scratch** projects must be created using the Scratch programming platform.

    b. **Middle School Web** projects must be created using HTML, CSS, and/or JavaScript in Codecraft's web editor.

    c. **High School Web** projects must be created using HTML, CSS, and/or JavaScript in Codecraft's web editor.

    d. **High School Python Tic-Tac-Toe** projects must be created using Python in Codecraft's Tic-Tac-Toe editor.

3. Participants must enter their chosen competition category by joining the corresponding Program via program access codes provided in this document. Details below.

    a. **Note:** Teachers, coaches, or club mentors are strongly encouraged to also join any Programs for categories in which their students are competing in order to gain access to the reference material and development tools.

4. To be considered, competition entries **MUST** be submitted via the category's corresponding Program page **NO LATER** than 4 pm on January 20, 2022**.** The project submission page will be accessible through each program beginning on January 13,

2022. **It is recommended that teacher sponsors submit projects for elementary competitors.**

5. The competition organizers reserve the right to disqualify any entry based on inappropriate or copyrighted content and any entries which do not adhere to the competition rules and guidelines.

6. When an entry is submitted, permission is granted to the organizers of the competition to make unrestricted use of the entry in the future for publicity or educational purposes.

Joining Competition Category Programs

Division	Category 1	Category 2
Elementary **Program Code**	Scratch **escs21**	-
Middle School **Program Code**	Web **mwcs21**	-
High School **Program Code**	Web **hwcs21**	Python Tic-Tac-Toe **hptcs21**

1. The students and coaches will visit CodecraftWorks.com and click the gold-colored “Get Started” button in the upper right hand corner of the site. This will take you to the login page.

    a. **Note:** Some public school student and workplace email accounts are backed by Microsoft (or Google) and can be used with the Microsoft (or Google) sign-in option on the Codecraft Works site. Of course, personal Google or Microsoft accounts will work too.

Important! Whichever email address AND method (Microsoft, Google, or email w/magic link) you use to create your account is the same method you must use everytime you sign in. Please make a note if you are likely to forget.

2. To create an account or log into the site, students are encouraged to take advantage of single sign-on through their school email address so that they do not have to remember new passwords or access email accounts from school. Alternatively, they may log in by entering their email address for a sign-in prompt to be sent to the address of their choice.

   Signing into our platform for the first time will create the user's Codecraft account.

3. After the student logs into our platform, they will be forwarded to their Dashboard, which will display personal web projects, game projects, and programs they're enrolled in. These areas will be empty until you complete the next step.

4. Go to the Redeem Program Code page at app.codecraftworks.com/programs/redeem. Enter the appropriate **Program Code** for your category of choice (as shown in the table above) into the Program Code field and click Redeem. Be a bit patient if it takes a minute for the system to set you up the first time.

5. The student will be redirected to the program page.

6. **To navigate back to the program after completing the first-time setup**, students will only need to log in using their email accounts and click the program tile under the "My Programs" tab on their Dashboard.

Competition Project Requirements

1. Projects can be created by a single student creator or team of up to 2 students working together.

2. Entries **must be ORIGINAL works created by the team or individual** submitting the entry.

3. If an entry incorporates music, sound, text or images, you must own the rights to use that material, or provide creative commons attribution in the project "Notes & Credits" section in Scratch or the "Read Me" section in a Codecraft Works web, Python, or Java project.

4. No violence or simulation of violence. Use your programming powers for good or positive change!
5. Project content is limited only by your imagination, ability to plan and demonstration of your programming ability.
6. All projects must have clear, precise and appropriate Title, Instructions, and Notes or Credits.

