

FLIGHT IN NATURE



STUDENT ACTIVITIES:

Read about characteristics, structure, and classification of birds.



Read about how birds fly.



Participate in experiments and demonstrations such as:
examination of bird feathers and bones
examination of owl pellets and bird nests
examination of bird eggs



Have students construct a bird of their own, designed for flight.



STUDY TRIPS AND SPEAKERS:

Zoo
Nature Conservancy
State Parks
Owling Night



CURRICULUM INTEGRATION:



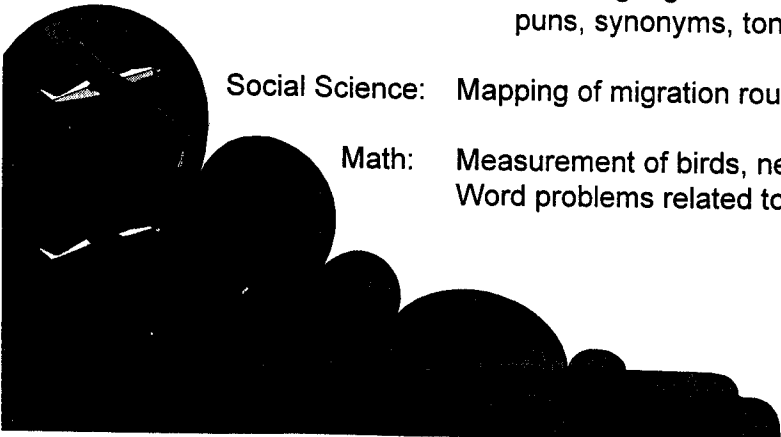
Literature: *Owls In The Family*, by Farley Mowat
 Mr. Popper's Penguins, by Richard and Florence Atwater
 Owl Moon, by Jane Yolen
 The Trumpet of the Swan, by E. B. White



Writing: Research reports on bird groups or individual birds.
 Write descriptive paragraphs of birds in flight.
 Write poems.
Related Language Skills:
 puns, synonyms, tongue twisters, idioms

Social Science: Mapping of migration routes.

Math: Measurement of birds, nests, eggs, etc.
 Word problems related to birds and flight.



HISTORY OF FLIGHT

STUDENT ACTIVITIES:



Read myths that tie in with flight, such as Daedalus and Icarus.

Read about primitive beliefs on aviation.



Trace the history of flight from the Chinese to today.

Create a vocabulary notebook with "flight" words.



Research the development of hot air balloons.

Research the development of kites.

Make hot air balloons and kites.



Make a Wright Flyer.

Design an aviation trivia game.

Design an illustrated timeline of famous flights.

STUDY TRIPS AND SPEAKERS:

Aviation museums

Children's museums

A local airport

Interactive Video

NASA Centers

CURRICULUM INTEGRATION:

Literature:

Around the World in 80 Days, by Jules Verne

The Glorious Flight, by Alice and Martin Provensen

Wright Brothers: Young Flyers, by Augusta Stevenson

The People Could Fly, by Virginia Hamilton

Dragonwings, by Laurence Yep

Lost Star, by Patricia Lauber

Heroes and Monsters of Greek Myth, by Evslin, Evslin, and Hoopes

From Kite to Kitty Hawk, by Richard Bishop

They Flew Alone, by George Sullivan

Writing:

Fact Pyramids on different fliers.

Write a letter to the Smithsonian.

Write a paragraph on how the Wright Brothers felt after they found out Otto Lillenthal's flight calculations were wrong.

Pretend you are one of the Wright Brothers.

Write a letter to your father describing your progress at Kitty Hawk.

Write a news article entitled, "The First Flight."

Write an advertisement announcing the contest to fly across the English Channel.

Keep a journal as one of the famous fliers.

Compare and contrast the flights of Bleriot and Charles Lindbergh.

Social Science:

Research countries of famous fliers.

Map famous flights.

Create timelines of flight development.

Math:

Do calculations for famous flights.

Create word problems using data of planes, flights, etc.

Create a distance graph for historical flights, compared to today's flights.

PEOPLE IN FLIGHT



STUDENT ACTIVITIES:

Students will complete research and task cards on the following people:

Wilbur and Orville Wright

Amelia Earhart

Charles A. Lindbergh

General Daniel "Chappie" James

Eddie V. Rickenbacker

Gus Grissom

August Martin

Louis Bleriot

Leonardo da Vinci



Complete Flight Journals, writing as one of the above people.

Create a mural portraying events of a person's life.



Make a salt relief map of a famous flight.

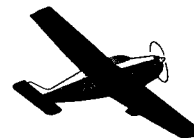
Dress as one of the above people to do an oral report.



Create a fact book on a person to share with a first grade class.

Create a rap, a song, a play, a newscast, or a poem about one of the people.

