



# NASA Aeronautics

September 2021  
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## Monthly STEM Newsletter

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The “Future-scaping Our Skies” Future of Flight Challenge recently chose [nine winners](#) of the competition. Participants were asked to help NASA envision the future of flight.

## September 2021

With scents of pumpkin spice coffee in the air, there is no denying that fall is quickly approaching. Many of you have started the academic year, which may look different depending on where you live, where you teach, and any number of factors this year. In order to work with as many of you as possible, NASA Aeronautics is constantly working to support and energize you with a variety of STEM materials—some that are meant to be used in a hands-on setting, informal and/or formal settings, virtually, a part of project-based learning units, as stand-alone activities that can be completed at home, and any other situation you can think of. Do you need to see more of something or have a new idea? Let us know!

Do you know someone else who needs this monthly update? [Sign Up for the Monthly STEM Newsletter](#). Do you have a question or want to be removed from the list? Send an email to: [April.a.lanotte@nasa.gov](mailto:April.a.lanotte@nasa.gov).

### New Videos and Resources:

#### [Back-to-School STEM Aeronautics Resources Series:](#)

Throughout the month of August, NASA Aeronautics published a S-T-E-M resource series, which can be found one letter at a time [here](#). Do you want the entire series at once? Download the entire series at the link above soon.

**Jr. Pilot Program: X-59:** Take your elementary students on a ride with Orville D. Squirrel to learn more about the science of sound and NASA's X-59 aircraft. After completing this booklet, students earn a certificate of completion. This is the first in our Jr. Pilot Program series.

**Aeronaut-X: X-Planes Student Digital Badge:** NASA's EPDC offers student digital badges, including one about NASA's X-planes. Geared for students in middle and high school, but available to all ages, participants can earn a digital badge and learn about the critical role NASA's X-planes have in developing new technologies, as well as new X-planes in development. Educators must first complete a 1-hour educator badge, "Using Badging with Students" to gain access.

**Design your own X-plane:** Engage students of all ages in a fun STEAM-based activity where with the roll of a die, students find out what attributes they need to include in their own X-plane design.

### En Español

[NASA STEM Stars \(Español\)](#)

- [Ingeniera Aeroespacial Nicole Pettingill](#)
- [Social Media Director Jessica Arreola](#)

**Aeronaut-X: Guías de actividades en español:** En estas actividades de ciencia, tecnología, ingeniería y matemáticas (STEM) descubre como las innovaciones tecnológicas en aeronáutica de la NASA estan transformando el futuro con Aeronaut-X. Estas actividades se enfocan en lo más avanzado de la aeronáutica que inspirará a nuestros futuros exploradores de la aviación a sumergirse en el mundo de una nueva generación de vuelos. NASA esta contigo cuando vuelas.

[NASA X-57 Maxwell Mini-Poster](#)

### Professional Development:

#### [Educator Professional Development Collaborative \(EPDC\):](#)

Aeronautics, Engineering Design, Digital Badges and more! Join NASA's EPDC for a month full of aeronautics-related professional development. Are you new to these offerings? There is a session on "Digital Badges for Educators and Students" on Aug. 3<sup>rd</sup> from 4:30-

### Coming Soon!

You all work incredibly hard to bring great STEM content to you students, and we just try to keep up with you all! Coming soon—new materials to add to your repertoire: a new Unmanned Aircraft Systems (UAS) Activity Guide from our Aeronaut-X team, additional aeronautics-focused bookmarks in English and in Spanish, a buildable paper X-59 model, and a 3D printable X-59.

### Funding Opportunity:

It's a very exciting time in aviation with the rapid growth in the unpiloted & autonomous aerial vehicle field.

NASA STEM and NASA Aeronautics are partnering together to seek contributions from the Minority Serving institution community. These academic institutions will form networks in partnership with industry to advance processes, products, workforce development, and develop institutional capacity for high volume aerospace manufacturing.

**Solicitation details: NSPIRES: MUREP High Volume**

### Student Challenge Opportunity

Do you teach about aeronautics and Earth's atmosphere? Have you taken a look at our [Where in the Air Are We?](#) Activity? Take that activity one step further with the [NASA TechRise Student Challenge](#). 6-12<sup>th</sup> grade participants design an experiment to test on a suborbital rocket or high-altitude balloon. The challenge is now open and entries are due by Nov. 3, 2021.

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5:30pm ET. Other sessions such as “Explore Aeronaut-X: Explore the four forces of flight with activity Fan-tastic Forces,” and the third session in our multi-part series about the X-57 Maxwell (prior attendance not necessary)--[Engineering Design and the X-57 Maxwell](#) will occur on Aug. 17<sup>th</sup> from 6-7pm ET. Sessions are free, but registration is required.

