**Title:** THE WRIGHT BROTHERS AT KITTY HAWK by Donald J. Sobol

**Subject Matter Emphasis and Level:** Reading – 4th Grade

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**Brief Description of the Lesson/Unit:**

The fourth grade class will read a biography on The Wright Brothers at Kitty Hawk. They will learn the personalities of the Wright brothers, the struggles, and creativity it took to invent an airplane. They will able to compare/contrast their characteristics with some present day personalities. They will learn to analyze their behavior, describe different objects and situations in the story, be able to retell in sequential order what happened, and evaluate and synthesize the material.

**SD Content Standards:**

Students will read a biography, learning what makes up this genre. They will access, synthesis, and evaluate information in this biography with other materials. They will use text features to categorize and gain insight meaning. They will compare and contrast and make inferences.

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**Stage 1: Identify Desired Results**

1. **What enduring understandings are desired?**

I want the students to understand what a biography is. I want them to be able to compare and contrast people in the biography with other personalities in the present. I want them to see how failures and successes can make or break a person. I want them analyze and evaluate what they read. I want the students to increase their vocabulary.
2. **What essential questions will guide this unit and focus teaching/learning?**

What good and bad qualities have you learned about the Wright brothers that would be helpful in your life?
What are some of the important things the Wright brothers did that helped them become successful at inventing a plane?
Did they invent this plane all alone, or did they learn from others?
Did they make this plane overnight or was it a process of mistakes and errors and successes along the way? Is so, what were the mistakes and successes?
How does something that was invented years ago affect your life today?
Is teamwork necessary?
Are failures and successes important?
Is determination and stick-to-it-ness important?

3. **What key knowledge and skills will students acquire as a result of this unit?**

They will take non-narrative information and compare/contrast it with other material they read and with their own lives. They will analyze and evaluate how things are done in the book. This will help them transfer the strategy to some other non-narrative literature. They will be able to link prior knowledge to new knowledge. I want this reading activity to be a tool for the students to think and learn. I want them to predict, organize the information, and interact with the text. They should be able to evaluate the ideas they are reading with what they already know.

4. **What prior learning, interests, misconceptions, and conceptual difficulties might be brought to this unit?**

Some prior knowledge will have to do with types of genres the students are familiar with. They will bring in their usage of technology to do some research. The prior learning they might bring to this is that they knew the Wright brothers invented the airplane a while ago.
The interest they may have is the process of getting to learn how to make an airplane that actually flies. Also, the interest probably will be in reading a book that makes the Wright brothers actual people with disappointments and joys.
The misconceptions probably will be that invention of the airplane was done overnight; that you don’t need to know math or physics to invent something; that you can do it all by yourself without any research or building on other people’s experiments.
The conceptual difficult might be “How in the world do you invent something?”
Stage 2: Determine Acceptable Evidence

1. What evidence will show that students understand?

   Performance Tasks:

   As an introduction to the biography, the High School Physics Class will demonstrate different flying
techniques and how physics applies to it. They will show the fourth grade class how to make different
models of airplanes. The class will then fly the planes they have made.

   Chapter 1: Students will be divided into pairs and read Chapter 1 orally to each other
   Students will complete the Story Frame on Chapter 1.
   Students will complete the Vocabulary sheet, using context clues to help figure out the meanings of
   words.

   Chapter 2: Students will complete the Anticipated Guide Sheet part of ME before reading Chapter 2.
   This tests for prior knowledge. After reading Chapter 2, they will complete the TEXT part.
   Students will be divide into groups. Those who want to work alone may. Those who want to work
   with a partner may. Those who want to work at a table with a teacher may.
   Students will have the describe everything they learned about the glider in Chapter 2.
   Students will discuss as a group what has been learned so far.

   Chapter 3: Students will do Carousel Brainstorming in Chapter 3. The class will be divided into five
   groups. They will read Chapter 3. There will be a question written on poster paper around the room. Each
   group will write their answer under the question on each paper. The group will rotate after each question is
   answered.

   Students will be divided into pairs again. Half of the students will complete the semantic map on the
   Wright’s First Flight. They will share the information with the rest of the class. The second half will
   complete the Questions/Answers sheet that later will be shared with the rest of the class.
   Students will then discuss the main parts of Chapters 1-4 using their worksheets and vocabulary sheets.

