Integrating Computing Across the Curriculum

Title: Space Explorers Biography
Grade(s): 4
Subject(s): Science
Author: ICAC Team
Overview: During this lesson, students will conduct a research project about an astronaut. Using the Internet and reference books, students will gather information about their selected astronaut. Then, students will type a report in a **Microsoft Word** document and give an oral presentation about their astronaut.

This lesson plan has been developed based on Tammy Short's original entitled Men and Women of Space Exploration. ALEX ID: 23903.

Content Standards:

SC(4)	8. Identify technological advances and other benefits of space exploration.
ELA(4)	8. Compose descriptive texts using an introductory paragraph, sensory details, vivid language, and a conclusion.
ELA(4)	12. Organize information on a specific topic obtained from grade-appropriate reference materials.
ELA(4)	13. Demonstrate eye contact, articulation, and appropriate voice intonation with descriptive presentations.
TC(3-5)	1. Use input and output devices of technology systems.
TC(3-5)	2. Use various technology applications, including word processing and multimedia software.
TC(3-5)	5. Practice safe use of technology systems and applications.
TC(3-5)	8. Collect information from a variety of digital sources.

Local/National Standards:

Primary Learning Objectives: Students will:

- appropriately use the Internet and reference books to gather information about an astronaut/space explorer;
- use paper and pencil to organize information in an outline, including all topics listed on the sample outline;
- use their outline to compose a biography in the **Microsoft Word**;
- use their outline to present an oral biography to the class.

Additional Learning Objectives:

Approximate Duration of Lesson: 4 separate lessons of 30 minutes each

Materials and Equipment: Reference books on space explorers, pencil and paper for notes, rubric and sample outline (1 per student), (extension activity: a very large sheet of paper, markers)

Technology Resources Needed: Computer, **Microsoft Word**, Internet access, **Internet Explorer**

Background/ Preparation:

- This project is designed to coincide with study on space, therefore, students should have some background knowledge about space exploration.
- The first two lessons will work best in the library. Talk to your librarian ahead of time about available books on astronauts and space exploration. Also, be sure Internet access is available.
- Proper instruction on Internet safety and use of search engines is required prior to this lesson. Be sure to review school and classroom rules for proper Internet use and safety.

Procedures/ Activities:

Day 1 *Introduction to space exploration*

Briefly review space exploration terms and ideas, including telescope, satellite, space shuttle, and the International Space Station.

Next, give an overview of several astronauts so that students may begin considering which astronaut they would like to report on. Explain that each student will be choosing an astronaut to research and write about, and that you will be going over some of the options, although there are many more astronauts to choose from.

- Sally Ride: first American woman in space
- Alan B. Shepard, Jr.: first American in space
- Yury Gagarin: first person around earth in space
- Valentina Tereshkova: first woman in space
- Neil Armstrong: first man on the moon

Research/Gathering Information
Explain to students that they will need to select an astronaut and begin collecting information about that person and his or her career activities. Give each student a sample outline (attached); students will need to find information for each item listed on the outline.

Go over the following research points with students before they begin:

- Students may use books and/or the Internet to gather information.
- They will take notes on the information to include in their biography.
- Direct quotations need to have quotation marks. Other information is to be written in the student's own words.
- Keep track of sources used to include in the bibliography. Provide a sample Internet citation so students will know the format:

Information gathered from: **Space Exploration**. (2010). In *Britannica Elementary Encyclopedia*. Retrieved September 18, 2010, from Encyclopædia Britannica Online School Edition: http://school.eb.com/elementary/article?articleId=353794)

- Review classroom/school rules about Internet use. Remind students never to give any personal information and to only visit sites approved by the teacher.

The following websites have kid-friendly search sections that will aid in research:

- The Alabama Virtual Library: http://www.avl.lib.al.us (click on "Student Resources" then "Elementary School")
- NASA: http://www.nasa.gov

Have students access the Internet and begin by searching the above two websites for information on their chosen astronaut. They can also use Google to search for information on other sites:

Type google.com into the Address Bar.
The screen should look like this:

Type the name of the astronaut or other key words into the search box to begin browsing. They may also search for pictures of the astronaut, space vehicles, etc. by clicking on the “Image” tab above the search bar. If needed, review with students how to save pictures and insert them into their Word documents.

Day 2 *Continue Gathering Information/Creating Outline*
Students may finish gathering information about their astronaut. Today they will also use their research notes to fill in the **outline** for the biography. You may want to review the sample outline with the students. Students should open a **Word** document and type in the information, creating an outline.

