GLOBAL EDUCATION LESSON PLAN

Student Name: Catherine Partington

Lesson Title: Women in European Science

Curriculum Area(s): Science, social studies, and literature.

Grade Level: Second Grade

Time Frame: 45 minutes a day for 6 days

Book Information: *Joan Proctor Dragon Doctor* by Patricia Valdez

Valdez, P. (2018). Joan Proctor Dragon Doctor: The Woman Who Loved Reptiles. New York, NY: Alfred A. Knopf.

Content Standards:

SS.2.A.1.2: Utilize the media center, technology, or other informational sources to locate information that provides answers to questions about a historical topic.

"I Can" Performance Outcomes for Students Aged 4-7:

Second Grade: Communicate Ideas

I can work with a partner or in a group. This means I can agree and disagree respectfully, I can add on to what my peers say, I can ask my peers to explain their thinking, and I can work with others to achieve a goal.

Brief overview of the lesson: Teacher will conduct a dialogic reading of *Joan Proctor Dragon Doctor* to students. She will then explain to students that there are many European women who were groundbreaking scientists. She will explain that students will be doing a research project. Students will be placed into groups of four. Groups will be randomly assigned one female European scientist to conduct a research project on. Students will use the library as well as computers to conduct their research in school. They will then compile their research onto a poster that they will present as a group at the end of the week.

List of materials:

- **Books**
    - Joan Proctor Dragon Doctor
    - Mary Anning and the Sea Dragon
    - The Girl Who Drew Butterflies: How Maria Merian's Art Changed Science
    - Caroline's Comets: A True Story
    - Marie Curie - (Little People, Big Dreams)
    - Me . . . Jane

- At least five computers or tablets.
- My model poster board
- Five poster boards
- Markers
- Construction Paper
- Scissors
- Glue
- Stickered Letters
- Magazine clippings

Brief summary of selected book:

Joan Proctor the Dragon Doctor is about Joan Proctor a woman born in 1897, who grew up to be the curator of reptiles at the London Zoo. The story starts with Joan as a young girl having a tea party with Reptiles. It follows her to the Natural History Museum in London where she took over as curator towards the end of World War One. The story tells that soon after she was asked to design the reptile house at the London Zoo. The story ends with descriptions of other work she did at the zoo as well as a description of how much she loved reptiles.

Essential Questions:

- How can I use technology and other informational sources to find answers to questions about a historical topic?
- How can I work with others to achieve a goal?
- What do I know about women in European science?

Assessment Evidence:

Formative: Anecdotal notes taken daily (M-F) during group work. Will be looking for groups using respect, collaboration, and teamwork. Will also be looking for the ways in which they gather their information.

Summative: A project rubric for their final poster board of their given European female scientist.

Making A Poster : Women in European Sciences

Teacher Name: **C Partington**

Student Name: _____

CATEGORY	4	3	2	1
Use of Class Time	Used time well during each class period. Focused on getting the project done. Never distracted others.	Used time well during each class period. Usually focused on getting the project done and never distracted others.	Used some of the time well during each class period. There was some focus on getting the project done but occasionally distracted others.	Did not use class time to focus on the project OR often distracted others.
Knowledge Gained	Student can accurately answer all questions related to facts in the poster and processes used to create the poster.	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 50% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.
Content - Accuracy	At least 7 accurate facts are displayed on the poster.	5-6 accurate facts are displayed on the poster.	3-4 accurate facts are displayed on the poster.	Less than 3 accurate facts are displayed on the poster.
Required Elements	The poster includes all required elements as well as additional information.	All required elements are included on the poster.	All but 1 of the required elements are included on the poster.	Several required elements were missing.
Attractiveness	The poster is exceptionally attractive in terms of design, layout, and neatness.	The poster is attractive in terms of design, layout and neatness.	The poster is acceptably attractive though it may be a bit messy.	The poster is distractingly messy or very poorly designed. It is not attractive.

