

The Return of the Kids: STEM In-Person

An ACT Now STEM Webinar
September 23, 2021

Agenda

- Welcome and Introductions
- Level Setting
 - Who is ACT Now?
 - Why STEM?
 - STEM in Afterschool
- Panelists' Presentations
- Q&A and Talkback
- Closing and Evaluation

Chat!

React!

Engage!



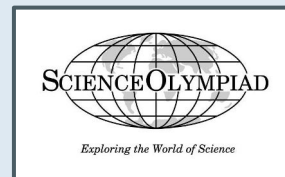
Introductions



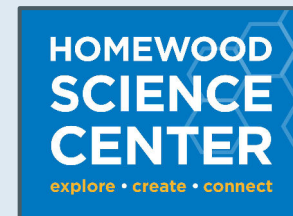
Lesley Fisher Chapman
she/her
Program Coordinator, ACT Now
Moderator



Erin Wiese-Reichert
she/her
Early Childhood Educator,
Children's Discovery Museum

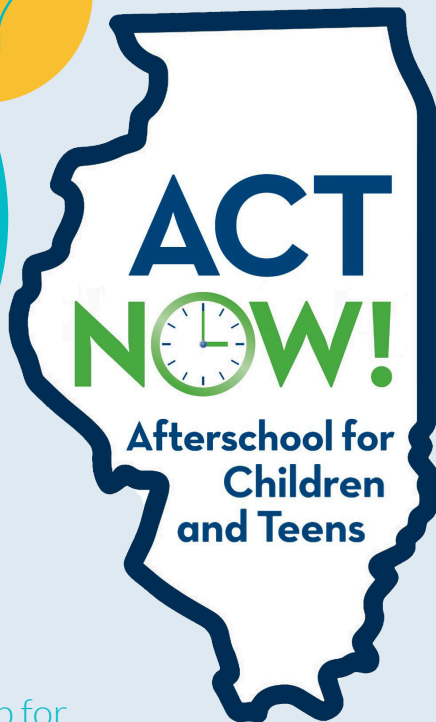


Dr. John Loehr
he/him
VP of STEM Education,
Science Olympiad



Holly Kelsven
she/her
Program Manager, Homewood
Science Center

ACT Now



[Click here to sign up for
our newsletter!](#)





Why focus
on STEM?

Science, Technology, Engineering, and Math



Life Skills

College &
Career
Prep

Job
Growth

Economic
Sustainability





BACK TO BASICS

Tips and tricks for
returning to in-person
STEM education



VIRTUAL GUEST SPEAKERS

How can you
creatively introduce
your students to real
STEM professionals?

**HOMWOOD
SCIENCE
CENTER**

explore • create • connect

GIRLS STEAM SUCCESS CLUB

The importance and
practice of engaging
young women,
especially youth of
color, in STEM
education



STEM in Afterschool

Tips and Tricks on Re-engaging Students with STEM In-Person

Erin Wiese-Reichert

Early Childhood Educator

1. Recognize the new normal of school

- New policies/procedures and time to adjust
- Separation anxiety exists
 - “It’s ok to be nervous.”

2. Establish Classroom Management

- Create classroom rules / expectations
- Create visual schedule / routine
- Model the behavior that you want (asking questions)

3. Create Open Communication

- Be clear with families on procedures, expectations, and why
 - Create a newsletter to keep families engaged and informed

4. Establish Relationships

- Take time to get to know the kids in your program
 - Beginning Circle Time
 - Ending Circle Time
 - Ask questions

5. Stay playful!

Virtual Guest Speakers

John F. Loehr; Ph.D.

