

# Outreach Planning Guide



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# Welcome!

The love of aerospace/science, technology, engineering and math begins early. When young students are supported and encouraged in their exploration of these and other critical STEM disciplines, they are far more likely to continue seeking out more information, laying the groundwork for an in-demand, technologically-fueled career. The Aerospace Center for Excellence connects with K-12 educators, community organizations, and local event organizers to share their knowledge and demonstrate how aerospace/science, technology, engineering, and math (STEM) matter in their lives.

The Aerospace Center for Excellence facilitates communication between the K-12 educational community and the aerospace/STEM industry. Educational entities often partner with the Aerospace Center for Excellence for efforts such as:

- Requesting guest speakers for Aerospace and STEM-related events
- Judging science and engineering fairs
- Requesting exhibitors for educational and community Aerospace and STEM events
- Participating in our Outreach and Field Trips

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**Education Director, Aerospace Center for Excellence**



## School Coordinator Information

**Outreach Date Requests** | Please book your outreach experience with our education team a minimum of six weeks prior to your requested outreach date.

**Time Specifications** | Outreach program time specifications are listed below for each program offered.

**Outreach Availability** | Outreach programs are available Monday - Friday between 9:00 am – 2:00 pm.

**Payment** | After your request has been received and the date is confirmed, you will receive an email with your invoice. Your invoice must be paid no later than three days before your outreach date. No refunds for weather or special circumstances will be provided; we will reschedule you for another date. **ONLY** credit cards are accepted. Non-payment will result in the cancelation of your outreach.

**Confirmation Details** | Confirmation of your group reservation will be sent via email from our education team. If we cannot accommodate your request, we will contact you via phone or email to discuss alternatives for your group.

**Refunds** | A full refund will be provided if the outreach experience is canceled within 72 hours of the scheduled trip. No refund will be provided if cancellation is received less than 72 hours from the scheduled start time.

**Contact** | Please contact our education team at [educate@flsynf.org](mailto:educate@flsynf.org)

**Important Information** | Depending on the number of staff members/volunteers attending your Outreach Experience, we may require assistance from one or more of your school employees or staff members to assist the team with unloading and reloading. This will be communicated to you upon confirmation. Additionally, teachers are required to attend at all times.

**Media Release Form** | A Media Release Form will be provided to the school coordinator via email. The Media Release Form must be signed by all participating students' parents/legal guardians. All forms need to be scanned and emailed to our team no later than three days before the planned outreach, and the hard copies must be provided for the team upon arrival.

# Outreach Program Options

You can select from the six options below.

OPTION ONE	OPTION TWO	OPTION THREE
<p><b>Portable Planetarium</b></p> <p><b>Maximum # of Students</b> 120</p> <p><b>Grouping</b> 6 groups of 20</p> <p><b>Time</b> 30-minute sessions</p> <p><b>Total Outreach Time</b> 3 hours</p> <p><b>Cost</b> \$150.00 flat rate</p> <p><i>**An additional .50 cents per mile for any location outside a 30-mile radius from the Aerospace Center for Excellence</i></p> <p><i>**\$50.00 per additional staff member (as needed)</i></p>	<p><b>Mobile Flight Simulation</b></p> <p><b>Maximum # of Students</b> 40</p> <p><b>Grouping</b> 4 groups of 10</p> <p><b>Time</b> 30-minute sessions</p> <p><b>Total Outreach Time</b> 2 hours</p> <p><b>Cost</b> \$150.00 flat rate</p> <p><i>**An additional .50 cents per mile for any location outside a 30-mile radius from the Aerospace Center for Excellence</i></p> <p><i>**\$50.00 per additional staff member (as needed)</i></p>	<p><b>Virtual Reality Headsets</b></p> <p><b>Maximum # of Students</b> 40</p> <p><b>Grouping</b> 4 groups of 10</p> <p><b>Time</b> 30-minute sessions</p> <p><b>Total Outreach Time</b> 2 hours</p> <p><b>Cost</b> \$150.00 flat rate</p> <p><i>**An additional .50 cents per mile for any location outside a 30-mile radius from the Aerospace Center for Excellence</i></p> <p><i>**\$50.00 per additional staff member (as needed)</i></p>

