



MINECRAFT MAKERS COMPETITION 2021

Theme

SUSTAINABLE CITY



AGE GROUPS

8 – 10 yrs
11 – 15 yrs



TEAMS

1 – 3 members



STREAM EDUCATION

Competition Manual

Created by STEMA Training and Development Center, MMC Committee

TABLE OF CONTENTS

Introduction

About the Competition -----	1
2021 Theme: Sustainable City-----	2
Learning Outcomes -----	2

Minecraft Makers Competition 2021

Competition Description -----	3
World Template -----	3

Design Criteria ----- **4**

Coding Criteria ----- **7**

Participation Rules ----- **8**

Participants' Approach ----- **9**

Submissions ----- **9**

Awards and Prizes ----- **10**

Training Sessions ----- **11**

Schedule ----- **11**

Terms and Conditions ----- **12**

KEY WORDS

Team

Comprising of Team member/participant and Team Supervisor

Team Member

Students registered under the same team, working towards the design collaboratively.

Team Supervisor

An educator, instructor, parent and/or guardian of team member(s).

Design

Referred to the sustainable city built and coded in the provided world template.

Submission

Any form of submissions including, design, pictures, videos and presentation.

Competition Resources

Any form of shared material on the website, social media platforms or email.

Elements of Sustainability

This document refers to the three main elements of sustainability; social, economic and environmental

INTRODUCTION



About the Competition

Minecraft Makers Competition aims to provide an opportunity to young minds and Minecraft-enthusiasts to obtain research skills, demonstrate their creativity, and learn the joy of coding, as an individual or a team. This is a skill-based competition held for two different age groups.

2021 Theme: Sustainable City

Sustainability is often represented diagrammatically. The figure on the right of this page suggests that there are three main elements of sustainability – economic viability, environmental protection and social equity.



AGE GROUPS
8 – 10 yrs
11 – 15 yrs



TEAMS
1 – 3 members



STREAM EDUCATION

LEARNING OUTCOMES

- Participants will add their own imagination to transform the allocated space into a Sustainable city; all while honing their 3D modeling, design, coding, and STEM skills.
- Participants will explore the various components of the eco-friendly city.
- Participants will realize the need for a sustainable future.
- Participants will collaborate and plan the creation of smart sustainable city.
- Participants will gain knowledge about the Sustainable Development Goals.
- Participants will gain knowledge about intelligent systems and how to write algorithmic code to run the systems.
- Participants will enhance their communication, collaboration and teamwork skills.

SUSTAINABILITY

Sustainability is usually defined as the processes and actions through which humankind avoids the depletion of natural resources, in order to keep an ecological balance that doesn't allow the quality of life of modern societies to decrease.

Social Sustainability



Social sustainability focuses on balancing the needs of the individual with the needs of the group. It focuses on maintaining and improving social quality with concepts such as cohesion, reciprocity and honesty and the importance of relationships amongst people to ensure that the social wellbeing of a country, an organization, or a community can be maintained in the long term.

Environmental Sustainability



Environmental sustainability aims to improve human welfare through the protection of natural capital (e.g. land, air, water, minerals etc.). Initiatives and programs are defined environmentally sustainable when they ensure that the needs of the population are met without the risk of compromising the needs of future generations. Environmental sustainability, as described by Dunphy, Benveniste, Griffiths and Sutton (2000), places emphasis on how business can achieve positive economic outcomes without doing any harm, in the short- or long-term, to the environment.

Economic Sustainability



Economic sustainability aims to maintain the capital intact. If social sustainability focuses on improving social equality, economic sustainability aims to improve the standard of living. In the context of business, it requires that a business or country uses its resources efficiently and responsibly so that it can operate in a sustainable manner to consistently produce an operational profit. Without acting responsibly and using its resources efficiently a company will not be able to sustain its activities in the long term.

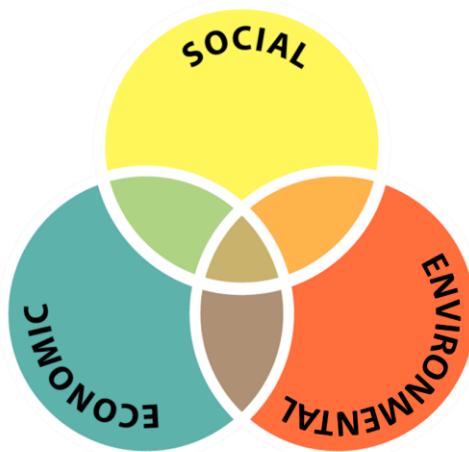


MINECRAFT MAKERS COMPETITION 2021



Competition Description

Participants are challenged to build a sustainable city that runs on technology that has a safe impact on our environment and can provide its residents with all the necessities in terms of housing, communication, transportation, education, wellbeing, etc. while considering the three main elements of sustainability.



