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US Department of Education/NASA
STEM Design Challenges
State Webinar

Pre- Webinar 1
October 2020

NASA STEM Design Challenges Pre-Webinar 1

During this pre-webinar, we will:
- provide a high-level overview of the program,
- explain operational support to be provided during implementation to sites and facilitators, and
- finalize virtual training dates/supply distribution

Today's Agenda

Roll Call: SEAs Introductions (5 minutes)
- SEAs share out

NASA Welcome and Program Overview (10 minutes)
- Maria Arredondo, NASA Project Manager

NASA & US Department of Education Support Team Introductions (5 minutes)
- Dr. Diane McElwain, (NASA) Peerless Technologies
- Chelsea Heffernan, (ED-Y4Y) Synergy Enterprises, Inc.

Implementation Support Overview (20 minutes)
- Dr. Diane McElwain & Maggie Melone, Peerless Technologies
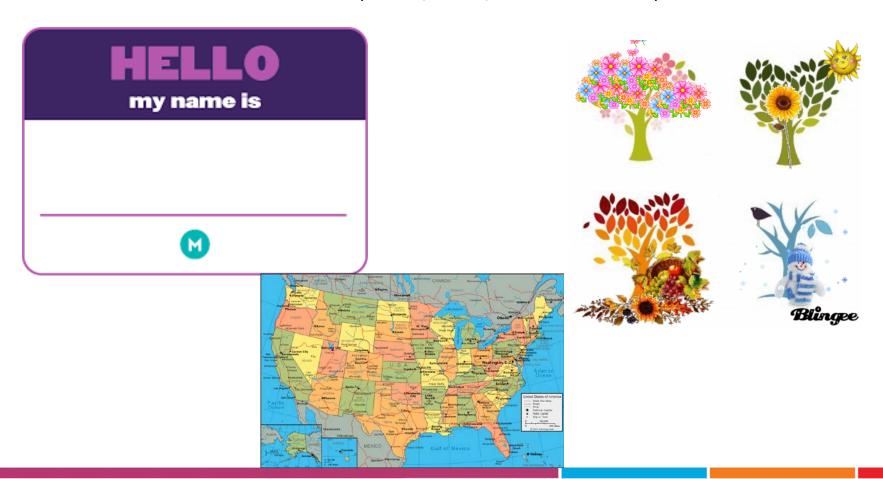
Dashboard & Help Desk (5 minutes)
- Chelsea Heffernan, Synergy Enterprises, Inc.

Next Steps & Questions (15 minutes)

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SEAs Introductions (5 minutes)

— SEAs share out (name, state, favorite season)

NASA STEM Design Challenges Pre-Webinar 1

NASA Welcome and Program Overview (10 minutes)

– Maria Arredondo**, NASA Project Manager**

STEM Design Challenge Background

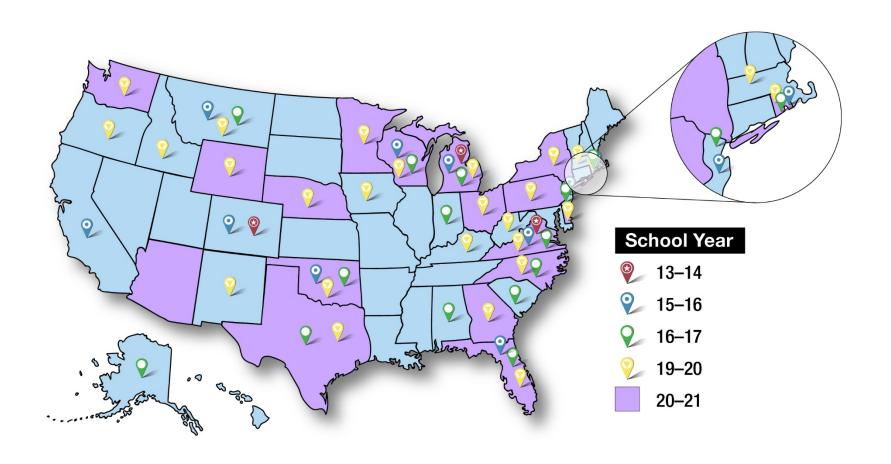|	
What	A partnership between NASA and the US Department of Education's 21st Century Community Learning Centers
Who	Sites execute a series of engineering design challenges in 3rd – 8th grades, enabling them to develop solutions to real world science and engineering problems faced by NASA scientists, engineers and astronauts today
Where	The collaboration will support an expansion of STEM opportunities for students across the country in 18 states
When	2020-2021 School Year