   Chapter 5: Students will be divided into three groups to read chapter 5.
   Group 5a: (1) Have accelerated group write down all they can find on the Wright’s family from the
   biography plus the internet. Add information to the time line.
   (2) Have the struggling student talk about Orville’s and Wilbur’s family. They can draw a
   picture of the oldest to the youngest. They can put this on a time line.
   Group 5b: Have this group talk about the changes the Wright brothers wanted to make to the new
   glider.
   Group 5c: (1) Have the struggling student write down all they learned about Octave Chanute from the
   biography.
   (2) Have the accelerated student look on internet about Mr. Chanute.

   Chapter 6: Divide the class into pairs. If they want to work independently, let them. The ones who really
   need help could work around the table with the teacher.
   6A – Those who worked on Chanute in Chapter 5 need to add more about Chanute after reading
   the chapter.
   6B – This group needs to answer three questions after reading the chapter – looking close at three
   men and the Wright’s opinions of what these men did.
   6C- This group needs to read over Chapter 6 and answer three questions.
   All three groups need to share their findings with the class.
Chapter 7: Read this chapter alone.

There were several times that the mosquitoes invaded the Wrights’ space. **Draw a picture** of one of the times the Wright brothers and the other two men had so much trouble with the mosquitoes. Then share what happened in your picture with a neighbor. Your neighbor needs to write a comment about your picture and what you shared.

Chapter 8: Reflection Strategies

Look at the different flights the Wright brothers had with the glider. Look at the successes and failures. See what Chanute had to say about the tables of the air pressure.

- After reading Chapter 8, develop a short script for a radio news broadcast that illustrates the concept in today’s news.
- Or write a poem about what happened.
- Or select a song that you feel illustrates what happened in this chapter.
- Or create a visual that depicts what happened in Chapter 8. Be prepared to explain how it illustrates what the concept means to you.
- Or write an editorial expressing your views on how what happened is important to today’s society.

Chapter 9: Give 1 to 1

After reading Chapter 9 in pairs, students will complete the 9 box “Give 1 to 1”. They will write an answer in their partner’s box, and the partner will write an answer in their box. They will go around the room doing this until all the questions are answered.

Chapter 10:

After reading Chapter 10 in groups of 4-5, each person will discuss what they think was important in the chapter. Then they will go back and write down everything they heard to hand in.

Chapter 11: Learning Log Format

The students will read this chapter alone. They will complete a Learning Log Format which includes a prediction, questions they ask as they are reading, a brief summary, and answering a specific question.

Chapter 12: R.A.F.T.S.

This chapter will be read orally to the class. The student will complete R.A.F.T.S.

(I have the rest of the chapters if you’re interested, along with the actual worksheets and materials used. Just email me.)

**Other Evidence:**

*Quizzes, Tests, Prompts, Work Samples (summarized):*

- Points will be given over each chapter’s work completed with a grade assigned.
- The rubrics will be shown to the students prior to completion of the assignments, so that they will see how they are graded.
- A test over Chapter 1-4 will be given. A grade will be given. The students will be allowed to use their materials and books to answer the questions for all the tests.
- A test over Chapters 5-8 will be given. A grade will be given.
- After every assignment, there will be sharing over the material and points are given for sharing.
- Wrap-Up Project which includes: (Students can select which one to work on)
1. Linguistic Activities: Write a story about the failures and successes the Wright brothers had trying to invent an airplane. Include dates and details.

2. Mathematical Logical Activities: Draw diagrams of at least 5 attempts or more that the Wright brothers tried. Map a graph to go along with this project.

3. Spatial Activities: Make a timeline of the major events that happened in the book.

4. Kinesthetic Activities: Put on a skit of at least five different flights the Wrights did. Have some discussion going on. You will need 2 or more people in this.

5. Musical Activities: Write a song or rap to tell about major events in this book. Include at least five events.

6. Natural Activities: Pretend you’re on a field trip and you’re explaining the events that happened at Kitty Hawk with the Wright brothers.

7. Intrapersonal Activities: Write a diary pretending you’re Orville or Wilbur. Tell about the important things that happened to you (that you read in the book). Write it like you are this person.

8. Interpersonal Activities: Build a model of different gliders the Wrights used. Be ready to explain how they’re worked.

Unprompted Evidence: (observations, dialogues, etc.)

The classroom teacher and Title 1 teacher will circulate among the class to see how students are working. They will have input with questions that are asked at strategic times. Sometimes, a teacher will have a whole class discussion. Sometimes, a few students will work together with a teacher on reading and completing the assignment.

