**Statement of Purpose: 5th Grade Science**

Science is a methodical process of investigation, observation, testing of hypothesis, measuring, experimentation and theory building, which fosters knowledge of the natural world (Ohio Department of Education, 2010). Fifth grade science is one of the three main cores and houses many concepts that will be tested in state assessment in the spring. It is critical to take the curriculum and captivate students through a variety of teaching methods. The objectives tested through statewide testing will encompass not only fifth grade curriculum, but third and fourth grade as well. Reviewing previously taught material and thoroughly teaching fifth grade objectives are essential to the success of student. Concepts will continue to be built upon in sub sequential years deepening student understanding and it’s relevance to their daily life. Students will continue to see the interdependence between the lower grade’s objective with the fifth grade objectives as well as other objectives brought about through classroom dialogues. Showing students the relevance of the curriculum to real world opportunities is also essential (Chiarelott, 2006).

Students will actively learn content in the areas of Earth and Space, Life Science, Nature of Energy, Science and Technology, Scientific Ways of Knowing, and Scientific Inquiry. These main areas of focus become the map for which students will be taught, evaluated, and assessed throughout their fifth grade year. Lessons will consist of lectures, hands-on activities, PowerPoint lessons, interactive games, journal activities, individual and group projects, and formative / summative assessments throughout the year. Students will be evaluated through: daily formative assessments, weekly written assignments, and summative assessments. The summative assessments will often be written assessment, but students will also complete hands-on assessments in conjunction with labs they will be completing.

Fifth grade science serves as the springboard from elementary (basic) concepts to more detailed oriented concepts. Students need to have the primary scientific skills to better meet their needs in upper middle school classrooms and beyond. Students must be able to take basic scientific principles and begin to see how they apply to them personally. An example of this could be identifying ways to conserve natural resources, how to better utilize renewable resources to conserve nonrenewable ones, how people impact environments (both positively and negatively) and more. Students need the opportunity to complete science labs by using the scientific process to reach conclusions and to convey those results to others. It is also extremely important for student to see the impact they can make in this world through possible careers they may choose in the field of science.

Science is a fascinating field to fall in love with. This course maintains the importance of current science standards and giving each student the opportunity to experience science not only through written text, but also through diversity lab experiences. Students will be assessed through many different methods to ensure each student is progressing and interventions will occur promptly if there are areas of concern. Students will work on independent projects, group projects, and labs completed in pairs / groups. Students will work collaboratively to ensure everyone succeeds in our science class. By promoting critical thinking, problem solving, collaboration, and integrating technology while building on core content and background knowledge, students will evolve into individuals who possess skills for the 21st century (Salpeter, 2003). It is with all this in mind that students will achieve to the best of their abilities being encouraged not only by the classroom teacher, but their peers as well.

**Unit Length**: four weeks

**General Outcomes:**

1. Students will know the celestial bodies in our solar system. (Bloom’s – knowledge)
2. Students will differentiate between planets within our solar system by identifying unique characteristics of each. (Bloom’s – analysis)
3. Students will explain the difference between rotation and revolution. (Bloom’s – comprehension)
4. Students will identify the cause of day and night. (Bloom’s – knowledge)
5. Students will identify the cause of seasons on Earth. (Bloom’s – knowledge)
6. Students will explain why the moon changes phases. (Bloom’s – comprehension)
7. Students will recognize there are other celestial bodies that orbit the sun besides planets. (Bloom’s – knowledge)
8. Students will recognize there are many stars in space and identify how they differ from one another. (Bloom’s – knowledge)
9. Students will identify what makes Earth unique when compared to all the other planets in our Solar System. (Bloom’s – Evaluation)
10. Students will recognize the need for a larger unit of measurement when describing distance in space. (Bloom’s – comprehension)

**Unit Outcomes**:

1. Students will identify all planets within our solar system naming them in order from the Sun outward. (Bloom’s – knowledge)
2. Students will compare and contrast inner and outer planets. (Bloom’s – analysis)
3. Students will identify what rotation is and how it affects life on Earth. (Bloom’s – comprehension)
4. Students will identify what revolution is and how it affects life on Earth. (Bloom’s – comprehension)
5. Students will investigate how the revolution of the moon can affect its appearance. ( Bloom’s – analysis)
6. Students will discuss other objects that can be found in space such as comets, meteors, and asteroids. (Bloom’s – comprehension)
7. Students will identify there are many stars in space that can be characterized by size, color, and temperature. (Bloom’s – comprehension)
8. Students will state specific traits Earth has that allow life to occur on it. (Bloom’s – application)
9. Students will identify the unit of measurement used in space and why it is essential. ( Bloom’s – application)

