Full STEAM Ahead:
Connecting Library of Congress Primary Sources and Graphic Novels

Lesson Plan Template
Author(s): Jen Matthews and Juliane Wade
Grade Level(s): 4th Grade
Subject: Science and Literacy integration
Length of Class: 40 minutes, 3 class periods
Insert visual or image that accentuates the lesson plan to make it appealing to educators: 

Image Citation: https://www.esa.int/About_Us/ESA_history/50_years_of_humans_in_space/Mercury_13	
Lesson Title:	Is Space a Place for the Ladies?
Overview:	Based on primary and secondary sources (Astronauts Women on the Final Frontier by Jim Ottaviani and Maris Wicks), students will construct an argument on whether they support the science behind sending women to space.
Learning Objective:	The student will be able to use primary and secondary sources to construct an argument to support the science behind sending women to space.
Standards:	Standards should be aligned with objectives **4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.**
Essential Question:	Do you believe there is scientific evidence to support women being sent to space?
Supporting Question(s):	What evidence can you find? Are those pieces of evidence primary or secondary sources? What do you know about the speed of an object and the energy of that object?
Digital Primary and Secondary Sources:	Jerrie Cobb testifying in front of Congress Transcript of Jerrie Cobb testifying to Congress (pg. 22) Historic American Newspapers (through LOC and SCDiscus)- Search "Women + Space" 1960-1963 Astronauts Women on the Final Frontier by Jim Ottaviani & Maris Wicks
Required Classroom Materials:	Teacher: • Astronauts Women on the Final Frontier by Jim Ottaviani & Maris Wicks • computer • projector Students: • Astronauts Women on the Final Frontier by Jim Ottaviani & Maris Wicks

	• Chromebook • Access to Discus/Library of Congress • Science journal
Classroom Environment:	The classroom is arranged with student desks in four groups of 4 and one group of 5. There is a large carpet in the front of the room where there is a Promethean board. There are two smaller rugs, a kidney table, two comfy arm chairs, wobble stools, rocking chairs, yoga mats, and cube seats for students to use while working around the room. Students will be able to work in their group of 2-3 around the room.
Differentiation and Adaptations:	Students will be working in small groups. Teacher may provided printed primary sources for students who struggle with a larger independent search.

Lesson Sequence/Procedures	
Estimated Time Needed	**Detailed Description of Teaching and Learning**
20 mins (on day 1)	Read the graphic novel Astronauts in sections. Assign groups page number sections. Students would be in pairs or groups. Students will not be required to read the whole novel for this, however, copies will be available for students in the classroom library. Review speed, mass, and energy with students. (taught prior through science lessons)
20 min (on day 1)	Students will find information that relates to the speed and energy of a woman vs. a man in space in the text. Students will search the Astronauts text along with finding the primary and secondary sources to support that text.
20 min (on day 2)	Based on primary and secondary sources (Astronauts), students will construct an argument on whether they support the science behind sending women to space. Students will use their CER(claim, evidence, reasoning) graphic organizer.
20 min (on day 2)	Once students gather their evidence, they join with other groups that agree on their opinion. They then share their resources and reasoning.
40 min (on day 3)	They will then, as one larger group, present their findings.

Assessments:	Informal feedback can be given to students during their group discussion. Students' CER responses can be graded using this rubric.
Learning Extensions:	Students can research and create biography trading cards on the women in space. Students can create straw rockets.