OPTION FOUR	OPTION FIVE	OPTION SIX
<p><b>Mobile Sonex Aircraft</b></p> <p><b>Maximum # of Students</b> 100</p> <p><b>Grouping</b> 10 groups of 10</p> <p><b>Time</b> 15-minute sessions</p> <p><b>Total Outreach Time</b> 2.5 hours</p> <p><b>Cost</b> \$150.00 flat rate</p> <p><i>**An additional .50 cents per mile for any location outside a 30-mile radius from the Aerospace Center for Excellence</i></p> <p><i>**\$50.00 per additional staff member (as needed)</i></p>	<p><b>Career Speaker/ Guest Speaker</b></p> <p><b>Maximum # of Students</b> 400</p> <p><b>Grouping</b> Discuss with ACE Education Team</p> <p><b>Time</b> 40-minute sessions</p> <p><b>Total Outreach Time</b> 2 hours</p> <p><b>Cost</b> TBD, based on availability</p>	<p><b>Combination of Option 1-4</b></p> <p><b>Maximum # of Students</b> 40</p> <p><b>Grouping</b> 4 groups of 10</p> <p><b>Time</b> 30-minute sessions</p> <p><b>Total Outreach Time</b> 2 hours</p> <p><b>Cost</b> \$275.00 flat rate</p> <p><i>**An additional .50 cents per mile for any location outside a 30-mile radius from the Aerospace Center for Excellence</i></p> <p><i>**\$50.00 per additional staff member (as needed)</i></p>

## Outreach Program Summaries

Below are summaries of each of the Outreach Experiences the Aerospace Center for Excellence offers.

Outreach Experience	Summary	Grade Level
<p><b>Portable Planetarium</b>  <i>**See specific requirements below for our Portable Planetarium in order for our team to visit your school.</i></p>	<p><b>Weather</b>            The Weather cylinder depicts the earth's atmospheric circulation patterns including location of the wind systems and jet streams, as well as high and low air pressure masses. Enables students to interactively explore pressure systems, storm systems, longitude and latitude coordinate plotting and other global weather phenomena. Students can even investigate the significance of the wind systems on the routes of early explorers and learn how the jet streams influenced military decisions during World War II. Adds a new dimension to teaching earth science, weather patterns, the age of exploration, navigation and history.</p>	6-8
	<p><b>Solar System &amp; Galaxy</b>            This exciting cylinder projects scaled representations of the sun and the principal bodies of the solar system in color with tables of basic statistics. The enormous distances between the planets are shown to scale. The cylinder also features a colored depiction of the Milky Way Galaxy, complete with spiral arms and a scaled distance line. An indispensable aid for the teaching of astronomy for middle school and up!</p>	6-12
	<p><b>Constellations</b>            Using the well-known constellation identification system of H. A. Rey, this cylinder features the 48 major constellations, the ecliptic and celestial equator, colorfully displayed for the ultimate in visual retention. Applications: Star identification, planetary positions and the path of the sun and moon. Useful at all grade levels to facilitate rapid orientation for outdoor observations.</p>	K-12

	<p><b>Deep Sky Objects</b> Ninety-six deep sky objects on a background of 3000 stars (including many of the Messier objects) are coded for easy recognition. The cylinder shows variable and double stars, open clusters, nebulae and galaxies. Detailed identification numbers/symbols and the object's location in right ascension and declination, as well as its relation to a nearby constellation, are shown. Applications: An excellent training device for learning telescope use. Perfect for junior high, high school and college students with an astronomy background.</p>	<p><b>6-12 College</b></p>
	<p><b>Earth</b> This cylinder is a projection of the entire terrestrial globe including all of the earth's land and ocean masses. Longitude is displayed at intervals of 15°, latitude is displayed every 10°, with a scale of projection of 1 inch = 40 miles. It is superior to flat maps in its total elimination of distortion, and is useful for studying weather patterns, ocean currents, time zones, social studies and current events. For the study of geography, earth science, geology and navigation.</p>	<p><b>4-12</b></p>
	<p><b>Celestial Coordinates</b> A full projection of 3000 stars are displayed here against a background of the celestial coordinates, the ecliptic and the galactic equator. Right ascension is marked in 1-hour intervals, declination at 10° intervals, with precessional axis plus or minus 13,000-year increments. Extremely useful for angular measurement, location of faint celestial objects and spherical geometry. Applications: Physics, telescope use, positional astronomy, celestial navigation and precession at the junior high through college level.</p>	<p><b>4-12 College</b></p>
	<p><b>Biological Cell</b> This one million-time magnification of a composite cell demonstrates the workings of a one-celled organism. The processes of cellular digestion and reproduction are illustrated in</p>	<p><b>6-12</b></p>

