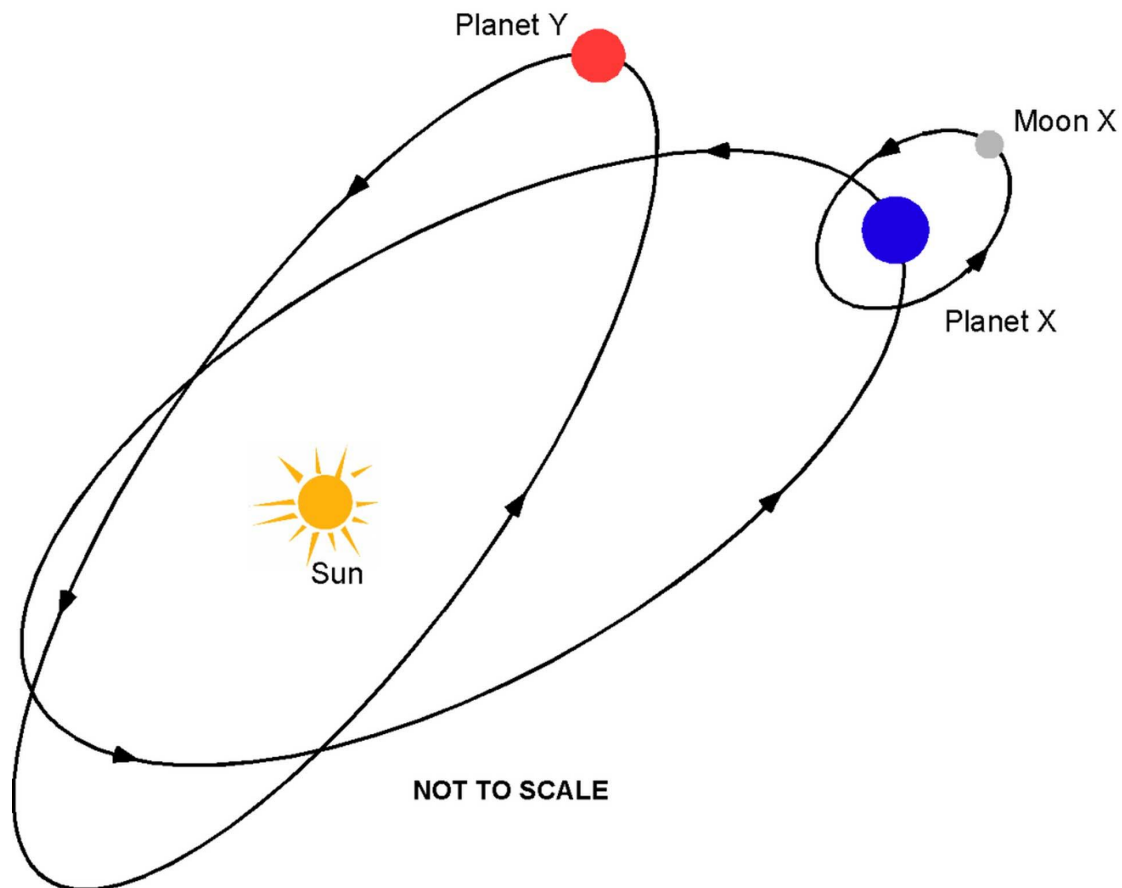


Image Analysis: Notice & Wonder

Directions: Look at the image and write down 3 things you **notice** (key details, main ideas, or themes) and then write down 3 things you **wonder** (questions you have because of the image or things you are curious about when you look at the image).

What
do you
notice?



What
do you
notice?

Read & Take Notes



Take Notes Here

Directions: Read the passage below. Take notes in the space provided.

Johannes Kepler was a German astronomer who lived from 1571 to 1630. He is considered one of the most important figures in the Scientific Revolution, a period of great scientific advancements. Kepler's work on planetary motion, described in his books "Astronomia nova", "Harmonice Mundi", and "Epitome Astronomiae Copernicanae", had a significant impact on Isaac Newton, who used Kepler's findings as a foundation for his theory of universal gravitation.

Kepler's early life was filled with challenges. He was born prematurely and suffered from various illnesses throughout his childhood. His family life was also tumultuous, with his mother facing accusations of witchcraft. Despite these difficulties, Kepler excelled in his studies, particularly in mathematics. He became a mathematics teacher at a seminary school in Graz, Austria, where he met Prince Hans Ulrich von Eggenberg.

