



AMERICAN AIRLINES  
CR SMITH MUSEUM

## FIELD TRIP GUIDE 2018-2019



817.967.1560 | 4601 Hwy 360 at FAA Road | Fort Worth, TX 76155

**CRSMITHMUSEUM.ORG**



**WELCOME ABOARD!** During your trip with us at the American Airlines CR Smith Museum, your class will learn about the science and technology behind why airplanes fly, the history of American Airlines, and learn about the men and women who help you get to your final destination safely. Do you want to FLY beyond what the museum exhibits have to offer? We have TEKS-aligned lab-based programs taught by our experienced, qualified museum staff.

## Planning a Field Trip

The CR Smith Museum offers TEKS aligned, grade appropriate self-guided and guided programs.

**GROUP RATE: \$3/child (2-17) and \$4/person for adult with group**

- **To qualify, groups must have at least 15 participants, pay in one transaction and schedule in advance**
- **Please schedule all visits at least 2 weeks in advance**

**Field trips may be scheduled Thursday and Friday**  
**between the times of 9am and 5pm.**





## Planning a Field Trip

### Pre-Flight Materials:

Before your visit to the museum, you may want to have a general discussion with your group or class about your field trip. We encourage you and your group leaders to visit the museum to prepare for your museum visit.

### Science:

- What is force?
- Review simple machines especially wheels, pulleys, gears and screws.
- Review properties of air.



We will focus on the simple machines that make up a complex aircraft, flight controls and flying in Earth's atmosphere, as well as the different jobs of aviation personnel.





## Flight Science Workshops Grades K-12

Enhance your field trip experience by allowing students to get even more hands-on in our Flight Science Workshops. Museum staff and volunteers will dive deeper into the science, engineering, technology and math of flight. Students will be challenged to put their new knowledge to the test and participate in one of our age-appropriate engineering builds.

**Must have at least 15 participants and up to 30 participants per session 45-60 min program. Please call if your group is larger,**

**Key Themes: Science, Technology, Engineering and Math, Engineering Design. Themes vary based upon workshop build.**

**Groups of 15 and above: workshops are \$8 /person and include general admission. Those not participating in workshops (chaperones, additional teachers, siblings, etc.) will be charged the group admission rate of \$4/adult and \$3/child (2-17).**

**Groups smaller than 15: workshops are \$11/person and include general admission. Those not participating in workshops (chaperones, additional teachers, siblings, etc.) will be charged the admission rate of \$9/ adult and \$6/child (2-17).**

## Outreach Programs All Grade Levels

Can't come out to the museum? Would you like for the American Airlines CR Smith Museum to participate in your school's science night or career day? Many of our museum programs can be turned into an Outreach Program!





## Available Workshops

### **Wind Tunnel Testing (Grades K-5) (on-site only)**

45 minute program. Students will discover the principles of air, air pressure and the forces that affect flight through an engaging live demonstration, hands-on experiments and an engineering challenge. Also, learn how aerospace engineers use wind tunnels to design and test flight. Students will then be put to the test to design their own hovercraft in our Museum wind tunnel.

### **Engineer an Airfoil (Grades K-5) (off site only)**

45 minute program. Students will discover what the principles of air, air pressure and the forces that affect flight through an engaging live demonstration, hands-on experiments and an engineering challenge. They will also learn how and why an airplane wing is the shape it is, how wind moves around the wing to cause lift and how aerospace engineers test wind flows over the wing.

### **Build a Communication Network (Grades 2-6) (on and off-site)**

45 minute program. Introduce your students to sound, signals and sensors! Students will not only learn the science behind sound waves and how it is used to assist pilots communicate, but also the aviation alphabet and language. Students will plan and build a network to send communication signals in multiple directions to multiple people.

### **Power a Plane Using Stored Energy (Grades 5-8) (on and off-site)**

45-60 minute program. Students will learn the different parts of an airplane and design their own glider. After a short lesson on potential and kinetic energy, students will then be challenged to power their plane using stored energy. Students will also learn about the role of aviation engineers through interactive videos.

### **Engineer a Long Spanning Wing (Grades 4-8) (on and off-site)**

Students will discover the materials, frame and design needed to engineer a long aircraft wing. While airplanes need to be strong, they also need to be lightweight. Put your students to the test to try and build a durable, yet lightweight wing through this hands-on program.

