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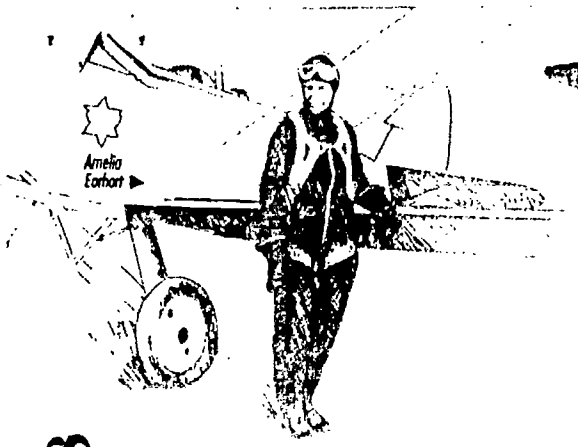
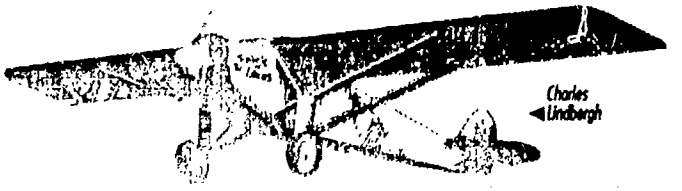
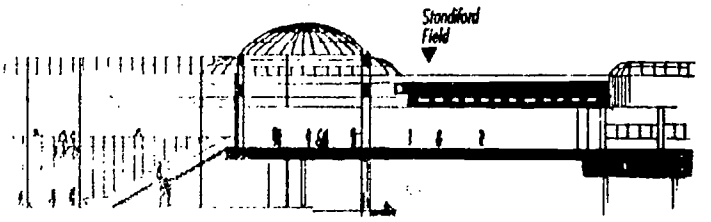
ABSTRACT

These lesson plans are designed for use by middle school social studies teachers who take their students on a tour of the regional airports of Louisville, Kentucky. Twelve lesson plans are included: "Let's Go There Next, Mom"; "Who Wrote That?"; "The Games They Play!"; "You Flew on What?"; "I Wonder Where"; "Look! Up in the Sky! It's a..."; "It's Around Here Someplace!"; "Way Back Then!"; "Whose Job Is It Anyhow?"; "Mom, Are We There Yet?"; "How's the Weather Up There?"; and "Which Way Is Up?" Each lesson includes the following information for teachers: title, grade level, skills, performance objectives, materials, and procedures. A bibliography is provided along with an appendix that lists organizations from which educational resources about aviation and aerospace are available. (DB)






# CURRICULUM PACKAGE

Middle School Social Studies Lessons



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*Standiford Field & Bowman Field*

**ACKNOWLEDGEMENT**

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Academy of Model Aeronautics
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National Headquarters Civil Air Patrol
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U.S. Department of Transportation

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## TABLE OF CONTENTS

## MIDDLE SCHOOL SOCIAL STUDIES LESSONS

**LESSON TITLE:** LET'S GO THERE NEXT, MOM.

**GRADE LEVEL:** 6

**SKILLS:**

- Applies research techniques to an assignment topic
- Records data on an organizational chart
- Summarizes data located from research
- Identifies places of interest to travelers

**PERFORMANCE OBJECTIVES:**

- The student will locate and describe features/events identified with a place.
- The student will collect data on the feature/event.
- The student will summarize the data collected on the feature/event.

**MATERIALS:**

Data Collection Sheet
Summary Worksheets
Encyclopedia
Textbook

**PROCEDURE:**

1. Ask students what they went to see on their last vacation. Categorize the lists---e.g. natural features, famous events, historic places.

2. Note that many places, events and features are world famous and draw visitors from all over the world. Mention several to demonstrate that the students have heard of them.

3. Distribute the data collection sheets and summary sheets. Assign each student a site to research. Have each student report on his/her destination to the class while the rest of the class records data on the data summary sheet.

## SUMMARY SHEET

| POSSIBLE VISIT | WHERE WOULD I GO TO SEE IT? | WHAT IS IT? | HOW MIGHT I GET THERE? |
|---|---|---|---|
| Astrodome | | | |
| Waikiki Beach | | | |
| Cape Cod | | | |
| Disney World | | | |
| Key West | | | |
| Mecca | | | |
| Tel Aviv | | | |
| Great Barrier Reef | | | |
| Lincoln's Tomb | | | |
| Taj Mahal | | | |
| Ellis Island | | | |
| Mt. Everest | | | |

## SUMMARY SHEET

| POSSIBLE VISIT | WHERE WOULD I GO TO SEE IT? | WHAT IS IT? | HOW MIGHT I GET THERE? |
|---|---|---|---|
| Tour de, France | | | |
| Grand Canyon | | | |
| Cumberland Falls | | | |
| La Scala | | | |
| Kentucky Derby | | | |
| Great Wall | | | |
| Niagara Falls | | | |
| Amazon River | | | |
| Mt. Vesuvius | | | |
| Wimbledon | | | |
| World Series | | | |
| White House | | | |
| Pyramid | | | |
| Eiffel Tower | | | |
| Big Ben | | | |
| Kremlin | | | |

## DATA COLLECTION SHEET

**DESTINATION**_____

**WHERE FOUND**_____

**DESCRIPTION**_____

**WHY IMPORTANT/WORTH SEEING**_____

**LESSON TITLE:** WHO WROTE THAT?

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Explains the historical process
- Researches a given topic
- Organizes data
- Writes a historical description

**PERFORMANCE OBJECTIVES:**

- The student will identify transportation centers.
- The student will conduct a research study of a selected center.
- The student will write a brief history of the center.

**MATERIALS:**

Library Materials
History Guide

**PROCEDURE:**

1. Explain what historians do, and note that students could do the same thing---e.g. investigate, evaluate, organize and present.

2. Assign the project "A History of..." and note:

a. where to investigate---interviews, librarians, etc.
b. how to collect/organize data,
c. how to write a rough draft/final draft.

3. Organize the students into writing teams, and have them work together in researching, writing, editing and rewriting. Review the final drafts.

