

FUTURE CITY COMPETITION – JUNIOR (2016-2017) 4-5TH GRADE RULES AND PROGRAM DESCRIPTION

The North Texas Regional is continuing the Future City Junior program for 4-5th graders. The Junior program is an abbreviated version of the full Future City Competition effort. It will include the research essay and the physical model deliverables. Rules and description of the project scope for the Junior program follow. Please note: this program is only available in North Texas at this time.

REGISTRATION:

Schools and youth organizations with 4-5th grade students may register by completing the form at: <https://www.dfwfuturecity.org/NorthTX/TeachBin/Teacher/Enroll>.

There will be no registration fee for the Junior Competition.

TEAMS:

The students will work in teams. Teams consist of three 4-5 grade students, an educator and an engineer-mentor. (For suggestions on finding mentors, see: https://www.dfwfuturecity.org/team_menfind.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 (there will be a TBA limit to the number of teams and models shown at UTA), 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 at the competition.

DELIVERABLE #1

RESEARCH ESSAY: THE POWER OF PUBLIC SPACES

This component (equivalent to the City Essay) will be as described in the Program Handbook (pages 25-26, 37, 57-62 *except*

- Pages 25-26 (Learn the Specs) and page 81-82 (Rules):
 - The maximum word count should not exceed 1000 words.
 - Essay only needs to include a detailed account of how the city converted ONE area – either a roadway or greyfield (the brownfield requires hazardous waste cleanup and will not be part of the junior problem).
- Page 37, 62 (Suggested Outline): see attached essay outline. Note that only a basic overview of the city is required rather than the detailed description in Part 2: A Closer Look.
- Pages 70-72 (City Essay Rubric): see attached rubric for FC Junior Research Essay.

Please review and use the information and research suggestions in the handbook appendix, pages 57-61.

The essay will be judged using the attached rubric. It is due 2 December 2016. Late submissions will be accepted (with penalty points deducted) through 19 December 2016. Submit the essay in electronic form, in a common file format (.doc or .pdf), by uploading to the Junior Team Center (http://www.dfwfuturecity.org/team_junior.html).

DELIVERABLE #2

PHYSICAL MODEL:

This component will be as specified in the Program Handbook, *except*

- Pages 27-28 (Learn the Specs) and page 81-82 (Rules):
 - Model size will be no bigger than 25" (w) x 36" (l) x 20" (h).
 - Model will be focused on demonstrating the theme/essay topic: Power of Public Spaces.
 - The total value of the materials used may not exceed \$50 and must be reported on the Competition Expense form.
- Pages 73-75 (Model Rubric): see attached rubric for FC Junior Scale Model.

Also review the information on City Maps and Scale on pages 39-40; and Model Construction on pages 63-64.

Model Judging:

- The model will be judged using the modified rubric attached.
- Judging will take place at UTA on the same date as the NTX Regional Competition (tentatively 28 January 2017).
- Team of students will stand with their model during judging to answer any questions and *briefly* explain their research solution (public spaces). No formal presentation is required or expected.
- Judges will spend approximately 5 minutes with each model display.
- Adults (parents, teachers, mentors) are not allowed to participate. They may stand quietly (out of the way, along the walls) and observe.

REQUIRED FORMS:

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

PRIZES:

- Future City Competition Junior will provide prizes for Best Essay, Best Model, and Best Overall Junior Team. Depending on sponsorship, we will also give out Special Awards.
- Prizes will consist of a cash award, gift cards for the students and a plaque/certificate.
- Prizes will be presented during the Future City NTX Regional Awards Ceremony later the same day.

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.

SUGGESTED ESSAY OUTLINE

NTX Future City Junior, 2017

In the Research Essay, you will share your vision of your future city and your solution to the public spaces challenge.

You can use the following outline as a guide to help you organize and draft your essay.

Introduction

Briefly introduce your future city by including basic information people should know, such as your city's name, population, age, and location. Include any unique features of your city – what makes your city futuristic and innovative.

Define the problem

Describe what the public space looked like before you made improvements.

Explain what problems (environmental, social, traffic congestion, etc.) your city solved by developing a futuristic public space. For example, were there places that didn't have anywhere for people to relax and children to play? Were there parts of the city that were disconnected because of a freeway or an old railroad station? Was there a lot of crime and pollution by a river or downtown?

