

## **NTX FUTURE CITY JUNIOR COMPETITION (2022-2023) 4-5TH GRADE RULES AND PROGRAM DESCRIPTION**

The North Texas Regional Future City Junior Competition is a STEAM project-based learning program for 4<sup>th</sup>-5<sup>th</sup> grades where students imagine, research and model a solution to a real-world problem in a city 100 years in the future. It is an abbreviated version of the award-winning Future City Competition for middle-schoolers. Components of the Junior Program include a research essay and a physical model of the city's solution to the annual challenge.



2022-2023 Challenge: *Climate Change*. Develop an innovative solution to answer the challenge of climate change on your future city.

Rules and description of the project scope follow. For complete details, consult the NTX Junior Team Center: [http://www.dfwfuturecity.org/team\\_junior.html](http://www.dfwfuturecity.org/team_junior.html).

### **REGISTRATION:**

Schools and youth organizations with 4-5<sup>th</sup> grade students may register through 31 October by completing the online form at <http://futurecity.org>. There is no registration fee for the Junior Competition.

### **TEAMS:**

The students will work in teams. Teams consist of three 4-5<sup>th</sup> grade students, an educator and an engineer-mentor. (For suggestions on finding mentors, see: [https://www.dfwfuturecity.org/team\\_mentor.html](https://www.dfwfuturecity.org/team_mentor.html).)

- Students must be from the same organization, but not necessarily the same class or grade.
- Organizations with large groups may either
  - Enter multiple teams (maximum number of teams TBD at this time), or
  - Work as a class or large group prior to the model showing but must select the three students (one team) that will represent the group.

### **PART 1**

#### **RESEARCH ESSAY: CLIMATE CHANGE**

This component will describe the team's solution to the annual challenge: Climate Change: design a futuristic 1) climate change adaptation (adjust to climate change by reducing harmful impacts) and 2) mitigation technique (reducing greenhouse gases) to keep the future city residents healthy and safe.

Download the Essay Requirements from the Junior Team Center

([http://www.dfwfuturecity.org/team\\_junior.html](http://www.dfwfuturecity.org/team_junior.html)) for a complete description. Briefly, the essay should:

- Introduce the team's city – at least 100 years in the future.
- Describe what the city and life was like in the past and the effects climate change had on your city.

- Choose one climate change effect and describe
  - One adaptation solution – using technology to reduce the harmful impact of climate change
  - One mitigation technique – using technology to reduce greenhouse gases.
- Contain no more than 1000 words.

Refer to the Essay Requirements document for a Suggested Outline and the FC Junior Essay rubric.

The essay is due 2 December 2022. Late submissions will be accepted (with penalty points deducted) through 9 December 2022.

## **PART 2**

### **PHYSICAL MODEL**

Download the requirements for this component in the Model Requirements document in the Junior Team Center ([http://www.dfwfuturecity.org/team\\_junior.html](http://www.dfwfuturecity.org/team_junior.html)). Briefly, the Physical Model should:

- Be built to scale (scale chosen by the team).
- Illustrate the team’s concept of their future city.
- Be focused on demonstrating the solution to the challenge: Climate Change.
- Not exceed the total of \$50 cost of materials. The total value of the materials used must be reported on the Competition Expense form.
- Be no larger than 25” (w) x 36” (l) x 20” (h).

To accommodate both in-person and virtual learning environments, there are two model building options for the 2022-2023 competition.

- Option 1: Your team can choose to build one single model
- Option 2: Your team can choose to build multiple model segments. These model segments are separate pieces that represent various sections of the city. Model segments do not need to fit together physically.
- In either case, the complete model can be no larger than 25” (w) x 36” (l) x 20” (h).

Model Judging:

- The model will be judged using the Junior Model rubric.
- Judging will take place at the NTX Regional Competition (tentatively 28 January 2023).
- Team of students (max 3) will stand with their model during judging to answer any questions and *briefly* explain their model, their future city, and their solution to the annual challenge (climate change). No formal presentation is required or expected.
- Judges will spend approximately 5 minutes with each model display.
- Adults (educators, mentors) may observe, but are not allowed to participate.

Refer to the Model Requirements document for the Junior Model Rubric.

### **PROGRAM HANDBOOK:**

The Future City Competition program handbook has been written for the middle-school program (available to registered participants only) and is a valuable guide for the teaching/leading the project. Download a copy from the Educator Dashboard (<https://dashboard.futurecity.org>). The Junior program has been simplified somewhat from the complete middle-school program described in the handbook. Specifically, for the Junior Competition:

1. The Project Plan is NOT included in the Junior program.
2. There will be no formal oral City Presentation. However, the student team-members will have the opportunity to talk to the judges. See Model Judging information.

3. The Essay is shortened such that it need not include a detailed description of the city and the maximum word count is 1000.
4. The Model, likewise, is simplified to be smaller in size, focused primarily on demonstrating the annual theme, and to cost no more than \$50.

Keeping in mind these changes from the middle-school program, the Program Handbook contains elements that might be useful for leading the Junior program:

1. The following sections are helpful in getting started:
  - a. Preparing to Lead and Preparing your Students (p. 49)
  - b. Introduce Engineering and The Engineering Design Process (p. 49-50)
  - c. Activities on Teambuilding and Brainstorming (website resources)
2. You might also find these activities useful:
  - a. Project planning - setting goals and monitoring progress
  - b. City planning - learning the elements of what makes a good city beyond the basic questions posed by the annual challenge.

### **REQUIRED FORMS:**

1. Honor Statement
2. Media Waiver
3. City Model Expense form (max expense = \$50)
4. Model ID card (attached to model)

### **NTX COMPETITION MANAGEMENT SYSTEM:**

There are two online systems for Future City:

1. Educator Dashboard (<https://dashboard.futurecity.org>). We will only be using this system for registration and downloading resources as needed for the Junior competition.
2. NTX Competition Management System (<https://secure.dfwfuturecity.org/NorthTXJunior/Teachers>). This is the system we will be using for the majority of the competition – to create teams, upload essay and forms, and obtain scores following the competition.

### **JUDGING:**

The Essay and Model will be judged by multiple judges (technical professionals). The judges' scores for each deliverable will be averaged. Those average scores will be added together, less any penalties incurred, to come up with a composite-total score for each team. Prizes will be awarded based on those scores.

### **AWARDS CEREMONY AND ANNOUNCEMENT OF WINNERS**

The results of the NTX Future City Junior Competition will be announced during the Awards Ceremony at the Regional Competition event in late January. Scores for individual teams and deliverables will be available for educators to download from the Junior Team Center following the competition.

### **Prizes:**

- Future City Competition Junior will provide prizes for Best Essay, Best Model, and Best Overall Junior Team.
- Sponsors will also give out Special Awards recognizing accomplishments in various categories, such as: Green City, Energy Efficiency, etc.

**OTHER RULES:**

- Participants will comply with the basic rules of the Future City Competition program as laid out in the handbook and as modified herein.
- Deadlines will not be extended. Teams making submittals after the deadlines will receive penalty points.
- Any conflicts will be resolved locally. There is no appeal.
- The judges' decisions are final.
- Prizes are not transferable or exchangeable.