2020-2021 Reach

Phase IV SY 2020-2021 Participating States			
1	Arizona*	10	Oklahoma
2	Delaware*	11	Ohio
3	Florida	12	Pennsylvania
4	Georgia*	13	Rhode Island
5	Michigan	14	Texas
6	Minnesota	15	Virginia
7	Nebraska	16	Washington
8	New York	17	Wisconsin
9	North Carolina	18	Wyoming

2020-2021 Reach

School Year

- ★ 13–14
- ◉ 15–16
- ◉ 16–17
- ▽ 19–20
- 20–21

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NASA/U.S. DEPARTMENT OF EDUCATION
STEM Design Challenge Collaboration for 21st Century Community Learning Centers • PHASE IV 2020–2021 IMPLEMENTATION

STEM DESIGN CHALLENGE BACKGROUND

The STEM Design Challenge is a partnership between NASA and the U.S. Department of Education's 21st Century Community Learning Centers. Various sites will execute a series of engineering design challenges for 3rd to 8th grades, enabling students to develop solutions to real-world science and engineering problems faced by NASA scientists, engineers, and astronauts today. The collaboration will support an expansion of STEM opportunities for students across the country in up to 25 states throughout 21st Century Community Learning Centers and will take place during the 2020–2021 school year.

ACTIVITY	TIMEFRAME	DATE—My project date
State Application Released	Aug. 5, 2020	
State Informational Briefing	Aug. 12, 2020	
State Application Due to U.S. Department of Education	Aug. 24, 2020	
States Selected and Site Application Provided to States	Sept. 1, 2020	
Site Application Due by State	Sept. 30, 2020	
State Coordination Calls With NASA	Oct. 2020	
Pretraining Webinar and Evaluation Overview With States and Sites	Oct. 2020 to Feb. 2021	
Professional Development Workshops	Flexible (Oct. 2020 to March 2021)	
Attend Monthly Calls and Post Webinars	Nov. 2020 to April 2021	
Virtual Connections With NASA Experts and Students	Flexible (Nov. 2020 to April 2021)	
Student Submissions Presentations at State Culminating Event	April to June 2021	

IMPORTANT INFORMATION

1. This project is voluntary. Additional funding is not provided for this project, but if support is needed, sites have collaborated with local universities, afterschool networks, and community organizations in the past.
2. You must create a You for Youth (Y4Y) account to participate in the design challenges.
3. There is an evaluation portion of this project. Information on the evaluation will be provided once states and sites are selected.
4. Technology will be used in this project. To ensure the best experience, use a wired Ethernet connection or strong WIFI; laptop/desktop with a built-in or external microphone and webcam; and a projector or large monitor to provide students better viewing (optional).
5. Challenge options: https://y4y.ed.gov/stemchallenge/nasa

STATE RESPONSIBILITIES CHECKLIST

- ☐ Submit up to 10 sites from your state to participate in the NASA project.
- ☐ Develop project timeline and inform participating grantees/sites.
- ☐ Determine a Culminating Event opportunity and date.
- ☐ Participate in associated training and preparation webinars. Coordinate the training opportunity for your sites in collaboration with NASA.
- ☐ You or a designated individual ensure all sites are completing project work by the time of the state's project deadline date.
- ☐ Provide update on sites' implementation start/end dates.
- ☐ Alert Y4Y/NASA when/if a site's primary contact should change.
- ☐ Follow up with grantees on program activities per Y4Y NASA updates.

SITE RESPONSIBILITIES CHECKLIST

- ☐ Complete the site application.
- ☐ Participate in pre-webinar activities not to exceed 2 hours.
- ☐ Participate in 2-day virtual professional development training.
- ☐ Complete Site Profile Forms (site details and technology information).
- ☐ Participate in at least one virtual connection with NASA scientists and engineers for students.
- ☐ Complete the challenge activity and submit a minimum of one student team final product presentation.
- ☐ Attend monthly calls and post webinars for facilitators.
- ☐ Alert NASA/Y4Y of any changes in personnel throughout project implementation.
- ☐ Submit Student Intellectual Property Release Form (i.e., video/image release).
- ☐ Evaluation
  - • All sites complete facilitator surveys and submit attendance.
  - • Selected Sample Sites complete student survey, facilitate parent passive consent notice, administer parent/guardian survey, and participate in administrative check-ins.