### **Build a Plane Painting Machine (Grades 6-8) (on and off-site)**

45-60 minute program. Have you ever wondered why are planes painted? Well, for a variety of reasons– to protect the plane, improve aerodynamics, and for decoration! Students will make a plane painting machine to draw a design on your airplane.





## TEKS Standards Alignment

Workshop Theme	Grade Levels	Scientific Investigation and Reasoning	Matter & Energy	Force, Motion & Energy
<b>Wind Tunnel Testing/Airfoil</b>	K	1AB, 2ABDE, 3ABC, 4A	5 ABC	6 CD
	1	1AB, 2ABDE,	5 ABC	6 CD
	2	1AB, 2ABDE,	5 ABC	6 CD
	3	1A, 2AB, 3ACD,	5B	6 BC
	4	2ABF, 3AD	5A	6AD
	5	2ABF, 3ACD	5A	6AD
<b>Build A Communication Network</b>	2	2ABDEF, 3ABC	5CD	6A
	3	2ADEF, 3ACD		6A
	4	2ABF, 3AD		6AD
	5	2ABF, 3ACD		6A
	6	2ABCE, 3ABCD		9C
<b>Engineer A Long</b>	4	2AD, 3AD	5A	6D
	5	2ABDF, 3ACD	5A	6D
	6	2ABCE, 3ABCD		8AB
	7	2ABCE, 3ABCD		7A
	8	2ABCE, 3ABCD		6A
<b>Power A Stored-</b>	5	2ABDF, 3ACD	5A	6AD
	6	2ABCE, 3ABCD	7A	8AB
	7	2ABCE, 3ABCD		7A
	8	2ABCE, 3ABCD		6AC





## FIELD TRIP REQUEST

SCHOOL OR ORGANIZATION NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY, STATE, ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

CONTACT PERSON \_\_\_\_\_ E-MAIL \_\_\_\_\_

GRADE \_\_\_ TOTAL # STUDENTS \_\_\_ TOTAL # TEACHERS \_\_\_ SPECIAL NEEDS \_\_\_\_\_

CLASSROOM PROGRAM REQUESTED \_\_\_\_\_

PREFERRED VISIT DATE: 1ST \_\_\_\_\_ 2ND \_\_\_\_\_ 3RD \_\_\_\_\_

TRANSPORTATION: CAR \_\_\_\_\_ PASSENGER VAN \_\_\_\_\_ SCHOOL BUS \_\_\_\_\_

CHECK ALL THAT APPLY	PROGRAMS	# OF STUDENTS	# OF CHAPERONES	# OF ADDITIONAL ADULTS
	WIND TUNNEL TESTING			
	BUILD A COMMUNICATION NETWORK			
	POWER A PLANE USING STORED ENERGY			
	ENGINEER A LONG SPANNING WING			
	BUILD A PLANE PAINTING MACHINE			





## ON YOUR CAMPUS REQUEST

SCHOOL OR ORGANIZATION NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY, STATE, ZIP \_\_\_\_\_ COUNTY \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

CONTACT PERSON \_\_\_\_\_ EMAIL \_\_\_\_\_

GRADE LEVEL \_\_\_\_ TOTAL # OF STUDENTS \_\_\_\_ TOTAL # OF TEACHERS \_\_\_\_ SPECIAL NEEDS \_\_\_\_

PREFERRED VISIT DATE: 1ST \_\_\_\_\_ 2ND \_\_\_\_\_ 3RD \_\_\_\_\_

PREFERRED PROGRAM CHOICE \_\_\_\_\_

ON YOUR CAMPUS OUTREACH PROGRAMS	ADDITIONAL INFORMATION
<b>ENGINEER AN AIRFOIL</b>	Maximum of 1 per day, with at least 5 minutes between programs.
<b>BUILD A COMMUNICATION NETWORK</b>	Maximum of 1 per day, with at least 5 minutes between programs.
<b>ENGINEER A LONG SPANNING WING</b>	Maximum of 1 per day, with at least 5 minutes between programs.
<b>POWER A PLANE USING STORED ENERGY</b>	Maximum of 2 per day, with at least 10 minutes between programs.
<b>BUILD A PLANE PAINTING MACHINE</b>	Maximum of 2 per day, with at least 10 minutes between programs.

