Standard S6E1 c., d., e.

S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.

c. Analyze and interpret data to compare and contrast the planets in our solar system in terms of size relative to Earth, surface and atmospheric features, relative distance from the sun, and ability to support life.

d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system.

e. Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids.

Storyline

The storyline connects the instruction to the real world.

Our sequence focuses on the solar system and the different bodies that move through it. These range from planets to asteroids, meteoroids, comets etc. Our sequence also focuses on the laws, the processes that keep these bodies moving and the order. We discussed these bodies moving and the necessity of gravity and the inertia for this to occur. In this standard, we discussed forces such as Newtons' Laws of motion, inertia, and gravity, which is essentially to all the moving planetary bodies and space objects/rocks. The concept of inertia and its interaction with the sun is crucial for the planets in maintaining a stable orbit through

space. All eight planets in the solar system are unique in their characteristics and composition. Compared to other planets in the Solar System, our planet is ideally located with features in the atmosphere like oxygen and nitrogen, gravity, water, and the correct amount of sunlight for heat. Through instruction, students will understand the difference in Earth and the other planets learning why the planet is unique. Students will discover why it is important to preserve our resources and explore the Universe for resources or other habitable planets. Historically, other countries started using rockets to reach space. The desire to be the first in outer space created a Space Race that landed the United States on the moon in 1969. NASA is now focused on space exploration to reach further and further into outer space.

The concept of gravity is crucial to the Space rocks aspect of our lesson because this is the force that allows those objects to travel through space. Gravitational force is a phenomenon that is crucial to the asteroid belt which is a concept that is discussed in the Space rocks lesson plan using the technology in Learning Gizmos. If gravity were not exerting such a strong presence on the asteroid belt, they would be scattered over the galaxy causing damaging collisions. Comparing and contrasting gravity on Earth to the other planet will bring in true scientific concepts to explain why objects are able to stay on Earth.

Gravity and Newton's first law of motion ties into meteors and meteoroids and is the defining difference between the two. Meteoroids are rocks traveling through the solar system in a uniform motion as explained by Newton's first law, once meteoroids get caught into a planetary gravitational field, or are acted upon by another force (another asteroid) they hurl towards the planet

and become meteors. The concept of gravity and inertia also align with our lesson plan on planetary alignment. Certain planets are also known to have more activity around them in the form of asteroids such as Mars and Jupiter. In conclusion our lesson plans form a cohesive unit to provide instruction and real-world experiences in the solar system. Each topic can be discussed sequentially and even conjunctionally.

Context

The instructional sequence of this 5E Lesson Plan will be presented to a Middle School Grade Level 6 in a suburban Atlanta School District. The demographic I work with is in an area that consists of predominantly underprivileged children, 55% boys and 45% girls (http://www.rockdaleschools.org/), from low-income, single parents' households. Some students deal with struggles due to learning disabilities. Most of the students are African American and Latinx. I work constantly to help the African American children overcome their struggles with misconceptions. This school is in suburban Georgia and is a Title 1 school that is diverse and there are concentrations of children with single parents. Title I, Part A funds, are earmarked to improve educational programs for students and ensure economically and socially disadvantaged students receive equal opportunity for access to a quality education (www.thebestschools.org). The College and Career Ready Index (CCRPI) Score is 73.5 which captures some information on school quality and performance in certain areas, looking at performance levels in content areas (https://schoolgrades.georgia.gov/memorial-middle-school).

Classroom Culture and Norms

A classroom culture of behavioral norms has been established since the first day of school. These norms include cameras on, microphones muted, raising hands, waiting to be called on, respect of yourself, and others, kind words to be spoken and behavior appropriate for school. The principle has established a family centered culture. Our students are called scholars and parents are

involved in the students' education. A culture of excellence and caring is mixed in with academic achievement as together we seek to improve the scores of the middle school.

<table>
<tr><th colspan="3">Desired Results</th></tr>
<tr><td rowspan="5">ESTABLISHED GOALS (GSE)
S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.
c. Analyze and interpret data to compare and contrast the planets in our solar system in terms of size relative to Earth, surface and atmospheric features, relative distance from the sun, and ability to support life.</td><td colspan="2">Transfer (meaning making, sense making)</td></tr>
<tr><td colspan="2">Students will be able to independently use their learning to…
Analyze and interpret data to determine scale properties of objects in the solar system.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS (Disciplinary Core Ideas)
Students will understand that…

● Compared to Earth, planets have similarities and differences in terms of size, surface, atmosphere, relative distance from the sun, and ability to support life.</td><td>ESSENTIAL QUESTIONS & BIG IDEAS
1. How is our solar system positioned in the Milky Way Galaxy and the universe?
2. How does Earth compare to other planets in the solar system?

BIG IDEAS
● analyze the solar system and investigate how the planets are aligned with the sun and one another within the solar system.
● design and create a working model of the solar system.</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
</table>

	Students will know how to apply… (Crosscutting Concepts) **Patterns** Graphs, charts, and images can be used to identify patterns in data. **Scale, proportion, and quantity** Phenomena that can be observed at one scale may not be observable at another scale.	*Students will be engaged in… (Science Practices)* ● Analyzing and Interpreting Data ● Analyze and interpret data to provide evidence for phenomena.

Learning Plan

Pre-Assessment:

Students will complete the Planets Assessment sheet to answer questions that assess prior knowledge of the following...

- Explain the effects that distance and mass have on the gravitational pull of the planets.
- List the characteristics of the inner and outer planets.
- Match the moon to its characteristics.
- Write the names of the planets starting from the Sun.
- Match the name of the planet to its characteristics.