For further information, click here:
https://y4y.ed.gov/uploads/media/Phase_4_21CCLC_Highlights_Overview_Final_03282019_%282%29.mp4

PS–03187–0920

Project Dates for 20-21 STEM Design Challenges

Activity	Timeframe
State Application Released	Aug. 5, 2020
State Informational Briefing	Aug. 12, 2020
State Application Due to U.S. Department of Education	Aug. 24, 2020
States Selected and Site Application provided to States	Sept. 1, 2020
Site Application Due	Sept. 30, 2020
State Coordination Calls with NASA	Oct. 2020
Pre-training Webinar and Evaluation Overview with states and sites	October '20 – February '21
Professional Development Workshops	Flexible (October '20 – March '21)
Attend Monthly Calls and Post Webinars	November '20 – April '21
Virtual Connections With NASA Experts and Students	Flexible (November '20 – April '21)
Student Submissions Presentations at State Culminating Event	April – June 2021

Dates are subject to change due to COVID-19

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20-21 Implementation Training and Support Plan

Educator Support

Development

Professional Development Training (virtual unless otherwise requested)

Virtual Professional Learning Communities (ES and MS)

Challenge Guides (Lesson Plan, Checklist, Introductory Video, Student Journal, Rubric)

State and Site Planning and Help Desk Support

Challenge Implementation

Virtual Scientist & Engineer Connections

Close-Out

State-Based Culmination Students Teams present their Final Product and NASA provides feedback

Student Experiences

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Engineering Design Challenge Menu

6th – 8th Grade Options

Parachuting onto Mars
Develop a drag device to slow a spacecraft for entry, descent, and landing.

Spacecraft Safety
Help design NASA's next generation spacecraft!

Why Pressure Suits?
Develop a containment system to protect astronauts from the vacuum of space.

Packing up for the Moon
Develop a plant growth system to help sustain astronauts on a lunar surface.

Let it Glide
Build a shoebox glider to produce the greatest glide slope.

3rd – 5th Grade Options

Safe Travels
Develop safety devices for astronauts traveling to the Moon or Mars.
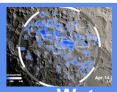
Mission to Mars
Develop a device to slow down spacecraft landing on Mars.

NEW 6th – 8th Grade Options

Lunar Water
Develop a filter to purify water to be used in a future Lunar Habitat.

Astro Socks
Develop protective footwear for the ISS astronauts to wear as they live and work in microgravity.

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Support Virtual and Blended Implementation

Virtual EDC Implementation Goal	• To ensure that all sites are positioned to effectively deliver content to students through virtual or blended approaches using products and resources provided by NASA
Approach	• Customize project framework based upon local needs (ie. PD, Virtual Connections, Follow-up Support, Student Submission, Culminating Event) • Use pre-training webinars and site profiles to better understand technology access and planned implementation • Enhanced training and support for use of technology with students (polls, hashtags, chat)
Support	• Build Virtual 2-Day Professional development sessions around customized framework and local context. • Trainers will add a Professional Learning Community (check-ins, deliver customized support, allow collaboration among sites)

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Reduce Administrative Burden

Changes to 20-21 School Year Program	
Create a dashboard for states and sites	• Allow real time status checks of progress • Strengthen communication around milestones
Modify Video Submission Requirement for Challenges	• Offer flexible final products for students (PPT Submission, Live Presentation, Video Submission
Clarify Project Requirements for States and Sites	• Created new summary sheets to include in application
Streamline Evaluation	• Reduce Number of Instruments • Modify attendance reporting
Enhancements to State and Site Application	• Working with group of states to review and modify questions

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SEA Check-ins

State Leaders will be contacted on the following Dates

Event	Timeframe
SEA Webinars	October
2-Day Virtual PD	November - February
Evaluation Call w/Sample sites	November - February
Culminating Event Discussion	January - March

NASA STEM Design Challenges Pre-Webinar 1

NASA & US Department of Education Support Team Introductions

- Dr. Diane McElwain, (NASA) Peerless Technologies
- Chelsea Heffernan, (Y4Y) Synergy Enterprises, Inc.