Vice President-STEM Education

Science Olympiad

Science Olympiad



- Founded in 1984
 - To engage, excite, and inspire the next generation of STEM learners & professionals
 - Based on the belief that excellence in STEM should be as recognized as excellence in athletics
- Programs offered for all grades
 - Elementary (Division A)
 - Multiple different models (competitions, camps, Fun Day/Fun Night) based on objectives
 - Excellent partnership opportunity with parents
 - Middle School (Division B) & High School (Division C)
 - A school-based, afterschool team competition - academic track meet with individual & team awards
 - Teams of 15 compete in 23 events, each student competes in about 3 events
 - 450+ In-person tournaments annually
- Reach about 300,000 students annually
 - Approximately 8,000 elementary, middle & high school teams
 - All 50 states plus the District of Columbia

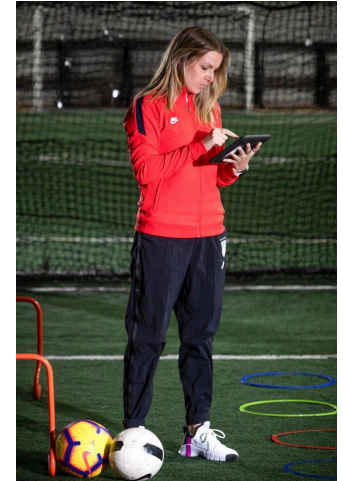
Pandemic Forced Pivot

- Shifted to a Virtual Format
 - Online from homes
 - Kept 22 of 23 events in each Division
- 370 Virtual Tournaments
 - 1st Ever Virtual National Tournament
- Professional Development Shifted Too
 - Workshops
 - Monthly Video Series (STEM Sessions)



Things to Look for in a Guest Speaker

- Meets your Organizational Need
 - Topic & Experience Alignment
 - Has Something Meaningful to Share
- Engaging Presence
 - Good Storyteller
 - Has Pictures
 - Safe, Simple Activities
- Understands Virtual
 - Experience with Your Platform
 - Has Access to a “Good” Space
 - Comfortable with Format Limitations
 - Limited Connections
 - No Direct Q&A



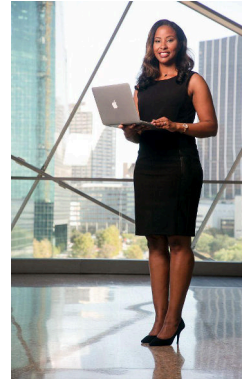
Where to Find Speakers

- Friends & Parents
- Aligned Institutions
 - Museums, Zoos, Aquariums
 - Colleges & Universities
- Professional Societies
- Chamber of Commerce
- Vendors & Suppliers
- Other Organizations



Ways to Make the Experience Better

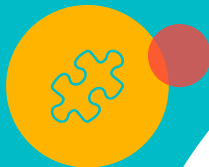
- Clearly Spell Out Your Needs
 - Expected Audience
 - Agenda & Topics
 - Identify Features Available/Unavailable
 - Polls
 - Breakout Rooms
- Identify Things to Avoid
 - Topics (i.e., Politics, Climate Change, Religion)
 - Sales Pitches/Product Plugs
 - Examples
- Think About Visuals/Branding
 - Does it Matter?
 - Prepare Materials
 - Virtual Backgrounds
 - Slide Template
- Establish Roles
 - Admitting Attendees
 - Running Slides
 - Managing Chat & Questions