4. Students' work can be collected and published to be kept in the library standing file for future use.

**SUGGESTED TOPICS:**

Shippingport, Union Station, Fourth Street Wharf, Portland, Bowman Field, Standiford Field, West Port, Greyhound Depot.

**LESSON TITLE:** THE GAMES THEY PLAY!

**GRADE LEVEL:** 6

**SKILLS:**

- Relates teams to cities that support them
- Locates places on a map
- Conducts research on an assigned topic
- Records data on charts/graphs

**PERFORMANCE OBJECTIVES:**

- The student will locate cities on a map.
- The student will conduct research on athletic teams/events.
- The student will record data on an organizational chart.

**MATERIALS:**

U.S. Map
Sport Inventory Chart
Newspapers/magazines

**PROCEDURE:**

1. Ask the class to name their favorite team(s). Discuss where these teams are located. Generate a list of favorite teams.

2. Note that some cities support several teams while others support only one. Distribute the retrieval chart, and ask students to find the information needed to complete it. Students may work individually or in groups.

3. Check the student work, and make certain each list is complete.

4. This activity can easily be extended:
   - Which region of the U.S. supports the most professional teams?
   - Pick a conference or a league, and key a map to show the cities included.
   - Plan a trip to see a team play.
   - Get a team schedule; pick an important game date, and check into making airline reservations (date, time, carrier, cost).

## SPORT INVENTORY CHART

| CITY | PRO TEAMS | | | MAJOR COLLEGE TEAM(S) | MAJOR SPORTING EVENT |
|---|---|---|---|---|---|
| | BASEBALL | BASKETBALL | FOOTBALL | | |
| Louisville | | | | | |
| New York | | | | | |
| Denver | | | | | |
| Boston | | | | | |
| San Francisco | | | | | |
| Los Angeles | | | | | |
| Portland | | | | | |
| Atlanta | | | | | |
| Philadelphia | | | | | |
| St.Louis | | | | | |
| Washington, D.C. | | | | | |
| Detroit | | | | | |
| Chicago | | | | | |

**LESSON TITLE:** YOU FLEW ON WHAT?

**GRADE LEVEL:** 6

**SKILLS:**

- Traces the history of an industry or institution
- Conducts research on an assigned topic
- Records data on a chart
- Relates a company to location and history

**PERFORMANCE OBJECTIVES:**

- The student will identify major airlines, their country of origin and their founding dates.
- The student will record data on an organizational chart.
- The student will conduct a media search on airlines.

**MATERIALS:**

Airline Registry Chart
Encyclopedia
Newspapers/Magazines

**PROCEDURE:**

1. In discussing travel, ask the students which airlines they have flown. Generate a list of airlines.

2. Note that many countries have one airline. Distribute the organizational chart, and read the list with the class.

3. Have the class, either individually or in groups, complete information required on each airline.

4. This activity can be extended in several ways. Airlines serving Standiford Field can be added to the list. A history of airlines could be written. A media search can be conducted for logos, ads, news stories on the airlines.

## AIRLINE REGISTRY CHART

| AIRLINE | COUNTRY OF ORGIN | DATE FOUNDED | HEADQUARTERS |
|---|---|---|---|
| Aeroflot | | | |
| Air Canada | | | |
| Air France | | | |
| Alitalia | | | |
| British Airlines | | | |
| Delta | | | |
| Japan Air Lines | | | |
| Lufthansa | | | |
| Quantas | | | |
| Royal Dutch | | | |
| Scandanavian | | | |
| United Airlines | | | |
| El Al | | | |
| | | | |
| | | | |
| | | | |

**LESSON TITLE:** I WONDER WHERE

**GRADE LEVEL:** 6, 7

**SKILLS:**

- Identifies cultural achievements
- Conducts research into an assigned topic
- Organizes data on a retrieval chart
- Relates data from different maps

**PERFORMANCE OBJECTIVES:**

- The student will identify the Seven Wonders of the Ancient World.
- The student will locate and describe the Seven Wonders of the Ancient World.
- The student will use a retrieval chart to organize data on the Seven Wonders of the Ancient World.

**MATERIALS:**

Text/encyclopedia
Seven Wonders of the World Chart
World Map

**PROCEDURE:**

1. Introduce the idea of major achievements. Ask what people a thousand years from now will find amazing about our civilization. Generate and discuss a list of achievements.

2. Note that the people of the ancient world produced many things we find amazing (mention some) and that have been labeled "wonders".

3. Distribute the retrieval chart and have the students, individually or in groups, complete the chart.

4. This activity can be extended by having the students add achievements of the non-western ancient world to the list of wonders and share their additions with the class---e.g., The Great Wall of China, The Pyramids of Mexico, The Temples of the Mayans.

## SEVEN WONDERS OF THE WORLD CHART

| SEVEN WONDERS OF THE ANCIENT WORLD | WHAT WAS IT? | CULTURE/INDIVIDUAL WHO BUILT IT? | APPROXIMATE DATE BUILT? | WHAT HAPPENED TO IT? | WHERE WOULD IT BE TODAY? | HOW TO REACH IT FROM KENTUCKY? |
|---|---|---|---|---|---|---|
| Pyramids of Egypt | | | | | | |
| Hanging Gardens of Babylon | | | | | | |
| Temple of Artemis at Ephesus | | | | | | |
| Statue of Zeus at Olympia | | | | | | |
| Mausoleum at Halicarnassus | | | | | | |
| Colossus of Rhodes | | | | | | |
| Light House of Alexandria | | | | | | |

**LESSON TITLE:** LOOK! UP IN THE SKY! IT'S A...

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Identifies types of aircraft
- Conducts research on assigned topic
- Identifies characteristics of aircraft types
- Collects data on retrieval charts

**PERFORMANCE OBJECTIVES:**

- The student will collect pictures of aircraft types.
- The student will conduct research on aircraft types.
- The student will record data on aircraft characteristics.
- The student will relate characteristics to aircraft types.

**MATERIALS:**

Magazines/newspapers
Aircraft Type Chart
Encyclopedia

**PROCEDURE:**

1. Ask the students to name things that fly. Use this list to generate a list of aircraft types.

2. Have the students locate pictures of the types listed. Collect the pictures in groups by types.

3. Distribute the Aircraft Type Chart, and have the students complete the chart. Have them summarize the chart in describing each type of aircraft.