NASA & Department of Education Support Team Introductions

Implementation	Evaluation
NASA/Peerless Technologies Diane McElwain, Ph.D.- **Curriculum/Training Lead** Corey Gordon- **Training Specialist** Laura Chachko- **Training Specialist** Maggie Melone-Echiburu- **Implementation Lead** Harold Cunningham- **Technology Lead** Emilia Durand-**Training Coordinator** Lindsay Thornton, **Education Programs Specialist** **Y4Y/Synergy** Chelsea Heffernan - **Project Manager** Sarah Whitehead - **Implementation Coordinator** David Mazza - **Technology Specialist**	**NASA/Peerless Technologies** Vanessa Mullins, Ed.D. – **Evaluation Lead**
	Program Management
	NASA/Peerless Technologies Jomill Wiley, Ed.D. – **Program Manager**

Implementation Support Overview

How will sites be supported during program implementation?

Implementation Support Overview

Implementation support will be provided to all sites in the form of:

- ***Pre-webinars for Site leads and Facilitators (held prior to Virtual Training)***
  - Overview of how to prepare for training
  - Assignment of Unique Identifier Number (UIN) for tracking and data capture for facilitators
  - Distribution of survey link for Pre-Training Survey
  - **HOW WILL PARTICIPANTS SIGN UP FOR PRE-WEBINARS?**
  - Site leads will receive an email at least 14 day prior to training asking for confirmation of attendees
  - Attendees with receive the pre-webinar date options for their state and register with the included link

- ***Virtual 2-day Professional Development***
  - Sites will participate in a 2-day Virtual PD designed for their state
  - Facilitators and other approved participants will be registered for the event and receive WebEx Information several days in advance of the event
  - Materials and Supply kits will be provided via shipment to sites 14 days prior to training (we will provide dates for shipment to each SEA and site)

- ***Monthly Calls***
  - The schedule will be provided during training based on when you will be trained

- ***Facilitation/Hosting (Virtual Connections for students)***
  - During training, a significant amount of time is spent discussing how Virtual Connections work for students.
  - The calendar of available dates will be provided posted on the Y4Y site.
  - Facilitators will register for events, which will be explain at training

- ***Help Desk support***
  - Facilitators will be able to communicate with the team to get support during the implementation of the program. The help desk will be introduced during the pre-webinar and at the Virtual PD training.

Implementation Support Overview
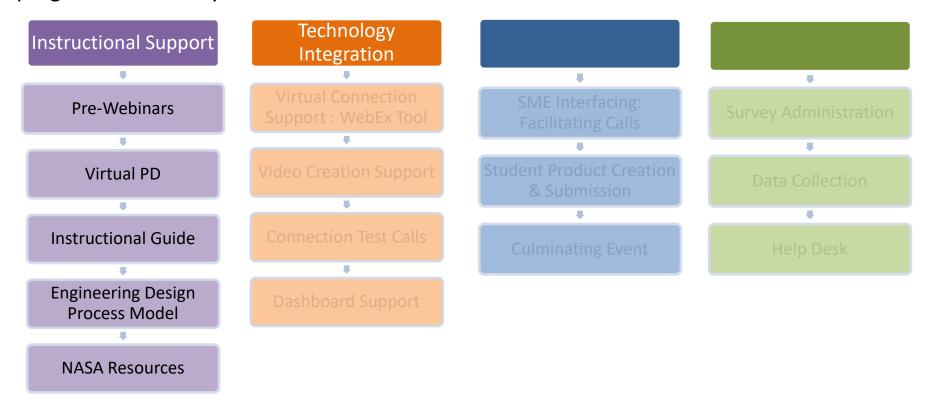
Using the Professional Learning Communities (PLC) as the framework, facilitators will have opportunities to learn, share and collaborate with colleagues- and receive targeted support.

- The PLC infrastructure will be used to group facilitators as needed to ensure flexibility in scheduling and customized support
  - *Focusing the support around areas of need*

- Examples include- training multiple states together when numbers indicate this if effective

- Offering monthly calls for sites based on specific needs such as elementary support or challenge support or new/returning site support

- Using breakout rooms during training opportunities to employ flexible grouping of facilitators to talk through instructional strategies, experiences and to foster collaborative conversations

Implementation Support Overview

The cadence of support will be focused around these four areas.
All support will be designed to ensure that site leads and facilitators are able to implement the program with fidelity.