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class / #\_\_\_\_\_\_\_\_\_\_\_\_\_

Pre- Assessment of Earth and Space Unit

True or False

1. \_\_\_\_\_\_\_\_\_ The Earth is the only planet in the Solar System that has water.
2. \_\_\_\_\_\_\_\_\_ There are eight planets in our Solar System.
3. \_\_\_\_\_\_\_\_\_\_ The Solar System only consists of the Sun and planets.
4. \_\_\_\_\_\_\_\_\_\_ The Sun is a larger star.
5. \_\_\_\_\_\_\_\_\_\_ Comets, asteroids, and meteoroids orbit the Sun.
6. \_\_\_\_\_\_\_\_\_\_ Revolution causes day and night.
7. \_\_\_\_\_\_\_\_\_\_ Rotation causes our seasons.

Fill in the blank

1. Distance in space is measured in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the force that causes everything to orbit the Sun.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the amount of matter in an object or substance.
4. It takes the Earth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to rotate on its axis.
5. It takes the Earth \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to complete one revolution.
6. Stars create patterns in the sky called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

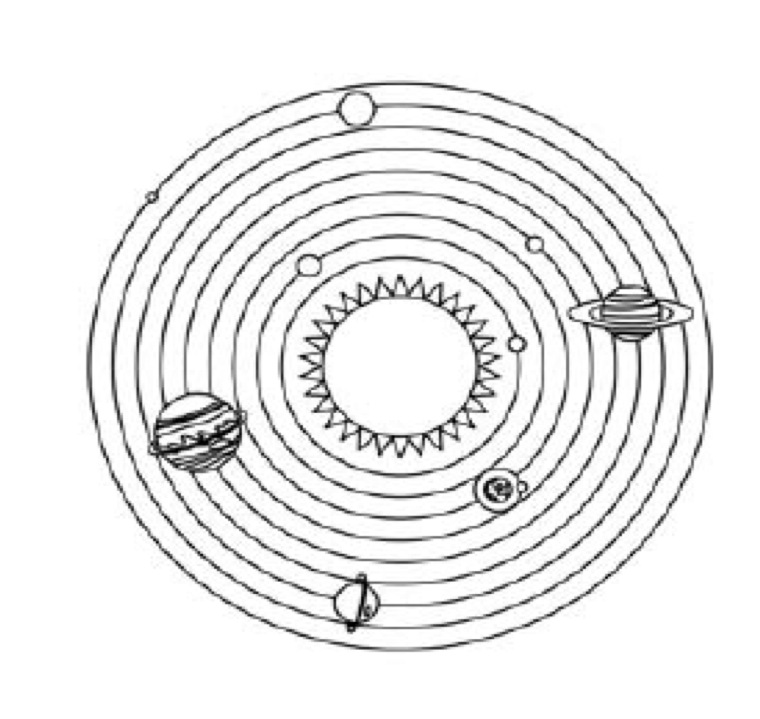
Answer as best you can.

1. How big is the universe?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Why does the moon shine?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Label the following diagram of the solar system as best you can.

**Earth and Space Science**

**Lesson 1**: Galaxies in space and our Solar System

**Class Length:** 45 minutes

**General Outcomes:**

1. Students will know the celestial bodies in our solar system. (Bloom’s – knowledge)

**Materials:** Pre-assessment, PowerPoint

**Procedures:**

**Before lesson:** Two or three days prior to beginning the unit, students will complete a written pre-assessment. The pre-assessment will be returned to students.

**Introduction:** Students will begin by discussing responses to their pre-assessments. (5 minutes) Students will then look at pictures taken from space. Students will list facts about space (this can include names of planets, satellites, stars, etc.) Students will brainstorm what makes space so interesting. (10 minutes)

**Activity**: Students will look at images from the Hubble. Students will describe the different formations of galaxies identifying the similarities of shapes and colors found in galaxies. Student will then begin to look at our solar system. Students will identify the eight planets of our solar system. Students will begin to memorize the order of the planets in our solar system using a silly sentence. (30 minutes)

