



**Title:** Follow Your Dream

**Grade Levels:** 3-6

**Time Allotment:** Three class periods of 50 minutes each

**Overview:** Through an interactive lesson involving video, internet, and presentations students will study the physics of simple machines and look at the effect of advice on their lives.

**Subject Matter:** Physical Science, Social Science

**Learning Objectives:**

Students will be able to:

- list and identify the six simple machines
- state how advice and dreams can affect a person's life

**National Standards:**

Science: All students should develop an understanding of properties of objects and materials.

**Media Components:**

*Video:* **Follow Your Dreams: The Bessie Coleman Story**

*Web sites:* **The Wright Stuff: Return to Kitty Hawk**

<http://www.pbs.org/wgbh/amex/wright/return.html>

**Simple Machines**

<http://sln.fi.edu/qa97/spotlight3/spotlight3.html>

**Animation on Parts of an Airplane**

<http://www.allstar.fiu.edu/aero/parts-anim.htm>

**Greener Pastures** <http://inventors.about.com/library/inventors/blawns.htm>

**Simple Machines**

<http://www.cosi.org/onlineExhibits/simpMach/sm2.html>

**Materials:**

Standard classroom supplies

**Prep for Teachers:**

Step 1: Bookmark the websites used in this lesson.

Step 2: Cue the videotape used in this lesson.



Step 3: When using media, provide students with a **Focus for Media Interaction**, a specific task to complete and/or information during or after viewing of video segments, websites or other multimedia elements.

**Introductory Activity:** Advice given to a child by their parent can affect their lives profoundly as in the case of Bessie Coleman.

Step 1: **CUE** and **START** the video **Follow Your Dreams** where Bessie is sitting by the ironing board and then stands to tell about the advice from her father. This clip goes from 7:08 to 7:35 on the timer. *As a Focus for Media Interaction have students be able to state what advice Bessie's father gave her.*

Step 2: **STOP** the video after Bessie states the advice her father gave her.

Step 3: His advice was as follows: "Follow your dreams and don't take no for an answer, 'cause every no brings you closer to a yes."

Step 4: This advice had a profound effect on Bessie's life. She always kept looking forward in life and trying to achieve her goals. Discuss with students advice that they have received from older persons and how this has affected their lives.

Step 5: Two other people, the Wright Brothers, were like Bessie in that they followed their dream to fly an airplane. They were bicycle makers by trade and needed to know a lot about simple machines and how to put them together to create an airplane. Go to The Wright Stuff: Return to Kitty Hawk website at <http://www.pbs.org/wgbh/amex/wright/return.html> to view a recreation of the Wright Brothers first flight at Kitty Hawk.

**Learning Activity:** Airplanes and all other machines are made up of six basic simple machines.

Step 1: Take students to the computer lab and go to the website **Simple Machines** <http://sln.fi.edu/qa97/spotlight3/spotlight3.html>. This website gives descriptions about the six basic simple machines. *As a Focus for Media Interaction have students divide into six groups. Ask each group to read about an inclined plane, a wedge, a screw, a lever, a wheel and axle, or a pulley.*

Step 2: Each group then should give a presentation to the class on their simple machine. This could take several forms such as a poster, a dramatization, a power point presentation, an oral report, etc. They should also find examples of their simple machine in the classroom, in the school, or at home and share these with the class.

Step 3: After the students become familiar with simple machines, take them to the computer lab and go to the website **Animation on Parts of an Airplane** <http://www.allstar.fiu.edu/aero/parts-anim.htm>. *As a Focus for Media Interaction have groups of students each take a part of the airplane and decide what simple machines make up that part of the airplane and be able to state reasons why.*



Step 4: Answers are as follows:

Ailerons, rudder, and elevators are made up of a wedge shape to allow airflow and a pulley to allow back and forth and up and down movements.

Propeller is made up of a wheel and axle to allow rotation and a wedge shape to allow airflow.

The fuselage, cockpit, and stabilizers are wedge shaped to allow for airflow in the aerodynamical shape of an airplane.

**Culminating Activity:** There was another person who had a dream. His dream was to invent a better lawn mower.

Step 1: Black Inventor John Albert Burr patented the first rotary-blade lawn mower on May 9, 1899. Take students to the computer lab and go to the website **Greener Pastures** <http://inventors.about.com/library/inventors/bllawns.htm> to see a diagram of his invention.

Step 2: Next go to the website **Simple Machines** <http://www.cosi.org/onlineExhibits/simpMach/sm2.html> to analyze the simple machines in a lawn mower. Note: This website takes a long time to load. *As a Focus for Media Interaction have students be able to state all the simple machines they found and their scores on the quiz.* Follow the step by step instructions on the website.

#### **Cross Curricular Extensions:**

Social Studies: Go to the **U. S. Centennial of Flight** website <http://www.centennialofflight.gov/> to find activities that are going to take place in 2003 to commemorate the 1903 flight of the Wright Brothers.

Language Arts: Keep a journal for a month of advice students are given and how it affects decisions they make.

Art: Design and draw an invention to do a specific job and label the simple machines in it. It could be a Rube Goldberg type of invention such as a machine to bring a container of food to the table without getting up.

Science: Go to the website **Marvelous Machines** <http://www.galaxy.net/~k12/machines/index.shtml> and have groups of students chose a simple machines' experiment to demonstrate for the class.

#### **Community Connections:**

Interview people with different jobs and discover what simple machines they use in their respective jobs. Also find out if they had a dream or advice from someone to do this job.