4. This activity can be extended to include a media search by having the students collect and summarize stories on aircraft types.

# AIRCRAFT TYPE CHART

| CHARACTERISTICS | KITE | BALLOON | BLIMP | GLIDER | HELICOPTER | AIRCRAFT | ROCKET |
|---|---|---|---|---|---|---|---|
| Lighter Than Air | | | | | | | |
| Wings | | | | | | | |
| Engine | | | | | | | |
| Rotor Blades | | | | | | | |
| Requires Runway | | | | | | | |
| Powered Flight | | | | | | | |
| Wheels | | | | | | | |
| Rudder | | | | | | | |
| Supersonic Flight | | | | | | | |
| Rides Air Current | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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**LESSON TITLE:** IT'S AROUND HERE SOMEPLACE!

**GRADE LEVEL:** 6, 8

**SKILLS:**

- Identifies characteristics of geographic regions
- Describes natural regions of Kentucky
- Records data on organizational chart

**PERFORMANCE OBJECTIVES:**

- The student will identify the natural regions of Kentucky.
- The student will describe activities characteristic of the natural regions.
- The students will record data on an organizational chart.

**MATERIALS:**

Map of Kentucky
Map of airport(s) in the region and regional centers
Library materials
Kentucky's Regions Chart

**PROCEDURE:**

1. Review the regions of Kentucky, and note that many regions relate to specific large cities for travel and economic contacts. Distribute the maps and charts.

2. List the cities of Kentucky by region, and ask the students, individually or in groups, to locate the information needed to complete the chart.

3. Discuss the findings.
   - Which cities and towns relate to Louisville as a regional hub?
   - Which are hubs themselves?
   - Which relate to cities outside of Kentucky?

## KENTUCKY'S REGIONS CHART

| REGION | MAJOR CITIES | REGIONAL AIRPORT(S) | ECONOMIC ACTIVITY | MAJOR UNIVERSITY |
|---|---|---|---|---|
| Bluegrass | | | | |
| Knobs | | | | |
| Pennyroyal | | | | |
| Eastern Mountains | | | | |
| Western Kentucky Coal Fields | | | | |
| Jackson Purchase | | | | |

**LESSON TITLE:** WAY BACK THEN!

**GRADE LEVEL:** 6, 8

**SKILLS:**

- Identifies transportation systems used during different periods of history
- Records data on charts/graphs
- Analyzes data on charts/graphs

**PERFORMANCE OBJECTIVES:**

- The student will identify transportation systems important to Louisville in different periods.
- The student will use charts to organize data.
- The student will analyze data to draw conclusions about transportation.

**MATERIALS:**

Encyclopedia
History materials
Transportation Systems Chart
Time line

**PROCEDURE:**

1. Ask students how their ancestors or parents came to Kentucky. What forms of transportation were used? Generate a list.

2. Note that at different times, different systems were "most important". Review the history of transportation in Kentucky (keel boat, wagon, railroad, steamboat, airplane). Develop a rough time line of transportation forms.

3. Distribute the organizational chart, and have the students, individually or in groups, complete the chart.

4. Review the results. Then ask:
   - Which had the most impact on Louisville? on Kentucky? Why?
   - Which was dominant longest?
   - Which forms overlap/coexist?
   - Which is most used by the class?

# TRANSPORTATION SYSTEMS CHART

| SYSTEM | FIRST TO LOUISVILLE | HEYDAY | CENTER(S) | MILESTONE EVENTS |
|---|---|---|---|---|
| Keelboat | | | | |
| Steamboat | | | | |
| Railroad | | | | |
| Bus | | | | |
| Aircraft | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
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**LESSON TITLE:** **WHOSE JOB IS IT ANYHOW?**

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Identifies job opportunities in an industry
- Relates jobs to responsibilities
- Records data on retrieval/organizational charts
- Conducts research on an assigned topic

**PERFORMANCE OBJECTIVES:**

- The student will study the airport work centers.
- The student will identify the jobs, responsibilities and workplaces found at the airport.
- The student will organize data collected on an organizational chart.
- The student will report to the class on the airport jobs.

**MATERIALS:**

Encyclopedia
Airport Centers Chart
Guest speaker (optional)

**PROCEDURE:**

1. Define workplace analysis as a study of the types of jobs found at a given place. Analyze the jobs found at school to demonstrate the idea.

2. Ask about the jobs at the airport, and have the class brainstorm a list. Distribute the organizational chart, and have the students, individually or in groups, use it to complete a workplace analysis of the airport.

3. Have the students share their analysis with the class.

4. This activity can be extended by using a guest speaker who has one of the jobs to assist in the analysis. Another option would be to have the students conduct a career analysis (educational requirements, training, pay, benefits expected).

# AIRPORT CENTERS CHART

| CENTER | ACTIVITIES | WORKERS INVOLVED | JOB RESPONSIBILITIES |
|---|---|---|---|
| Terminal | | | |
| | | | |
| | | | |
| Hangars | | | |
| | | | |
| | | | |
| Runway/ Taxiway/ Airfield | | | |
| | | | |
| | | | |
| Control Tower | | | |
| | | | |
| | | | |
| Aircraft | | | |
| | | | |
| | | | |
| National Weather Service | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

**LESSON TITLE:** **MOM, ARE WE THERE YET?**

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Applies math skills in practical situations
- Relates air travel, flying time, fuel consumption and time zones
- Records data on retrieval charts

**PERFORMANCE OBJECTIVES:**

- The student will determine the distance from Louisville to other parts of the U.S.
- The student will determine the travel time at a given rate of speed.
- The student will determine fuel consumption for the trip.

