



## Civil Air Patrol's ACE Program

### Plane Art Grade 1 Academic Lesson #3

**Topic:** gliders, vocabulary (science, arts) **Length**

**of Lesson:** 45 minutes

#### Objectives:

- Students will identify 4 parts of a plane: cockpit, wings, fuselage, and tail.
- Students will define cockpit, wings, fuselage, and tail.
- Students will practice flying their balsa glider.

#### Next Generation Science Standards:

- The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)

#### National Core Arts Standards:

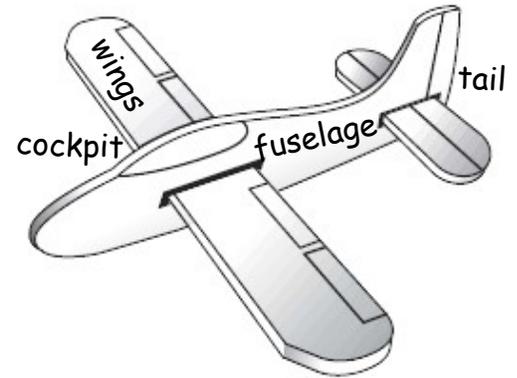
- #2 - Students will organize and develop artistic ideas and work.

#### Background Information:

This lesson seeks to introduce basic facts regarding 4 basic parts of a plane: cockpit, wings, fuselage, and tail. Additionally, students will be able to practice flying their glider, discovering how the force with which they toss the glider and the angle at which they release the plane affects flight performance.

Building and flying balsa airplane models is an excellent way to learn about airplane construction and flight. Balsa models are not just toys: engineers also create models of their designs before building the real, full-sized craft or product. Building models was an early method used by the pioneers of aviation. Early designers did not just begin by building flying machines and racing about in them—that would have been far too dangerous. These early inventors and engineers — such as the Wright Brothers — began with building model kites and gliders to learn about flight patterns. At a smaller scale, they played with wing shapes and sizes to see how much kites and gliders could carry. They once created a model kite that could carry a 10-year-old boy!

What is the difference between a glider and an airplane? (Listen to student ideas.) A glider is any aircraft that flies without an engine. Gliders can have all the same parts as an airplane, but use the wind — instead of fuel — for power. How many of you have ever made a glider out of balsa wood? (If possible, show an example of the models they will be making or show them what the balsa wood looks and feels like.) What makes balsa a good material for glider model design? (Possible answers: it is very light, easy to cut and alter; and inexpensive.)



## Materials:

- balsa planes (provided by CAP)
- markers or water color paint
- ink pen
- chalkboard (dry erase board/marker)

**NOTE:** Use the balsa planes that CAP sent to you for use with this lesson. This activity is a great activity to use water color paint! It works nicely on the balsa planes, and kids love the opportunity to paint.

## Lesson Presentation:

1. Begin by casually flying a balsa plane in the class with as little attention given to the students as possible. Ask a student to please catch the plane for you. Speak your thoughts while tossing the plane, such as, "I wonder what will happen if I point my airplane up a bit more and toss it," "Maybe if I toss it as hard as I can, it will fly farther," or "I wonder what will happen if I remove the tail parts of the plane." After a few tosses and thinking aloud, act like you just realized that your students are all watching you. Ask the students if they would like to build a plane like yours and practice flying it.
2. Tell students that they must agree not to test their plane until you have given them permission to do so. Tell them that after their plane is built, you have a few things to tell them before they fly their plane.
3. Distribute one balsa plane to each student. Help them assemble their plane.
4. Draw an outline of an airplane on the board. Draw arrows to the 4 parts of the plane you are about to discuss (wings, tail, fuselage, and cockpit).
5. Tell students that before they fly their plane, you want them to learn some parts of the plane. Point to the wings. Ask students if they know what this part of the plane is. Confirm that the correct answer is wings. Write "wings" next to the arrow pointing to the wings on the picture on the board. Ask students if they can explain why it is important for a plane to have wings. Explain that when air flows over the wings of the plane, it helps the plane stay lifted in the air. There is a push upward below the wings and a pull above the wings. The wings help the plane sail through the air.
6. Ask the students what we call the end of the plane. Confirm that we call it the tail. Write "tail" next to the arrow pointing to the tail of the airplane on the board. Ask students what they think the tail does. Confirm that it helps the plane stay in control and fly straight through the air. (It helps stabilize and balance the plane.) (If using the CAP balsa airplanes, tell students that there are two pieces that make up the tail area of their airplane; the piece in the back that fits on top of the fuselage, and the other piece that is inserted horizontally.)
7. Ask students what the long part of the plane is; the part that goes through the wings and seems to end with the tail. Tell students that this part is called the fuselage. Have students pronounce the name with you: few - suh - lodge. Write "fuselage" next to the arrow pointing to the fuselage of the airplane on the board. Ask students if they know what the fuselage is. Explain that it is just the body of the plane. Everything is connected to the fuselage, and luggage and people fit inside the fuselage.

8. Ask students to point to the place where the pilots would sit. Confirm that the pilots sit toward the front of the plane in the fuselage. Ask students what we call the front of the fuselage where the pilot sits. Confirm that we call this the cockpit. Write, "cockpit" next to the arrow pointing to the cockpit of the airplane on the board.
9. Check for understanding by calling out the 4 parts of the plane and observing that students point to the correct part of the plane.
10. Ask students to write their name on either the tail or the fuselage with an ink pen. Tell students to only use white or yellow paint or markers if they color over their name.
11. Use this short video "[Let's Build a Plane](#)" to review the parts of the parts of the airplane.
12. Allow students to decorate their plane using markers or water color paint.
13. Ask students to try different things when flying their plane to see what helps their plane fly the best. Does it work better if they toss their plane hard or softly? Does it fly better if they toss it straight or angle it up or down? What happens if the wings or parts of the tail are removed?
14. Once students have had a few minutes to practice flying their airplane, call everyone together to allow students to share what they thought worked well or what did not.

**Summarization:**

Ask students to share what they learned today. (Make sure that all of the parts of the plane and function of the parts are mentioned.) Question prompts: why did your plane perform the way it did? Why did the best plane fly so well? What would you do differently if you made another plane? What could you add to your plane to improve it?

**Character Connection:** Express to students that just as they colored their airplane to make it look nice, they have the opportunity each day to color their classroom by their attitudes. Being nice, sharing, helping, smiling, and putting forth one's best effort are the best decorations in the classroom. Those things make the class, as well as the world a beautiful place.

**Assessment:**

- teacher observation
- "Airplane Art Parts" (optional extension worksheet)

**Drug Demand Reduction (DDR) Connection:** See page 9.

**Additional activity ideas to enrich and extend the primary lesson (optional):**

- Have an airplane flying contest to see whose airplane stays in the air the longest or whose airplane flies the farthest.
- Complete the "Airplane Art Parts" worksheet.  
Answers: 1. tail 2. wings 3. cockpit 4. fuselage

# Airplane Art Parts

NAME \_\_\_\_\_

Directions: Use the word bank to label the parts of the plane, and then color the plane.

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**Word Bank:**  
tail fuselage cockpit wings