Girls STEAM Success Club

Holly Kelsven

Program Manager





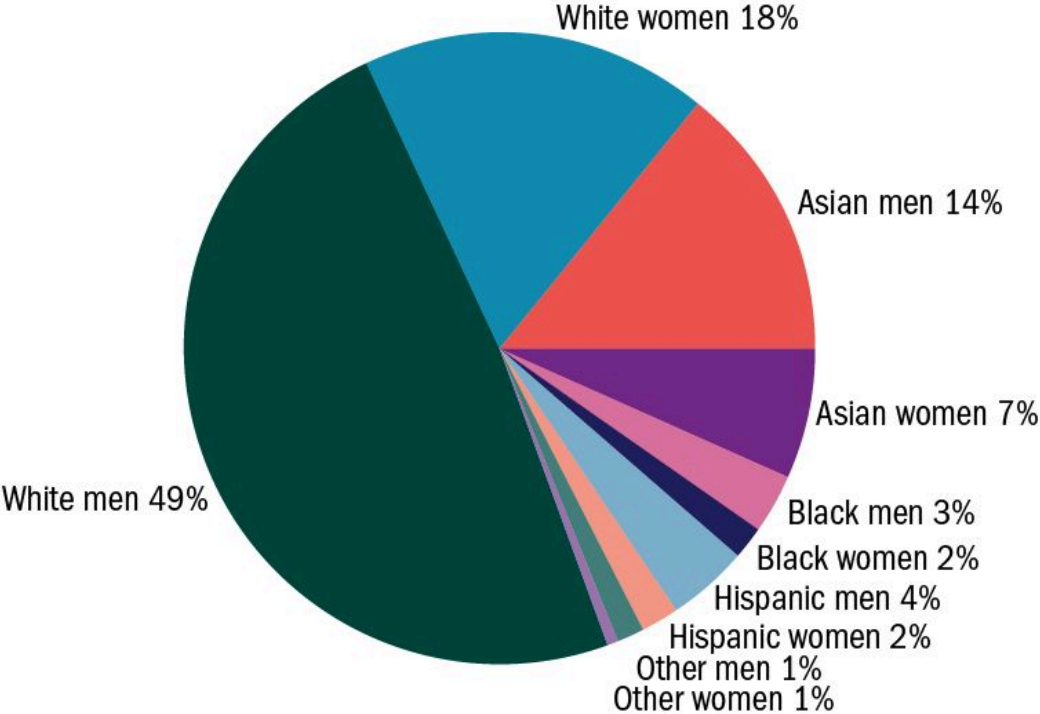
Rachel Buckle-Rashid, MD



@RABuckle

Little girl just jumped into my arms and rested her head on my shoulder in the ED. Her dad said "she's never seen a black doctor before and I think she thinks you're Doc McStuffins" 🥺

Scientists and engineers working in science and engineering occupations: 2015



NOTES: Hispanic may be any race. Other includes American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and multiple race.
Women, Minorities, and Persons with Disabilities in Science and Engineering: 2017



"NOT GOOD ENOUGH"



dogtorcourt Haters are always gonna hate.

I actually almost never became a veterinarian because **a man once told me I would never be good enough.**

As a veterinary student months away from graduation, I am so glad I chose not to listen- but I almost did.

"FIND SOMETHING EASIER"

Science + MENTORS = Success

Crush your goals with our online club for high school girls!

build job skills / meet women in **STEAM** / explore citizen science



Recipient of
Cook County
Community
Development
Block Grant



Additional support provided by




End of year MVP AWARDS by



Pathway to Summer
SUCCESS scholarships by

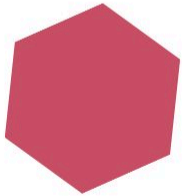
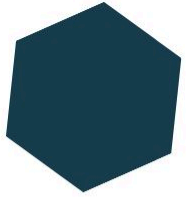




"Our greatness comes
when we appreciate each
other's strengths, when
we learn from each other,
when we lean on each
other."