**Lesson 2:** Inner and Outer Planets

**Class Length:** 45 minutes

**General Outcome:**

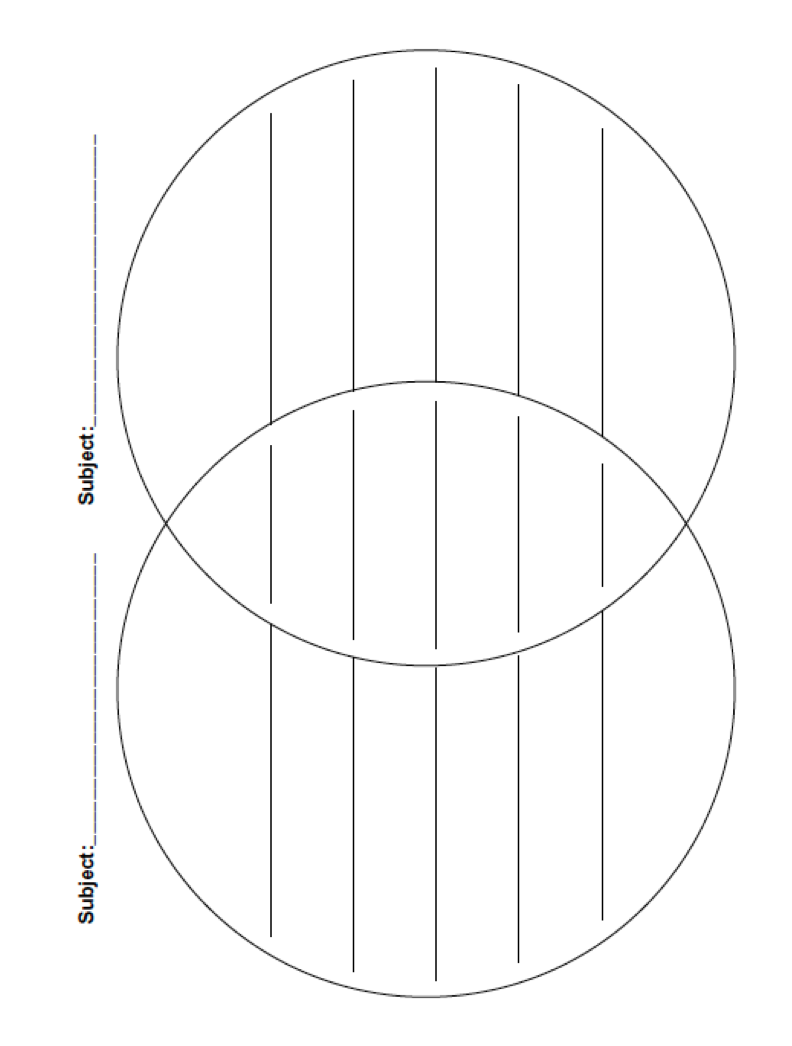
1. Students will differentiate between planets within our solar system by identifying unique characteristics of each. (Bloom’s – analysis)

**Materials:** PowerPoint, Venn Diagram worksheets

**Before lesson**: Review the lesson 1 and have students give the names of the planets in our solar system in order from the Sun outward. (5 minutes)

**Introduction:** Students will begin to categorize the planets in our solar system as inner or outer. Students will also begin to explain differences between the inner and outer planets. (20 minutes) Students will fill in a Venn Diagram as we begin inner and outer discussions.

**Activity:** Students will complete a Venn Diagram showing likes and differences between inner and outer planets. (20 minutes)



**Lesson 3**: Each planet is unique.

(This lesson will take at least three days to complete)

**Class Length:** 45 minutes

**General Outcome:**

1. Students will differentiate between planets within our solar system by identifying unique characteristics of each. (Bloom’s – analysis)

**Materials:** Planet papers to take notes on, PowerPoint, Venn diagram from lesson 2

**Procedures:**

**Before lesson:** Students will compare and contrast inner and outer planets as discussed during previous lesson. We will then begin to look at each individual planet. (10 minutes)

**Introduction:** Students will look at images of each planet. Students will take notes over each individual planet on the paper that corresponds with the planets. These notes will begin with observable traits for each planet. They will then take notes off of the PowerPoint. These notes will consist of general facts about each planet. The inner planets will be completed in this day. (35 minutes)

**Activity**: Fill in notes on each planet on corresponding worksheet

\*\* The following lessons would require 10 minutes to review previous lessons and then 35 minutes for notes.

Mercury

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Venus

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Earth

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Mars

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Lesson 4**: Each planet is unique.

(This lesson will take at least three days to complete)

**Class Length:** 45 minutes

**General Outcome:**

1. Students will differentiate between planets within our solar system by identifying unique characteristics of each. (Bloom’s – analysis)

**Materials:** Planet papers to take notes on, PowerPoint, Venn diagram from lesson 2

**Procedures:**

**Before lesson:** Students will compare and contrast inner and outer planets as discussed during previous lesson. We will then begin to look at each individual planet. Students will review the inner planet characteristics.