Planets Assessment Name _____

1. Explain the effects that distance and mass have on the gravitational pull of the planets.

_____

_____

_____

_____

2. List the characteristics of the inner and outer planets.

Inner Planets	Outer Planets

3. These are the four Gallean Moons: Io, Europa, Callisto, and Ganymede. Match the moon to its characteristic.

a. The largest in our solar system _____

b. The smoothest surface _____

c. Has an underground ocean _____

d. Is the most geologically active _____

e. Same hemisphere always faces Jupiter _____

Planets Assessment Name _____

4. Write the names of the planets starting from the Sun.

1. _____ 2. _____ 3. _____

4. _____ 5. _____ 6. _____

7. _____ 8. _____

5. Match the name of the planet to its characteristic.

a. Hottest planet because of the Greenhouse Effect _____

b. Planet with the "Great Dark Spot" _____

c. Fastest orbiting planet _____

d. Planet with a sideways axis _____

e. The "red planet" _____

f. The largest planet _____

g. Planet with the most rings _____

h. Planet made of 2/3 water _____

i. Planet with the Great Red Spot _____

j. Planet with a canyon larger than the Grand Canyon _____

Anchoring Phenomenon	***Overall Driving Question***
Solar *System - What are the forces governing the arrangement of planets in the solar system?* Students will watch the video below. *Why do planets revolve around the sun? (This demo can be repeated using a large bed sheet with balls of different sizes. Consider using a basketball to represent the sun in the center)* *Watch video: https://youtu.be/uG7wKcB63rY* *After watching the video, students will ask questions to connect their current level of understanding or prior knowledge to the phenomenon. For example, students may ask, why do the balls all roll to the middle? Why does the large ball move faster? How are the planets rotating around the sun?* *Teacher will write the questions/statements on a KLEWS chart. (This will identify what the students - Knows, Learn, Evidence, Wonderings, Scientific Concepts) Students will engage in developing explanations and integrating scientific principles in their thinking. Students will engage in scientific practices as they learn core ideas in science.*	● How does Earth compare to other planets in the solar system?

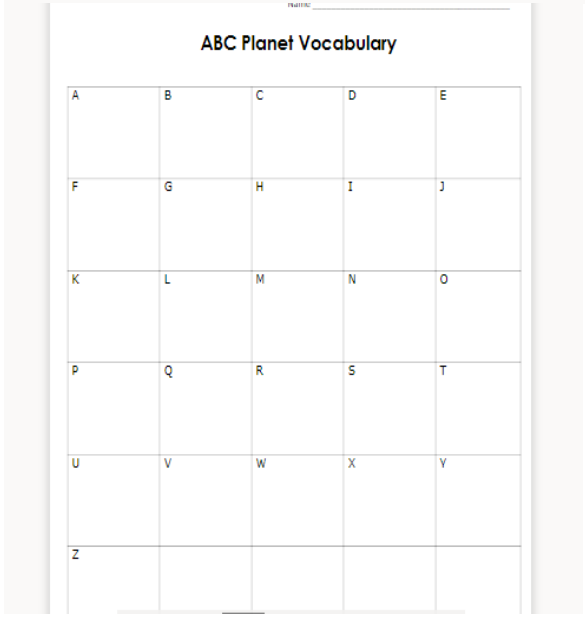
KLEWS to Mapping Scientific Explanations

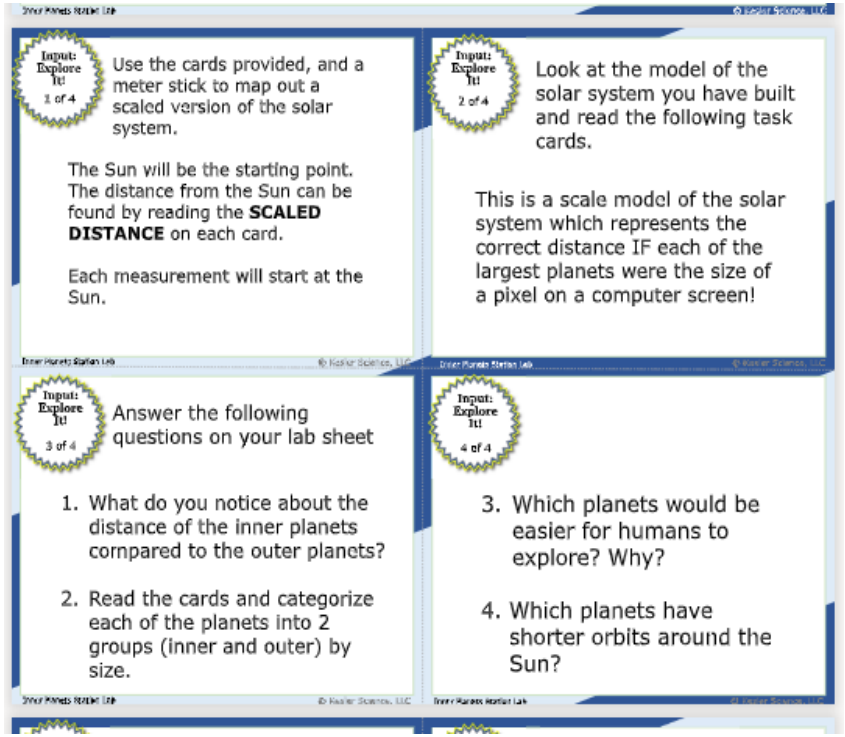
Phenomena:

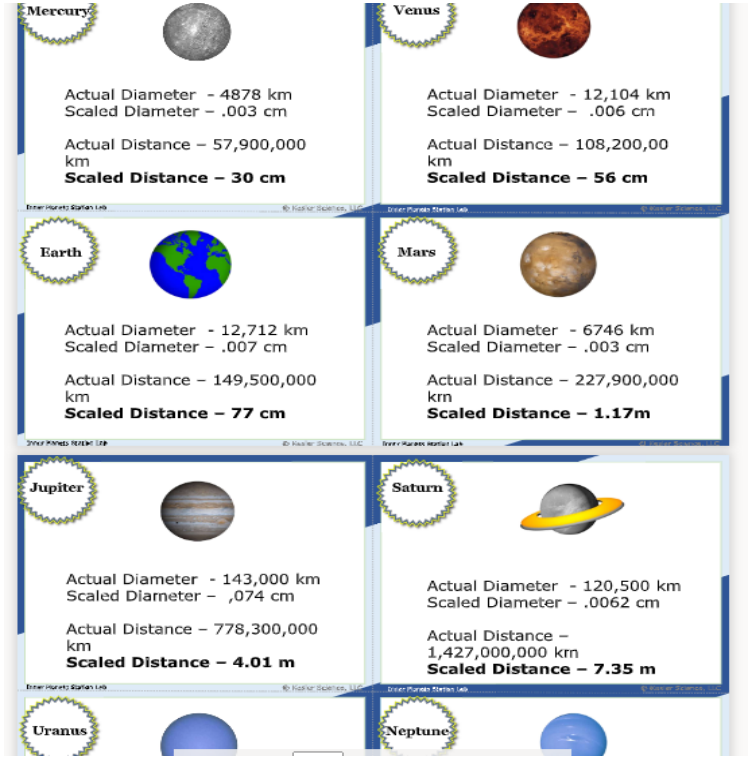
Driving Question:

What do we *think* we **KNOW**? (prior knowledge)	What are we **LEARNING**? [claims]	What's our **EVIDENCE**?	What do we **WONDER**? [testable questions]	What **SCIENCE** Ideas can we use to make our explanation stronger. [reasoning]

Stage	***Learning Events***	***Progress Monitoring***
ENGAGE	*The teacher will engage the students by using a Think-Pair-Share activity– Planets Materials - ABC handout below Objective Introduction.* *The teacher will have the students do a Think-Pair-Share to discuss the objective. One student will read the objective, and the other student will respond with their understanding of the objective (topic).* *Students then individually brainstorm words that relate to planets. Write the words in the boxes of their corresponding first letter. (Example: I- inner planets, S - Saturn, A- atmosphere) There can be more than one word in the box. Next, have them get with a*	*Through discussion, the teacher will get a better understanding of a students' prior knowledge of Planets and their distinct characteristics. This will inform instruction.*

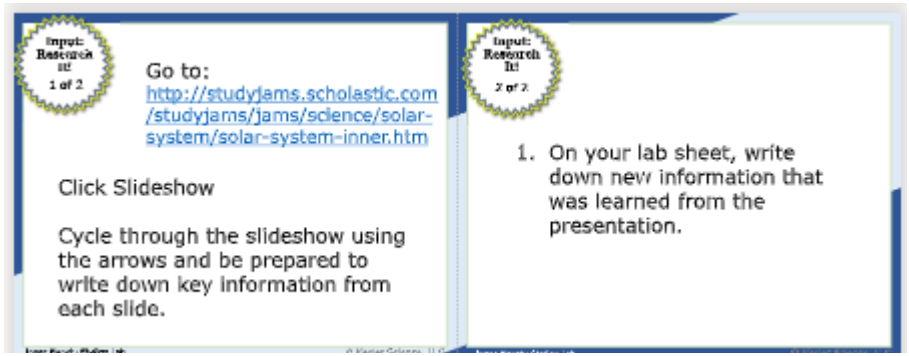
	partner and share the words. Partners cand use each other's words to expand their ABC's.  ABC Planet Vocabulary A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	
EXPLORE	*Teacher will place the students in four groups for Explore It! Stations. Each group member will write down their conclusions on their lab sheet in the Explore It! section.* *Explore It! Instructions. One group member will read the task cards in order. The group will be responsible for completing each task that is being read.*	*The teacher will monitor their interactions by observing and interacting with group discussions.*


Input: Explore It! 1 of 4
Use the cards provided, and a meter stick to map out a scaled version of the solar system.
The Sun will be the starting point. The distance from the Sun can be found by reading the **SCALED DISTANCE** on each card.
Each measurement will start at the Sun.
Input: Explore It! 2 of 4
Look at the model of the solar system you have built and read the following task cards.
This is a scale model of the solar system which represents the correct distance IF each of the largest planets were the size of a pixel on a computer screen!
Input: Explore It! 3 of 4
Answer the following questions on your lab sheet
1. What do you notice about the distance of the inner planets compared to the outer planets?
2. Read the cards and categorize each of the planets into 2 groups (inner and outer) by size.
Input: Explore It! 4 of 4
3. Which planets would be easier for humans to explore? Why?
4. Which planets have shorter orbits around the Sun?



<u>Differentiation- Research It!</u>

Each member of this student group will go to the website and use technology listed on the task card #1. Complete the task card in order. Every student will answer the questions from the task cards on the lab sheet in the Research It! section.