Describe Your Solution

Provide a description of how your city redeveloped either a roadway or a greyfield into a new public space. Areas you should address:

- Description of the space after the renovation, including any new infrastructure created
- Technologies used for the renovation
- The benefits, drawbacks, and tradeoffs of renovating and creating the new public space
- All the new (plausible) innovative and futuristic features of the space
- How the new public space solves the environmental, social and other problems
- How people will use the space and how it will improve their quality of life
- The types of engineering and the roles of engineers in creating the new space

Conclusion: Summarize Your City and Your Solution

Summarize how your public space makes your city a great place and has influenced peoples' lives and attitudes about their city.

Essay Rubric (FC Jr.)

	0 No Points Requirements missing	1 POOR Poor-Fair quality. Fulfills less than 50% of requirements.	2 GOOD Average-Above average quality. Fulfills at least 90% of requirements.	3 EXCELLENT Excellent quality. Fulfills 100% of requirements with additional distinctive features.
I. INTRODUCE CITY AND DEFINE THE PROBLEM (9 points)				
1. City overview • Introduce city: location, geography, climate, development, etc.	No description of city	Brief description of city.	Good description of the city.	Detailed description of city.
2. Features and innovations • Attributes or features that make this city unique	No description of unique features.	Brief description of unique features.	Good description of unique features.	Detailed description of unique features.
3. Physical description of the area before the public space renovation	No description of area.	Brief description of area	Good description of area.	Detailed description of area.
4. Describe the problem to be solved by the new public space	No description of any problems.	Brief description of one problem	Good description of two problems.	Detailed description of two or more problems.
III. SPECS AND SOLUTION (21 points)				
5. Discuss some of the requirements for the solution	No discussion of requirements	Brief description of one requirement.	Good description of two requirements.	Detailed description two or more requirements.
6. Describe the solution • One example of redeveloped public space, either roadway or greyfield	No description of solution	Brief description of solution	Good description of the solution	Excellent description of solution
7. Description of physical improvements to area after renovation • Infrastructure improvements • Improvements to health, happiness, safety of citizens	No description of improvements	Brief description of improvements	Good description of improvements and infrastructure	Excellent description of improvements and infrastructure
8. Impact of public space on environment and other areas • Environmental impacts, social or other issues • Improvements to health, happiness, safety of citizens	No description of improvements	Brief description of improvements in either environment or citizen health/happiness	Good description of improvements in environment and citizen health/happiness	Excellent description of improvements in environment and citizen health/happiness.
9. Describe technology involved	No description of technology	Brief description of technology	Good description of the technology	Excellent description of technology
10. Tradeoffs & compromises • Benefits, drawbacks, risks • Tradeoffs & compromises • Positive and negative impacts	No discussion of benefits, risks or tradeoffs	Brief description of at least one benefit, risk and/or tradeoff.	Good description of benefits, risks and tradeoffs or compromises	Excellent description of benefits, risks and tradeoffs or compromises for this solution.
11. Public usage & Quality of life	No discussion of how citizens use space or impact on quality of life	Some discussion of how citizens use space or impact on quality of life.	Good discussion of how citizens use space or impact on quality of life.	Excellent discussion of how citizens use space or impact on quality of life.
12. Engineering disciplines involved and role of 1-2 engineers	Engineering disciplines are not identified	Discusses one Engineering discipline or role of one engineer	Discusses more than one engineering disciplines and role of engineers	Good discussion of more than one engineering disciplines and roles of engineers

Essay Rubric (FC Jr.)