**Introduction:** Students will look at images of the inner planets. Identify each planet. As students are identifying planets, probe what information they can recall. (15 minutes)

**Activity**: We will then begin to describe the outer planets. Students will look at They will take notes over each individual planet on the paper that corresponds with the planet. These notes will begin with observable traits for each planet. They will then take notes off of the PowerPoint. These notes will consist of general facts about each planet. (30 minutes)

Fill in notes on each planet on corresponding worksheet

\*\* This lesson will require three days to complete the outer planets.

Jupiter

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Saturn

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

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Uranus

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Neptune

Planet Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Distance from the Sun:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How long does is one day?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How long does it take to go around the Sun? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did it get its name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Does it have a symbol? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many satellites does it have? \_\_\_\_\_\_\_\_\_\_

What is its atmosphere made up of? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the average temperature of the planet? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Other interesting facts:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Lesson 5**: Planet Pamphlet

(This project will be completed in class and will take four to five days to complete)

**Class Length:** 45 minutes

**General Outcome:**

1. Students will differentiate between planets within our solar system by identifying unique characteristics of each. (Bloom’s – analysis)

**Materials:** Notes from previous lessons, access to computers, books in the classroom on planets, rubric for project, notebook paper, coloring supplies, and white paper for pamphlet

**Procedures:**

**Before lesson:** Students will quickly review all of the planets in the solar system and specific characteristics each have.

**Introduction:** Teacher will introduce the pamphlet project and students will randomly select planets to be their focus. Students will be given the rubric for their project and the teacher will begin to explain the procedure to completing the project. (15 minutes)

**Activity**: Students may use their notes, computers, and reference books to begin compiling information to be put into their pamphlets. Each section of the pamphlet has criteria. Students will be guided as to which sections to begin with at the beginning of each class period. (30 minutes)

Day 1: Front cover, Vital Statistics, Placement in solar system (Intro 10 minutes, activities 35 minutes)

Day 2: Why would NASA send (spend resources) astronauts to (your planet)? (Intro 10 minutes, activities 35 minutes)

Day 3: What could future settlements on (your planet) be like if we had to leave Earth? (Intro 10 minutes, activities 35 minutes)

Day 4: Road Trip (Intro 10 minutes, activities 35 minutes)

Day 5: Wrap up project due at the end of the class period. (Intro 10 minutes, activities 35 minutes)

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Planet Pamphlet Checklist

\_\_\_\_\_\_\_\_\_\_ Paperclip this checklist to your pamphlet (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ **Front Cover**

\_\_\_\_\_\_ Name of planet written neatly (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Illustration of planet (4 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Catch Phrase or Logo for planet (4 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_ **Page 2** Vital Statistics

\_\_\_\_\_\_ Size (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Temperature (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Rotation / Day (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Orbit / Year (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Atmosphere (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ How many satellites (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Who discovered it (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ When was it discovered (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ Planet’s symbol (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_ **Page 3** Show placement of your planet in the solar system

\_\_\_\_\_\_ illustrate solar system in color pencil (4 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ label your planet (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ **Page 4** Answer the question, Why should NASA send (spend resources) astronauts to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?

\_\_\_\_\_\_ 6 sentences typed (10 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ 12 point font (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ spelling (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ illustration in colored pencils (5 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ **Page 5** Answer the question, What could future settlements on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ be like if we had to leave Earth?

\_\_\_\_\_\_ 10 sentences typed (10 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ 12 point font (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_ spelling (2 pts) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ **Page 6** Road Trip!!!

\_\_\_\_\_\_ Write at the top of the page. “I’m takin’ off, Mom and Dad!” (2 pts)

\_\_\_\_\_\_ Choose 5 things you would need to take with you to your planet to make your stay more enjoyable and tell me why you would need them. Remember to make sure you use complete sentences. You will need a total of at least 6 sentences for this section. (6 pts.) \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_ Neatness and spelling (10 pts) \_\_\_\_\_\_\_\_\_\_

\*\*\*\*\*\*This is a TEST grade!! Use your time and resources wisely. Score \_\_\_\_\_\_\_\_\_\_\_\_/ 90

Chiarelott, Leigh (2006). *Curriculum in content*, Wadsworth Cengage Learning, 5-6.

Ohio Department of Education. (2010). Ohio Revised Academic Content Standards for Science.

Salpeter, Judy (2003, October 15). 21st Century skills: will our students be prepared?, *Tech and Learning*, Retrieved, February 15, 2011 from http://www.techlearning.com

*By Judy Salpeter, October 15, 2003*