Kepler's career took a significant turn when he became an assistant to the renowned astronomer Tycho Brahe in Prague. After Brahe's death, Kepler succeeded him as the Imperial Mathematician to Emperor Rudolf II. In this role, Kepler continued Brahe's work, focusing on understanding the movement of planets. He challenged the prevailing belief that planets moved in circular orbits, instead proposing that they moved in elliptical paths. This groundbreaking discovery, along with his other two laws of planetary motion, revolutionized our understanding of the solar system.

Kepler's contributions extended beyond astronomy. He made significant advancements in the field of optics, earning the title of "father of modern optics." He also invented an improved version of the refracting telescope, known as the Keplerian telescope, which became the foundation for modern refracting telescopes.

Kepler's work was not only scientific but also deeply philosophical. He believed that the universe was governed by mathematical laws and that these laws reflected God's design. His discoveries were not simply a collection of facts but part of a larger understanding of the cosmos. Kepler's legacy continues to inspire scientists and thinkers today, reminding us of the power of observation, curiosity, and the pursuit of knowledge.

Key Vocabulary

Directions: For each term, use the word in a sentence that shows you understand its definition. Then create an image to represent the term. Be ready to explain the image.

Vocabulary Term

tumultuous

adjective

marked by great commotion, confusion, or uproar

Use It In A Sentence:

An Image to Represent It:

Vocabulary Term

prevailing

adjective

existing or most common at a particular time

Use It In A Sentence:

An Image to Represent It:

Vocabulary Term

groundbreaking

adjective

innovative and important; making a significant advance

Use It In A Sentence:

An Image to Represent It:

Vocabulary Term

elliptical

adjective

shaped like an ellipse, a closed curve that is symmetrical about its center

Use It In A Sentence:

An Image to Represent It:

Vocabulary Term

philosophical

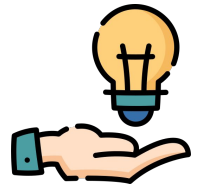
adjective

relating to or characterized by philosophy, the study of fundamental questions about existence, knowledge, and values

Use It In A Sentence:

An Image to Represent It:

3-2-1 Learning Reflection



Directions: Fill in the boxes below to reflect on your learning. Write down **three** new things you learned, **two** connections you made to what you already know, and **one** thing you want to learn more about.

3 THINGS I LEARNED

2 CONNECTIONS I MADE

1 THING I WANT TO LEARN MORE ABOUT

Answer and Explain

Directions: For each question, answer the question and then explain why you picked the answer you did using specific evidence from the text.

Question:

1. What was Kepler's main contribution to the field of astronomy?

Pick the Answer

- A) He developed a new type of telescope.
- B) He proved that planets move in circular orbits.
- C) He discovered that planets move in elliptical paths.
- D) He created a detailed map of the stars.

Explain: Why did you pick that answer?

Question:

2. What was Kepler's role after Tycho Brahe's death?

Pick the Answer

- A) He became a mathematics teacher at a seminary school.
- B) He continued Brahe's work as the Imperial Mathematician.
- C) He published Brahe's findings in his own books.
- D) He became a renowned astronomer himself.

Explain: Why did you pick that answer?

Question:

3. What did Kepler believe about the universe?

Pick the Answer

- A) He believed the universe was a random collection of objects.
- B) He believed the universe was governed by mathematical laws.
- C) He believed the universe was created by aliens.
- D) He believed the universe was constantly expanding.

Explain: Why did you pick that answer?

Short Answer Questions

Directions: Answer each question in complete sentences. Use specific evidence from the text in each response.

Question

1. What were some of the challenges Kepler faced in his early life?

Question

2. What was Kepler's role at the seminary school in Graz, Austria?

Question

3. How did Kepler's work on planetary motion impact Isaac Newton?

Reflect and Discuss

Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

1. Kepler believed that the universe was governed by mathematical laws and that these laws reflected God's design. How do you see the world around you? Do you believe there is a larger purpose or design to life? Explain your perspective.

Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

Directions: When instructed, you will share your responses with your group. Take notes on their responses in the boxes below. Be sure to write their names at the top of each box.

