



The Planets

What I Will Be Learning In This Mastery Badge:

In this mastery badge you will learn about the planets of our Solar System as well as several of their moons. You will learn to make predictions about planets based on where they are located in the Solar System and will begin to recognize patterns that these planets all share in common.

What This Packet Includes:

It is important that you complete all aspects of this packet so that you gain the knowledge and skills that we are working on.

I. **Discovering Lab**

A discovering lab is a fun, introductory lab, where we discover the knowledge on our own.

II. **Video Instruction**

You will watch a video presented by Mr. Bertoch, and answer questions about it.

III. **Literacy Practice**

Reading and writing are critical life skills, and also very important to science. You will read the assigned article and complete a writing prompt.

IV. **Applying Lab**

An applying lab is how you pass off the Mastery Badge. It serves as the quiz. It is a hands on demonstration that you have mastered the skills and content of this badge.

Key Things We Will Learn In This Mastery Badge

Some of the most important things we will learn in this mastery badge:

- Introduction to each of the eight planets
- Characteristics of The Inner Planets
- Characteristics of The Outer Planets
- Rings
- Why isn't Pluto a planet?
- The Asteroid Belt

Name: _____

Date: _____



Discovering Lab

Learning Through Hands On Activities



Activity: Discovering Commonalities Among Various Planets

Directions: Follow the directions below.



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

Goal: To learn as much as you can about how the planets are alike, and how they are different.

Collecting Data On Our Solar System

Collecting data is a really important task that scientists often must engage in. As a scientist it is important that you collect accurate data. This means taking your time and checking your numbers carefully. In this assignment, you will collecting data on each of the eight planets in our solar system. You will then examine your data looking for patterns.

Collecting Data About The Planets

One very important thing that scientists do is research. This research leads to them collecting data that they can then use to make educated conclusions about how the Universe works. In this lab, you will be researching online to collect data about each of the eight planets in our Solar System.

Where Can You Find This Data?

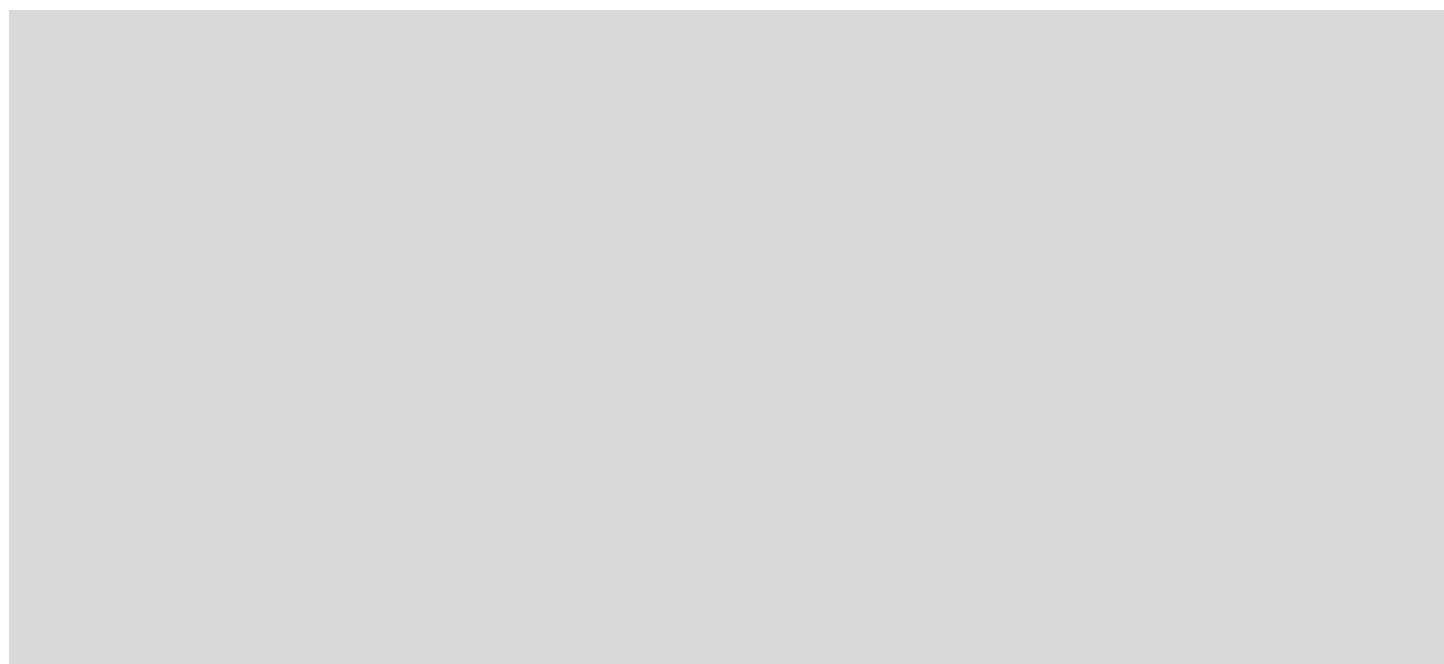
You will have to utilize your resources in order to find the data to complete the table on the next page. You might look in books that you have at home, or use a search engine to find a website that has this information.