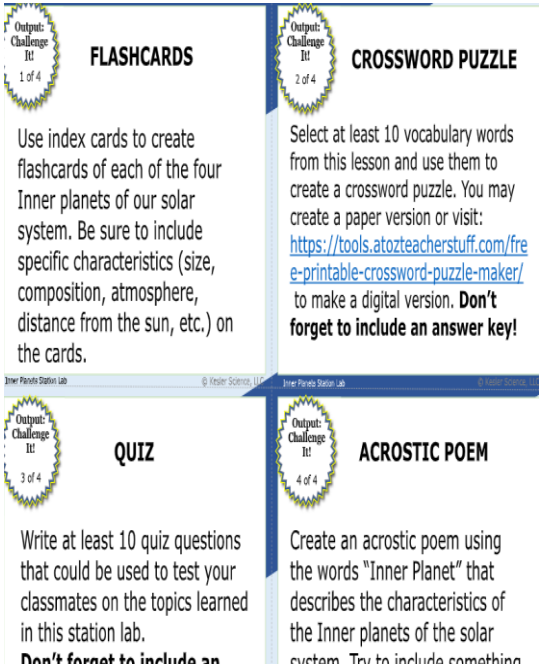
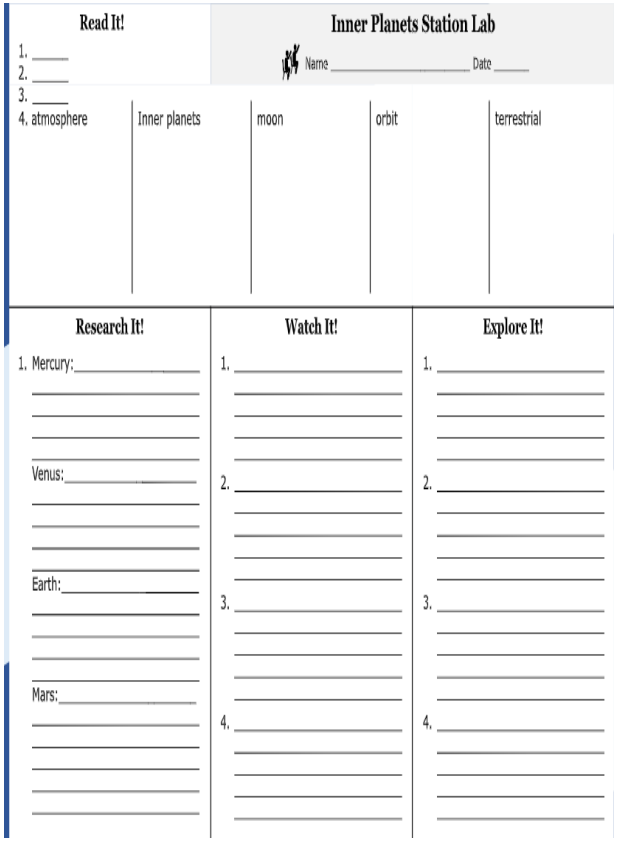


http://studyjams.scholastic.com/studyjams/jams/science/solar-system/solar-system-inner.htm

<u>Differentiation</u> - Challenge It! for High Learners

After completing all other stations, students will choose one or more task cards to complete.

The completed challenge will be checked by the teacher and/or attached to the answer sheet.

	 	
EXPLAIN	*Teacher will give explicit instruction on the* similarities and differences of planets in terms of size, surface, atmosphere, relative distance from the sun, and ability to support life. *PowerPoint* *https://drive.google.com/file/d/1LFlJi7ymusbGrlDo4X8HBWdqAkQ_F37e/view?usp=sharing*	*The teacher will be attentive of the student's responses to evaluate if they are making the necessary connections. Students will use the interactive PowerPoint to*

	Misconceptions addressed: 1. We could easily go to another planet and live. Traveling to another planet would require very large amounts of money, planning, and time, and would not be at all easy to do because of the expense and complexity of the operation. 2. We could grow plants in the soil on Mars. Very low temperatures and the lack of water should make Mars a hostile planet for any organism that has evolved in an Earth environment.	*explain what they learned. Teacher will follow up the activity with explaining the phenomenon with reinforcing information. Teacher will clear up any misconceptions.*
ELABORATE	Students will select a project to complete from the Planet Choice Project. Planet Choice Project It seems impossible but in the year 2060 space travel to other planets is now available to the general public. All you need is some "dough". How much would you be willing to spend to visit the planet of your dreams? Your goal is to raise $100,000, so you can visit one or more of your favorite planets.	*Teacher will guide student's comprehension of the characteristics of the planet as they complete details of the project and elaborate.*

Planets Choice Project Name _____

It seems impossible but in the year 2060 space travel to other planets is now available to the general public. All you need is some "dough". How much would you be willing to spend to visit the planet of your dreams? **Your goal is to raise $100,000**, so you can visit one or more of your favorite planets.

Planets	Project Title	Dollars
	Chart	$25,000
	Story	$25,000
	Mural	$75,000
	Travelogue	$75,000
	Picture Story Book	$100,000
	Game	$100,000
	Original Song	$50,000
	Newspaper Article	$50,000

Planet Choice Project Name _____

Planets	Project Title	Dollars
	Chart - Make a chart to show the specific characteristics of each of the eight planets. List at least six characteristics for each planet.	$25,000
	Story – Write a creative story about visiting one of the eight planets. What would you see?	$25,000
	Mural – Illustrate a mural of the planets. Research their size and colors and make the planets somewhat representative of their sizes.	$75,000
	Travelogue – Design a travelogue that a travel agent might use to sell a trip to the planets. Include facts about each planet and reasons for visiting there.	$75,000
	Picture Story Book – Write a non-fiction book about the planets with facts and illustrations.	$100,000
	Game - Make a board game for the planets. Have at least 40 questions included in the game.	$100,000
	Song – Create an original song about the planets. Include information about gravity as well.	$50,000
	Newspaper Article – Write a "creative" newspaper article about someone who has returned from visiting a planet. Include pictures.	$50.000

Differentiation- Students will be able to work on drawing on a piece of paper for a presentation that identifies the relative location, size, topography, distance from the sun, and ability to support life. Students will take a picture of the drawing and upload it to the online learning platforms.