**MATERIALS:**

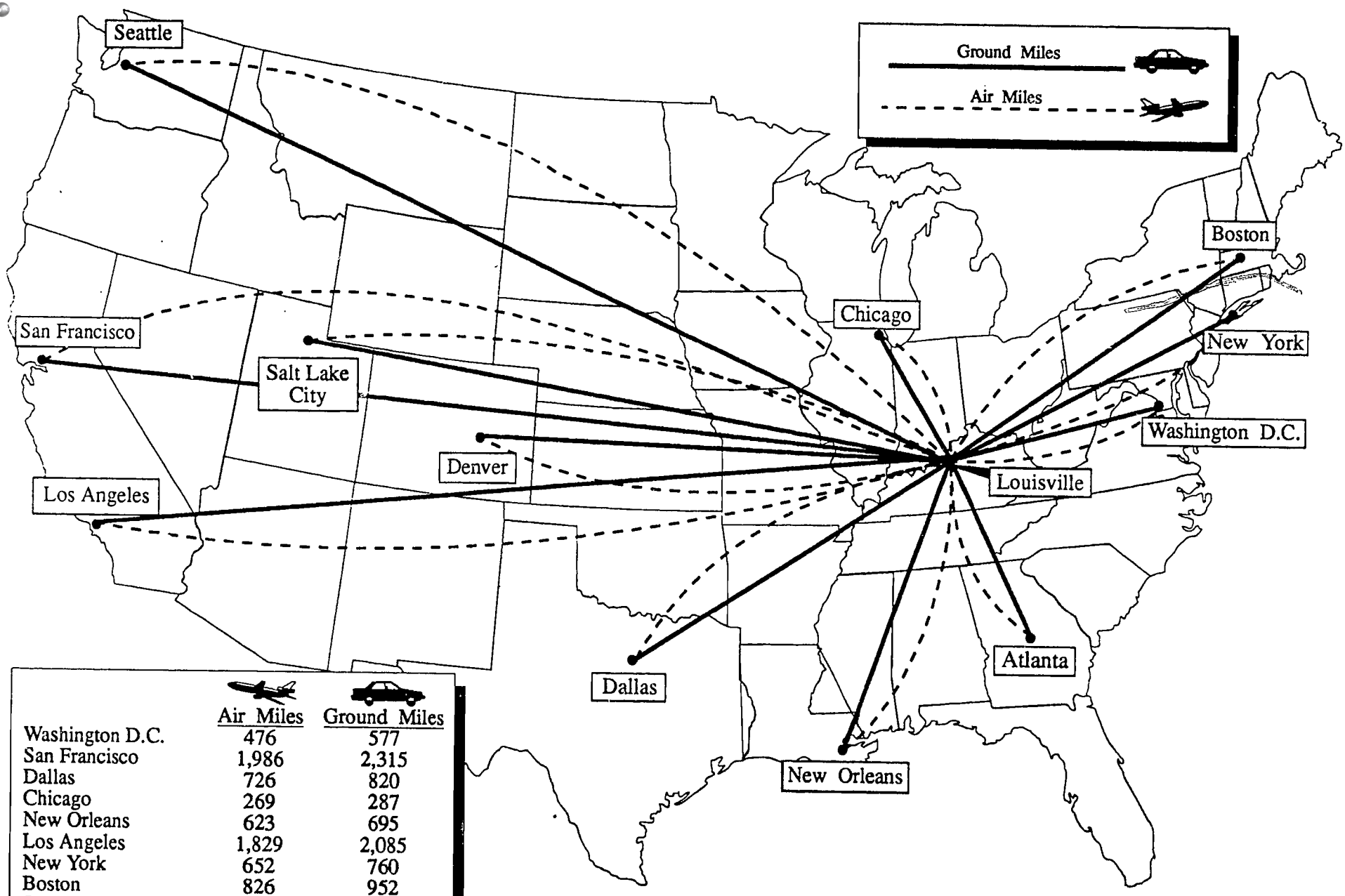
Travel Planner Chart
Map
Mileage Chart From Any Atlas

**PROCEDURE:**

1. Introduce the lesson by discussing what subjects are important to pilots---e.g., geography, sciences, math. Note that airlines must use knowledge from a variety of disciplines to plan flights---e.g., distance, flight time, fuel consumption.

2. Distribute the maps, mileage charts and Travel Planner Charts. Discuss the charts with the class, and demonstrate how it should be completed. Note the disciplines involved (sciences, social studies, math).

3. Have the students, individually or in groups, complete the charts. Ask each student/group to report on one of the entries.




| | Air Miles | Ground Miles |
|---|---|---|
| Washington D.C. | 476 | 577 |
| San Francisco | 1,986 | 2,315 |
| Dallas | 726 | 820 |
| Chicago | 269 | 287 |
| New Orleans | 623 | 695 |
| Los Angeles | 1,829 | 2,085 |
| New York | 652 | 760 |
| Boston | 826 | 952 |
| Seattle | 1,943 | 2,293 |
| Denver | 1,038 | 1,114 |
| Salt Lake City | 1,402 | 1,573 |
| Atlanta | 321 | 398 |

Air mileage information was obtained from INFORMATION PLEASE ALMANAC.
Ground mileage information was obtained from RAND McNALLY STANDARD HIGHWAY MILEAGE GUIDE.

## TRAVEL PLANNER I

| DESTINATION | MILES FROM LOUISVILLE | TRAVEL TIME at 200 MPH | TRAVEL TIME at 450 MPH | FUEL NEEDS 8 MPG at 200 3 MPG at 450 | LOCAL ARRIVAL TIME IF DEPARTURE 1:00 P.M. EST |
|---|---|---|---|---|---|
| Washington, D.C. | | | | | |
| San Francisco | | | | | |
| Dallas | | | | | |
| Chicago | | | | | |
| New Orleans | | | | | |
| _____ | | | | | |
| _____ | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**LESSON TITLE:** HOW'S THE WEATHER UP THERE?

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Identifies weather/climate patterns
- Locates places on map
- Records data on charts
- Relates needs to climate
- Relates data from different map types

**PERFORMANCE OBJECTIVES:**

- The student will locate places using longitude/latitude coordinates.
- The student will determine the climate/weather patterns of a location.
- The student will conclude what clothing would be needed to visit the destination on a given date.

**MATERIALS:**

World map
Climate map
Travel Planner Chart II
Encyclopedia

**PROCEDURE:**

1. Introduce the lesson by discussing vacations or places the students might want to visit. Note that they have to plan the clothes to take on a visit and that weather differs from place to place.

2. Distribute the chart and maps, and ask the students, individually or in groups, to complete the chart. Demonstrate the skills involved.

