



The Sun

What I Will Be Learning In This Mastery Badge:

In this mastery badge you will learn about the Sun and its characteristics. This includes its size, temperature, age, stellar classification, location in the galaxy, how it formed, and how it will eventually die.

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:

- What are stars?
- How do stars form?
- How old is the Sun?
- How will the Sun die?
- Sun size/distance from Earth.
- What kind of star is the Sun?
- Where is the sun located in the galaxy?
- The properties of sunlight.

Name: _____

Date: _____



Discovering Lab

Learning Through Hands On Activities



Activity: Discovering The Properties of Sunlight

Directions: Follow the directions below.



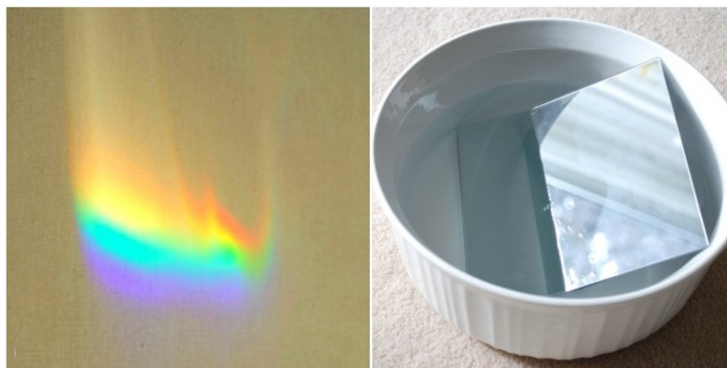
Video Instructions Available For This Assignment. Watch this video to learn how to do this assignment, and why it is important.

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

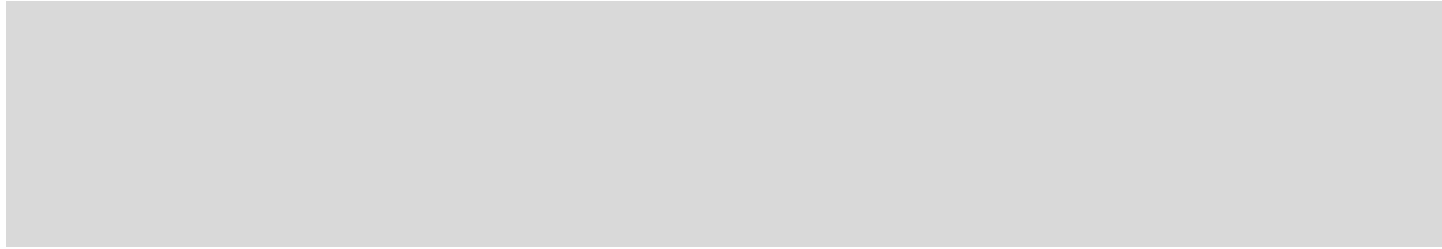
Goal: To learn as much as you can about the properties of sunlight

Experiment: Dividing The Sunlight

Instructions: For this lab you will need a bowl of water, and a small mirror. Place the bowl of water in a sunny place near a wall. Put the mirror inside the bowl so that it is at least partially submerged. It is important that your mirror be held at an angle (slanted) under the water. Catch the rays of the sun, and aim them at the wall.



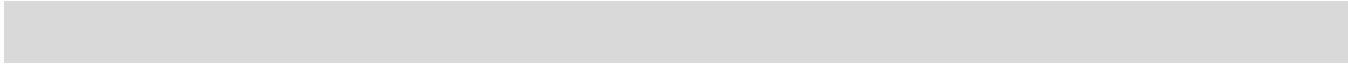
What do you observe? Be detailed and write using complete sentences.



Final Questions:

Remember to answer questions using complete sentences.