## AAM Academy:

The Advanced Air Academy (AAM Academy) is a year-long series devoted to ongoing student and educator opportunities to learn more about AAM and how it will change the airspace above us. A link will be available soon, but stay tuned to us via our NASA Aeronautics for Educators Facebook page for updates:

AAM Safety Poster Contest (Fall 2021, opens Sept. 15, 2021). This activity helps support the FAA’s [“Drone Safety Awareness Week”](#)

Live Events (9-10am PT):

- Nov. 3, 2021 “Flight Control Math 1”
- Dec. 8, 2021 “Package Delivery Drone Simulation” (This event highlights a NASA Aeronautics activity that can be used to support computer science week and Hour of Code.)
- Jan. 19, 2022 “The Science Behind Quadcopters”
- March 9, 2022 “Air Taxi Design Challenge”
- May 11, 2022 (9-11am PT) AAM Middle and High School Career Day
- May 18, 2022 (time coming soon) AAM Future Workforce Seminar for post-secondary students

K-12 classrooms, join in on these live events (or participate in them via recorded videos), and you can apply to be an “AAM Academy Classroom of the Quarter” and work directly with one of our AAM experts. More details coming soon!

## Come See Us!

Now that some conferences are face-to-face (and others are still virtual), make sure to come and find us for engaging NASA Aeronautics content. In Sept, here is where you can find us:

- (In-Person) AISES National Conference, Sept.23-25

<https://conference.aises.org/>

- (Virtual) Langley Research Center celebrates Girls in Aviation Day (GIAD), Sept. 25

Stay tuned for opportunities throughout the year, including at the California STEM Symposium in Oct. and the Colorado Science Conference in Nov.

## Did you know??

- September 17, 1959: The first powered X-15 flight with A. Scott Crossfield at the controls occurred in Edwards, CA. The X-15 demonstrated the first application of hypersonic theory and wind tunnel work to an actual flight vehicle, and examined pilot performance and physiology within and outside Earth’s atmosphere. (find out more about exploration in September [here](#).)



## Links to our Aeronautics STEM Resources:

[Aeronautics Research Resources](#): (all ages) This link takes you to a wide variety of educator resources, Aeronautics@Home, ebooks, National Academies Reports, webinars, lithographs and mini posters, the NASA Aeronautics Research Institute, and more.

[Aeronautics@Home](#): (K-12) This web page contains aeronautics-based activities, videos, games, and more that can be completed at home, in the classroom, or in any number of settings. Topic areas include: "Build It!" "Explore It!" "Watch It!" "Solve It!" "Color It!" and "Aero Educator Resources". Coming soon: "Read It!" and "Do It!"

[NASA Express Sign-Up](#): (K-12, post-secondary) Have you signed up for NASA's NASA EXPRESS weekly newsletter? This newsletter contains the latest information for educators (K-12 and post-secondary) about new resources, design challenges, internships, and workshops. It is THE go-to for the latest STEM news.

[NASA Educator Professional Development Collaborative](#): (K-12 educators) Where do you go for ongoing, free NASA educator professional development opportunities? To EPDC! Take a look at webinars, digital badging and CEU opportunities, STEM teaching tips, videos, and so much more.

[Aeronaut-X](#): (K-12) Our Next Gen STEM: Aeronaut-X program provides new and exciting STEM activities that focus on cutting-edge aeronautics education and the future of flight.

[Museum and Informal Education Alliance](#): (Informal Educators and Museums) Not in a classroom? Looking for informal education materials? Join NASA's Museum and Informal Education Alliance, where you have access to NASA resources—including aeronautics—for your program, organization, museum, science center, or library. Find out about events happening near you and in the virtual world, and let the MIE Alliance help you build your programs! Access to guest speakers, the latest announcements about grant programs, and an active community network allow you to connect with other like-minded people in a supportive, engaging, and aerospace-focused neighborhood.

[NASA Aeronautics for Educators Facebook Page](#): (K-12, post-secondary) Join our NASA Aeronautics for Educators Facebook page, where the latest aeronautics updates, professional development opportunities, lessons and ideas are freely shared.

[NASA STEM Stars](#): (students ages 13+) Webchats that connect students ages 13+ with NASA experts of all types. Each chat introduces a STEM career, addresses a STEM topic, and highlights a NASA mission. Webchats are streamed live at 2pm EST via YouTube, and students can ask questions via the chat feature in real time. Or, you can choose from a growing library of archived sessions.