Fill In The Entire Data Sheet Carefully

Planet Name	Length of Year	Distance From Sun	Rocky Surface or Gas?
Mercury			
Venus			
Earth			
Mars			
Jupiter			
Saturn			
Neptune			
Pluto			

Analyze Your Data - What Patterns Do You See?

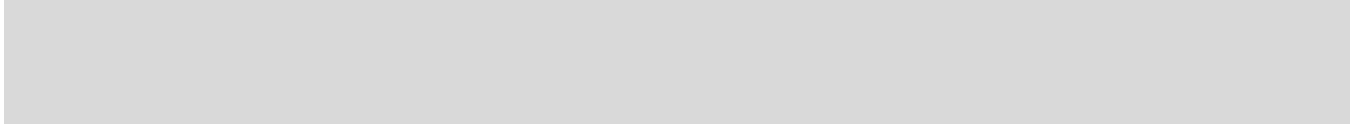
After collecting data, scientists analyze it. When you are analyzing data, there are no wrong answers. Just make sure that your answers are supported by the data that you collected. As you examine your data, what do you notice? Are there any patterns? What stands out? How are the planets alike, and how are they different? Look carefully at how the first four are alike and different versus the final four.



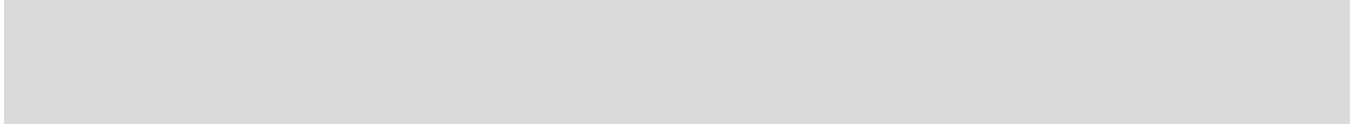
Final Questions:

Make sure to answer these questions using complete sentences.

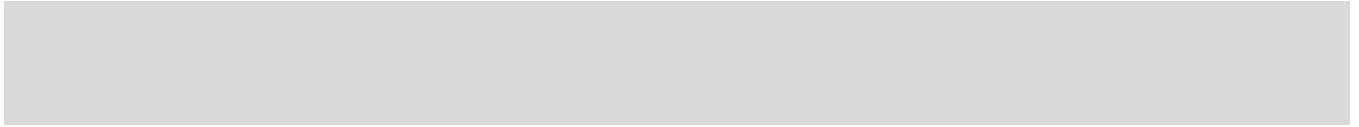
1. Which planet has the longest year?



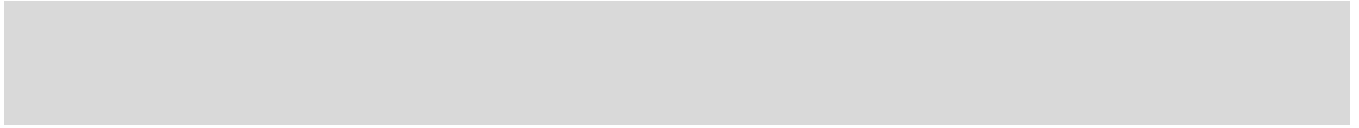
2. Which planet has the shortest year?



3. Do you see any patterns in how short or long the years are for planets?



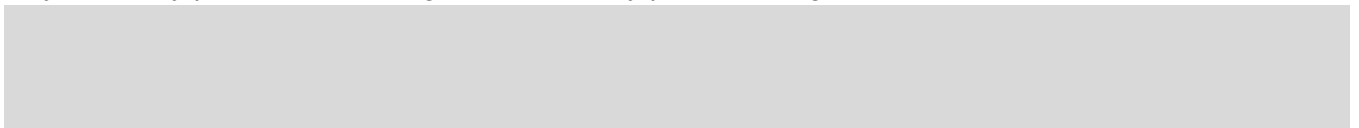
4. Which planets are rocky?