World Template

Use the provided world template to build and code your design.

To get the template, please visit: <https://www.stema-center.com/mmc>

DESIGN CRITERIA

Participants' design must contain the following:

Irrigation system

Irrigation means the watering of land to make it ready for agriculture. It is the process of application of water to crops through artificial channels to grow them. Water is vital for the growth of plants. There can be no plants or crops if they do not have access to water in some form. It is, thus, crucial to supply water to crops and plants in time as per their need.

Challenge 1:

Design an irrigation system that is environmental-friendly and involves the latest techniques to irrigate a field or land.



Smart transportation

Sustainable Transportation refers to any means of transportation that has low impact on the environment. Sustainable transportation is also about balancing our current and future needs. Examples of sustainable transportation include walking, cycling, transit, car sharing, public transportation and green vehicles.

Challenge 2:

Design a transportation system or transport vehicle that can be replaced with traditional modes of transportation in one of the following category; private, public or commercial use.

Artificial Intelligence

Artificial Intelligence (AI) is a branch in computer science that is concerned with the intelligent behavior of machines. It is the resourceful ability of a machine to simulate human behavior and their routine response patterns.

Challenge 3:

Design a solution that involves the Minecraft agent in solving a problem in the sustainable city that can be automated. Use code to let the agent intelligently adapt to the city layout. Example: Tour guide, finding important buildings/places, building a road by navigating the landscape, finding way out of a public place, etc.



Renewable Energy: Solar Panel

Solar energy is the technology used to harness the sun's energy and make it usable. Solar panels convert the sun's light into usable solar energy using N-type and P-type semiconductor material. When these materials absorb sunlight, the solar energy knocks electrons loose from their atoms, allowing the electrons to flow through the material to produce electricity.

Challenge 4:

Research and design smart ways of incorporating solar panels throughout the city.

Advanced City

Cities that have a forward-thinking approach to technology, architecture and the environment. It is easily accessible and provides all necessities necessary: source for economics as well as efficient work processes for the population. Innovation is key, delivering new ideas that push traditional boundaries and wow visitors.

Challenge 5:

Research and design all of the necessities of daily life. Including, but not limited to, parks, hospitals, communication centers, etc. in your sustainable city.



Sustainable Development Goals

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face. The UAE has put forward 17 such sustainable goals ranging from ending poverty, hunger and inequality, to taking action on climate change, improving access to health and education and committing to building stronger institutions.

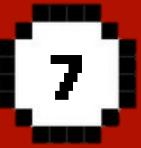
Bonus Challenge:

Research and incorporate any two of the UAE sustainable development goals in your design.

SUSTAINABLE DEVELOPMENT GOALS



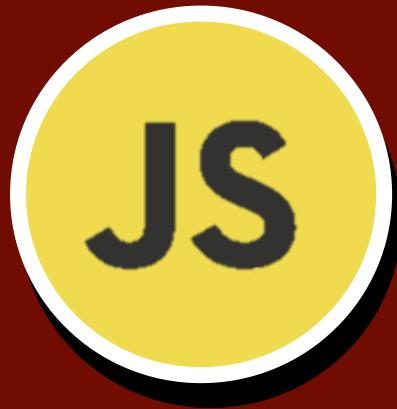
CODING CRITERIA



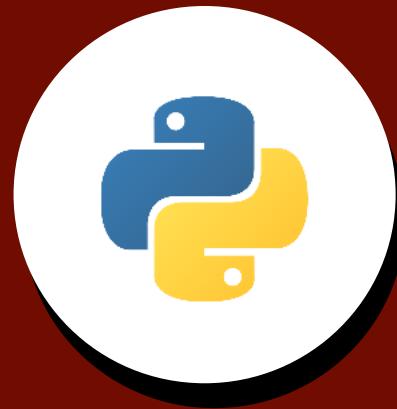
Participants can use **any one (1) of the following** languages within the Minecraft Education software to code their design or add coding to solve the challenges:



Microsoft MakeCode
(Block based)



JavaScript
(Script)



Python
(Script)



Platform (Software) Details

The competition requires the participants to use Minecraft: Education Edition to build and code the design. Minecraft Education edition is a game-based learning platform that builds skills, unleashes creativity and engages students in collaboration and problem solving.



Code Builder

The Code Builder is a feature available within the software that allows users to create and add modifications to their builds.