If needed, review the basic features of Word with the students. Remind them to save their work frequently. Follow these instructions to save the document:

1. Click on the **Microsoft Office Button** 
2. Click on **Save as**
3. Choose **Word Document**
4. Click on **Desktop**
5. Type in a File name.
6. Click Save

The Document is now saved to the Desktop.

To save the Document to a USB Drive

1. Click on the **Microsoft Office Button** 
2. Click on **Save as**
3. Choose **Word Document**

4. Click on **My Computer**
5. Click on the **Drive** for the USB (for example, F:)
5. Type in a File name.
6. Click Save

Day 3 *Writing the biography*

Students should have their outlines completed. You may want to check outlines for completeness and accuracy.

Now, students will use their outlines as a guide for writing a biography report on their astronaut. It may be helpful to students if you hand out or go over the requirements listed on the rubric so that students are aware of expectations.

Students will use **Word** to produce the report including text and illustrations.

Day 4 *Presenting the Report*

- Students can use a document camera or Promethean Board to display their outline to the class as they present their report to the class. They should also show the pictures that they collected to illustrate their biography.
- Remind students about good practices when presenting: make eye contact, speak clearly, and use proper voice volume.
- Students may take turns presenting their report, using their outline as a guide.

Attachments: Sample Outline, Rubric

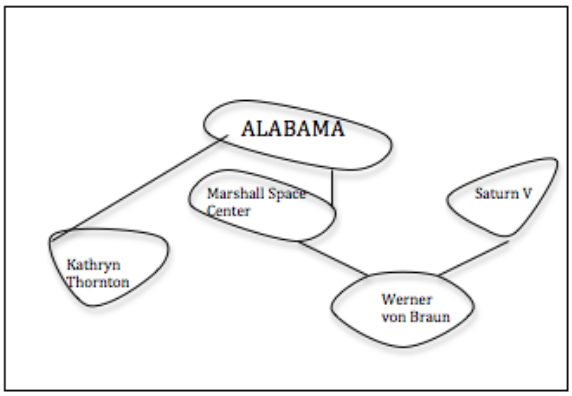
Assessment Strategies: Rubric

Extension: Extend this project by creating a concept map that connects Alabama with various astronauts and space achievements. Post a very large piece of paper on the wall. Write "ALABAMA" in the center of the paper and draw a circle around it. Demonstrate the concept map to the students by making some connections (see picture below).

- The George C. Marshall Space Flight Center (located in Huntsville, AL) was dedicated by President Eisenhower in 1960.
- Wernher von Braun was director of the Marshall Space Flight Center and the developer of the Saturn V rocket

that helped the first men to the Moon.

- 1989 Kathryn Thornton was the first woman on a military space mission and the second woman who walked in space.



From here, students can take the information they gathered and make connections to Alabama or to other items on the concept map.

(Information obtained from: **NASA-Marshall Center 50th Anniversary**. Retrieved Sept. 20,2010 from: http://www.nasa.gov/centers/marshall/home/marshall50/index.html; **Biography of Wernher Von Braun**. Retrieved Sept. 20,2010 from: http://history.msfc.nasa.gov/vonbraun/bio.html; **ADAH: Alabama History Timeline (1951-present).** Retrieved Sept. 20, 2010 from: http://www.archives.state.al.us/timeline/al1951.html)

Remediation: Some students may not be familiar or comfortable with presenting in front of the class. As a means of scaffolding, you may decide to allow some students to read their report from the **Word** document (still using proper volume and eye contact when possible). As they become more comfortable presenting, these students can move on to speaking from notes/outline.

Assessment Rubric for Space Explorers Biography

Process:	**Always**	**Mostly**	**Sometimes**	**Never**
• appropriately used the Internet and reference books to gather information about an astronaut/space explorer				
• wrote an outline including all the information required from the sample outline				
• presented the report using eye contact and proper volume/ intonation				
Biography Report:	**Completely**	**Mostly**	**Somewhat**	**Not at all**
• included all the topics required for the sample outline				
• included an accurate bibliography				
• contained correct grammar, punctuation, spelling				

Sample Outline for Space Explorer Biography

I. Introduction

A. Name, Job Title

B. Why he/she is famous

C. Lifespan (birth date, where born, raised, death if not still living)

D. Interesting fact about childhood or early life

II. Career

A. Training for space missions_____

B. Missions Flown _____

1. Detail about mission 1_____

2. Detail about mission 2, etc._____

C. Other accomplishments_____

III. Conclusion