	<p>vivid color. Endoplasmic reticulum, ribosomes, mitochondria, the Golgi complex, secretion vesicle, lysosomes, pinocytotic vesicles, microvilli, cilia, chromosomes and nucleolus are clearly displayed. An identification key is conveniently located on the cylinder. An ideal introduction to cellular biology.</p>	
	<p><b>Plate Tectonics</b>  This global projection is based on the work of Dr. Paul D. Lowman on the Continental Drift Theory at the Goddard Space Flight Center. This map shows active ridges, faults, spreading centers and volcanic activity over the past 1 million years. Identification keys are clearly visible, making earth science instruction at junior high through college levels easy to illustrate. For earth science and geology.</p>	<p><b>6-12  College</b></p>
	<p><b>Ocean Currents</b>  This cylinder, features both warm (red) and cold (blue) currents in the world’s oceans. Enable students to study the nature of currents, determine what causes them and discover the effects that the currents have on the earth. For earth science, weather patterns, the age of exploration, navigation and history.</p>	<p><b>6-8</b></p>
<p><b>Mobile Flight Simulation</b></p>	<p>Your students can take the flight controls and pilot multiple aircraft in various age-appropriate flight simulation scenarios. Led by an experienced pilot from our education team, your students can connect theory of flight to real world application. Students will learn to operate the aircraft on the ground, through takeoff and climb, and during approach and landing. They will also get the opportunity to practice maneuvering the aircraft, just like a real pilot.</p> <p>NOTE: This mobile lesson is a great pre-learning activity to prepare students for a field trip to the Redbird Flight Simulation Laboratory at the Aerospace Center for Excellence.</p>	<p><b>3-8</b></p>

<p><b>Virtual Reality Headsets</b></p>	<p>Open the whole world to your students with our Virtual Reality Experiences! Our Virtual Reality Experience allows your students the ability to gain a deeper understanding of settings and environments that you may not otherwise be able to show them.</p>	<p><b>3-8</b></p>
<p><b>Mobile Sonex Aircraft</b>  <i>**See specific requirements below for our Mobile Sonex in order for our team to visit your school.</i></p>	<p>Your students will have the opportunity to sit inside a Sonex, and learn about the instruments and the function of each part of the airplane.</p>	<p><b>K-5</b></p>
<p><b>Career Speaker/ Guest Speaker</b></p>	<p>Between our own staff and our extensive network of industry connections, we can offer your students/school a unique motivational opportunity. From pilots to air traffic controllers, from airport planners to aviation mechanics, we can connect your learners with an awesome opportunity to hear from men and women who are doing the jobs your students are dreaming of!</p>	<p><b>K-12 College</b></p>
<p><b>Combination of Option 1-4</b></p>	<p>See Details for Options 1-4 above.</p> <p>This Option will include four stations, our portable planetarium, flight simulation, mobile Sonex, and virtual reality headsets. Your students will rotate between all four stations for 30-minute sessions each.</p>	<p><b>3-12</b></p>

## Portable Planetarium Requirements

- Your school **MUST** have an **indoor location** for the Portable Planetarium that meets the requirements below.
  - The dome requires a 25' square footprint, it is 11' tall (requires a ceiling of 12 ft or higher), and requires electricity.
- Seats approximately **15 – 20** people at a time.
- The teacher **must** be present inside the Planetarium during presentations.
- It is **NOT** the responsibility of ACE staff to move any tables, chairs or other furniture in the set-up location. The space must be cleared for ACE staff to set up the planetarium before they arrive.

## Mobile Sonex Requirements

Before you request the Mobile Sonex, please see the specifications below. The aircraft requires a significant amount of space.

- Wingspan – Requires at least 30 feet of clearance
- Length – Requires at least 20 feet clearance (not including the SUV that pulls the aircraft)
- Requires a flat concrete surface with coverage if possible