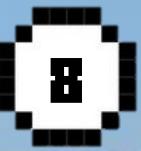
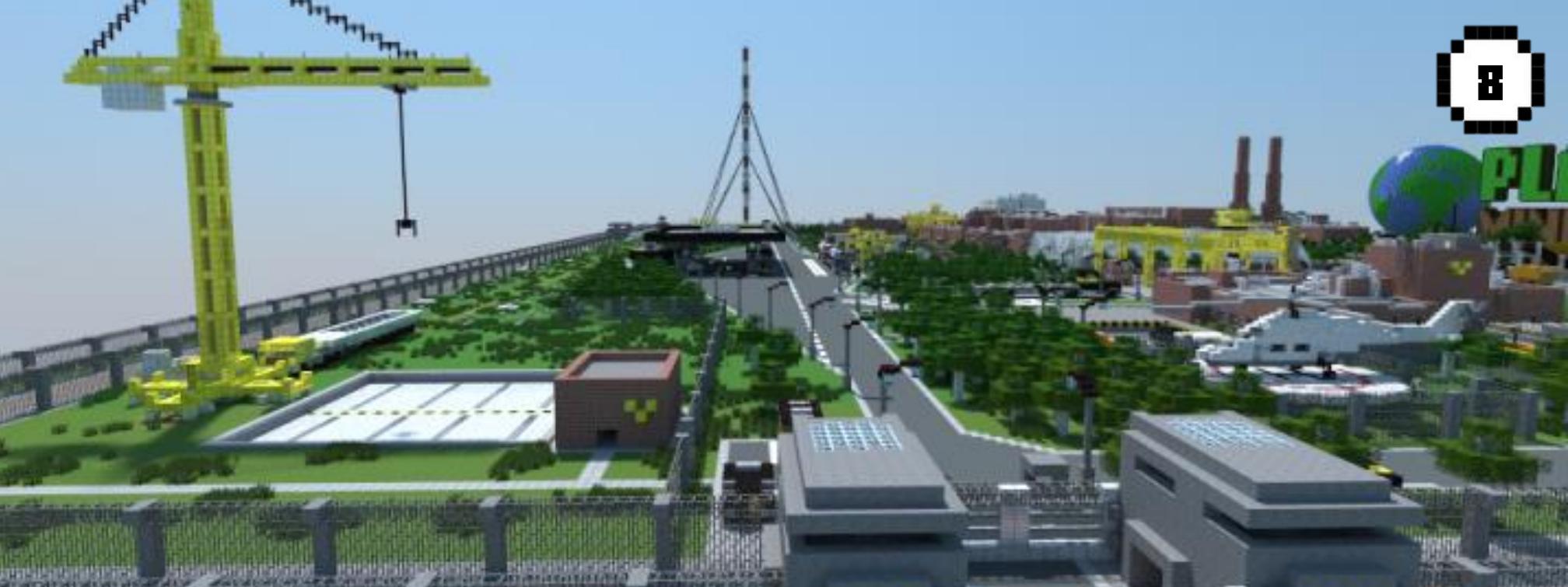


Get Software

The software can be downloaded for Windows, Chromebook or Apple products from the link below:

<https://education.minecraft.net/get-started/download>





PARTICIPATION RULES

- Age group: 8 – 10 & 11 – 15 years (anyone who falls under this age group until the date of the competition)
- Participation: Open for all (homeschool, school students, etc.)
- Type of participation: Teams must include a minimum of one (1) member and maximum of three (3) members.
- Each Team must have a “Team Supervisor” that will guide and instruct the Team Members and will submit the entries for each of their student teams.
- A Team supervisor may be an educator, instructor, parent and/or guardian of member(s).
- Each person may only be a Team Member of one (1) team.
- On the other hand, Team Supervisor can supervise more than one team simultaneously and will be responsible for the submissions from the undertaken teams.

PARTICIPANTS' APPROACH

Step 1: Register your team on <https://www.stema-center.com/mmc>

Step 2: Attend all important sessions such as: Webinar, Orientations, Minecraft Course (only for enrolled members), etc.

Step 3: Download all the available resource material from the website including, competition manual, Minecraft World template, PowerPoint template, etc.

Step 4: Research and understand the theme and the challenges.

Step 5: Start building and coding in the given World Template.

Step 6: Prepare a presentation by using the provided PowerPoint template.

Step 7: Submit all the work before the submission deadline.

Step 8: Present (Live) your PowerPoint in front of the Judging Panel.

Step 9: Attend the Award Ceremony to know the results.