Judging

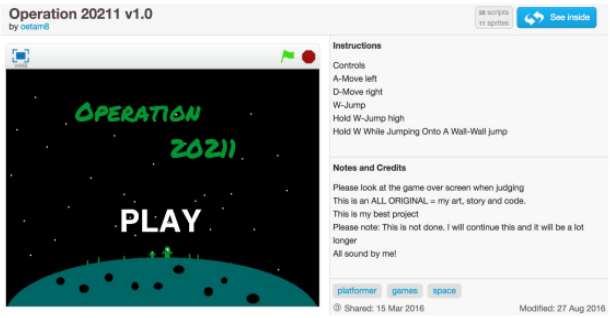
Elementary Scratch Programming

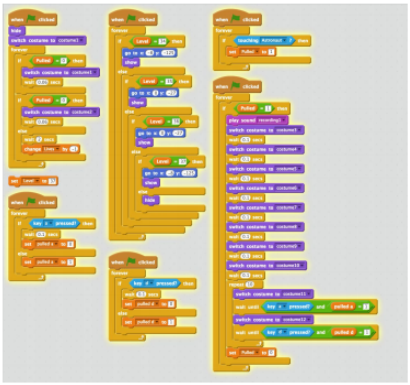
This year's project prompt is the following:

Research scientific discoveries, inventions, and innovations achieved by people in science, technology, engineering or math (STEM) fields. Create an original, informative, and compelling game or web story reflecting on the innovation and its impact on society.

- Each entry will be reviewed by a panel of at least two judges and scored for its engagement, artwork, use of digital media, use of computer science concepts, originality, and completeness. The score sheets below will be used by the Judges during the competition.

- The decisions of the judging panel are final and no correspondence will be entered into. The scorecard sample below will be online as a digital form and made available to each judge for use as they review the projects.





Scratch Rubric				
				Points
Content				
	1 2 3	4 5 6	7 8 9 10	
Engagement				
	1 2 3	4 5 6	7 8 9 10	
Artwork & Digital Media (Sound/Animation)				
	1 2 3	4 5 6	7 8 9 10	
Coding / CS Development				
	1 2 3	4 5 6	7 8 9 10	
Originality				
	1 2 3	4 5 6	7 8 9 10	
Completeness (Testing / QA)				
	1 2 3	4 5 6	7 8 9 10	

Totals				

Middle School and High School Web Programming

This year's project prompt is the following:

Research scientific discoveries, inventions, and innovations achieved by people in science, technology, engineering or math (STEM) fields. Create an original, informative, and compelling game or web story reflecting on the innovation and its impact on society.

- Each entry will be reviewed by a panel of at least two judges and scored for its content, engagement, design, use of computer science concepts, originality, and completeness. The score sheets below will be used by the Judges.

- The decisions of the judging panel are final and no correspondence will be entered into. The scorecard sample below will be online as a digital form and made available to each judge for use as they review the projects.

Web Development Rubric				
				Points
Content				
	1 2 3	4 5 6	7 8 9 10	
Engagement				
	1 2 3	4 5 6	7 8 9 10	
UX / Frontend Design				
	1 2 3	4 5 6	7 8 9 10	
Coding / CS Development				

	1 2 3	4 5 6	7 8 9 10	
Originality				
	1 2 3	4 5 6	7 8 9 10	
Completeness (Testing / QA)				
	1 2 3	4 5 6	7 8 9 10	
Totals				

High School Python Tic-Tac-Toe

- Players' programs will be randomly matched against each other in a bracketed tournament. There will be multiple games of tic-tac-toe per matchup.
- The victor of a matchup will be whoever wins the most games. In the event of a draw, the Player that ran most efficiently (i.e. least amount of time to execute) will be the winner. Winners will advance through the bracket until there is a single Player left standing.
- "Player" matches will be run through our interface. (Details about the interface can be found in Codecraft's Tic-Tac-Toe program. See the "Joining Competition Category Programs" section above for help joining your program of choice)
- If a Player submits an invalid move, their turn will be skipped. If a single game lasts more than a certain amount of turns (in excess of 9), the Player that ran most efficiently will be the winner.
- If a Player program fails to submit a move, crashes, gets stuck in an infinite loop, or fails to compile, they will be disqualified.