

Student Teacher Candidate: Hailey Hause, Sam Faber, Courtney Harriman, and Olivia Stone  
Lesson Subject(s)/Title: STEAM- The Night Sky: Planets and Constellations  
Lesson Date(s): October 24, 2019  
Course & Grade(s): SPED 358- 6th Grade

**INSTRUCTIONAL MATERIALS:**

Foam ball, ipads, SkyViewLite app, Nightsky app, chart paper, planet handouts, constellation handouts, garbage bag planetarium

**ESSENTIAL QUESTIONS/ SUBSIDIARY QUESTIONS:**

How does the orbital rotation of planets affect our lives?  
How do the planets differ from Earth?  
Why did the ancient Greeks create constellations?

**PURPOSE:**

The purpose of this lesson is to instill and understanding about the solar system and how people have formed constellations out of star patterns. Our job is to identify where constellations are located and the specific characteristics of each planet to deepen our understanding of the solar system.

**SPECIFIC LEARNING OBJECTIVES: (clear, observable)** The goal of this lesson is for students to develop their skills in the realm of STEAM while learning about planets, constellations, and outer space.

**STANDARDS:**

- PDESAS 3.3.6.B1
  - Compare and contrast the size, composition, and surface features of the planets that comprise the solar system as well as the object orbiting them.
  - recognize the role of gravity as a force that pulls all things on or near the earth toward the center of the earth and in the formation of the solar system and the motions of objects in the solar system.
  - Explain why the planets orbit the sun in nearly circular paths.
  - Describe how the planets change their position relative to the background of the stars.
  - Explain how the tilt of the earth and its revolution around the sun cause an uneven heating of the earth which in turn causes the seasons and weather.

**ANTICIPATORY SET:**

<https://www.youtube.com/watch?v=ZHAqT4hXnMw> - We Are the Planets Rap

**INPUT/ ACQUIRE NEW KNOWLEDGE:**

- Planets
  - Introduction of what planets are and how they orbit around each other.
  - Students will be separated into groups and given a specific planet to “research”.

- Students will explore on the app their specific planet to gain knowledge that they will eventually present to the class.
- Constellations
  - Teachers will discuss with the students what constellations are and who “invented” them.
  - Students will remain in their “planet groups” and will begin a scavenger hunt using the virtual reality app of constellations through the school. (20 minutes)

**APPLY/ DEEPEN NEW KNOWLEDGE:**

- Planets
  - Students will remain in their group and be given a sphere to decorate based upon what the planet looks like.
  - Students will present information on their planet to the class.
- Constellations
  - Teachers will provide descriptions of each zodiac sign and students will be grouped by their sign.
  - The students will create a physical representation of their sign’s constellation within the “garbage bag planetarium”.

**CLOSURE/ASSESSMENT:**

- Planets
  - Students will participate in an orbiting game using the foam balls that they used to create planets.
- Constellations
  - Students will participate in the garbage bag planetarium activity.

**INSTRUCTIONAL PROCEDURES:**

**Planets**

<p>The teacher will:</p> <ul style="list-style-type: none"> <li>● Check for prior knowledge on planets</li> <li>● Show a planet rap as an anticipatory set</li> <li>● Give a brief overview on the planets</li> <li>● Break students into groups and assign each group a planet</li> <li>● Explain the task that students will be asked to do (create posters and foam balls)</li> <li>● Have students present their posters</li> <li>● Be the sun and assist students with orbiting</li> </ul>	<p>The students will:</p> <ul style="list-style-type: none"> <li>● Discuss what they know about planets</li> <li>● Watch the planet rap</li> <li>● Listen and ask any questions they may have</li> <li>● Use the NightSky app to research their planet</li> <li>● Create a poster demonstrating what they found as well as design their planet on a foam ball</li> <li>● Present their posters</li> <li>● Orbit around the sun</li> </ul>
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**INSTRUCTIONAL PROCEDURES:**

**Constellations**

<p>The teacher will:</p> <ul style="list-style-type: none"> <li>● Give a brief overview of the history of constellations.</li> <li>● Explain the scavenger hunt activity to students</li> </ul>	<p>The students will:</p> <ul style="list-style-type: none"> <li>● Listen and ask potential questions.</li> <li>● Stay in their groups and participate in the scavenger hunt</li>   <li>● Get in groups with their zodiac signs</li> <li>● Following along with their handout</li> </ul>
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<ul style="list-style-type: none"><li>● Give out a constellation handout and divide students into their zodiac signs</li><li>● Give an overview of the constellations</li><li>● Explain the garbage bag activity</li><li>● Explain that students who are not participating in the garbage activity will create constellations with marshmallows and toothpicks</li><li>● Handout a 3-2-1 paper</li></ul>	<ul style="list-style-type: none"><li>● Participate in the garbage bag activity</li><li>● Complete the 3-2-1</li><li>● Create constellations using marshmallows and toothpicks</li></ul>
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<http://www.astronomytrek.com/star-constellations-the-zodiac/>