FIELD TRIPS AND SPEAKERS:



Local airport

Challenger Center

NASA Center

Aviation museums



CURRICULUM INTEGRATION:

Literature: *Lost Star*, by Patricia Lauber

Amelia Earhart: Adventure In The Sky, by Francene Sabin

Wilbur and Orville Wright: The Flight to Adventure, by Louis Sabin

The Glorious Flight, by Alice and Martin Provensen



Poetry: *Wilbur Wright and Orville Wright*, by Rosemary and Steven Vincent Benet

Writing: Descriptive paragraphs and research reports

Phase biographies

Character sketch

Young Author's book

Social Science: Milestones in Flight Timelines

Map skills for flight plans of historic flights

Math: How Much Farther?

Distance Graph

Altitude Graph

Art: Illustrating reports, books, poetry, etc.

PRINCIPLES OF FLIGHT



STUDENT ACTIVITIES:

The students will learn about the principles of flight through several experiments and demonstrations.

Teach the Scientific Method and how to use the experiment form for these experiments:

Hot-Air Balloons ----- Hot air is lighter than cold air

What Makes an Airplane Fly ----- Strip of paper airfoil

Bernoulli's Principle ----- Water hose activity

Properties of Air experiments:

Air takes up room

Air has weight

Air has pressure

Air moves

Heat causes air to expand

Air contains moisture

Forces on An Airplane

Basic Movements of an Airplane ----- Controlling pitch, roll, and yaw demonstrations

Experiments with Gliders

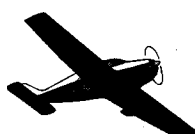
Experiments with Lift, Thrust, Gravity, Drag

Experiments on Achieving Balance Between the Forces of Flight

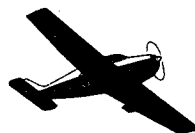
Students learn the parts of a plane:

Develop a poster with the plane parts labeled

Sing a song to the tune of the Negro spiritual "Dem Bones" naming the parts of a plane and where each part is connected



STUDY TRIPS AND SPEAKERS:



Aircraft Manufacturing Facility

Military Base

Airport

Flight Service Station

Hot Air Ballooning

Tower Control

Military Installation

Commercial Airplane Factory



CURRICULUM INTEGRATION:

Literature:

Bored! Nothing to Do, by Peter Spier

Sabotage Flight, by Paul Meyerhoff

What Makes A Plane Fly, by Scott Corbett

Poetry:

I Am Flying

Writing:

Journal writing tied to literature

Coded messages – using pilot code

Social Science:

Aeronautical Charts – Comparison with other maps; locate specific land features; discuss obstructions and find them on the map; plan a trip with charts.

Math:

Calculate distances using aeronautical charts

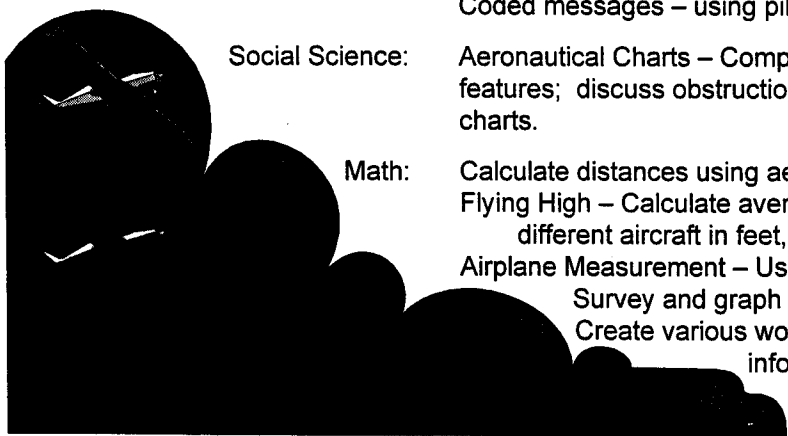
Flying High – Calculate average heights in the sky for different aircraft in feet, miles, kilometers, meters

Airplane Measurement – Use twine to measure off lengths of various aircraft
Survey and graph information on students who have flown.

Create various word problems using mileage and travel speed information

Health:

Examine conditions that affect pilots' reaction time.



FLIGHT SIMULATION



1. Together the students will select a country that they are interested in learning more about. (This could easily be tied into regions study in the social sciences.) Students will then research this country to learn about location, history, culture, cuisine, customs, and interesting places to see. This could be done by students individually, or each learning team might take a different topic to research.
2. The students will find out the necessary information they will need to travel to this country. They will need to know:

flight schedules	departure times	lodging	exchange rates
air fares	route information	meals	etc.

This information can be obtained by talking to a travel agent or by sending for travel brochures.
3. After obtaining the information outlined above (number 2), the students will calculate the cost of their trip.
4. Students will fill out their own passport application and make their own passport.
5. The students will plan an in-flight meal, keeping in mind the food pyramid. The meal must consist of food common to their destination. This meal will actually be prepared and served on the "flight."
6. The students will transform the room into an interior of an airplane.
7. A guest speaker who is a native of the chosen country will visit and share information about the country, if possible.
8. The students will calculate the cost of lodging and meals.
9. The students will write to any places that they would like to visit to obtain information about cost, hours, tours, and so on.
10. Each student will come up with one thing that they would like to know about this country. Students will copy these into their travel logs and write down the answers as they find them.
11. Students will select the role that they would like to play on the flight simulation. Roles:

Pilot	Baggage Porters	Airplane Design Crew
Co-pilot	Airport Security	Other positions as the class
Flight Attendants	Ticket Agents	may come up with
12. On the Flight Simulation Day, students will play their assigned roles, the food will be served, and, if possible, an in-flight movie about the country will be shown. The pilot should make announcements throughout the flight about cruising altitude, geographic landmarks, flight time, weather, and any other trip information.
13. The students will keep travel logs in which they will record information about their flight and trip.