EVALUATE	The evaluation of the student's progress will be through a formative assessment. Students will use the Pre-assessment worksheet and complete it again after the lesson. Students will complete the Planets Assessment sheet to answer the following questions: 1. Explain the effects that distance and mass have on the gravitational pull of the planets. 2. List the characteristics of the inner and outer planets. 3. Match the moon to its characteristics. 4. Write the names of the planets starting from the Sun. 5. Match the name of the planet to its characteristics.	*The progress of a student's knowledge on this topic will be evaluated based on prior assessments. Students will receive a grade for this evaluation.*

Planets Assessment Name _____

1. Explain the effects that distance and mass have on the gravitational pull of the planets.

_____

_____

_____

_____

2. List the characteristics of the inner and outer planets.

Inner Planets	Outer Planets

3. These are the four Gallean Moons: Io, Europa, Callisto, and Ganymede. Match the moon to its characteristic.

a. The largest in our solar system _____

b. The smoothest surface _____

c. Has an underground ocean _____

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e. Same hemisphere always faces Jupiter _____

Planets Assessment Name _____

4. Write the names of the planets starting from the Sun.

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a. Hottest planet because of the Greenhouse Effect _____

b. Planet with the "Great Dark Spot" _____

c. Fastest orbiting planet _____

d. Planet with a sideways axis _____

e. The "red planet" _____

f. The largest planet _____

g. Planet with the most rings _____

h. Planet made of 2/3 water _____

i. Planet with the Great Red Spot _____

j. Planet with a canyon larger than the Grand Canyon _____

<table>
<tr><th colspan="3">Desired Results</th></tr>
<tr><td rowspan="6">ESTABLISHED GOALS (GSE)
S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.
d. Develop and use a model to explain the interaction of gravity and inertia that governs the motion of objects in the solar system.

https://www.sciencebuddies.org/teacher-resources/lesson-plans/modeling-gravity</td><td colspan="2">Transfer (meaning making, sense making)</td></tr>
<tr><td colspan="2">Students will be able to independently use their learning to…
Create connections between gravity and inertia that governs the solar system.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS (Disciplinary Core Ideas)
Students will understand that…
•Gravity is the force of attraction between two bodies that have mass. The greater the mass, the greater the attraction. The earth and other planets in the solar system are under the influence of the sun’s gravitational field.
•Inertia is the tendency for an object to continue in its current state of straight-line motion.
•The balance between inertia and the force of gravity keeps the planets in an elliptical orbit around the sun.</td><td>ESSENTIAL QUESTION & BIG IDEAS
● Why do planets orbit around the sun?
● What factors play a role in the planets’ orbits around the sun?
● What is Newton’s First Law of Motion?</td></tr>
<tr><td colspan="2">Acquisition</td></tr>
<tr><td>Students will know how to apply… (Crosscutting Concepts)

<u>Scale, Proportion, and Quantity</u>- In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change.

<u>Systems and System Models</u>- A system is an organized group of related objects or components;</td><td>Students will be engaged in… (Science Practices)

● Developing and Using Models- A practice of both science and engineering is to use and construct models as helpful tools for representing ideas and explanations. These tools include diagrams, drawings, physical replicas,</td></tr>
</table>

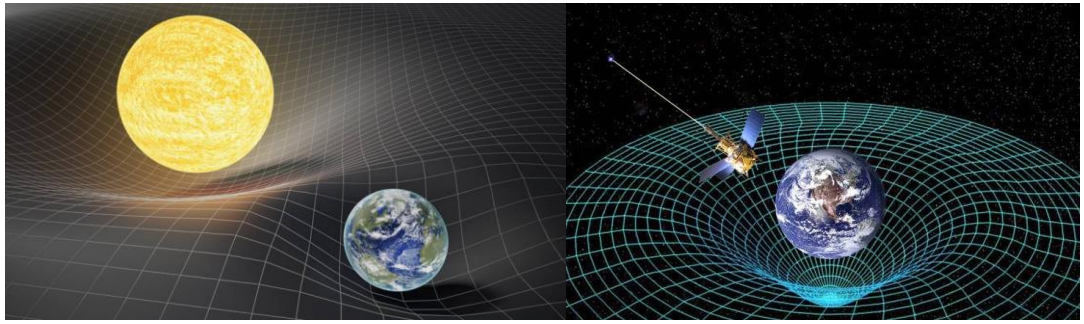
	models can be used for understanding and predicting the behavior of systems	mathematical representations, analogies, and computer simulations.

Learning Plan- Day One [Interaction of Gravity]

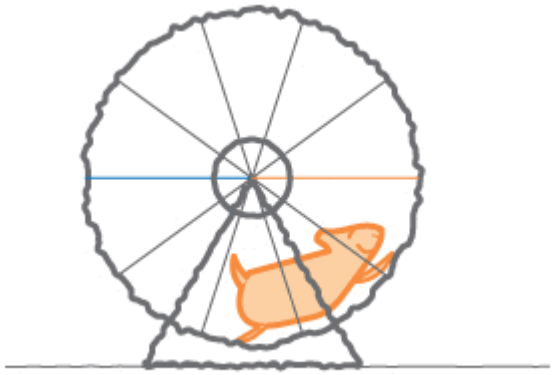
Pre-Assessment: Video Interpretation- Students will view the video [https://www.youtube.com/watch?v=x2adl6LszcE] and will write and discuss their interpretation on how gravity played a role in the video.