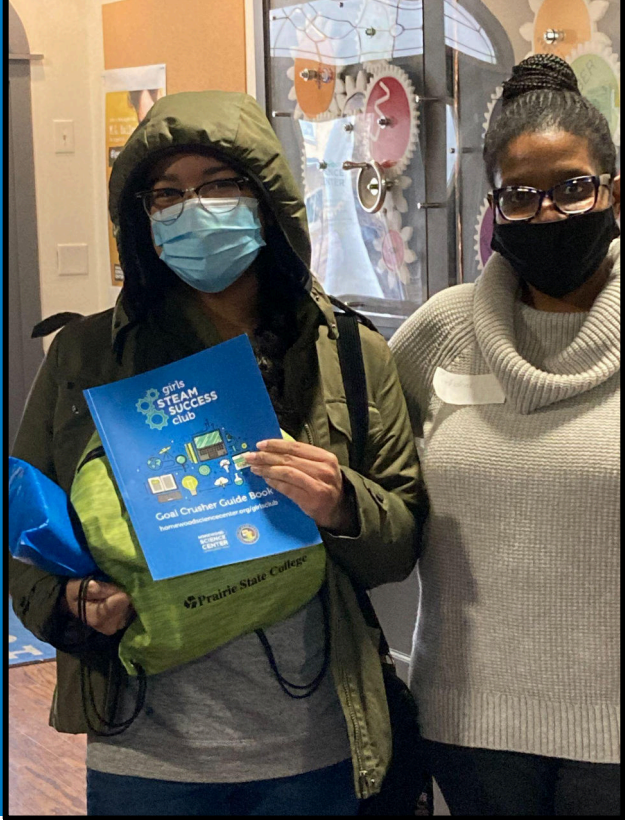
Michelle Obama

I feel like the Girls STEAM Success Club has been an inspiration for me, and has helped me to reach my goals involving my career.



Alana Thompson

Girls STEAM SUCCESS Club, 2021



Goal Crusher Guide Book

SMART Goals

Set a SMART Goal
Long term dreams
vs. short term goals
Score your
SMART Goal

STEAM Activities

Citizen Science:
All About Birds
Girls Who Code

Conclusion

Map Your Journey!

Introduction

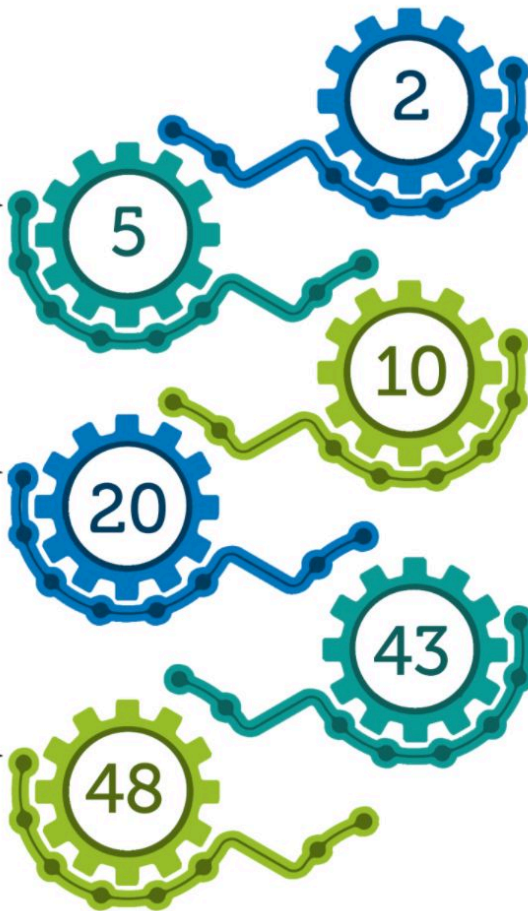
Welcome to the Club!
Attendance Tracker
Internet Safety

Job Skills

Personal Mindset
Planning for Success
Communication
Collaboration
Problem Solving

Career Explorer

Career Tracker
Career Girls Journal
Career Action Plan





Citizen Scientists: Why are they important to science?

AT-HOME ACTIVITY

1. Explore National Audubon Society's "**Survival by Degrees: 389 Bird Species on the Brink**" to explore a range map of the black-capped chickadee, a native Illinois backyard bird.
<https://www.audubon.org/field-guide/bird/black-capped-chickadee>
2. Scroll down to the range map titled:
"How Climate Change Will Reshape the Range of the Black-capped Chickadee."
3. Black-capped chickadees are common in Illinois and are attracted to backyard bird feeders. If you have ever seen a black-capped chickadee, **what do you know about this bird species?**
4. Explore the interactive map by doing the following:
 - ☐ Find and become familiar with the **Map Legend**
 - ☐ Locate the **"Warming Scenario"** temperature buttons. Click on the **"Current"** button and observe what happens to the data patterns on the range map. Click on the other Temperature buttons (+1.5°C; +2.0°C; +3.0°C) and **observe how the data patterns change.**



4. What claim, or statement, can you make about the **importance of citizen science data** to scientists in their understanding of the survival of bird species?

