



Lesson 9 - Assembling an Aircraft (*optional*)

Background

For this optional lesson, students practice reading directions from a task card to assemble a paper aircraft. Some students find reading and following directions to be a difficult task. This activity allows the students to work with the task card format they will see again during their Moons, Mars, and Beyond Mission. With practice, they can become more familiar and comfortable with the style of the task cards; they will be able to work more independently during the mission and gain an enhanced sense of accomplishment as they debrief their work after the mission.

The task card format also guides them to accomplish one step in the directions before moving on to another. This is a common mistake; many students skip steps in directions, get incorrect answers, and have difficulty backing up and finding their mistake. The student, the class, and the teacher can lose valuable class time when problems or tasks have to be repeated. Teachers often report that reading and following direction skills improve greatly during and after mission work for every class as students become increasingly aware of the importance of these skills.

Teacher Notes and Hints

This activity is optional, but if you think that your students could benefit from practice in reading directions, this activity could make the difference you need. Many teachers report that student independence for reading directions increases dramatically after these types of activities.

This lesson has been written to provide you with choices for the aircraft to be assembled. This HSCT (High Speed Civil Transport) is the easiest aircraft to assemble and may be more applicable to your third or fourth grade class. The 757 Glider Kit is only slightly more difficult to assemble and may be applicable to fourth or fifth grade classes. The difference is primarily in the difficulty of cutting out the pieces and the number of directions required.

You may want your class to construct more than one of the aircrafts. They will enjoy the activity and it will provide additional practice.

Your class can construct the aircrafts in cooperative groups or individually.

Allow enough time to review the activity and the students' work on the aircraft. If some do not turn out as expected, discuss what the students could have done differently, or which direction gave them the most trouble.

The aircraft can be constructed using paper, but thicker or stiffer paper works better and adds slightly more difficulty to the cutting task.

Allow enough time to prepare the templates and the task cards. The templates can be copied and the instructions on the copies can be used directly. The students still get the practice reading directions.

If you think the students need practice with the task card format, cut off the directions on the templates and use the task cards provided with this lesson.

Skills and Objectives

Students will be able to:

- Practice reading and following directions
- Construct an aircraft from task card directions
- Relate the activity to their Moon, Mars, and Beyond Mission work

Activity Overview

This lesson uses a task card format to allow students to practice reading and following directions. Students construct a paper aircraft by reading step-by-step directions on task cards.

Students relate the activity to their mission work and realize the importance of reading directions and being able to work more independently.

Key Concepts

1. Reading directions are an important part to a successful task.
2. The Moon, Mars, and Beyond Mission requires reading directions and working from task cards to process the data needed to find and save the lost astronauts.

Materials

- Student task cards with instructions for building the aircraft
- Copies of the aircraft templates for construction
- Scissors
- Tape
- Paper clips

Procedure

Prior to class

Download copies of the template for the 757 Glider and the Space Shuttle at the following sites:

Space Shuttle Glider:

http://www.nasa.gov/pdf/58283main_Space.Shuttle.Glider.pdf

757 Glider: http://www.nasa.gov/pdf/58150main_757.Glider.Kit.pdf

Copy the aircraft templates for the class, use thicker copier paper if available.

To use this activity, cut off the Assembly Instructions before you copy the template. The instructions will be on each task card for the students.

Copy the Aircraft Task Cards, cut, and staple.

Decide how you will have the students work the activity - in collaborative groups or individually.

In class

Distribute the Task Card Activity.

Distribute the Aircraft templates and materials needed to construct the aircraft.

Briefly review the activity with the students making sure they know the activity is to practice reading and following directions using task cards.