	0 No Points Requirements missing	1 POOR Poor-Fair quality. Fulfills less than 50% of requirements.	2 GOOD Average-Above average quality. Fulfills at least 90% of requirements.	3 EXCELLENT Excellent quality. Fulfills 100% of requirements with additional distinctive features.
IV. JUDGE ASSESSMENT OF SOLUTION (15 points)				
13. Effectiveness and quality of solution <ul style="list-style-type: none"> Effective solution to stated problems Clever design and application of technology Accounts for health, happiness and safety of citizens 	Not effective	Solution is fairly effective, technology and design can be better. Fair impact on citizens' health/ happiness.	Solution is effective, but technology and design could be improved. Good impact on citizens' health/ happiness.	Solution is a highly effective, with excellent technology application with high impact on citizens' health/ happiness.
14. Innovative and futuristic solution <ul style="list-style-type: none"> Reasonable extrapolation and application of technology 	Not innovative or original	Somewhat original or innovative. Not futuristic.	Solution is innovative, original and somewhat futuristic.	Solution is highly innovative, original and futuristic.
15. Plausibility of solution <ul style="list-style-type: none"> Based on sound scientific principles 	Implausible or not scientifically sound	Solution is not very plausible (science fiction)	Solution is somewhat plausible	Solution is highly plausible and scientifically sound
16. Tradeoffs & compromises <ul style="list-style-type: none"> Accounting for risks, benefits Assessing consequences and making logical decisions 	Does not explore tradeoffs	Some consideration of tradeoffs, but ignores major issues.	Adequate assessment of tradeoffs, but analysis and decisions could be better.	Excellent assessment of risks, benefits, tradeoffs in the decision-making process.
V. WRITING SKILLS (12 points)				
17. Organization	Poorly organized	Fair organization	Good organization	
18. Writing skills	Poor writing	Fair writing	Good writing	
19. Grammar & spelling	Many errors	Some errors	Few, if any, errors	
20. Maximum number of Graphics <ul style="list-style-type: none"> If used, max of 4 (does not include tables) 	Exceeds maximum of 4 graphics, illustrations		Does not exceed maximum of 4 graphics and/or illustrations	
21. List of references <ul style="list-style-type: none"> At least three acceptable references Wikipedia not recognized as an acceptable reference 	No references	Less than three acceptable references	At least three acceptable references	
22. Word count <ul style="list-style-type: none"> Does not include title, references 	No word count at end of document or inaccurate count		Accurate word count at end of document	

Within maximum number of words: 1000

Yes

No

Scale Model Rubric (FC Jr.)

	0 No Points Re- quire- ments missing	1 POOR Poor-Fair quali- ty. Fulfills at least 20% of requirements.	2 FAIR Fair-Average quality. Fulfills at least 50% of requirements	3 GOOD Average quality. Fulfills at least 90% of require- ments.	4 VERY GOOD Above average quality. Fulfills 100% of re- quirements.	5 EXCELLENT Excellent quality. Fulfills 100% of requirements. Additional dis- tinctive features.
I. CITY DESIGN (15 POINTS)						
1. Model demonstrates theme: Public Spaces <ul style="list-style-type: none"> Incorporating essay topic/theme into model Solutions for public space renovations 	No illustration of theme.	Little illustration of problem or solution.	Some illustration of problem and attempt at solution.	Fairly good illustration of public space solution.	Good overall illustration of the public space solution. Could be more comprehensive.	Excellent illustration and overall solution for public space problem.
2. City Representation <ul style="list-style-type: none"> Includes clearly recognizable city elements and identifiable structures 	No recognizable structures.	Elements and structures unclear. Little variety.	Elements and structures somewhat clear. Little variety.	Elements and structures clear. Some variety.	Elements and structures clear and some variety. But, could be more comprehensive.	Elements and structures form clear representation of city. Very good variety.
3. City Infrastructure and Services <ul style="list-style-type: none"> Includes infrastructure and services essential to support the theme (public spaces) 	No infrastructure or services.	Shows very little infrastructure and services.	Few infrastructure or service components.	Some infrastructure and services.	Several infrastructure and services. Not all essential theme.	Several infrastructure and services essential to theme.
II. BUILD IT: QUALITY AND SCALE (15 points)						
4. Quality Workmanship and Age Appropriateness <ul style="list-style-type: none"> Age appropriate for 4-5th grade Quality construction Reasonably durable 	Poor quality. Not age appropriate.	Mediocre quality.	Fair to good quality.	Good quality. Age appropriate.	Very good quality. Age appropriate.	Excellent quality. Age appropriate.
5. Appearance <ul style="list-style-type: none"> Use of color, graphics, shapes, etc. Realistic elements (flora, fauna, landscapes) Good use of available space 	No aesthetics.	Poor aesthetics.	Fair aesthetics.	Good aesthetics enhance the model.	Very good aesthetics enhance the model.	Excellent aesthetics enhance the model.
6. Model Scale: _____ <ul style="list-style-type: none"> Appropriate scale chosen to create a good city model Consistent scale throughout model Applied horizontally and vertically 	Scale not used.	Inconsistent scale for majority of model.	Fair scale choice. Some scale inconsistencies.	Good scale choice, city elements easy to identify. Scale consistently applied over majority of model.	Very good scale choice; city elements easy to identify. Consistent application.	Exceptional scale choice, city elements very easy to identify. Consistent application of chosen scale across entire model.
III. BUILD IT: MATERIALS AND MOVING PARTS (15 points)						
7. Innovative Construction Materials, Techniques <ul style="list-style-type: none"> Variety of materials, imaginative or unusual materials Creative modification and application of recycled materials Building materials primarily recyclables to comply with \$50 budget. 	No creativity or innovation.	Few recycled materials. Not within budget. Very few creative materials or modifications.	Recycled materials. Little creativity, variety. Little attempt to modify.	Recycled materials. Some variety of innovative materials. Some creatively modified.	Recycled materials. Good variety of innovative materials. Many creative modifications and applications.	Recycled materials. Exceptionally varied and innovative materials. Most creatively modified and applied.