Instructional Support	Technology Integration		
Pre-Webinars	Virtual Connection Support : WebEx Tool	SME Interfacing: Facilitating Calls	Survey Administration
Virtual PD	Video Creation Support	Student Product Creation & Submission	Data Collection
Instructional Guide	Connection Test Calls	Culminating Event	Help Desk
Engineering Design Process Model	Dashboard Support		
NASA Resources			

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Implementation Support Overview

Instructional Support: Virtual Professional Development

Six workshop goals:
- Complete and explore two NASA engineering design challenges
- Discuss the future of NASA missions to the Moon and Mars
- Experience a variety of instructional techniques and resources
- Explain all aspects of the NASA engineering design challenges
- Connect to instructional resources and program supports
- Explore the evaluation plan and the Dimensions of Success (DoS) tool

Covid-19 Flexibility

Scientist and Engineering Connections	The facilitator will be provided with the WebEx link for the NASA connection -recorded versions of the Virtual connections for students will be made available for later review
Student Collaboration	During the training, use of virtual platforms, breakout rooms, and collaborative communication opportunities will be modeled as instructional delivery strategies
Materials and supplies	Teacher kits and guidebooks will be mailed to the sites for facilitators to build models during the 2-day PD
Final Team Presentation	Presentations will be uploaded onto the online platform using video aps and collaborative software.
Options for a final team presentation	Video, Google slides, iMovie, presentations

Implementation Support Overview

Instructional Support: Materials and Supplies

Shipment

Individualized teacher kits will be mailed to each site inside a larger box that will also contain guidebooks and the PD folder for each participant

Guides

Sites will be receiving a hard copy of three guides

Supplies

Walkthrough of additional supplies that can also be used during the challenges

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Implementation Support Overview

Technology Integration

Tools (Virtual)

Discussion of the software/hardware tools that will be used to support the 21st CCLC program virtually (WebEx, Webcam/Mic, Office 365, etc.)

Final Product Creation Support

Assist students and teachers with the process of creating their Engineering Design Challenge Presentation

Connection Setup

Walkthrough of how to connect to Monthly Calls, Virtual Connections with NASA scientists and engineers, and Culminating Events throughout the 21st CCLC Program

Portal Support

Explanation of the Y4Y Website, how to navigate the site, and where to find the tools provided to complete the 21st CCLC Program

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Implementation Support Overview

Student Support

NASA Scientists and Engineers Interface

- Virtual connection opportunities with the NASA scientists and engineers
- Protocol and requirements for participating in the virtual connections

Event Scheduling

- Registration process to student and teacher participation in a virtual connections
- Protocols and requirements for scheduling virtual connections events

Final Product Submission

- Submission requirements and rubric for the student presentations
- Types of submissions accepted

Implementation Support Overview

Pre-Webinar & Tentative Training Dates

State	Time Zone	Pre-Webinar #1:	Pre-Webinar #2	Training Session Number	Training Date (2020-2021)	Materials & Supplies Shipping Date
Minnesota	Central	October 7, 2020	November 2	1	November 9-10	October 23
Oklahoma	Central	October 7, 2020	November 2	1	November 9-10	October 23
Arizona	Mountain	October 8, 2020	November 3	2	November 12-13	October 23
Washington	Pacific	October 8, 2020	November 4	3	November 16-17	October 23
Wyoming	Mountain	October 8, 2020	November 4	3	November 16-17	October 23
Pennsylvania	Eastern	October 5, 2020	November 5	4	November 19-20	October 23
New York	Eastern	October 6, 2020	November 5	4	November 19-20	October 23

Implementation Support Overview

Pre-Webinar & Tentative Training Dates

December	Time Zone	Pre-Webinar #1	Pre-Webinar #2	Training Session Number	Training Date (2020-2021)	Shipping Date
Michigan	Eastern	October 6, 2020	December 1	5	December 7-8	November 23
Delaware	Eastern	October 5, 2020	December 2	6	December 10-11	November 23
Ohio	Eastern	October 5, 2020	December 2	6	December 10-11	November 23
Georgia	Eastern	October 5, 2020	December 3	7	December 14-15	November 23
Rhode Island	Eastern	October 6, 2020	December 3	7	December 14-15	November 23
Wisconsin	Central	October 7, 2020	December 4	8	December 17-18	November 23

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Implementation Support Overview

