



TIES 2003

Teachers in Industry for Educational Support

AVIATION HEROES

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AVIATION HEROES Curriculum Unit Overview

Summary

This unit was designed during the TIES experience at the Air Force Museum during our studies on Honoring America's Air and Space Pioneers. The National Aviation Hall of Fame (NAHF) was founded in 1962 by a handful of people who were determined to honor many of the aviation pioneers by preserving the individual human histories. To date, there are 178 aviation pioneers enshrined in the NAHF, 33 of them are still living. This unit is targeted to Primary Students.

Big Picture

Many years ago, Orville and Wilbur Wright looked up at the beautiful sky and the birds, and dreamed of flying some day. This year we will be celebrating the 100th anniversary of the Wright Brothers' invention of powered flight. On December 17, 1903, after years of research, the Wright Brothers dream of flight became a wonderful reality in North Carolina. Often students have difficulty understanding the connection between flight and how it came to pass. The "Hook" activity that will address this lack of understanding will be a power point presentation and discussion of our experience with teachers through the TIES program and the work site. Our power point presentation will be formed from the knowledge we gained at the Aviation Hall of Fame during the summer of 2003. The students will see pictures of aviation heroes and the great impact that they have made on our life today.

Preparation for the Unit

- Identify 5-10 Aviation Heroes showing diversity
- Make photocopies of each hero
- Choose your favorite male aviator
- Choose your favorite female aviatrix
- Compare and contrast
- List and describe their major career accomplishments
- Make a list of needed supplies and equipment
- Make sure that a projector and a lap top is available for the power point presentation.
- Design a time line of the era that the Heroes lived in.

Overview

On the following page is a summary of the unit including brief summaries of each Authentic Learning Task (ALT). This table provides an overview of the tasks in the unit sections and shows how the activities in the different teaching areas relate to each other.

AVIATION HEROES Curriculum Unit Summary

Language Arts	Science	Social Studies
<p>ALT 1 - Engage The students will complete a K-W-L chart on Aviation.</p>	<p>ALT 1 – Flight Students will discuss the parts of a plane and determine which parts are essential to flight.</p>	<p>ALT 1 – Timeline Place these 10 heroes on a timeline from 1903 to the present.</p>
<p>ALT 2 –Explore Reading The students will explore facts about the Wright Brothers contribution to flying.</p>	<p>ALT 2 Design your own plane Students will design their own plane. Give it a name, gender, mind and other human characteristics.</p>	<p>ALT 2 – Male Heroes Describe 2 character traits for him. Explain how they helped him be successful in life.</p>
<p>ALT 3 – My Hero Students will construct an information web on their favorite flight hero.</p>		<p>ALT 3 – Women in Aviation Describe 2 character traits for her. Explain how they helped her be successful in life.</p>
<p>Transfer or Culminating Activity</p> <p>To connect and extend this unit, schedule a visit to the National Aviation Hall of Fame 9:00 am to 5:00 pm. Contact person for you group is Education Director Pam Martin 256-0944 Ext. 17. pmartin@nationalaviation.org. Student’s task is to locate the biography of one of their identified heroes and gather additional information.</p>		

Section One: Language Arts

ALT 1: Engage

Summary

Students will complete a K-W-L chart on Aviation.

The students will be introduced to this unit by viewing the Power Point presentation on “Aviation Heroes” to enlighten their interest.

Competencies

- Verbalization of ideas.
- Generating comments and questions that stay on topic.
- Consider the possible effects of flight on space, war and daily life of humans.

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Time

20 minutes to view the Power Point Presentation.

45 minutes at the beginning of the unit to generate a list of what we know and what questions we have about aviation.

15 minutes at the end of the unit to complete the chart with what we have learned.

Materials

- Chart paper
- Markers
- Power Point presentation

Instructions

Students take time to reflect, and then contribute to the class discussion.

Evaluation/Assessment of Student’s Competency

Each student will be graded on class participation during the K-W-L chart, and the discussion after the *Aviation Heroes* presentation.

Closure

1. From an item on the chart relating to Early Flight, bring out books from the bibliography list and read about the Wright Brothers.

Section One: Language Arts

ALT 2: Explore Reading

Summary

The students will explore facts about the Wright Brothers contribution to flying.

Competencies

Students will be able to explain why the Wright Brothers are considered the Fathers of Aviation.

Time

One hour

Materials

Book on The Wright Brothers from the Bibliography appropriate to the children's learning level.

Instructions

1. The students will listen to the book, or review a video lesson on the Wright Brothers.

Evaluation/Assessment of Student's Competency

Students will meet in groups of four and discuss the key points. The group reporter will share their key ideas with the class. Teacher or a student recorder will add this information to the K-W-L chart that was begun in yesterday's lesson.

Closure

Review key ideas that were recorded on the chart.

Section One: Language Arts

ALT 3: My Hero Summary

Students will construct an information web on their favorite flight hero.

Competencies

Student will correctly construct a web making sure key data is complete.

Time

One hour

Materials

Choose a book on a favorite Aviation Hero, or use information on one of the Aviation Heroes included in the Handouts.

Instructions

2. Read about your favorite hero. Discuss him/her with a classmate. Working independently, construct an information web of at least four parts.

Evaluation/Assessment of Student's Competency

Hang the class' information webs in the hallway. Sit as a class and discuss the Aviation Hero's, using the webs as your prompt. The expectation is that the webs are legible and include main idea and detail sentences.

Closure

2. Keep the webs posted in the hallway, to use for Social Studies lessons later in the week

Section Two: Science

ALT One: Flight Summary

Students will identify the parts of a plane, and use the key words **lift** and **gravity** When describing flight.