1. What color is sunlight? Is it more than one color? How do you know?



2. Do you think there might be colors in sunlight that the human eye can't see? Explain your answer.



3. What type of star is the Sun? How do you think this might affect the type of light it produces?



4. How old is the Sun?



5. How long do scientists think the Sun will live?



6. Explain what will happen at the end of the Sun's life.

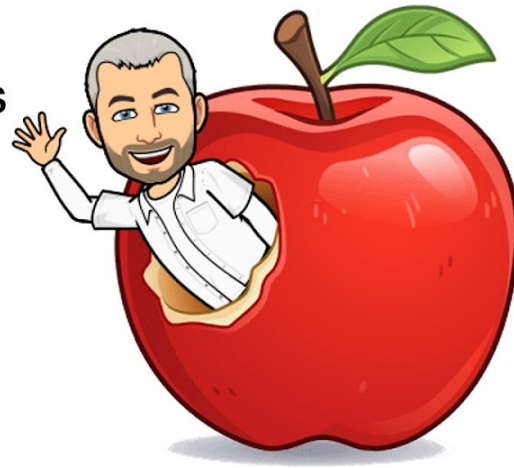


7. Think of at least two ways that the Sun affects things here on Earth. Explain your answer.



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.

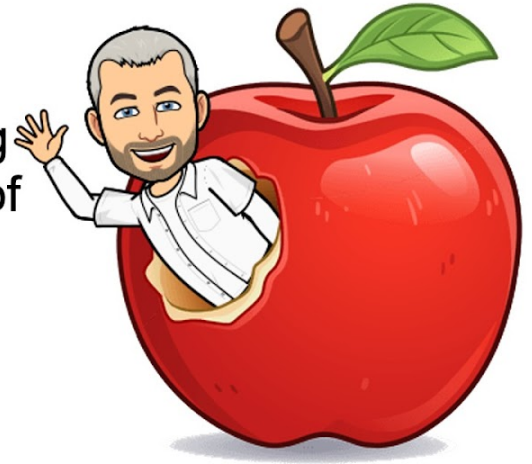
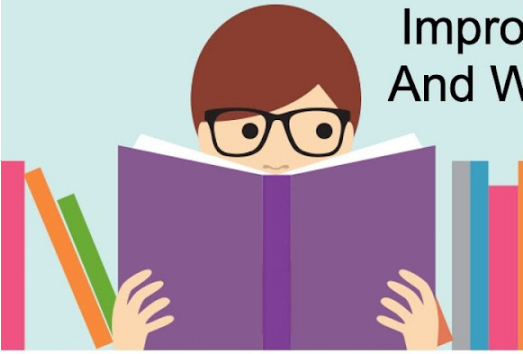
Now, Let's Connect These New Concepts To Things You Already Knew

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-sun/>

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: Scientists have learned a lot about stars by studying our sun. According to this article what are some of the characteristics of the Sun? Write two paragraphs.

Name: _____

Date: _____



Applying Lab

Proving That We Can Do It Ourselves



Activity: Sun Diagram

Directions: Follow the instructions below to make a diagram of the Sun.



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 diagram of the Sun.

Step 1: Imagine that you have been hired to create a diagram of the Sun for a textbook company. They need a detailed picture showing each of the following things:

- How the Sun formed.
- Where the Sun is located in the Milky Way Galaxy.
- How the Sun will eventually die.
- The properties of sunlight.

The company has asked that your diagram be completed in color, but they have not given you any other directions beyond that. You can use crayon, colored pencils, or complete your drawing digitally. You can complete one drawing, or show each of the above criteria in four separate drawings. Make sure you label each diagram.

Final Questions:

Remember to answer each question using complete sentences.

1. How much bigger is the Sun than the Earth?

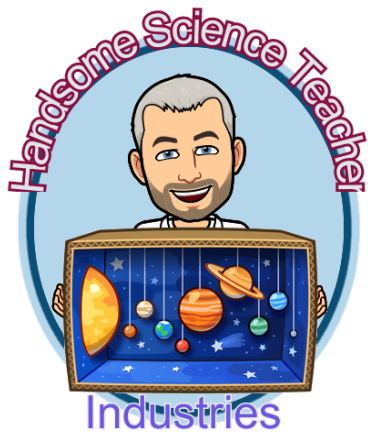
2. How far is the Sun from the Earth?

3. How big is the Sun compared to other stars?

4. How much of the Solar System's total mass is found in the Sun?

5. What is the temperature of the surface of the Sun?

6. What would happen to life on the Earth without the Sun?



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)

[Large gray rectangular area for student self-evaluation]

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.

[Large gray rectangular area for counselor evaluation]

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.