Scale Model Rubric (FC Jr.) – cont'd

	0 No Points Re- quire- ments missing	1 POOR Poor-Fair quali- ty. Fulfills at least 20% of requirements.	2 FAIR Fair-Average quality. Fulfills at least 50% of requirements	3 GOOD Average quality. Fulfills at least 90% of require- ments.	4 VERY GOOD Above average quality. Fulfills 100% of re- quirements.	5 EXCELLENT Excellent quality. Fulfills 100% of requirements. Additional dis- tinctive features.
8. Moving Part Innovation and Quality <ul style="list-style-type: none"> At least one moving part Quality workmanship, durability Repeatability of movement Innovative execution 	No moving part.	One moving part. Fair quality. One time movement.	One moving part. Good quality. Little innovation.	At least one moving part. Good quality. Repeatable movement. Somewhat innovative.	At least one moving part. Very good quality. Repeatable movement. Innovative.	More than one moving part. Excellent quality. Repeatable movement. Highly innovative.
9. Moving Part Relationship to the Design or Function of the City <ul style="list-style-type: none"> At least one moving part Closely related to function of the city 	No moving part.	Moving part cosmetic; not relevant to city function.	Moving part not relevant to city function.	At least one moving part closely related to city function.	At least one moving part intrinsic to city function.	More than one moving part essential to city function.
IV. JUDGE ASSESSMENT OF DESIGN (15 POINTS)						
10. Innovative, Futuristic Solution <ul style="list-style-type: none"> Innovative solution to public spaces theme Futuristic, yet plausible and technologically sound 	No solutions	Poor solution, not innovative or futuristic.	Fair solution. Somewhat innovative and futuristic, but not real plausible.	Good solution. Somewhat innovative, futuristic and plausible.	Very good solution that is innovative and futuristic.	Excellent, innovative, futuristic and plausible solution.
11. Questions and answers <ul style="list-style-type: none"> Answers questions with confidence Accurate and complete answers 	No answers.	Answers a few questions accurately. No supporting facts.	Students answer at least 50% of the questions accurately, few supporting facts	Students answer 90% of questions with accuracy and some supporting facts.	Answers 100% of the questions accurately with some supporting detail.	Students fully, accurately, and confidently answer all questions with many supporting details.
12. Teamwork <ul style="list-style-type: none"> Team members supported each other Team members shared time equally Team members displayed an equal amount of knowledge Full complement of team members (three students) 	No teamwork.	A small amount of collaboration among team members but more support of one another is needed; one or two tend to dominate.	Some collaboration, some support and sharing among some team members. Amount of knowledge appears unequal. One or two tend to dominate.	Good collaboration; support and sharing among most members. Full complement of three team members. Some team members have more knowledge and dominate	Very good collaboration, support and sharing among the team. Equivalent knowledge level for most of team. Full complement of three team members.	Excellent collaboration, support and sharing among all team members. Equivalent knowledge level for all. Full complement of three team members. No one dominates.

Within maximum model size: 25" (w) x 36" (l) x 20" (h)

Yes No

Within maximum expense: \$50

Yes No