

PROGRAM

Mini-Maker Space: Tallest Freestanding Tower



ORGANIZATION NAME

Herschell Carrousel Factory Museum

AVAILABLE FORMATS

- Performance
- Single Workshop
- Multi-Session
Residency Workshop
- Field Trip

GRADE LEVELS

- Pre-K
- K – 2nd
- 3rd – 5th
- 6th – 8th
- 9th – 12th

MAX NUMBER OF PARTICIPANTS

In-Person: 35
Virtual: 35

PROGRAM LENGTH

Single Workshop: 45 minutes
Field Trip: 90 minutes

PROGRAM DESCRIPTION

Students are presented with historical blueprints and are tasked with developing their own. Our virtual program entails an engineering challenge. In honor of our tallest ride ever built, The Sky Wheel, students must develop the tallest free-standing tower with only provided materials.

CURRICULUM STANDARDS

This program supports these NYS or Next Generation Learning Standards:

New York State Standards:

- CCLS – Math: 1.MD.2 Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.
- CCLS – Math: G.MG.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Next Generation Science Standards:

- K-2 ETS 1-1 Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.
- K-2 ETS 1-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.
- K-2 ETS 1-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
- 3-5 ETS 1-1 Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
- 3-5 ETS 1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

New York State Learning Standards for the Arts:

- VA:Cr1.2.5. Identify and demonstrate diverse strategies for artistic investigation to choose an approach for beginning a work of art.
- VA:Cr2.2.1. Demonstrate safe and proper procedures for using materials, tools, and equipment.
- VA:Cr2.2.2. Demonstrate safe procedures for using and cleaning art tools, equipment, and studio spaces.
- VA:Cr2.2.3. Demonstrate an understanding of the safe and proficient use of materials, tools, and equipment for a variety of artistic processes.
- VA:Cr2.2.4. Utilize and care for materials, tools, and equipment in a safe manner.
- VA:Cn11.1.2 Compare and contrast differently designed objects that have a similar function

Contact Arts for Learning WNY for more information.
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EDUCATIONAL OBJECTIVES

1. Students will be able to develop a tower that stands under its own volition.
2. Students will be able to plan a construction project by drawing a blueprint.
3. Students will be able to use a measuring implement to determine height.

LOGISTICS/EQUIPMENT

- tables and chairs are ideal

VOCABULARY

Design – a plan or drawing produced to show the look and function or workings of a building, garment, or other object before it is built or made

Outcome – the way a thing turns out; a consequence

Blueprint – a design plan or other technical drawing

Measurement – the size, length, or amount of something, as established by measuring

POST-PROGRAM ACTIVITIES & RESOURCES

Paper Bridges: <https://www.carrouselmuseum.org/carrousel-courier-jr/previous/2>

Resources:

- <http://blog.buffalostories.com/tag/allan-herschell-company/>
- https://www.sciencebuddies.org/science-fair-projects/project-ideas/CE_p027/civil-engineering/tallest-paper-tower-challenge
- <https://www.explainthatstuff.com/howbuildingswork.html>



ORGANIZATION DESCRIPTION

The Herschell Carousel Factory Museum, operated by the Carousel Society of the Niagara Frontier, is a premier national historic site and community resource for family recreation and learning that fosters an appreciation for the unique heritage of the carousel and related industries in the Niagara Region.



Arts for Learning WNY's mission is to inspire, expand learning, and strengthen our community through engagement with the arts.

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