Teacher: April Peacock

Date: June 13, 2019 (Use during the Space Unit)

Subject / grade level: 4th grade

Materials: **Teacher ~** SMARTBoard, computer, wifi
Students ~ 1:1 student Chromebook, Google Classroom, wifi

VA SOL Essential Standards and Clarifying Objectives
NGSS
4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.
4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

Math 4.14a Collect, organize, and represent data in bar graphs and line graphs,
4.14b Interpret data represented in bar graphs and line graphs, and
4.14c Compare two different representations of the same data (chart and bar graph or pictograph and bar graph).

ELA 4.6 The student will continue to read a variety of nonfiction materials
a) in order to predict and categorize information;
i) use prior knowledge and build additional background knowledge as context for new learning.
4.9 The student will demonstrate comprehension of information and resources to research a topic.

Lesson objective(s):
Students will observe the Space Shuttle Atlantis mission STS-129, which was to retrieve Nicole Stott, an astronaut on the International Space Station and return her to Earth.

(In a separate lesson, students will watch the Space Shuttle Atlantis landing and then design a capsule and landing apparatus to ensure that the astronauts land safely and their capsule is not destroyed.
NGSS
4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.
4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.)

Differentiation strategies to meet diverse learner needs:
Students will be able to progress through the exploration of the Space Shuttle Atlantis STS-129 mission and resources at their own pace.

Students will be encouraged to collaborate with one another and design their capsule and landing gear in a manner that demonstrates their ideas and knowledge.

There are three students who will want to extend their knowledge and they will be able to explore further once they have completed the assignment.

ENGAGEMENT
- We will begin class reading *Chasing Space*, Leland Melvin's autobiography. We will have a discussion about disabilities and how persistence is important in working toward your goal.
- Students will also share what they know about the International Space Station. How do you know the information? What was significant about the STS-129 Mission? What do you want to know

about the International Space Station? What do you want to know about the Space Shuttle Atlantis? How fast does a space shuttle fly? How does a space shuttle land safely?

EXPLORATION

- Students will be working in pairs, and collaboration is welcome when students need assistance or guidance from another peer (and teacher is working with someone else).
- Students will use this NASA website, https://www.nasa.gov/subject/3435/, to explore the Space Shuttle Atlantis and to locate STS-129.
- Students will also use the NASA website, https://www.nasa.gov/mission_pages/station/main/index.html, to explore and learn more about its purpose, significance, and occupants.

EXPLANATION

- Students will utilize a Google Classroom Assignment to do their note taking and create their Slides Presentation.
- Students will explore the above noted websites with the goal of learning more about the ISS and SSAtlantis and STS-129, their importance, and understanding the purpose of these missions.

ELABORATION

- Students will create a slide presentation of information and graphics to illustrate what they have learned about either the Space Shuttle Atlantis, the STS-129 Mission, or one of the astronauts who were on the mission.
- Students will also do a brief Seesaw video sharing this information with their parents.

EVALUATION

- Students will be evaluated on their research of the two websites shares.
- They will be evaluated on the slide presentation of information and the exploration questions that they answered.
- Students will be evaluated on whether they completed the Seesaw video.
- Students will be evaluated on their participation, as well as knowledge gained from this lesson.