Claim: I think

because

5. Write three questions that you still have after what you have learned in this lesson.

- 1.
- 2.
- 3.

Why do you think citizen science is valuable to science research?

Scientists can't be everywhere!

It allows an opportunity for the most data to be collected around the world.

Citizen science allows for more people to contribute to research.

I think it's valuable because we know there are people/scientists that are passionate to make a change for the animals.

I think citizen science is valuable because it gives you information that you may be interested in or didn't know. Also it's always good to learn something new

Because they can collect data or information to keep as records and to see the change in the world.

I think it is valuable because it gives citizens an insight into how the environment works. It also helps

allows people from all over the city to input their views of research

Press S to show image

Algorithmic Artist Game Planning Guide

Instructions

Use this guide to create the drawings you will use in your game. We will use four variables to generate the content of the drawing: type of shape, the number of shapes, the size of a shape, and the color of a shape. How you configure them is up to you!


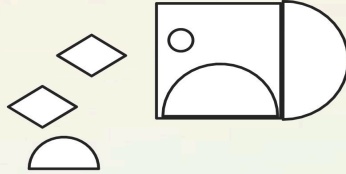



- **Shape.** What shape will you use? For example, circle, square, rectangle, triangle, oval, line, hexagon, etc.
- **Number of shapes.** How many of each shape will you include in your drawing? We recommend 2-4 shapes for an easy drawing, 5-6 shapes for a more challenging drawing, and 7-10 shapes for the hardest drawing.
- **Size of the shape.** How big or small will it be? Tiny, small, medium, large, or very large. Be relative to every player, so during gameplay you should be able to describe the size of a shape.
- **Color of the shape.** What color is it? Red, green, yellow, purple, etc.

You can use the tables below to help you plan each drawing. We've provided each level with space to draw, but you can always add more to make it easier/harder, etc.


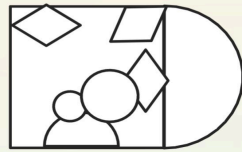





Example Drawings			
Easy	Easy	Medium	Hard


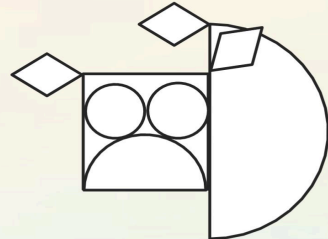



Lia

Shape	Number of shapes	Drawing
	1	
	3	
	2	
	2	






Sierra


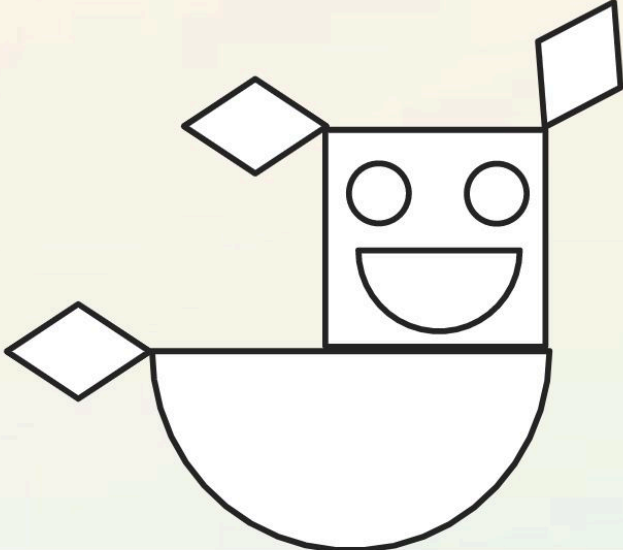



Shape	Number of shapes	Drawing
	1	
	3	
	2	
	2	

Marilyn

Shape	Number of shapes	Drawing
	1	
	3	
	2	
	2	

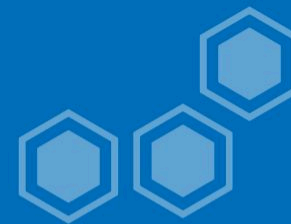
Lola

Shape	Number of shapes	Drawing
	1	
		
		
		

