Traveling Through Air

Finding Out About Flight

Teacher Notes for Grades K-2

Main Objectives

- Finding out about flight
- Finding out how to make a glider

Introduction

Many stories have been told about the ways people a long time ago tried to fly. One story is an ancient Greek myth about a man called Daedalus and his son, Icarus. They were imprisoned on an island. Daedalus made them both a pair of wings. He used wax and feathers to make the wings, just as he had seen on birds. When they started their escape, Daedalus warned Icarus not to fly too close the sun. But Icarus did not take any notice of his father's warning and flew as high as he could and got far too close to the sun. The wax in his wings melted, the feathers came out, and he fell into the sea.

The story of Daedalus and Icarus is over two thousand years old. Humans only learned to fly in 1783. This was when Joseph and Etienne Montgolfier, French brothers, first ascended in a hot air balloon. It was not until 1903 when two American brothers, Orville and Wilbur Wright, built the first airplane that flew. It was Orville who became the first person to fly and control an airplane off the ground.

Cross-Curricular Learning Objectives

Math

- Finding out about pattern and shape
- Learning to measure time
- Finding out about comparative size
- Finding out about weight in relationship to size

Science

- Finding out about the characteristics of living things
- Finding out how animals are different
- Learning how animals' body parts help them live in their habitats
- Finding out that there are different kinds of birds
- Finding out that not all birds are the same size
- Finding out that each type of bird has different patterns, color, and markings

Technology

- Exploring properties of materials
- Exploring shapes of things that fly
- Experimenting with shapes that make good gliders
- Learning how to cut, fold, and make a model using different types of material
- Designing and making a glider

Language Arts

- Developing effective communication skills in a variety of settings
- Expanding listening and speaking vocabularies including following oral directions, asking for clarifications and explanations of words and ideas, and using words that reflect a growing range of interest and knowledge
- Applying knowledge of how print is organized and read
- Demonstrating comprehension of non-fiction

History/Social Science

- Describing significant achievements of important scientists and inventors

Materials, Tools & Equipment

The materials, tools, and equipment required to complete the activities in this book are listed below.

Activity 1: Finding Out About Things That Glide

feathers
magnifiers
pencils
modeling clay
drawing paper

Activity 2: Experimenting With Paper Gliders

copier paper
scissors
paper clips
rulers
pencils

Activity 3: Making a Glider With Cardboard and Balsa Wood

1cm square-section balsa wood	Checkcard™*
wood glue	modeling clay
scissors	pencils

Tools & Equipment: *(Teacher can pre-cut the fuselage if desired.)*

junior hacksaw	vice or bench hook
safety glasses	

Supplemental Materials:
General classroom art supplies such as crayons, markers, and construction paper may be made available to students at the teacher's discretion.

**Checkcard™ is a good quality card marked with a grid of 1cm squares. It has many applications and helps students to count, measure, work out area, and make accurate constructions. Each pack contains 50 large sheets of card (60cm x 41cm) in five bright colors. If you are unable to purchase Checkcard, a grid can be drawn on a sheet of copier paper and photocopied onto thin card.*

Resources

You will need photographs of gliders, airplanes, feathers, and birds that glide in flight including birds of prey, seagulls, and vultures. Download and print photographs and illustrations for classroom display and student learning resources.

Vocabulary

glide	glider	pattern	shape	markings
type	bend	habitat	record	balsa wood
fuselage	challenge	instructions		characteristics

Evaluation

Students will be able to demonstrate their understanding of the following:

- Air has substance.
- Air is a gas.
- Wind is moving air.
- Moving air has energy and can make things happen.
- Strong winds can be destructive.
- Some types of birds use the wind to glide high in the sky.
- Both birds and gliders have similar shaped wings.
- Different kinds of birds have different characteristics.

Students may demonstrate their knowledge through teacher questioning, observation, and written work.

Ask students to record what they have found out through drawings. Write down what they can tell you. Add their ideas and what they have learned into a class book.

Teacher Preparation

- The teacher should lead all activities.
- Demonstrations and discussions can take place with the whole class.
- All practical work should be with groups of 2 to 4 students.
- Students should wear aprons for all practical work.
- Safety glasses must be used whenever students are involved in cutting, drilling, or sanding activities.