

San Diego Air & Space Museum

Educator Guide 2014-2015

Dear Educator,

Welcome to the 2014-2015 Educator Guide! We are excited to bring you a great selection of newly revised workshops, tours, outreach programs and traveling exhibits, all designed to engage and inspire your learners.

Our programs cover a wide variety of subject areas, from math and science to history and art, and are aligned with Common Core, Next Generation Science Standards, and the state standards you want to cover with your students. Our dynamic and hands-on activities will help you master these topics in a shorter time than school classrooms often allow, because of our access to historical artifacts, subject matter experts, and unique learning opportunities.

By coming face to face with history and technology in ways only our Museum can offer, a visit becomes a wonderful primary source for research assessment projects and motivates to students to learn.

In this immersive environment, we help students discover for themselves by interaction with real objects, as well as through building, testing and experimenting. We engage your students' whole range of senses and deductive skills.

It is our hope that the motivation we provide will inspire a lifelong love of learning.

Thank you for making the San Diego Air & Space Museum part of your learning experience; we look forward to seeing you very soon!

The Education Department
San Diego Air & Space Museum



Air & Space at your place or at the Museum

Let us come to you! Our programs can be taught here in our Museum classroom, brought to your school, or taught at our Gillespie Field annex. A mileage fee of 75 cents per mile (both directions) will be added for school outreach.

SIGN ME UP!

Please call the Education Department at 619-234-8291, ext. 119, to make a reservation. All phone messages are returned promptly. Reserve early! Our programs often fill to capacity early in the school year.

- Reservations **must** be made by the classroom teacher.
- Please have alternate dates ready!
- Tentative reservations will not be processed. **A reservation request does not reflect an official booking until you have received a confirmation from us.**
- Guided tours, museum classes, and outreach programs are offered Monday to Friday and must be scheduled at least seven business days in advance. **No tours are given on the fourth Tuesday of each month.** The Museum is open from 10:00 a.m – 5:00 p.m. every day except Thanksgiving and Christmas Day.
- When visiting the museum, one adult supervisor is required for every ten students. The teacher **must** remain with their class.
- Payment may be made by purchase order, cash, credit card, or check payable to: Education Department, San Diego Air & Space Museum. A deposit may be required for certain programs.
- If you must cancel a guided tour, please notify the Education Department as soon as possible. Cancellation of a museum class or outreach program must be made at least seven business days in advance.
- A \$25.00 cancellation fee will be charged for groups canceling after that time or who fail to show for a tour or class.



UP, UP AND AWAY STORY TIME

Grades Pre-K and K

Students will hear a story, and then take a special guided tour and explore the museum.

Time: 45 min

Cost: \$60

Notes: Maximum class size of 20



Take a Little Airplane Trip

Pack your suitcase, get your boarding pass, and take a pretend trip on an airplane with *Lisa's Airplane Trip* by Anne Gutman. After story time, the group will visit our Golden Age of Flight Gallery.



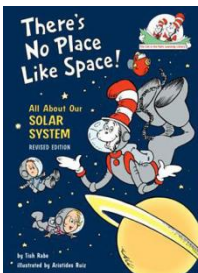
Astronaut School

What does it take to prepare for space travel? Join our astronaut school and find out if you have the right stuff to become a space explorer! We will read *Astronaut Handbook* by Megan McCarthy and then visit the Space Age Gallery to see real astronaut suits and other space artifacts.



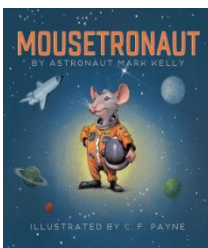
Rocket Race

Join a tortoise and a hare on a race to the Moon! After reading *Hare and Tortoise Race to the Moon* by Oliver J. Corwin, we will look at the design of different space vehicles in the Space Gallery.



There's No Place Like Space

Au revoir, Pluto! Budding astronomers are launched on a wild trip to visit the now eight planets in our solar system (per the International Astronomical Union's 2006 decision to downgrade Pluto from a planet to a dwarf planet), along with the Cat in the Hat, Thing One, Thing Two, Dick, and Sally. It's a reading adventure that's out of this world!



Mousetronaut

Mousetronaut tells the story of a small mouse that wants nothing more than to travel to outer space. The little mouse works as hard as the bigger mice to show readiness for the mission . . . and is chosen for the flight! While in space, the astronauts are busy with their mission when disaster strikes—and only the smallest member of the crew can save the day.

Education Programs

Most of these programs can be offered either at the museum or at a different venue – please call for details. **Note: Curriculum will be adjusted to students' grade level when multiple grades are listed.**

THINGS THAT FLY

Grades K-1

This activity-oriented program introduces younger students to the history and science of flight, learning from designs in nature and those created by humans.