3. Have the students report on a destination. Compare clothing lists, and discuss differences of opinions.

## TRAVEL PLANNER II

| DESTINATION | LONGITUDE/ LATITUDE | CLIMATE ZONE JANUARY 15 SEASON/WEATHER | WEATHER EXPECTED | CLOTHES NEEDED |
|---|---|---|---|---|
| Juneau, Alaska | | | | |
| Rio de Janiero | | | | |
| Jerusalem, Israel | | | | |
| Calcutta, India | | | | |
| Moscow, U.S.S.R. | | | | |
| Miami, Florida | | | | |
| Tokyo, Japan | | | | |
| Honolulu, HA. | | | | |
| London, England | | | | |

**LESSON TITLE:** WHICH WAY IS UP?

**GRADE LEVEL:** 6, 7, 8

**SKILLS:**

- Identifies the cardinal directions
- Uses compass designators to assess/describe direction
- Determines directionality (cardinal and numerical)
- Records data on an organizational chart

**PERFORMANCE OBJECTIVES:**

- The student will relate the cardinal directions to the compass rose and the circle compass.
- The student will determine directions from Louisville to other destinations.
- The student will relate directions in traditional and numerical forms.

**MATERIALS:**

U.S. and world map
Compass diagram (circle compass)
Compass rose
Directionality Chart

**PROCEDURE:**

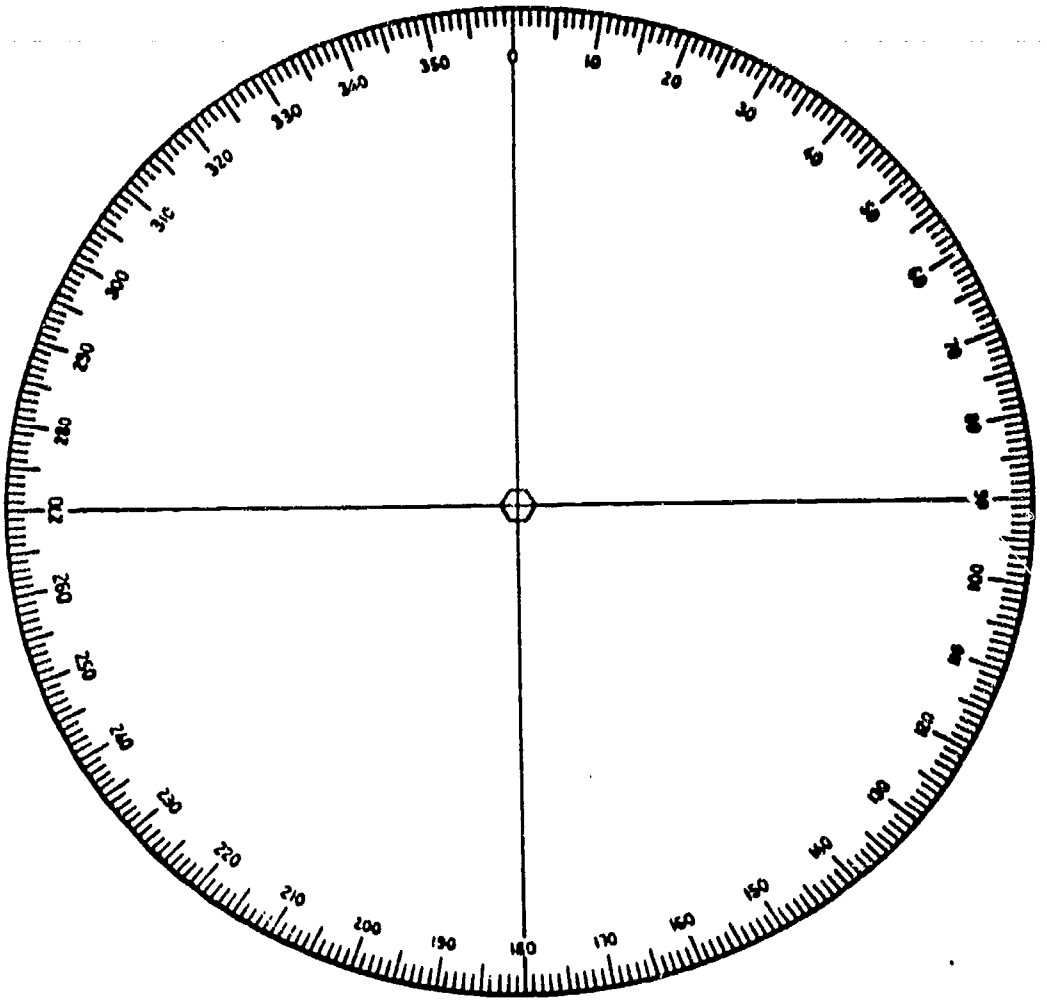
1. Note that navigators do not use N, S, E, W designators but rely on an numerical system of 360 degrees.

2. Pass out the circle compass diagram. Note the numbers, and relate them to the compass rose (N=0, S=180, E=90, W=210). Have the students label the diagram with the N, S, E, W designators.

3. Distribute the maps and the retrieval chart. Ask the students to center the compass on Louisville and read the direction to the listed destinations. A ruler can be used to extend the line of flight.

4. The activity can be extended by including multiple destinations and having students file a flight plan.

# THE COMPASS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210
220
230
240
250
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270
280
290
300
310
320
330
340
350

## DIRECTIONALITY CHART

| DESTINATION | CARDINAL DIRECTION | NUMERICAL DIRECTION |
|---|---|---|
| Indianapolis | | |
| New York | | |
| San Francisco | | |
| London, England | | |
| Tokyo, Japan | | |
| Juneau, Alaska | | |
| Nashville, TN. | | |
| Tel Aviv, Israel | | |
| Capetown, S.A. | | |
| Bagdad, Iraq | | |
| Calcutta, India | | |
| Toronto, Canada | | |
| Mexico City, Mex. | | |
| Beijing, China | | |
| Phoenix, Arizona | | |
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Company Profile: REGIONAL AIRPORT AUTHORITY OF
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Chief Officer: Robert S. Michael
General Manager

The Regional Airport Authority of Louisville and Jefferson County is an independent public agency, established by a special act of the State Legislature in 1928. It operates both Standiford and Bowman Fields in Louisville. An eleven-member Board, appointed by the Mayor of Louisville, the Jefferson County Judge/Executive and the Governor, make major decisions by setting Authority policy. The Board members serve without pay.