Competencies

Students will observe the effects of air

Students will demonstrate that objects fly only when the upward force of air (lift) is greater than the downward force (gravity)

Students will enhance their group discussion skills

Time

One hour

Materials

- Small Styrofoam plane available in discount stores or at the Air Force Museum Gift shop. (One plane for each pair of students.)
- Notebook
- Pencil
- Diagram of a plane- Handout ALT One- Flight

Instructions

3. Using the diagram of the plane discuss the parts of plane, and why each is important.
4. Discuss key vocabulary words **lift** **gravity**
5. Go outside and fly the plane, observing the effects of air on the wings and tail.
6. Allow ample time for student experimentation and group discussion.

Evaluation/Assessment of Student's Competency

In their Science Journals have the students record today's activities and explanation of flight. Correct use of **lift and gravity** must be included in the explanation. Allow 20 minutes for the reflective writing.

Section Two: Science/Writing/Art

ALT 2: Design Your Own Plane

Summary

Students will design their own plane. It can be a realistic plane, or a fantasy plane. He will then do a follow up writing.

Competencies

Using the information from Alt1- Flight, students will create an airplane.

This can be a realistic vehicle of flight, or a fictional type of plane. If it is fantasy, the student can give it a name, gender, mind and other human characteristics. Write a short story, essay, or poem about the future of flight.

Time

Two one hour sessions.

Materials

- Sample of planes. For ideas for a realistic plane, students can use Handout Alt1- Flight or pictures of planes from the bibliography
- For samples of fantasy planes, students can study Handout Alt-2 Design. These are the character logos used by the Aviation Hall of Fame, and can serve as an inspiration piece for their design.
- Pencils, crayons, markers, colored pencils
- Paper

Instructions

Discuss all the samples of planes, but realistic and fantasy. Brainstorm the elements of the plane that must be there for flight to occur. Identify the parts of the plane that are more decorative and not essential for flight. Work independently on the rough draft of your design. Day Two- Study your design again and make any needed changes. Complete the final drawing. Write a short story, essay, or poem about the future of flight.

Evaluation/Assessment of Student's Competency

Evaluate students on task behavior and his key discussion points. As he is working have the student verbalize the elements of flight that he included in his plane.

Closure

Have each student read their story or poem to the class as they share their drawing.

Section Three: Social Studies

ALT One: Timeline

Summary

Create a timeline on the life of an Aviation Hero.

Competencies

1. Student will correctly place in chronological order the key dates in the life of an Aviation Hero.

Time

One hour

Materials

- Paper
- Pencil
- Book on their favorite aviation hero
- Computer access for web research on their hero. One timeline is available at www.lindberghfoundation.org . Other sites are available on a Google search using Aviation timelines as the Advanced Search Prompt.

Instructions

1. Model a timeline format on the overhead. Discuss the key elements of a timeline.
2. Students should create a timeline including all key elements for their hero.

Evaluation/Assessment of Student's Competency

Assessment will include accuracy of data and the ability to relate their Hero's life verbally to a classmate.

Closure

Use these timelines to springboard the next two days lessons on Character Traits.

Section Three: Social Studies

ALT Two: Male Heroes

Summary

Briefly describe two character traits for a Male Hero. Explain how they helped him be successful in life.

Competencies

1. Students will write a brief description of two incidents in their Aviation Heroes life, and name a character trait that each incident exemplifies.

Time

Day One- one hour for the teacher to read, discuss, model and write.

Day Two- one hour for the student to read his biography and writes his story.

Materials

- .Biographies of Aviation Heroes or information gained from the Power Point presentation.
- Data available through web searches.
- Character Education Curriculum available through Trotwood City Schools.
- Pencils and Paper

Instructions

Day One- Read a biography to the class about Neil Armstrong. Discuss the character traits of perseverance, responsibility and teamwork. Model a writing lesson. Include the elements of these character traits that you want the children to use in their writing.

Day Two- Students read their own biography and write a story following your model.

Lesson Alternate- Students can work in groups of three in reading about a Hero. They can brainstorm the character traits that this hero exemplifies. Students then do an individual writing about their hero.

Evaluation/Assessment of Student's Competency

Evaluation is done using the Writing Rubric appropriate for the Grade Level.

Closure

Read several of the stories together. Discuss the strong points of each selection. Tell the class they will do writing like this again tomorrow.

Section Three: Social Studies

ALT Three: Women in Aviation

Summary

Briefly describe two character traits for a Female Hero. Explain how these strong traits of character helped her be successful in life.

Competencies

1. Students will write a brief description of two incidents in their Aviatrix's life, and name a character trait that each incident exemplifies.

Time

Day One- one hour for the teacher to read, discuss, model and write.

Day Two- one hour for the student to read his biography and writes his story.

Materials

- .Biographies of Aviation Heroes or information gained from the Power Point presentation.
- Data available through web searches@. nationalaviation.org.
- Character Education Curriculum available through Trotwood City Schools.
- Pencils and Paper

Instructions

Day One- Read a biography to the class about Jackie Cochran. She truly exemplifies a rags to riches story. Discuss the character traits of hard work and ambition. Model a writing lesson. Include the elements of these character traits that you want the children to use in their writing.

Day Two- Students read their own biography and write a story following your model.

Lesson Alternate- Students can work in groups of three in reading about an Aviatrix.. They can brainstorm the character traits that this hero exemplifies. Students then do an individual writing about their hero.

Evaluation/Assessment of Student's Competency

Evaluation is done using the Writing Rubric appropriate for the Grade Level.

Transfer Activity

Visit to the Aviation Hall of Fame

To connect and extend this unit, schedule a visit to the National Aviation Hall of Fame 9:00 am to 5:00 pm. Contact person is Education Director Pam Martin 256-0944 Ext. 17 e-mail pmartin@nationalaviation.org
Alternate activity is to schedule a speaker from their Speakers Bureau.