Time: 1.5 hours

Cost: \$120

Notes: Maximum class size of 25

IT'S A BLAST

Grades 1-3

Students build and launch paper rockets as they learn about rocket stability – and see the dramatic demonstration first-hand! Please note that in order to keep the cost of this class down; we need to re-use our film canister “rocket motors.”

Time: 2 hours

Cost: \$120

Notes: Maximum class size of 25

KITES!

Grades 2-6

Students use household materials and imagination to build and fly kites, and learn how kites have been enjoyed and used around the world for thousands of years.

Time: 2 hours

Cost: \$120

AVIATION ART

Grades 2-12

Using our “Fantastic Voyage” traveling poster exhibit as inspiration, students will create individual aviation-related art projects. The Museum’s graphic design department will then convert the students’ work into take-home stickers and book covers. This is a wonderful way to blend science and inspire future artists!

Time: 2 week rental of Fantastic Voyage, with a 2 hour classroom visit.

Cost: \$100

MAGIC PLANET- SOLAR SYSTEM TOUR

Grades 3-6

Students go on a high tech tour of our solar system featuring the Magic Planet digital globe. Features and characteristics of the planets, our sun, and moons are addressed.

Time: 1.5 hours

Cost: \$120

MAGIC PLANET- CONCEPTS OF SCALE

Grades 4-6

Students learn about our solar system through hands-on explorations of scale to appreciate “how big and how far” the planets really are.

Time: 2 hours

Cost: \$130

BALLOON BUILDERS

Grades 4-8

After a short visual presentation on the history of lighter-than-air flight, students work in teams to build and launch hot air balloons.

Time: 3 hours

Cost: \$150

AWESOME AERODYNAMICS

Grades 3-12

After a visual journey through aviation history, students use the familiar medium of paper to make innovative kinds of airplanes and learn the not-so-familiar concepts of aerodynamics.

Time: 2.5 hours at the museum (Includes 60 minute tour)/1.5 hours for Outreach

Cost: \$120

Notes: At the museum, two classes (70 students) may be accommodated during the same time frame for a fee of \$160.

INTERNATIONAL SPACE STATION

Grades 3-12

Interactive demonstrations and hands-on activities teach students about spaceflight and the International Space Station (ISS). The presentations cover concepts such as orbit, microgravity, rendezvous, spacesuits, and living in space.

Time: 1.5 hours

Cost: \$130

GLIDERS GALORE!

Grades 4-6

Students learn the basics of aerodynamics, then directly apply that knowledge in a hands-on way by building working, student-steerable model gliders.

Time: 2.5 hours

Cost: \$140

WHAT GOES UP

Grades 5-10

Discovering the basics of aerodynamics with paper airplanes leads to a practical application of aircraft design as students build balsa and tissue flying models.

Time: 4 hours (includes half hour for lunch) Cost: \$180

Notes: Includes 60 minute museum galleries tour

AQUAROCKETS

Grades 4-12

Newton's Laws come to life as students turn simple soda bottles into amazingly high-flying rockets.

Time: 2 hours Cost: \$140

ENGINEER DESIGN CHALLENGE

Grades 5-12

Based on a well-known college egg drop test, your students will be challenged to engineer a creative and functional impact-resistant capsule. Students work with limited materials and within a budget to design vehicles capable of protecting their "astronaut" from the impact of re-entry. A great team-building project, and a fun way for the world's future engineers to learn the scientific method!

Time: 3 hours Cost: \$120



SCIENCE FESTIVALS OR AFTER SCHOOL PROGRAMS

Short on time? Need several back-to-back programs? These popular programs are a great fit!

Please remember:

- Maximum class size is 35 students and price shown is per class.
- The teacher must remain with the class during the program.
- **A mileage fee of 75 cents per mile (both directions) will be added to the cost.**

PAPER ROCKETS

Grades 1-6

Learn about rocket stability by building simple paper rockets launched with a drinking straw. A brief study of rocket aerodynamics made fun!

Time: 1 hour

Cost: \$100

INTERNATIONAL SPACE STATION

Grades 1-12

Hands-on demonstrations teach students about spaceflight and the International Space Station (ISS). The presentation covers concepts such as orbit, microgravity, rendezvous, docking, astronaut selection and training, spacesuits, and living in space. At least two programs must be scheduled per visit.

Time: 1 hour

Cost: \$100 for two programs

AERODYNAMICS WITH PAPER AIRPLANES

Grades 3-12

In this popular program, students make and use innovative paper airplanes to discover the concepts of heavier-than-air flight. At least two programs must be scheduled per visit.