These activities can be done by all the students, or each team can be assigned a different activity to complete and then share their findings with the rest of the class.

CAREERS IN FLIGHT



STUDENT ACTIVITIES:

Introduce job categories – service, technical, manufacturing, sales.



Brainstorm jobs in aviation with which students are familiar.

Research different occupations.



Complete "When I Grow Up" activities.

Discover educational training information on various careers.

Meet with the school guidance counselors.



STUDY TRIPS AND SPEAKERS:

Airports
Military Bases
NASA Center

Challenger Center
Flight School
Aircraft Manufacturing Facilities

Civil Air Patrol
Control Tower
Commercial Airport



CURRICULUM INTEGRATION:



Literature:

Behind the Scenes at the Airport, by David Cooke
Aircraft at Work, by Mary Elting
Highways in the Sky: The Story of Air Traffic Control, by Lou Jacobs
What Does an Airplane Crew Do?, by Roy E. Ray
Come Work With Us In Aerospace, by Jean Wilkinson



Writing:

Complete a research report on a specific career.
Write letters to schools for educational information.
Design a resume and cover letter to apply for a specific job.
Design and fill out a job application.
Write a business letter to various institutions for job information.
Write job descriptions for various jobs and careers.



Social Science:

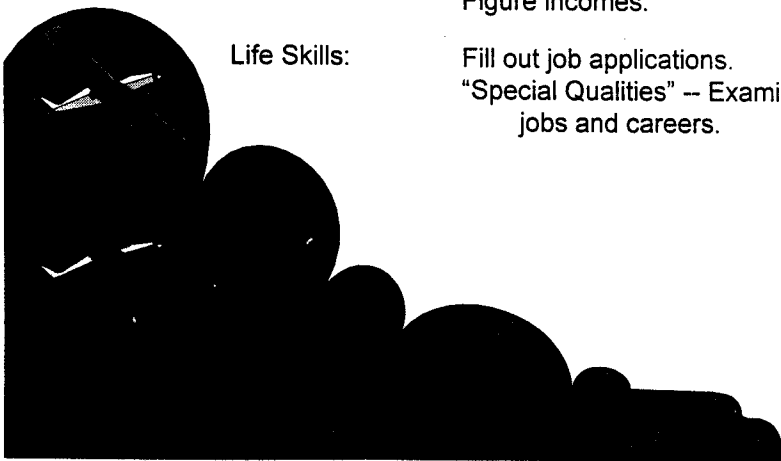
Map skills – locate job locations
Examine work and why particular jobs are needed.

Math:

Calculate the cost of training and education.
Figure incomes.

Life Skills:

Fill out job applications.
"Special Qualities" – Examine qualities needed for success in various jobs and careers.



THE FUTURE OF FLIGHT

STUDENT ACTIVITIES:

Brainstorm needs for future planes – examine issues such as:
fuel available, cost, time, where people will need to go, etc.

Students will design and draw or build their future aircraft.

Students will examine the need for environmental friendly airplanes.

Students will research technology needed for future flight.

Students will research the National Aerospace Plane.

STUDY TRIPS AND SPEAKERS:

Aeronautical Engineer
NASA Center
Aircraft Manufacturing Facility

CURRICULUM INTEGRATION:

Literature: *A Wrinkle in Time*, by Madeleine L'Engle
A variety of science fiction having to do with flight or travel

Writing: Create a reading log on ideas for flight discussed in books
Write letters to Boeing, Cessna, Lockheed, other aircraft manufacturers
and the Jet Propulsion Laboratory for information on new
ideas for flight
Create a book called "Window On The Future" with the ideas you receive

Technology: Go on-line with NASA Spacelink for information.

Flight Festival

The Flight Festival is an end-of-component celebration. We spend one day having the students rotate around to each of the five classrooms. They complete various hands-on and interactive activities. During the Festival, the students also display their Specialty Information. The students are required to present their information as an assigned part of the day. Parents are invited to participate in all activities throughout the day. We do a special picnic lunch outside.

Suggested Rotation Activities:

- Students participate in a pilot training program. Have students complete different physical activities. Example: walk beam, run obstacle course, throw football, jump through hoop, etc.
- Students will complete an activity measuring off lengths of different types of aircraft.
 - Students build models of the Wright Flyer or balsa wood planes
 - Have students create their own kites and compete in various contests with them.
- Students present their Specialty projects to parents.
- Many different activities could be used as part of the celebration.