5. Which planets are gaseous?

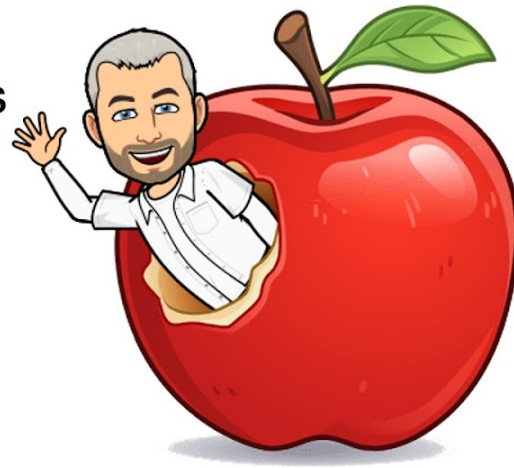


6. Do you see any patterns in how the gaseous and rocky planets are organized?



Video Instruction

Reviewing The Teacher's Instruction At My Own Pace



Handsome Science Teacher One Take Videos

Now that you have completed the Discovering Lab let's watch the video that goes with it. In this video Mr. Bertoch will help connect the discoveries that you made during the lab to the broader concepts covered under this badge, and will also introduce the vocabulary that goes with these concept.

Take Your Time, Pause And Rewind As needed

You are not in a hurry! It is more important that you understand the concepts in this video than that you finish it quickly. Take your time. If you don't understand something, pause the video and use the Internet or other resources to look up the concept that has you confused.

When you finish this video, you should have a good understanding of the concepts that have been taught. If you find yourself confused, rewind, and rewatch.

The Video For This Mastery Badge Can Be Opened Using This QR Code

This Mastery Badge includes one video:



Watch The Assigned Science Video

Scan This QR Code To Open And Watch The Assigned Video For This Mastery Badge

Check Point

Let's make sure that you really did take your time and watch the video carefully! Remember that it is important to hold yourself accountable to a high standard and to take pride in your own success as a learner.

I watched the video carefully, and paused to look up anything I didn't understand.

Recording Your Learning

On the next page, you will record your learning and connect it to things you already know.

Ten Things I Learned From This Video

A powerful tool to help you retain what you learn is to take notes. Notes give you something that you can look back at later, to quickly remind your brain reinforcing the memories for the concepts you have learned. Record ten things that you learned or that you perhaps already knew that were discussed in this video.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

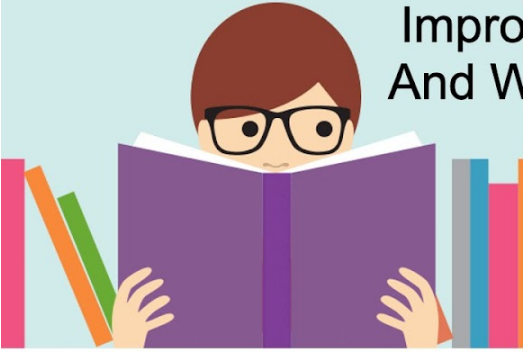
Now, Let's Connect These New Concepts To Things You Already Knew

Another great way to help your brain retain new things is to connect these new concepts to other things that you already know. This gives your mind a place to store the new knowledge. Imagine that you are placing the new knowledge on a shelf in your brain next to facts that are already in there.

Write a paragraph explaining how the concepts taught in this video relate to things you already knew. There are no wrong answers. What are some things that you already knew that this video reminded you of?

Literacy Practice

Improving Our Reading
And Writing In Search of
Knowledge



Activity: Reading And Writing About Biomes

Directions: Reading and writing are very important life skills. Good scientists must be able to learn through reading and communicate their own discoveries through writing.



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

1. Practice Reading For Understanding

Read the article below **for understanding**. Reading for understanding means that you take your time and monitor your own learning. If you get to the end of a sentence and you do not remember or understand what you read, **re-read it**.

2. Practice Writing To Communicate

Complete the writing prompt below. Do your very best to write clearly so that others will understand what you are saying. This means using correct spelling, grammar, and writing, taking your time to think about the best ways to clearly communicate to others the main ideas that you are trying to get across to them.

Article:



Read The Assigned Article Carefully For Understanding.

<https://handsomescienceteacher.com/Online-science-classes-kids/the-eight-planets/>

Scan This QR Code To Open And Read The Article That Goes With This Mastery Badge

Check Point

Let's make sure that you really did read for understanding! Remember that it is important to hold yourself accountable to a high standard and to take pride in your own success as a learner.

I Read For Understanding. I did not skim the article. I understood the material that the article discussed.

Quiz Time

Complete the quiz at the end of the article and post your score in the box below. Your goal is to get at least 75% on the quiz. Did you accomplish this goal?

