21st CCLC STEM-Rich Afterschool Making Project

2019-2020 School Year

The Institute of Museum and Library Services (IMLS) is partnering with the U.S. Department of Education and New York Hall of Science to bring 21st Century Community Learning Centers program (21st CCLC) afterschool professionals and students an exciting science, technology, engineering, and math (STEM) opportunity. Science and children's museums in eight states will train a cohort of 21st CCLC afterschool educators on a six-hour STEM-rich maker curriculum. This curriculum will be implemented in fall 2019 and spring 2020 with two cohorts of 21st CCLC students. Students will have the opportunity to design, test, and redesign objects using affordable, readily available materials to integrate art, science, and technology during out-of-school time.

The collaboration with IMLS provides students a way to learn more about engineering, design, and technology by participating in the Maker program. The program allows students to make firsthand scientific observations as well as participate in hands-on activities to increase understanding of STEM in the real-world. Additional opportunities for the program include:

- 21st CCLC practitioners will receive professional development on how to implement a six-hour maker/STEM curriculum focusing on circuitry concepts.
- Students will build critical 21st century skills, including critical thinking, problem solving, and creativity.
- Access to online resources and ongoing technical support to cultivate a community of practice and support sustainability.

Why sites should participate

- Sites will receive professional development for your afterschool educators on how to implement a six-hour maker/STEM curriculum focusing on circuitry concepts.
- Students will build critical 21st century skills, including critical thinking, problem solving, and creativity.
- Science and/or Children's museum partners will provide all of the materials necessary to implement the program. (*Funding: no additional funding will be provided for this project.*)
- The science and/or children's museum will co-implement the program with one cohort of 15 students from each site in the fall and one cohort of 15 students in the spring to model best practices.
- Access to online resources and ongoing technical support to cultivate a community of practice and support sustainability.

Site responsibilities

- Assign one or two afterschool educators to participate in ongoing professional development with your science and/or children's museum partner throughout the school year. They must be able to:
    - Attend an initial two-day training on the maker curriculum
    - Attend a one-day reflection training mid-year
    - Participate in phone and virtual meetings
    - Lead and facilitate the six-hour program in the fall and spring
    - Participate in a half-day training at the end of the school year
- Coordinate and schedule the six-hour maker program with a cohort of 15 elementary-middle school students in fall 2019 and a new cohort of 15 students in spring 2020.
- Participate and assist in project evaluation activities, including interviews, collection of evaluation materials, consent forms and documentation of student work through videos or photos.

Tentative Timeline

Event	Tentative Dates
In-person, 2 Day Professional Development Training for CCLC Site Facilitators	September-October (Location: participating science and/or children's museum)
Program Cycle 1: Lesson Modeling (museum site will lead the program with students while the CCLC facilitator observes and assists)	November 2019 – February 2020
In person, 1 Day Reflection Training for CCLC Site Facilitators	January – February 2020
Program Cycle 2: 21st CCLC Facilitator Leading (the 21st CCLC facilitator will lead program implementation with students and museum sites will observe and assist.)	March – June 2020
In -person, ½ Day Professional Development Training for 21st CCLC Site Facilitators	May – June 2020

Additional Information

2018 IMLS STEM-Rich Making Project: https://y4y.ed.gov/stemchallenge/imls

- Watch the "What is a Maker?" and "A Reason for Making" videos to get an overview of the projects. Activity guides and professional learning resources are included in the Activities section and include images of real student projects!

Maker Curriculum Resources: https://y4y.ed.gov/stemchallenge/imls/2018/maker-resources

- Additional resources that will help you explore making projects that suit your needs, ideas for extending these making activities, and facilitation strategies to foster open ended engaging experiences for your students.