Board policies are implemented and day-to-day operations and maintenance handled by a staff of about 142 under the direction of the General Manager.

Some of the jobs performed by the Airport Authority staff are:

Airfield, electrical, structural and heating, plumbing and air-conditioning - also vehicle maintenance
Airport Rescue Fire Fighting
Security and communications
Engineering, drafting and survey work
Construction inspection
Accounting and bookkeeping
Contract and lease preparation
Air Service development and promotion
Purchasing
Personnel and employee program management
Public relations
Marketing
Information Specialists
Secretarial

The Airport Authority has nothing to do with the everyday operations of the individual airlines. Each of them is operated separately by airline management and other personnel. The airlines, along with other companies and agencies, lease space from the Airport Authority to conduct business at the airports.

Although the airlines' employees get special discounts and privileges when traveling by air, Airport Authority employees do not. The Airport Authority does not own any aircraft. Airplanes are owned by the airlines, flying services or private individuals who use airport facilities.

The Authority's annual budget is $16.6 million. Income for operation of the airports is derived from landing and field use fees, ground transportation and lease revenue; the Authority does not receive tax dollars to support the facility. Through the operation of the airports, it is estimated that airport employees contribute over $13.9 million in State and local taxes.

The Authority has received tremendous support by the federal government in grant money for the improvement of facilities at both Standiford and Bowman Fields. In the 1988 and 1989 fiscal years, over $10 million was awarded toward the completion of Standiford Field projects, to include taxiway and apron construction and airport Rescue service needs.

In 1988, the Authority announced plans to improve Standiford Field through the expansion to a parallel runway system. This expansion will provide an estimated 27,000 additional jobs for the community and have an economic benefit estimated at over $40 million in taxes alone by 2010. Expansion of the airport will allow the addition of improved service, greater efficiency in airline operations and improved economic viability.

Bowman Field

* Named for A. H. Bowman, an aviation pioneer, who formed the first flying service on the airfield.
* Operated as the only airport serving Louisville from 1918 through 1947 with service by Trans World Airlines, American Airlines and Eastern Air Lines initiating in 1928.
* First paved runway built in 1938, now a network of three runways and nine taxiways complete with lights and navigational aids are in use.
* Military groups have been stationed at the airport since 1922 when the Air Corp Reserve group arrived. In the 1940s, the Glider Pilot Combat Training and a nurses training school established operation relative to World War II needs and at present the United States Army Reserve is based at the airport.
* During World War II, Bowman was considered the busiest airport in the country and today remains the busiest airport in Kentucky with over 190,000 aircraft operations annually.
* Today a multitude of services are available with flight instruction, aircraft charter and aircraft repair as just a few.

Standiford Field

* Named for Dr. Elisha David Standiford, a former president of the L&N Railroad, who owned a portion of the original airport acreage.
* Serves commercial, military, air cargo and general aviation aircraft.
* Opened in 1947 to handle air carrier service, today served by ten airlines with over 80 commercial flights daily and over two million passengers served annually.
* Standiford has experienced tremendous growth and improvement over the years such as:

  - 1950 Lee Terminal constructed
  - 1969 First cargo facility completed
  - 1971 Lee Terminal expanded
  - 1973 FAA Air Traffic Control Tower opened
  - 1981 FAA Airway Facilities Sector Field Office and National Weather Service facility opened
  - 1982 United Parcel Service began operation
  - 1983 10,000 ft. runway completed
  - 1984 Second cargo facility constructed
  - 1985 Landside Terminal and parking lot/roadway system completed
  - 1989 Airside Terminal completed

* The passenger terminals comprise over 225,000 sq. ft. and are designed to accommodate anticipated growth well into the next century.
* The airport consists of two runways and fifteen taxiways and handles over 150,000 operations a year, the airport currently ranks ninth in the world and fifth in the U.S. in the total amount of cargo handled.

# BIBLIOGRAPHY

## BIBLIOGRAPHY

ACADEMY OF MODEL AERONAUTICS
Director of Marketing
1810 Samuel Morse Drive
Reston, Virginia 22090

AEROSPACE EDUCATION SERVICES PROGRAM
NASA Lewis Research Center
21000 Brookpark Road
Cleveland, Ohio 44135

BEECHCRAFT AIRCRAFT CORPORATION
P.O. Box 85
Wichita, Kansas 67201-0085

CESSNA AIRCRAFT COMPANY
Supply Division
P.O. Box 1521
Wichita, Kansas 67201

ESTES INDUSTRIES HI-FLIER MANUFACTURING CO.
P.O. Box 227
Penrose, Colorado 81240

KENTUCKY AVIATION ASSOCIATION
Robert Riggs
P.O. Box 39
Frankfort, Kentucky 40602

NASAO CENTER FOR AVIATION RESEARCH & EDUCATION
8401 Colesville Road
Ste. 505A
Silver Spring, Maryland 20910

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
300 North Cordell
Oklahoma State University
Stillwell, Oklahoma 74078-0422

NASA
Langley Research Center
TWS Bld. 1206
M/F: L93681 C
Hampton, Virginia 23665-5225

NATIONAL AUDIOVISUAL CENTER
8700 Edgeworth Drive
Capitol Heights, Maryland 20743-3701

NATIONAL HEADQUARTERS CIVIL AIR PATROL
United States Air Force Auxiliary
Director of Educational Programs
DCS, Aerospace Education
Maxwell Air Force Base, Alabama 36112-5572

THE NINETY-NINES, INC.
International Women Pilots
P.O. Box 59965
Will Rogers Airport
Oklahoma City, Oklahoma 73159

SAINT LOUIS UNIVERSITY PARKS COLLEGE
Cahokia
Illinois 62206

SMITHSONIAN INSTITUTION
National Air and Space Museum
Office of Education P-700
Washington, D.C. 20560

U.S. DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Director of Aviation Education
Office of Public Affairs
800 Independence Ave., S.W.
Washington, D.C. 20591

**APPENDIX**

March 1991

# Information from General Aviation Manufacturers Association

Suite 801
1400 K Street NW
Washington, DC 20005
(202) 393-1500

## AVIATION EDUCATION RESOURCES

**Academy of Model Aeronautics**
1810 Samuel Morse Drive
Reston, VA 22090
703-435-0750
Provides information on building and flying model aircraft.