%

Now Let's Write To Communicate

Remember that when you write to communicate you are taking your time, and explaining the topic in a detailed and concise way. Don't rush! You are not in a hurry. Think about what you are going to say, and plan how you will say it. So that someone else who reads your paragraphs will understand them easily.

Writing Prompt: Write two paragraphs comparing and contrasting the eight planets of our Solar System.

Name: _____

Date: _____



Applying Lab

Proving That We Can Do It Ourselves



Activity: Making My Own Planet

Directions: Follow the instructions below to make your own planet



Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

Scan This QR Code To Watch Mr. Bertoch Give You Directions For This Assignment

Goal: To create a planet that follows the patterns that I have learned about in this mastery badge.

Discovering A New Planet

Pretend that you are an astronomer and that you have just discovered a new planet in our Solar System. Scientists always communicate their discoveries to other scientists so that humankind can all benefit. In order to help other scientists fully understand the awesomeness of your new discovery, you will need to explain some facts about the planet that you have discovered.

My Planet's Name

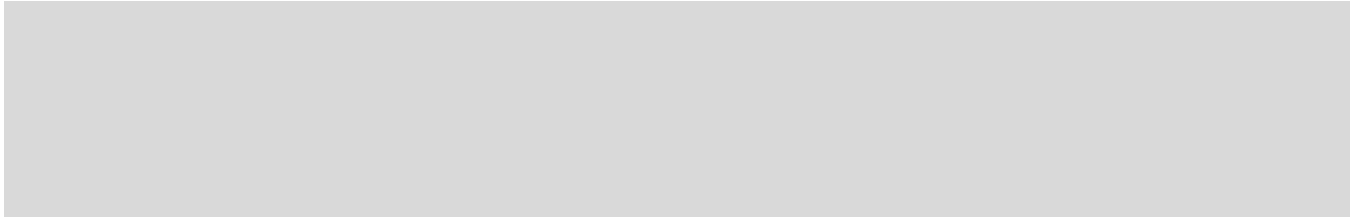
Go ahead and give your planet a name. This can be anything you want:

Where my planet is located

What part of the Solar System is your planet located in? Is it inside the Asteroid Belt (an inner planet) or outside the Asteroid Belt (an outer planet)? There are no wrong answers, it is entirely up to you. However, remember that the location of your planet will affect its features.

Describe Your Planet's Features

What does the planet you discovered look like? Is it a small rocky planet, or a gas giant? Does it have moons? Does it have rings? Remember to follow the patterns that we learned about earlier. If it is an inner planet, it should have the characteristics of an inner planet. If it is an outer planet, it should have the characteristics of an outer planet.



Draw a picture of your planet

Using colored pencils, crayons, or computer software draw a picture of your planet. Make sure that the drawing matches the description you provided.

This drawing should be completed on a separate piece of paper.

Final Questions:

Answer each of the following final questions using complete sentences.

1. Which planet in our Solar System is the biggest?



2. Which is the smallest?



3. Where are the rocky planets located?



4. Where are the gas giants located?



5. Why isn't Pluto considered a planet?



6. Which planets have moons?





Congratulations! You Have Completed The Entire Mastery Badge

You have worked really hard to earn this mastery badge. More importantly, you have worked hard to earn your knowledge!

Time To Evaluate Your Work

Check each of the following to evaluate your work:

1. Did you do every assignment?
2. Did you read the assigned article?
3. Did you watch the assigned video?
4. Did you answer all the questions using complete sentences?
5. Are your answers accurate?

My Self-Evaluation:

Based on the criteria listed above, I believe I have passed off this Mastery Badge because...
(Be detailed and specific)

Mastery Badge Counselor Evaluation:

I have reviewed this student's work. Based on the criteria listed above I hereby certify that they have passed off the Mastery Badge because... (Be detailed and specific) Note: Any adult may serve as a Mastery Badge Counselor, so long as they are committed to ensuring the highest standards of excellence.

Student's Signature

Date

Signature of Mastery
Badge Counselor

Date

Certificate For Your Homeschool Records

The following certificate which has been awarded through self-evaluation by the student, and also certified by a mastery badge counselor proves that the student listed thereon has completed all the work and has mastered all the concepts for the specified topic.

Keep this on file as evidence of your successful completion of this topic.

If audited by the State, these certificates stand as evidence that you have worked on and successfully completed a rigorous science curriculum.



**Mastery Badge
Certificate**

Topic: The Planets

Student Name: _____

This certificate certifies that the person named above has completed all of the requirements to earn this Mastery Badge.

MASTERY BADGE
COUNSELOR SIGNATURE

DATE AWARDED