Procedures:

Day 1 (Preferably a Friday)

- Dialogic reading of *Joan Proctor Dragon Doctor* by Patricia Valdez.
    - Completion: “She took careful notes, just like a _____” (Answer: Scientist) P. 2.
    - Recall: Joan talked with whom at the Natural History Museum? (Answer: Curator of reptiles and fish). P.7
    - Open Ended: How do you think Joan felt when the reporters were asking her questions about her and not the animals? P.18
    - Wh- Questions: Why do you think Men returning from war were surprised to see a woman in charge? P.9
    - Distancing: If you could walk through a zoo with a reptile, what kind of reptile would it be? P. 24

- Explanation of Project
    - Joan Proctor was a real woman born in 1897-1931 in London, England. She made significant innovative contributions to veterinary practice and zoo displays. She also wrote scientific and popular zoological articles, including early accounts of the behavior of captive Komodo dragons. She is one of many European female scientists that have changed the world of science. For the next week, you are going to be assigned into groups of four, each group is going to receive a European female scientist to research. You will have two days to conduct research, two days to construct your poster board, and on Friday you will present. Each group will be given a children's book about their female scientist and each group will have access to the library and the internet. I am going to show you an example of what your poster should look like. *Pulls out my model poster about Joan Proctor.* This is my poster about Joan Proctor. You see I have her name in big letters across the top and then I have her date of birth and date of death underneath her name. On the left I have information about her early life. In this section it talks about her love of reptiles as a child, and how she was very sick growing up and relied on reptiles as her friends. In the middle there is pictures of her and the reptiles she worked with. On the right there is her accomplishments and places where she worked. Your final project grade will be graded from a rubric. *Display rubric on board* You'll be graded on you use of class time, knowledge gained, content accuracy, required elements (which I just explained: Early life information, pictures, and accomplishments.), and attractiveness of poster. Any questions? *Answers any questions students have* Alright let's put you into groups!
        - Group 1: Mary Anning
        - Group 2: Maria Merian
        - Group 3: Caroline Herschel
        - Group 4: Marie Curie
        - Group 5: Jane Goodall

Day 2: Research (Preferably a Monday)

- Give groups the children's books that correspond to their assigned scientist. Allow 45 minutes of research. If children need to go to the library send them with their groups. Ensure that students are using "Kiddle" (A child friendly search engine) to research their scientist on the internet. Begin taking anecdotal notes.

Day 3: Research (Preferably a Tuesday)

- Allow 45 minutes of research. If children need to go to the library send them with their groups. Ensure that students are using "Kiddle" (A child friendly search engine) to research their scientist on the internet. Continue taking anecdotal notes.

Day 4: Work on Poster (Preferably a Wednesday)

- Lay out poster materials. Allow 45 minutes for students to work on their posters. Let students know that if they need to print any pictures now is the time to do so. Continue taking anecdotal notes.

Day 5: Work on Poster (Preferably a Thursday)

- Once again lay out poster materials. Allow 45 minutes for students to finish up their posters. Continue taking anecdotal notes.

Day 6: Present Posters to Class (Preferably a Friday)

- Groups will be randomly drawn to see who presents first. Students should talk about their female European scientist's early life and then discuss what they accomplished in science. Presentations should be at least five minutes long. Students will be able to ask questions to group about their poster. Teacher will be filling out rubric while students present.

Additional Comments:

Anticipated Difficulties:

Students may have trouble with the vocabulary they come across while doing their research since they are researching scientists. Students may also have difficulties finding trustworthy, kid-friendly, sites to conduct their research, it is recommended that students use "Kiddle" a child friendly search engine. Working in groups also may pose difficulty. Students may need coaching in how to work together as a team to express ideas and complete the goal.

Differentiation: Students will be placed in their groups heterogeneously to ensure that students who may struggle with reading/writing can be supported by students who are stronger readers and writers. Students will have the option to draw out their information instead of writing formal paragraphs.

Additional Resources:

- Kid friendly handouts about credible sources to ensure that their research is reliable.
- Articles that I have printed out about the female European scientists.

Reflection:

This lesson is a great way to expose students to female scientists outside of the United States, that have made outstanding contributions to the world. The hope of this lesson is that it will broaden student's global perspective as well as inform students that women have been doing amazing things in science for a very long time. After composing this lesson, I realize that students could also produce a PowerPoint presentation with the same rubric, and it would increase their knowledge of using technology in the classroom. If one were to use PowerPoint or Google Slides to complete this project, I believe all students would need access to a computer, and training on how to use PowerPoint/Google Slides would be needed. It is my opinion that using poster board and craft materials to create the project would be more hands on and engaging, but that is just my opinion. I believe conducting research is an important part of education and students as early as kindergarten should be exposed in how research projects work. This project is more suitable for second grade because students need to be able to complete basic reading, writing, and typing. Also, the fact that the research is on female European scientists and the vocabulary content is more rigorous. My number one goal as an educator is to ensure that students fall in love with learning, and I believe this project promotes this. It is inspiring to learn about women across Europe in times as early as 1647, making names for themselves and changing science. I believe it gives students the idea that they can do anything they put their minds to as well as exposing them to different areas of the world where science and exploration have occurred.