**Aerospace Industries Association of America (AIA)**
1250 Eye Street, NW
Washington, DC 20005
202-371-8400
Provides information on aerospace manufacturing, including aircraft, missiles, spacecraft, helicopters and related equipment.

**Air Line Pilots Association (ALPA)**
535 Herndon Parkway
Herndon, VA 22070
703-689-2270
Provides educational, safety, and pilot career information.

**Air Traffic Control Association (ATCA)**
220 North 14th Street, Suite 410
Arlington, VA 22201
703-522-5717
Provides information on national air traffic control.

**Air Transport Association of America (ATA)**
1709 New York Avenue, NW
Washington, DC 20006
202-626-4000
Provides information concerning the scheduled airline industry.

**Aircraft Electronics Association (AEA)**
P.O. Box 1981
Independence, MO 64055
816-373-6565
Provides information on installation of avionics.

**Aircraft Owners and Pilots Association (AOPA)**
421 Aviation Way
Frederick, MD 21701
301-695-2000
Provides information on general aviation from the pilot's perspective, careers, regulations, safety, and value of community airports.

**American Institute of Aeronautics & Astronautics**
370 L'Enfant Promenade, SW
Washington, DC 20024
202-646-7400
Promotes aeronautics and astronautics through educational material.

**Aviation and Space Education Newsletter**
1000 Connecticut Ave, NW, Suite 9
Washington, DC 20036
202-822-4600
Monthly newsletter profiles person, programs, students, and teachers who are making an impact in aviation education.

**Aviation Distributors & Manufacturers Assoc. (ADMA)**
1900 Arch Street
Philadelphia, PA 19103
215-564-3484
Provides information on aviation products, distributors and careers.

**Aviation Exploring Division - Boy Scouts of America**
National Office
1325 Walnut Hill Lane
Irving, TX 75038-3096
214-580-2427
Provides information on national BSA aviation exploring program.

**Aviation Maintenance Foundation Inc. (AMFI)**
Box 2826
Redmond, WA 98073
206-828-3917
Provides vocational guidance, books, and technical materials.

**Aviation Technical Education Council (ATEC)**
229 South 4th Street
Steelton, PA 17113
717-939-0620
Provides information on aviation maintenance technician training.

**Civil Air Patrol (CAP)**
Building 714
Maxwell AFB, AL 36112-5572
205-293-6019
Provides aerospace education programs on regulations and safety. Trains youth ages 13-21 in volunteer Cadet program for safety patrol.

**Embry-Riddle Aeronautical University**
Teacher Resource Center, Aeronautical Science Dept.
Daytona Beach, FL 32114
904-239-6499
Permanent collection of developed aviation curricula.

**Experimental Aircraft Association (EAA)**
Wittman Field
Oshkosh, WI 54903-3086
414-426-4800
Provides information on sport and recreation aviation, aerobatics, and how to restore old planes. Sponsors Project School Flight.

Federal Aviation Administration (FAA)
Aviation Education, APA-100
800 Independence Avenue, SW
Washington, DC 20591
202-267-3465
Provides information on aviation education materials and films.

Future Aviation Professionals of America (FAPA)
4959 Massachusetts Blvd.
Atlanta, GA 30337
800-538-5627
Provides pilot and aviation career information.

General Aviation Manufacturers Association (GAMA)
1400 K Street NW, Suite 801
Washington, DC 20005
202-393-1500
Provides information on general aviation statistics, learning to fly, teaching units, and general information.

Helicopter Association International (HAI)
1619 Duke Street
Alexandria, VA 22314-3406
703-683-4646
Provides general information on helicopters.

International Air Transport Association (IATA)
2000 Peel Street
Montreal, PQ, Canada H3A 4R4
Provides information on air transportation. Deals with air traffic and safety regulations.

Jeppesen Sanderson
55 Inverness Drive East
Englewood, CO 80112-5498
303-799-9090
Provides aviation education materials in the form of textbooks, videos, overheads and classroom support items.

National Aeronautics & Space Administration (NASA)
Educational Programs Office CODE XEE
400 Maryland Ave, SW
Washington, DC 20546
202-453-1000
Provides information on career and educational opportunities.

National Agricultural Aviation Association
115 D Street, SE, Suite 103
Washington, DC 20003
202-546-5722
Promotes interests of agricultural aviation through public education.

National Air & Space Museum
Office of Education
Washington, DC 20560
202-786-2106
Provides educational information on aviation and space activities.

National Air Transportation Association (NATA)
4226 King Street
Alexandria, VA 22302
703-845-9000
Provides information on airport service organizations (FBOs), air r and flight training.

4-H Aerospace Education Program Leader
USDA Extension Service, Rm 3860 South Bldg.
Washington, DC 20250-0900
202-447-5516
Provides information on aerospace materials and state level 4-H aerospace program assistance.

National Association of State Aviation Officials
Metro Plaza One
8401 Colesville Road, Suite 505
Silver Spring, MD 20910
301-588-1286
Provides educational materials for all sectors of aviation.

National Business Aircraft Association, Inc, (NBAA)
1200 18th Street, NW
Washington, DC 20036
202-783-9000
Promotes aviation related interests of businesses, companies & individuals using aircraft for business.

National Intercollegiate Flying Association (NIFA)
Box 3207
Delta State University
Cleveland, MS 38733
601-846-4205
Promotes collegiate aviation education and safety.

National Transportation Safety Board (NTSB)
Office of Public Affairs
800 Independence Avenue, SW
Washington, DC 20591
202-382-6500
Provides information on air traffic safety.

The Ninety-Nines, Inc.
Box 59965, Will Rogers World Airport
Oklahoma City, OK 73159
405-685-7969
Contributors to educational, charitable and scientific activities.

Professional Aviation Maintenance Assoc. (PAMA)
500 NW Plaza, Suite 809
St. Ann, MO 63074
314-739-2580
Educational materials on professional aircraft mechanics.

Soaring Society of America, Inc.
P.O. Box E
Hobbs, NM 88241
505-392-1177
Provides information on soaring and gliding.

University Aviation Association (UAA)
3410 Skyway Drive
Opelika, AL 36801
205-844-2434
Provides information on college level aviation curricula and schools.