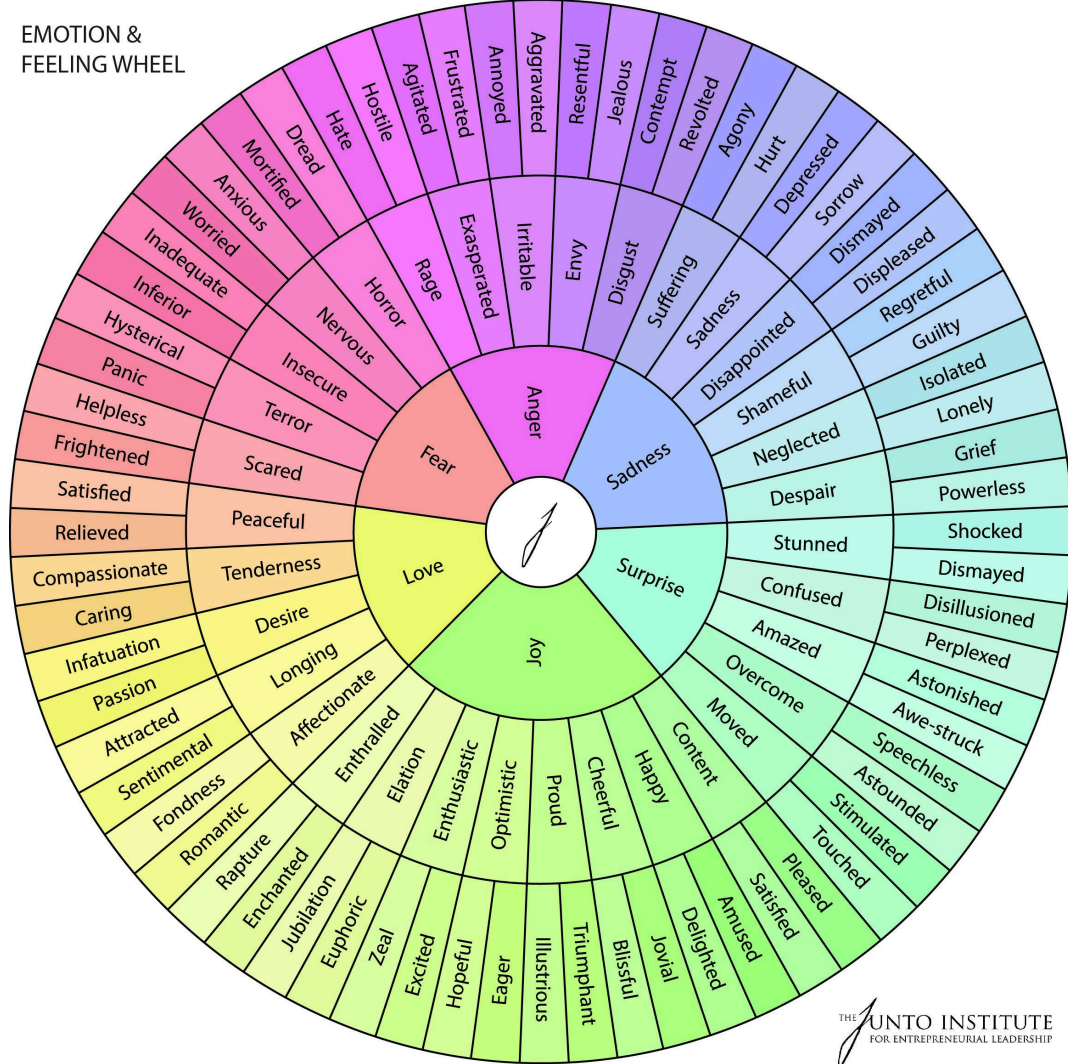
Shape	Number of shapes	Drawing
	1	
	3	
	2	
	2	



THANK YOU MENTORS



How do you feel
today at
Girls STEAM
SUCCESS Club?