Student #1: _____

Student #2: _____

Student #3: _____

Student #4: _____

Reflect and Discuss

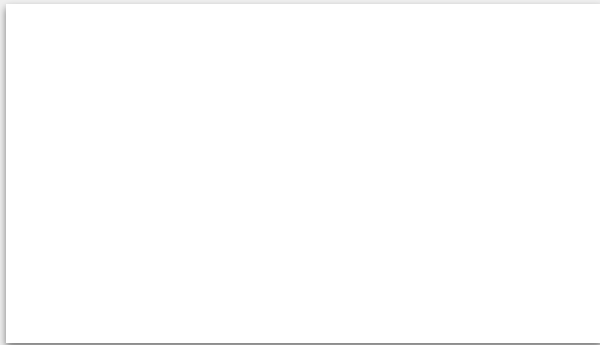
Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

2. Kepler's work was not only scientific but also deeply philosophical. He was driven by a desire to understand the universe and its workings. What are you curious about? What questions about the world around you do you want to explore? How can you use your curiosity to learn and grow?

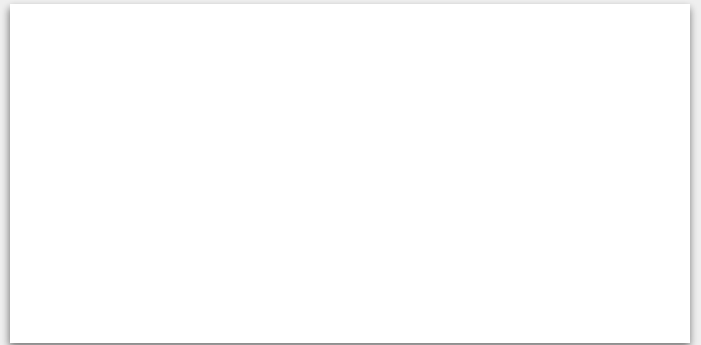
Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

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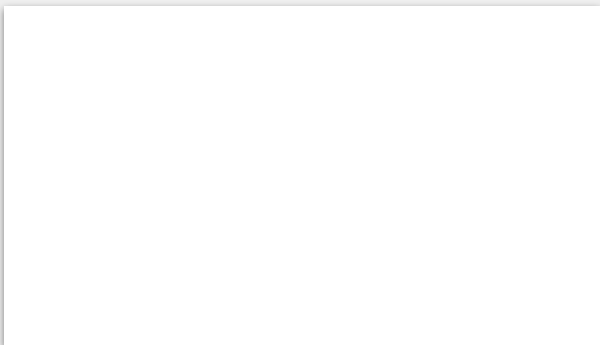
Student #1: _____



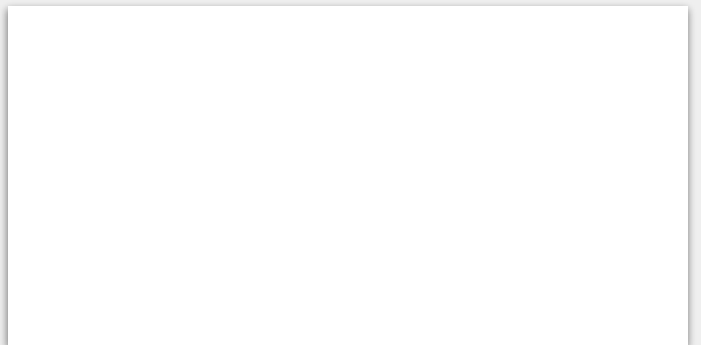
Student #2: _____



Student #3: _____



Student #4: _____



Reflect and Discuss

Directions: Respond to the following question using the reading and your own knowledge and experiences. Be as thorough as possible.

3. Kepler's discoveries revolutionized our understanding of the solar system. What are some other scientific discoveries that have had a profound impact on humanity? How have these discoveries changed the way we live and think?

Write Your Response Here. Be sure to use what you learned in the reading and your own knowledge and experiences to answer the question thoroughly.

Directions: When instructed, you will share your responses with your group. Take notes on their responses in the boxes below. Be sure to write their names at the top of each box.

Student #1: _____

Student #2: _____

Student #3: _____

Student #4: _____

Vocabulary Flashcards

Print, cut, and fold to use as flashcards.

tumultuous

*marked by great commotion, confusion,
or uproar*

prevailing

*existing or most common at a particular
time*

groundbreaking

*innovative and important; making a
significant advance*

elliptical

*shaped like an ellipse, a closed curve that
is symmetrical about its center*

philosophical

*relating to or characterized by
philosophy, the study of fundamental
questions about existence, knowledge,
and values*