

San Diego Air & Space Museum

Educator Guide 2011-2012

Dear Educator,

Welcome to the 2011-2012 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 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 that only our museum can offer, visitors become increasingly motivated to learn.

In this immersive environment, we help students discover for themselves by interaction with real objects, 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



ENROLLMENT INFORMATION

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 normally open from 10:00 a.m. - 4:30 p.m. (until 5:30 p.m. during the summer) every day except Thanksgiving, Christmas Day, and New Year's 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.
- A 30-minute guided tour of the museum can be added to all classes held at the museum at no extra cost: this must be requested when making your booking, and is subject to tour guide availability. Some classes already include gallery tours, as noted in the class descriptions.

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



Educational Programs

Most of these programs can be offered either at the museum or at a different venue – please call for details.

THINGS THAT FLY

Grades K-2

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: \$130

Notes: Curriculum adjusted to students' grade level

AVIATION ART

Grades 2-12

Using our “Fantastic Voyage” traveling poster exhibit as inspiration, students will create individual aviation-related art projects. The Museum 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 art while inspiring future artists!

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

Cost: \$100

Notes: Curriculum adjusted to students' grade level

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 moon are addressed.

Time: 1.5 hours

Cost: \$120

MAGIC PLANET- CONCEPTS OF SCALE

Grades 3-6

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 3-9

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**

Notes: Curriculum adjusted to students' grade level

AWESOME AERODYNAMICS

Grades 3-12

(Curriculum adjusted to students' grade level)

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

(Curriculum adjusted to students' grade level)

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 4-9

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

ROCKET SCIENCE FOR REAL

Grades 4-9

Day One: Students are introduced to Newton's Laws of Motion and learn about the history of space flight as they build model rockets. This can be performed at the Museum or at your school.

Day Two: "Launch Day" at the Fiesta Island launch site as the students enjoy the drama of launching their own rockets, followed by a debriefing and review of the launch data. Schools are responsible for transportation to the Mission Bay Fiesta Island launch site. Rocket Launches subject to FAA approval/cancellation.

Time: Two-day program (3.5 hours per day; includes half hour for lunch)

Cost: \$350 (up to 20 students, \$15 for every extra student)

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

SCIENCE OF: DA VINCI

Grades 4-12

Students will examine da Vinci's life and the science of his designs and will then build da Vinci-inspired gliders.

Time: 2 hours

Cost: \$120

AIR ROCKETS

Grades 5-12

Introduce your students to Newton's Laws of Motion as they build their own paper rockets which will be launched outside using a pneumatic rocket launcher. The perfect alternative to our "Rocket Science for Real" class for those who only have one day.

Time: 2 Hours

Cost: \$120

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 reentry. 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

THE STORY OF BESSIE COLEMAN: FIRST BLACK WOMAN PILOT

Grades 5-12

Join author Connie Plantz as she tells the amazing story of Bessie Coleman, who overcame gender and racial prejudice in order to earn an International Pilot's License in 1921. Coleman's life from sharecropper's daughter to daredevil pilot and businesswoman is told using original photos and materials from the museum's archives.

Time: 1 hour Cost: \$135 for an assembly, \$50 for one class (Museum tour not included)



TRAVELING EXHIBITS

Exhibits are available for loan to community groups, schools, libraries or individual teachers. Along with the materials included in the exhibit, you will receive background information and a variety of suggested activities to help your students explore the exhibit.

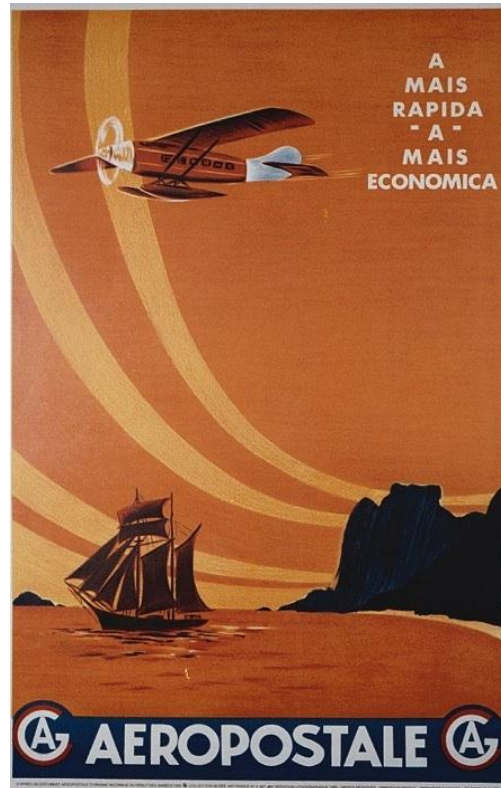
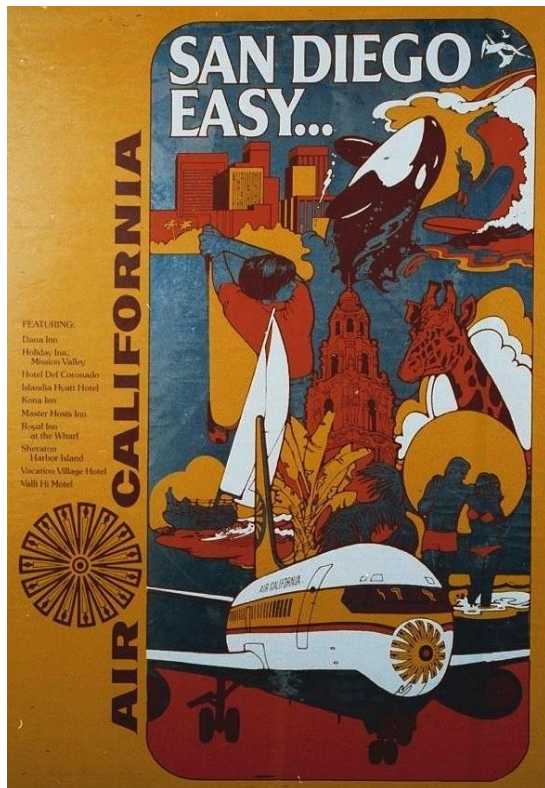
SPACE AT YOUR PLACE

This exhibit includes two kiosks providing information on the solar system, satellites, rockets, spacecraft, and the International Space Station. Three additional display cases showcase models of Atlas, Titan, and Saturn rockets.

FANTASTIC VOYAGE

Travel around the world and inspire your students without leaving the classroom! You will receive a beautiful set of vintage airline travel posters to display. Each poster features a different country and aircraft. Information provided in the curriculum enables your class to make a trans-world flight while learning about geography, history, science, and art.

The fee for a two-week loan is \$75 plus mileage fees (Fee includes exhibit set up and removal by museum staff). Each additional week is \$25. Please call for more information.



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: 45 minutes to 1 hour

Cost: \$100 for two programs

Notes: Curriculum adjusted to students' grade level and adaptable for assemblies

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**

Notes: Curriculum adjusted to students' grade level

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 Grade 3 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.
- Other San Diego County schools receive a *significantly discounted group rate* (\$4.00 per student, \$7.00 per required adult), if an advance reservation is made. All other school groups, including out-of-county, receive a group rate of \$5.00 per student and \$10.00 per required adult, if an advanced reservation is made. Tour does not include special exhibitions.
- 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 celebrate, educate, and inspire: 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
- Once a month Family Days with 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 programs!

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! Bicyclists such as Lance Armstrong, Olympic medal winners, and even extreme skateboarders use 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
- Ford Motor Company Fund
- 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.