SUBMISSIONS

Team submission must include the following:

1. **Video screen-recording of the team giving a tour of the design** (maximum length 5 minutes)
2. **Minecraft Education 'World' file** (The same template world used by the team to build and code)
3. **PowerPoint file** (Use the provided ppt template to make your presentation)
4. **Other videos or pictures may be required for 'People's choice award'**

To get the World template and PowerPoint template, please visit:

<https://www.stema-center.com/mmc>



Champions	1st highest score <i>(one winner will be considered from each age category)</i>
Runner-Up	2nd highest score <i>(one winner will be considered from each age category)</i>
Best Presentation Award	Best presentation submitted and presented
Best School Award	Highest number of registered teams from a school
Girls Power Award	The highest score attained by an all-girls team. <i>(This award category does not involve the Champions and Runner-up)</i>
People's Choice Award	Highest likes gained on the team's design picture(s)/video <i>(Teams must fill up the People's Choice Award participation form and submit it along with the media files in order to participate for this award category before the mentioned deadline on the form. To get the form, visit www.stema-center.com/mmc)</i>

PRIZES

Champions	Champion medal for each team member Minecraft merchandize for each team member <i>(Visit competition website for more details)</i> STEMA course discounts 100%
Runner-Up	Runner-Up medal for each team member Minecraft merchandize for each team member <i>(Visit competition website for more details)</i> STEMA course discounts 50%
Best Presentation Award	Best Presentation Award Trophy presented to the team
Best School Award	Best School Award Trophy presented to the school
Girls Power Award	Girls Power Award Trophy presented to the team
People's Choice Award	People's Choice Award Trophy presented to the team

Participation Certificate will be awarded to all the team members of all the participating teams.

ORIENTATION SESSIONS

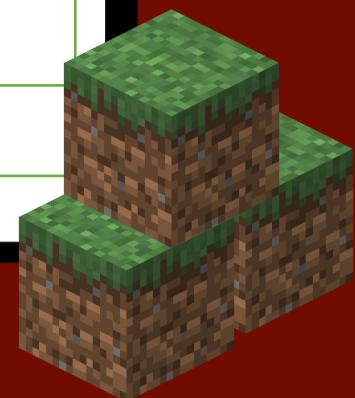


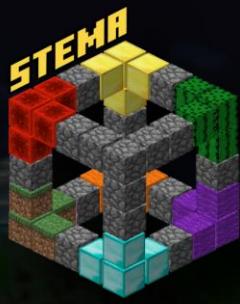
The Free 2 orientation sessions will include:

- Steps to download the software
- How to utilize the provided competition resources
- Explanation of all important aspects of the Competition: Challenge description, design criteria, etc.
- Introduction to Minecraft platform; basic controls & navigation tools
- Detailed run-through of the submission criteria

SCHEDULE

Agenda	Target Period
Registration Opens	15 th January 2021
End of Registration	28 th of February
2 Orientation Sessions	5 th and 6 th of March
5 Training Sessions (Optional)	12 th , 13 th , 19 th , 20 th , and 25 th of March
Submission	22 nd of May
Judging	28 th and 29 th of May
Award Ceremony	5 th of June





MINECRAFT
MAKERS COMPETITION

12

TERMS AND CONDITIONS

1. By registering for the competition, Teams accept these terms and conditions along with any specific instructions and terms mentioned in any electronic message, website or communicated to participants in any other way.
2. Team details cannot be modified or amended once registration confirmation is received. This includes team name, team members, and team supervisor.
3. Teams must provide a copy of UAE Emirates ID card/passport of all team members upon receiving an official email from STEMA Center.
4. No late submissions will be entertained.
5. The dates related to the competitions might be changed or modified at any time by STEMA Training and Development Center based on circumstantial consideration.
6. Teams warrant that, they are the owner of the submitted work, presentation, photos, etc.
7. Winners are determined based on the judging criteria's and will be declared by the judging panel.
8. Teams are only entitled to receive the prizes mentioned for the specific award (*refer to awards section, page 10*)
9. In case of deferral from teams, registration fees/course fees will not be refunded by STEMA Training and Development Center for any reason.
10. STEMA Training and Development Center's decision on all matters relating to the Competition is final. No correspondence will be entertained.
11. STEMA Training and Development Center will notify the winner when and where the prize can be collected from or delivered to.
12. STEMA Training and Development Center cannot warrant that the services related to the competition will be free from errors or omissions due to system failure or maintenance.
13. For any inquiries or questions, visit our website www.stema-center.com/mmc or contact STEMA Training and Development Center directly.