Time: 45 minutes per program Cost: \$100 for two programs

PUFF GLIDERS

Grades: 3-6

Design, build, and launch straw gliders that allow students to learn first-hand how some aircraft and gliders fly.

Time: 1 hour

Cost: \$100

KITES

Grades: 3-6

Build and fly a cool paper kite.

Time: 1 hour

Cost: \$100

FOAM & Balsa GLIDERS

Grades: 4-8

Build and fly a foam and balsa glider with adjustable tail and wing positions.

Time: 1 hour

Cost: \$150

FOAM FLYERS

Grades: 5-12

Design, build, and fly a glider based on historical designs or imagination.

Time: 1.5 hour

Cost: \$160

Just a Tour, Please!

Our exhibition galleries have a lifetime's worth of learning opportunities in themselves, and our guided tours bring the stories of flight to life!

Our guides are highly dedicated volunteers with extensive knowledge of air and space history and technology.

The tours are designed for Grades 5 and up: younger students are welcome to take a self-guided tour of the museum with their teachers.

- Tours are **free to Title One school groups from San Diego County**, if an advance reservation is made.
- All other school groups, including out-of-county, receive a ***significantly discounted group rate*** if an advanced reservation is made. General admission tours do not include special exhibitions. For pricing, please call 619-234-8291, ext.119.
- Reservations must be made at least seven business days in advance.
- Any group without a reservation must pay the regular group rate at the admissions desk.
- One adult supervisor is required for every ten students (one per five for students under six years of age). Additional adults must pay the regular admission fee.
- Supervisors must remain with the group and are responsible for the students' supervision, their behavior, and the safety of the students and exhibits.
- Tours do not include special exhibitions.

For information on visiting special exhibitions and prices please contact the Education Department.



COMPETITIONS • EXHIBITIONS • FESTIVALS • SUMMER CAMPS • AND LOTS MORE

Our educational mission does not end with our school programs!

- Our Museum mission statement is to preserve, inspire, educate, and celebrate. We do that through a variety of methods designed to encourage life-long and active participation in learning.

Please keep a close eye on our website for new and exciting events!

- Competitions in areas such as art, model-building, photography, and engineering design
- Festivals including Space Day, Paper Airplane Festival, and San Diego Science Festival
- Our Family Days feature hands-on activities for everyone
- Special Exhibitions and other surprises

To keep fully updated with our latest programs, competitions and special events, please sign up for our education e-blasts:

http://www.sandiegoairandspace.org/education/education_signup.php

The San Diego Air & Space Museum offers a variety of half-day, week-long summer camps!

These grade 1-12 classes teach air and space history and science through hands-on activities such as designing and building model airplanes, launching model rockets, and flying simulators.

Scholarships are available! *Call for details.*

Education Programs Scholarship Fund

Through the generosity of many donors and patrons, the San Diego Air & Space Museum is pleased to offer the **Education Programs Scholarship Fund**. Designed for schools needing financial assistance, the Fund pays for the cost of the museum classes, outreach programs, and traveling exhibit loans.

Some restrictions apply; please contact the Education Department for more information.



ATTENTION EAST COUNTY

If you want the Museum experience but Balboa Park is too far away, our education programs can all be taught at our Gillespie Field location as well!

You can also tour our **Gillespie Field facility** – with ongoing restoration projects, a model shop, two hangars full of aircraft, and a view of the runway, there is plenty to enjoy!

To set up a tour, please contact the Education Department.

DID YOU KNOW?

- The San Diego Air & Space Museum welcomes students with special needs; working in partnership with the “Kids Included Together” organization, we ensure that all children have access to our programs. *Please contact us so we can make accommodations to allow your child’s successful participation in our programs.*
- Teachers may visit the Museum for planning purposes free of charge by calling the Education Department and letting us know when you would like to visit. We can also help arrange visits to the Museum’s Library and Archives.
- Another great place to visit is the **San Diego Air & Space Technology Center**. Not only do aerospace companies like Boeing, Cessna, and Northrop Grumman conduct tests there, but so do many athletes! Cyclists, Olympic medal winners, and even extreme skateboarders have used the wind tunnel to hone their need for speed! *To set up a tour of the facility, please contact the Education Department, or call the tunnel directly at 619.683.8900.*

MANY THANKS TO

- Price Charities
- City of San Diego Commission for Arts and Culture
- Ackerman Foundation
- Catch a Rising Star Program
- The Samuel J. And Katherine French Fund
- High Tech High
- Lockheed Martin
- SAE International / A World In Motion
- San Diego Air & Space Technology Center
- San Diego County Regional Airport Authority
- Union Bank

...and our many other formal and informal corporate and community partners.

All information in this guide is subject to change at any time.