Young Astronaut Council (YAC)
1211 Connecticut Ave, NW, Suite 800
Washington, DC 20036
202-682-1984
Provides educational packets to YAC chapters nationwide.

Beech Aircraft Corporation
P O Box 85
Wichita KS 67201-0085 USA

316 681 7111
Telex 71 203603

Beechcraft
A Raytheon Company

# SELECTED ELEMENTARY TEACHER RESOURCES 1989

Beech Aircraft Corporation
Aviation Education
Department 95
9709 East Central
Wichita, Kansas 67201

- Teacher's Free Packet (A collection of pictures and information about the Beechcraft product line.)
- Teacher's Workbook (Enrichment material organized by aviation subjects including exercises and teaching strategies.) $5.00
- Teacher Packet on Beech History (Covers the history of general aviation related to Beech airplanes.)

Cessna Aircraft Company
Air Age Education Department
P.O. Box 1521
Wichita, Kansas 67201

- International Air Age Education Packet (Includes 6 posters and teacher's guide.) $2.00
- Order Form (Listing current available booklets, charts, and teacher aids.)

General Aviation Manufacturers Association
1400 K Street NW, Suite 801
Washington, DC 20005

- General Aviation Activities and Resources (Material developed to assist teachers in constructing a unit on general aviation history and its modern application.)
- Learning to Fly (A booklet describing the training required for pilot certificates, answering questions, and illustrating basics of flight.)
- Aviation Education Resource List (List of aviation organizations providing materials to educators.)

Civil Air Patrol
Maxwell AFB, Alabama 36112-5572

- Teaching Materials Pamphlet (Listing of available elementary aerospace education kits, packets and booklets for teacher use.)

Federal Aviation Administration
Office of Public Affairs
Aviation Education Program (APA-100)
800 Independence Avenue, SW
Washington, DC 20591

- FAA Aviation Education Programs and Materials Booklet (Lists elementary level pamphlets, teacher guides, demonstration aids and regional FAA contacts in aviation education.)

Wayne Teague
State Superintendent of Education
Department of Education
State Office Building
Montgomery, Alabama 36130

- Aerospace Curriculum Guide (K-3) Bulletin 1988, No. 65 Single Copies Free

Dr. David Housel
Oakland University
Rochester, Michigan 48309-4401

- Come Fly With Me! Book 1 (K-6)
- Come Fly With Me! Book 2 (7-9) (Graded lesson units based on single to complex science teaching activities using aviation/aerospace concepts.) $10.00 per copy

Beech Aircraft Corporation
PO Box 85
Wichita, KS 67201-0085
USA

316 676 7111
Telex 203603 Beech UR

Beechcraft
A Raytheon Company

# AEROSPACE EDUCATION VIDEO SOURCES

| | |
|---|---|
| America's Achievements in Space Series | Two 90-minute video tapes every other month.<br>$29.95 per tape<br>The Eustin Press<br>47 Richards Avenue<br>Norwalk, CT 06857<br>(800) 424-3800 |
| Aviation Week Video Club | Selection of Aviation and Aerospace subjects.<br>$29.95 per tape<br>Aviation Week Video Club<br>McGraw-Hill Aerospace and Defense Group<br>P.O. Box 308<br>Mt. Olive, NJ 07828<br>(800) 433-0880 |
| ABC Wide World of Flying Video Magazine | Four 90-minute videos at the rate of one every three months.<br>$99.95 per year<br>ABC Wide World of Flying<br>P.O. Box 1719<br>Riverton, NJ 08077-9719<br>(800) 999-8783 |
| Flight and Space Films and Videos | Selected historical and current subjects. Also available are Space Science NOVA Programs.<br>Rental and purchase costs vary from $40.<br>Coronet/MTI Film and Video<br>108 Wilmot Road<br>Deerfield, IL 60015-5196<br>(800) 621-2131 |

| | |
|---|---|
| Air Combat Series | Series of 13 - 50 minute video tapes. Initial tape entitled "War Aces" offered for $4.95 - others $29.95 plus $2.50.<br>Air Combat<br>P.O. Box 5079<br>Clifton, NJ 07015 |
| CNN Science & Technology Week<br>(Saturday and Sunday Cable Casts) | Video link for both science and news as well as teacher guides available weekly. Call (404) 939-4596 for sign up sheets and on-line information. |

# NASA and NASM Resource Centers

Teacher Resource Centers have been established to provide educators with NASA-related educational materials for use in the classroom. The materials include NASA publications, lesson plans, teacher guides, filmstrips, computer software, and audio cassettes, video tapes, 35-mm slides, and other reference materials.

Please contact the nearest Teacher Resource Center for further information.

NASA Ames Research Center
ATTN: Teacher Resource Center
Mail Stop 204-7
Moffett Field, CA 94035

NASA Goddard Space Flight Center
ATTN: Teacher Resource Laboratory
Mail Code 130.3
Greenbelt, MD 20771

NASA Jet Propulsion Laboratory
ATTN: Teacher Resource Center
JPL Education Outreach
Mail Stop CS-530
Pasadena, CA 91109

NASA Johnson Space Center
ATTN: Teacher Resource Room
Mail Stop AP-4
Houston, TX 77058

NASA Kennedy Space Center
ATTN: Educator Resource Library
Mail Stop ERL
Kennedy Space Center, FL 32899

NASA Langley Research Center
ATTN: Teacher Resource Center
Mail Stop 146
Hampton, VA 23665-5225

NASA Lewis Research Center
ATTN: Teacher Resource Center
Mail Stop 8-1
Cleveland, OH 44135

NASA Marshall Space Flight Center
ATTN: Teacher Resource Room
The Space & Rocket Center
Tranquility Base
Huntsville, AL 35807-0680

NASA National Space Technology Laboratories
ATTN: Teacher Resource Center
Building 1200
NSTL, MS 39529

The Education Resource Center of the National Air and Space Museum in Washington, D.C., is open to educators on a walk-in or through-the-mail basis. An extensive collection of videos, computer software, slides, audio cassettes, and written materials are available for review and duplication.

Contact:
The Education Resource Center
Office of Education P-700
National Air and Space Museum
Smithsonian Institution
Washington, D.C. 20560
202/786-2109