Anchoring Phenomenon	***Overall Driving Question***
● **Gravity** (from Latin gravitas 'weight'), or gravitation, is a natural **phenomenon** by which all things with mass or	● What role does gravity play in the Solar System?

energy—including planets, stars, galaxies, and even light—are brought toward (or gravitate toward) one another.		
Stage	***Learning Events***	***Progress Monitoring***
ENGAGE	*The teacher will introduce the phenomena to the students by doing the following. The teacher will toss an object into the air and ask the students to explain why the object falls back down and why it does not continue in a continuous trajectory. After the class discusses their thoughts on why that happens the topic of the day will be introduced to the students.*	*The teacher will ask students to write down their theories based on prior knowledge.*
EXPLORE	*The students will be separated into groups for this portion of the lesson. In the groups, the students will be engaging in the following scientific experiment that will be recorded in their journals:* ● *A **large piece of elastic fabric** will be suspended by heavy objects on the table.* ● *A **billiard ball** will be placed at the center of the fabric mimicking our sun at the center of the solar system.* ● *Students will then be given marbles which they will hold onto until further instructed.* ● *The instructor will point out three designated spots on the fabric which are inner ring, middle ring, and outer ring.* ● *Students will then place their **marbles** anywhere within the ring and note how the distance from the billiard ball affects how the ball behaves.* ● *Give students the opportunity to place their marble ball in all three rings.* ● *Have students write down anything they noticed during this exercise.*	*The teacher will monitor their inferences by observing and interacting with group discussions.*
EXPLAIN	*The groups will come back together to have a class discussion to make sense of their observations.*	*The teacher will be attentive of the student's responses to evaluate if they are making the*

	• *During this class discussion the teacher will ask guiding questions to clarify students' misconceptions that they might have accumulated during the activity.*	*necessary connections.*
ELABORATE	 *The instructor will elaborate on the findings of the students and connect them to the visualization of gravity. This image will help put the experiment into perspective. Students will also be able to see that objects with greater mass will have more gravitational pull.*	*After finding out what gravity is and how it affects our solar system the students will have a 3-2-1 assignment which will demonstrate to the teacher 3 things the students found fascinating, two questions they have and one fact*
EVALUATE	The evaluation of the student's progress will be through a formative assessment. They will do a short, written response on the question "What role does gravity play in the Solar System?"	*The progress of a student's knowledge on this topic will be evaluated based on prior assessments.*

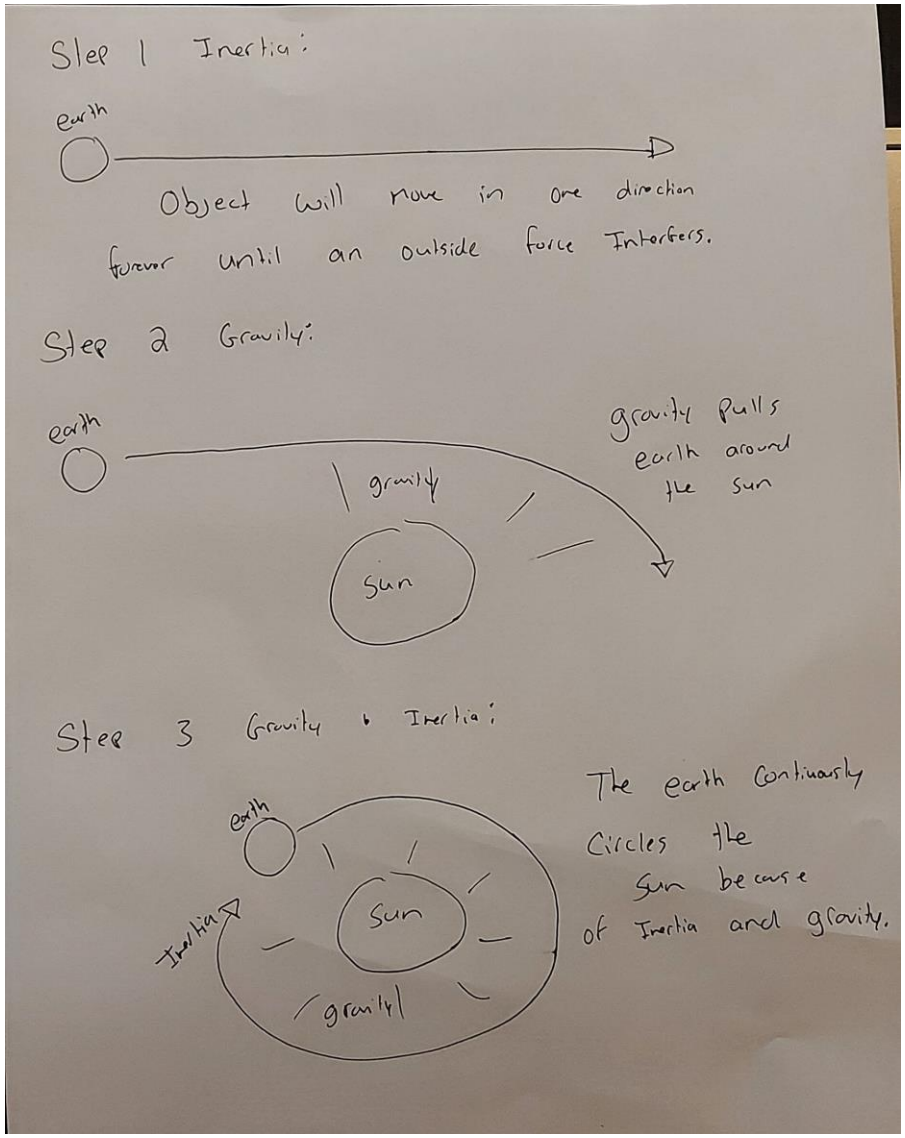
Learning Plan- Day Two [Inertia]
Pre-Assessment: For the Pre-assessment, the class will fill in a KWL chart to see if the students have any prior knowledge about inertia.