Fatima



MVP COMMUNICATION

14 hours of participation in Club meetings

Began volunteering at
Homewood Science Center in 2019

SMART Goal: Get scholarships, save
money for college, and get a job.



girls who
CODE



feel free



PRITZKER SCHOOL OF
MOLECULAR ENGINEERING





- **Mentor**
- **Donate**
- **Connect**

www.homewoodsciencecenter.org/girlsclub

Andrea Brown-Thirston, PhD
Girls STEAM SUCCESS Club Facilitator
optimallearning2@gmail.com

Holly Kelsven
Program Manager
hkelsven@homewoodsciencecenter.org

Questions for
our presenters?



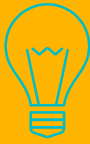
**How can students collaborate scientifically
while staying socially-distanced?**



What are your favorite little known STEM topics/themes/professions OST providers can highlight or explore with their students?



What is your key takeaway for program providers as it relates to engaging students in STEM OST education?





Upcoming ACT Now Events

Using Data to Design Afterschool Programs

PD webinar on 9/30 from 10 am - 11 am

October Membership Exchange “LOA: Sparking Meaningful Connections”

10/5 from 10 am - 11 am

Supporting SEL for Afterschool Staff

SEL webinar on 10/12 from 10 am - 11 am

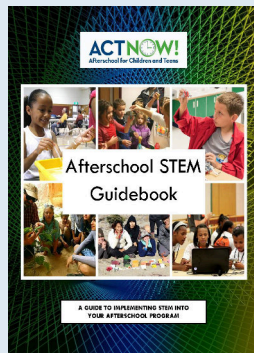
The Root of All STEM: Family Engagement in STEM OST Programming

STEM webinar on 11/2 from 10 am - 11 am





Additional Resources



[Afterschool STEM Guidebook](#)

Resource Name & Link	Description & Specific STEM Themes	Grade Level(s) & Facilitation	S	T	E	M
			Environmental Science, Agriculture, and Gardening	Coding, App Development, and Computer Design	Engineering and Building	Robotics
Add STEM Activities Add STEM Activities Add STEM Activities Add STEM Activities Add STEM Activities	OSE's pilot initiative is in partnership with the International Technology and Engineering Education Association (ITTEA) and aims to bring high-quality STEM themes, focused primarily on engineering and building, that are standards aligned, to interested educators and CSE providers. These three resources are only available to those that are approved by OSE and ITTEA and individuals must work hand-in-hand with school districts in order to be included in the registrant list.	Pre-K, 6, 6 through 12 No person and virtual facilitation	👍	👍	👍	👍
The Concord Consortium The Concord Consortium The Concord Consortium The Concord Consortium The Concord Consortium	The Concord Consortium offers high-quality STEM curricula and modules on a variety of topics for students. The curriculum is NGSS aligned and the online modules offer educators to track their students' progress, and receive tips and tricks for providers while you are facilitating lessons.	K through 12, Higher Education No person and virtual facilitation	👍	👍	👍	👍
			*Units on Space Exploration, Water Cycle and Climate, Natural Resources	*Automating Common Online Data Analysis Program (COPAP)	*Modules on Bridges, Thermal Expansion, Wind Energy	

[Science Curricula Matrix](#)

[Equity and Inclusion Assets for Afterschool and Summer Programs](#)

Access code: **MGM2021**





THANK YOU!

Don't forget to fill out the evaluation so we can continue to offer free PD and training opportunities to our members!

Questions?
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312-273-8252