Pre-Webinar & Tentative Training Dates

January	Time Zone	Pre-Webinar #1	Pre-Webinar #2	Training Session Number	Training Date (2020-2021)	Shipping Date
North Carolina	Eastern	October 6, 2020	January 11, 2021	9	January 21-22	December 22, 2020
Florida	Eastern	October 5, 2020	January 11, 2021	9	January 21-22	December 22, 2020
Nebraska	Eastern	October 7, 2020	January 12, 2021	10	January 25-26	December 22, 2020
Texas	Eastern	October 7, 2020	January 12, 2021	10	January 25-26	December 22, 2020
Virginia	Eastern	October 6, 2020	January 13, 2021	11	January 28-9	December 22, 2020
Michigan	Eastern	October 6, 2020	January 13, 2021	11	January 28-29	December 22, 2020

Implementation Support Overview

Astro Socks schedule will include 10 sites selected to participate in the Astro Socks pilot.

Date	Event
December 1, 2020	Announce Astro Socks sites
February 1, 2021	Shipping Equipment
February 8, 2021	Pre-Webinar: Facilitators
February 16-17, 2021	Professional Development
State Schedule Event	Culminating Event

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How will sites and states:

- inquire when support is needed?

- record and track progress?

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New Dashboard & Help Desk

Communication will take place through the:

NASA STEM Challenges Help Desk

The Help Desk is now open for facilitators to locate project information, find answers to frequently asked questions, and contact the STEM Design Challenge team:

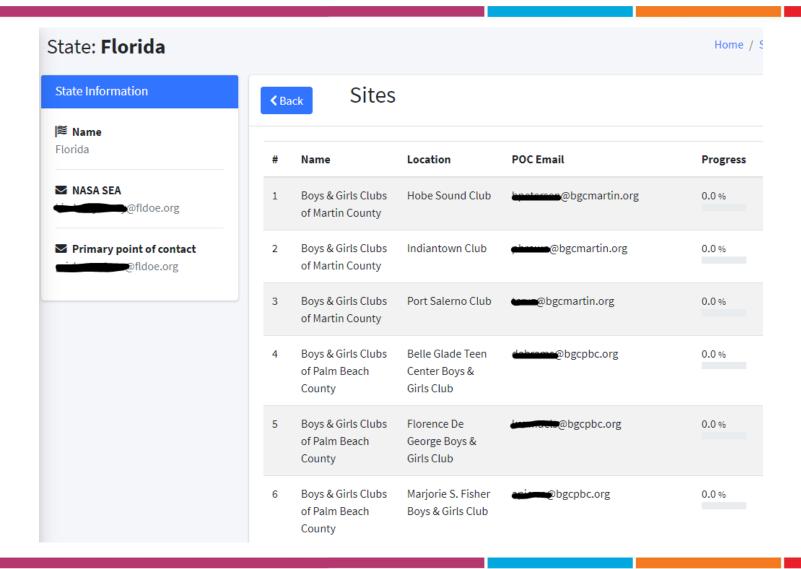https://y4y.ed.gov/stemchallenge/nasa/nasa-stem-challenge-help-desk

Responses to Help Desk inquiries will be within 48 hour of the receipt of the request.

Immediate Requests: (782) 666-4932

Dashboard

State: **Florida**

State Information

🏳 **Name**
Florida

✉ **NASA SEA**
▪▪▪▪▪▪▪▪@fldoe.org

✉ **Primary point of contact**
▪▪▪▪▪▪▪▪@fldoe.org

< **Back**   ## Sites

#	Name	Location	POC Email	Progress
1	Boys & Girls Clubs of Martin County	Hobe Sound Club	▪▪▪▪▪▪@bgcmartin.org	0.0 %
2	Boys & Girls Clubs of Martin County	Indiantown Club	▪▪▪▪▪@bgcmartin.org	0.0 %
3	Boys & Girls Clubs of Martin County	Port Salerno Club	▪▪▪▪@bgcmartin.org	0.0 %
4	Boys & Girls Clubs of Palm Beach County	Belle Glade Teen Center Boys & Girls Club	▪▪▪▪▪▪@bgcpbc.org	0.0 %
5	Boys & Girls Clubs of Palm Beach County	Florence De George Boys & Girls Club	▪▪▪▪▪▪@bgcpbc.org	0.0 %
6	Boys & Girls Clubs of Palm Beach County	Marjorie S. Fisher Boys & Girls Club	▪▪▪▪▪@bgcpbc.org	0.0 %