Anchoring Phenomenon	***Overall Driving Question***
● What happens when a hamster stops running? 	● How does inertia and gravity affect our Solar System?

Stage	***Learning Events***	***Progress Monitoring***
ENGAGE	*The teacher will engage the students by showing them the gif of the hamster spinning after it stopped running. Then the teacher will tell the class that the gif demonstrates inertia.*	*Through discussion, the teacher will get a better understanding of a students' prior knowledge of inertia and Newton's First Law of Motion.*
EXPLORE	● *The teacher will introduce the students to inertia hats to help them understand what inertia is.*	*The students will be creating inertia hats and taking notes in*

	● *The students will be tasked with creating their own hats to simulate inertia on their own.* ● *During this activity, the students should be thinking about how the inertia hat works and how it can be related to the solar system.* 	*their journals. They should be writing questions or epiphanies they have during this activity.*
EXPLAIN	*The teacher will explain to the students the role of inertia had in the static movement of the balls on the hat. The concept of inertia will also be expanded upon to relate it back to the role it plays in the solar system.*	*The teacher will evaluate the student's understanding of inertia based on their responses to the discussion.*

ELABORATE	*During this phase of the lesson the teacher will connect the students prior knowledge of gravity to their new knowledge of inertia to explain planetary orbits. The video below will help explain and give a visualization of the role that inertia and gravity has on the Solar System.* *https://www.youtube.com/watch?v=yIIYLjb7C8o*	
EVALUATE	*The students will be drawing illustrations to support their knowledge of the relationship between Gravity and Inertia.*	*Teachers will monitor the students progress of the unit with the Step 1-2-3. It will display the students ability to not only make the connection between inertia and the solar system, but also with gravity.*


Step 1 Inertia:
earth
Object will move in one direction forever until an outside force interfers.
Step 2 Gravity:
earth
gravity
sun
gravity pulls earth around the sun
Step 3 Gravity + Inertia:
earth
Inertia
sun
gravity
The earth continuously Circles the Sun because of Inertia and gravity.

<table>
<tr><th colspan="3">Desired Results</th></tr>
<tr><td rowspan="4">ESTABLISHED GOALS (GSE)

- S6E1. Obtain, evaluate, and communicate information about current scientific views of the universe and how those views evolved.

- e. Ask questions to compare and contrast the characteristics, composition, and location of comets, asteroids, and meteoroids</td><td colspan="2">Transfer (meaning making, sense making)</td></tr>
<tr><td colspan="2">Students will be able to independently use their learning to…
Compare and contrast the differences between planetary objects such as asteroids, meteors and comets.</td></tr>
<tr><td colspan="2">Meaning</td></tr>
<tr><td>UNDERSTANDINGS (Disciplinary Core Ideas)
Students will understand:

● differences occur among comets, meteors, and asteroids based on physical features a composition
● comparisons can be made between comets, meteoroids and asteroids based on characteristics, composition and location.
● there are differences between a meteor and meteorite
● what happens to a meteoroid/meteor as it moves from outer space to the Earth’s surface?</td><td>ESSENTIAL QUESTIONS & BIG IDEAS

● What is the difference between a comet, meteor, and asteroid?

Essential vocabulary:
● Comet, Meteor, Asteroid belt, Elliptical Asteroid

Big idea:

● The standard will be used to guide content by giving the teacher a set of goals to hit to ensure the students learn the required content. The standard also helps guide lesson content by giving a broad set of goals that the teacher can then narrow down by what he or she deems to be most important to their students.</td></tr>
</table>

	Acquisition	
	Students will know how to apply… (Crosscutting Concepts) **Patterns:** Patterns can be used to identify cause and effect relationships. **Systems and System Models:** Models can be used to represent systems and their interactions.	*Students will be engaged in… (Science Practices)* ● Asking questions (for science) and defining problems (Class discussion) ● Developing and using models. (Gizmos) ● Planning and carrying out investigations. (Gizmos) ● Analyzing and interpreting data (Gizmos, group activity)