Student Self-Assessment

Along with the tests that are given, a student self-assessment will be given to see if the student feels he/she is really comprehending the material. Also, it’ll be a way to see if this method seems like a better way to learn.

Stage 3: Plan Learning Experiences and Instruction

1. What sequence of teaching and learning experiences will equip students to develop and demonstrate the desired understandings?

Major Learning Activities:

Physics Class Explanation with students’ hand-on activity
Story Frame
Vocabulary definitions
Anticipation Guide
Glider Description
Oral Discussion
Carousel Brainstorming
Semantic Map
Question/Answer Worksheet
Interaction with each other
Test
Emailing a commercial pilot
Be Orville or Wilbur and write an ad about their invention
Teacher Observation
Student Questions
Wrap-Up Project

Materials & Resources (technology & print):

- The Wright Brothers at Kitty Hawk by Donald J. Sobol
- Teaching Reading in the Content Areas by Rachel Billmeyer & Mary Lee Barton
- Strategies to Engage the Mind of the Learner by Rachel Billmeyer
- The Brain-Compatible Classroom by Laura Erlauer
- Educating Everybody’s Children by Robert W. Cole
- More Strategies for Educating Everybody’s Children by Robert W. Cole

Websites:
www.flight100.org
www.glider.com
www.wrightexperience.com
www.kitty-hawk.com
www.ibiscom.com
www.hfmgv.org/exhibits/wright/chrono.asp

Management:

Determining groups by pulling sticks with their names on it.
Putting students in small groups with teachers circulating.
Having students give themselves pep talks before engaging in a task.
Having students highlight important information.
Designate reasonable homework to be completed before class.

Support Services and Special Teacher Notes:

Lorene Burma, Title 1 Teacher
Special Education teacher
High School Physics Class

Extensions and Adaptation:
Further research on the internet concerning the Wright brothers or other inventors or pilots.
Talk to a commercial pilot via email.
Have an inventor come to give talk on how to get started.
Try to invent something. Bring it to class and explain it.
Tape the reading.
Answer by using a tape.
Working with a teacher.
Pre-teaching vocabulary words.

Stage 4: Plan Differentiation

2. What differentiated instruction strategies are being used in this lesson/unit?

Differentiated Process:

Working in different types of groups:
Sometimes a struggling student with an accelerated student.
Sometimes two struggling students working on a diagram or picture.
Sometimes two accelerated students doing some research on the internet.
Sometimes working with a teacher.
Sometimes working alone, if this is preferred.
The jigsaw process where students can each come up with different information to share- completing the whole picture.
Answering the questions on tape.
Drawing pictures of the various events instead of answering in sentences.
The struggling student reads the vocabulary word in the text. They then use the word in a sentence. The average student reads the word in text and writes the definition in their own words. The accelerated student reads the word in text and writes the definition in their own words. They also use the word in a sentence.
Completes an anticipation guide – assesses student’s prior knowledge; helps focus their reading; promotes active reading and critical thinking; motivates reluctant readers by stimulating their interest in the topic.
Has a picture of a glider on the page – look for description of the glider as they read to write on the glider page.
Carousel Brainstorming – fast-paced interactive strategy in which small groups of students rotate around the classroom responding to statements on posted chart paper. Keeps students focused and involved as they discuss and record ideas. fosters a collaborative environment. Encourages critical thinking about a
Semantic Mapping – helps to depict the relationship among key concepts. Is a way for students to brainstorm and collaborate on concepts that are related.
Writing – using the R.A.F.T.S. strategy.
Different rubrics set up to match and extend the students’ varied skill levels.

**Differentiated Content:**

Students will use the Internet to access different research material.
Different reading levels of books will be used to read about aviation.
The text will be read on tape for the struggling student.
Some ideas will be presented through auditory and visual means.
Some discussions will be teacher-led; others will be student-led.

**Differentiated Product:**

Students allowed to make different types of planes that fly.
A mural with a time-line will be developed.
Students are encouraged to create their invention. They can include as much as they need to as long as their products contain the required elements.
Reflection strategies – using a poem about what happened, selecting or writing a song, creating a visual or illustration, or writing an editorial.
Coming up with comparisons/contrasts, evaluations, analyzing by talking with a peer, reading about it, discussing it with a teacher, doing research on the internet, or interviewing a commercial pilot.