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Dashboard

Site: Dummy Site in Maryland

Site Information

Name
Dummy Site in Maryland

State
Maryland

Location
Dummy MD Location

Main Point of Contact
- nasa_member2@seiservices.com

Additional Facilitators
- asdkjlfakjs askldjsafsdf
  adsfa@sadas.com

Tasks

1. Before Implementation | Prior to starting your NASA STEM Challenge, you should complete these items. All items will be marke... —

Prior to starting your NASA STEM Challenge, you should complete these items. All items will be marked "complete" on a monthly basis by our NASA Project Management team. If you have any questions, please visit our help desk via the navigation at the top of

Title	Display Name	Description	Completed
Create a Y4Y login	https://y4y.ed.gov/join	This account is free. Each facilitator working on the NASA STEM Challenge at your site should have a Y4Y login.	☐
Register for your state's Virtual Professional Development (PD) Training		This information should have been sent to you via the Y4Y NASA Team. If you did not receive this information, please send us a message via the NASA STEM Challenge Help Desk.	✓

Dashboard

Before Implementation

- Create a You for Youth (Y4Y) login (each facilitator should have an account, which is free)
- Register for Virtual Professional Development (PD) Training
- Complete Site Profile Form (to be finalized one week after Virtual PD Training)
- Obtain proper equipment for virtual connections and final product creation and submission
- Participate in pre-webinar activities (not to exceed 2 hours)
- **Evaluation:** Facilitator Survey prior to Virtual PD Training
- Participate in 2-day Virtual PD Training
- **Evaluation:** Facilitator Survey after Virtual PD Training

During Implementation

- Participate in at least one (1) virtual scientist and engineer connections
- Attend monthly planning calls
- Submit Student and Educator Intellectual Property Release Forms (i.e., video/image release).
- Complete challenge activity

After Implementation

- Submit a minimum of one (1) student team final product
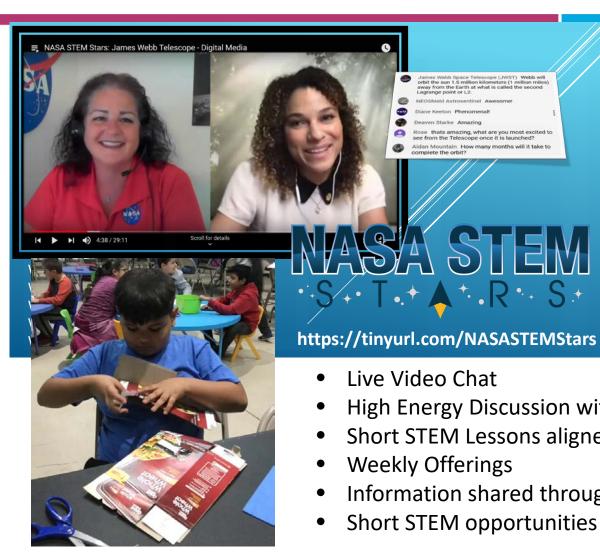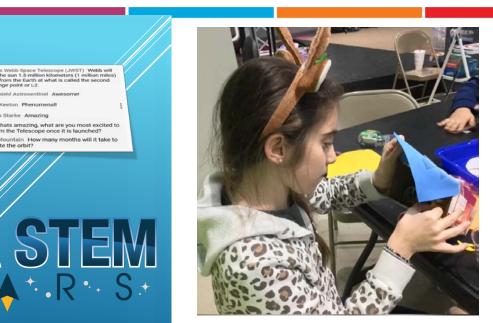- **Evaluation:** Post Implementation Facilitator Survey

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Questions and Answers

- State Support Provided
- Confirm your state's training dates
- Dashboard Feedback

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Alternate Engagement Models

NASA STEM STARS

https://tinyurl.com/NASASTEMStars

- Live Video Chat
- High Energy Discussion with STEM Role Models
- Short STEM Lessons aligned to each video chat
- Weekly Offerings
- Information shared through the Y4Y E-blast
- Short STEM opportunities listed on the Y4Y website

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In-flight Education Downlinks

What would your students ask an astronaut?

- A live, 20-minute question-and-answer session between students and astronauts aboard the International Space Station.

- Available to K-12, Higher Ed, and Informal educational organizations in the United States.

- NASA is accepting proposals for downlinks occurring during Expedition 65 (April to October 2021).

- Proposals are due December 1, 2020.

Email JSC-downlinks@mail.nasa.gov for the proposal form and guidelines.

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THANK YOU!

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