

FUTURE CITY COMPETITION – JUNIOR (2017-2018) 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 and a few other regions 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 AGE-FRIENDLY CITY

This component (equivalent to the City Essay) will be as described in the Program Handbook (pages 22, 56-63 *except*

- Pages 22 (Learn the Specs) and page 82-83 (Rules):
 - The maximum word count should not exceed 1000 words.
 - Essay only needs to include a detailed account of ONE solution to the identified age-related challenge that will allow senior citizens to be as active and independent as they want to be.
- Page 63 (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 64-66 (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 58-62.

The essay will be judged using the attached rubric. It is due 1 December 2017. Late submissions will be accepted (with penalty points deducted) through 19 December 2017. 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 22 (Learn the Specs) and page 82-83 (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: Age-Friendly Cities.
 - The total value of the materials used may not exceed \$50 and must be reported on the Competition Expense form.
- Pages 71-72 (Model Rubric): see attached rubric for FC Junior Scale Model.

Also review the information on City Maps and Scale on pages 31-32; and Model Construction on pages 67-70.

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 27 January 2018).
- Team of students will stand with their model during judging to answer any questions and *briefly* explain their research solution (age-friendly). 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 (attached to model)

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, 2018

In the Research Essay, you will share your vision of your future city and your solution to the age-friendly city 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 some of the typical challenges older adults face. Select one challenge and describe why this problem was important for your city to solve.

Describe Your Solution

Provide a description of how your city solved the problem and made the city more age-friendly for senior citizens. Areas you should address:

- Describe the solution, how it works and the engineering involved
- Emphasize the innovative, futuristic features of the solution
- Explain how your solution improves your citizens' ability to remain active and independent
- Include the benefits, drawbacks, and tradeoffs of the solution
- Provide examples of how the solution will benefit other citizens (not just older adults) and how it will improve the quality of life in general
- Explain the types of engineering and the roles of engineers involved

Conclusion: Summarize Your City and Your Solution

Summarize how your age-friendly solutions make your city a great place to live.

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. Description of some of problems faced by older adults	No description of problems.	Brief description of one problem	Good description of more than one problem.	Detailed description of a few problems.
III. SPECS AND SOLUTION (24 points)				
4. Describe selected problem	No discussion of problem	Brief description of selected problem.	Good description of selected problem.	Detailed description of selected problem.
5. Describe why the problem is important to solve	No discussion of importance	Brief discussion of why problem is important	Good discussion of problem's impact and why it is important.	Excellent description of problem's impact and why it is important for the city to solve.
6. Describe the solution • One innovative, futuristic solution to problem	No description of improvements	Brief description of improvements	Good description of improvements and infrastructure	Excellent description of improvements and infrastructure
7. Discuss impact on senior population • Ability to remain active and independent	No description of impact	Brief description of impact on senior citizens	Good description (some detail) of impact on senior citizens' ability to remain active and independent	Excellent description (many details) of impact on senior citizens' ability to remain active and independent
8. Describe technology involved • Innovative and futuristic	No description of technology	Brief description of technology	Good description of the technology	Excellent description of technology
9. Risks & tradeoffs • Drawbacks, risks • Tradeoffs & compromises	No discussion of risks or tradeoffs	Brief description of at least one risk and/or tradeoff.	Good description of at least one risk, how it is reduced and tradeoffs or compromises	Excellent description of risks, how they are reduced and tradeoffs or compromises for this solution.
10. Describe solutions benefits to citizens • Other citizens (not just seniors) • Enhances the quality of life in general	No discussion of how solution benefits other citizens or enhances quality of life.	Short discussion of how solution benefits other citizens and/or enhances quality of life.	Good discussion of how solution benefits other citizens and enhances quality of life.	Excellent discussion with more than one example of how solution benefits other citizens and enhances quality of life.
11. 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)				
12. Effectiveness and quality of solution <ul style="list-style-type: none"> Effective solution to stated problems Clever design and application of technology 	Not effective	Solution is fairly effective, technology and design can be better.	Solution is effective, but technology and design could be improved.	Solution is a highly effective, with excellent technology application.
13. Solution positive impact on citizens <ul style="list-style-type: none"> Positive impact on ability of seniors to remain active and independent Benefits all citizens, quality of life in general 	No benefit to citizens	Fair impact on senior citizens. Little or no impact on quality of life in general.	Good impact on seniors' ability to remain active, independent and on quality of life in general.	High impact on seniors' ability to remain active, independent and improve quality of life in general throughout city.
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)	0	1	2	3	4	5
1. Model demonstrates theme: Age-Friendly City <ul style="list-style-type: none"> Incorporating essay topic/theme into model Solutions for making city more age-friendly 	No illustration of theme.	Little illustration of problem or solution.	Some illustration of problem and attempt at solution.	Fairly good illustration of solution making city more age-friendly.	Good overall illustration of the age-friendly solution. Could be more comprehensive.	Excellent illustration and overall solution for making city more age-friendly.
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 (age-friendly city) 	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 age-friendly 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