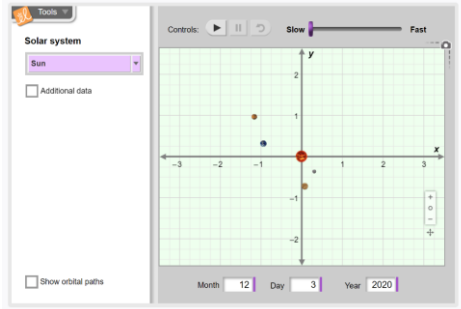
Learning Plan

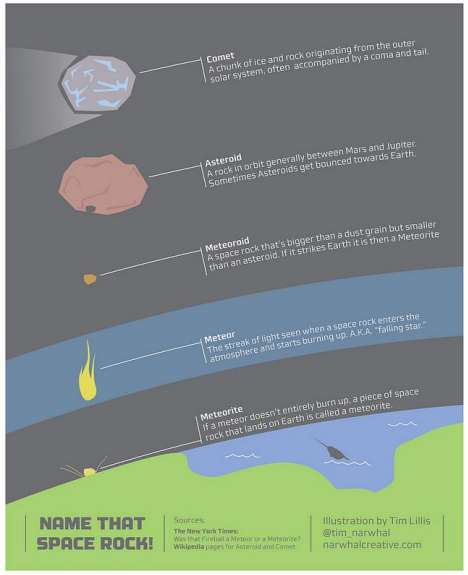
Pre-Assessment: ***Students will watch for differences in this video https://www.youtube.com/watch?v=xYOPnqB-9j8***

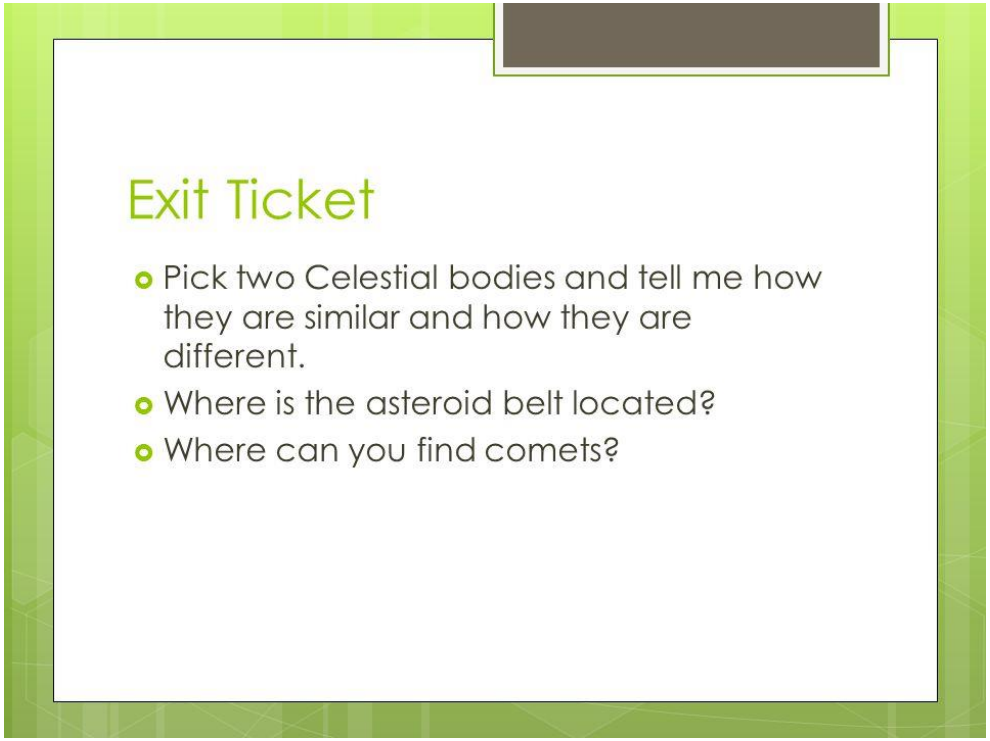
Anchoring Phenomenon	***Overall Driving Question***
● Though asteroids, meteoroids and comets can all be found in space, there are big differences between all three?	● How are asteroids, meteoroids and comets different? Explain in terms of characteristics, composition and location

Stage	***Learning Events***	***Progress Monitoring***
ENGAGE	*The student's prior knowledge on the topic will be tapped by them completing a KWL chart. The student's prior knowledge will be leveraged by having a class discussion where the*	*The teacher will walk around and*

	students will read what they wrote for their chart. The students will then make predictions on what information they think they are learning next. Name _____ **K.W.L Chart** Date _____ **Topic** _____ **What I Know** | **What I Want to Know** | **What I Have Learned** www.timvandevall.com | Copyright © 2014 Dutch Renaissance Press LLC.	*actively monitor their progress*
EXPLORE	*Students will have concrete, tangible, examples of the concepts being discussed. Technology from the platforms of Learning Gizmo's. The Gizmo's platform will be incorporated into the student's activity where they will explore, compare and contrast the differences between the different objects in space such as meteorites, comets and asteroids.*	*The teacher will walk around and actively monitor their progress*

	https://www.explorelearning.com/index.cfm?method=cResource.dspDetail&ResourceID=441  	
EXPLAIN	*Students will be broken up into groups by the different space objects they are learning about. After giving the students an appropriate amount of time, they are to take turns teaching the class traits, characteristics and information about composition to the class. As each group explains their space rock, the rest of the class will be taking notes in their science notebook. This ensures every student gets the same information.* 	*The teacher will walk around and actively monitor their progress*

ELABORATE	*Students will debate/discuss the differences and similarities between the different space rocks. The students will be taking notes during the class discussion to help them answer the open-ended questions that follow the discussion. The questions will be: How are these objects different from one another in terms of composition? How do these space objects affect the Earth? What would happen if these objects did not exist?*  	*The teacher will walk around the class and mediate the class debate/discussion.*

EVALUATE	Students will be evaluated through an exit ticket, given through Microsoft forms, which reviews all the information that was discussed. How accurate their responses are will let the teacher know who understands the concept and who needs more support. Another form of evaluation will occur when taking a look at the effectiveness of their notes in their science notebook.  	*The teacher will walk around and actively monitor their progress*

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