



Day And Night

What I Will Be Learning In This Mastery Badge:

In this mastery badge we will discover what causes day and night.

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:

- We live on a planet that orbits the Sun.
- The Sun is a star that produces immense heat and light.
- The Earth rotates (spins) once each 24 hours creating day and night.

Name: _____

Date: _____



Discovering Lab

Learning Through Hands
On Activities



Discovering Day And Night

Making your own discoveries.

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



The Earth Is Round And Orbits The Sun

Everything you have ever touched in your entire life is part of the same planet. We all live on Earth. Earth is round, and orbits a very bright star called the Sun. The Sun produces a tremendous amount of light and heat. Because the Earth spins sometimes we face the Sun and sometimes we face away from the Sun. This causes day and night to occur.



Creating A Model To Better Understand What Is Happening



In order to better understand things they observe in nature, scientists often build models. In this lab you will be creating a model of the earth so that you can show how day and night occur.

Step 1: Build A Model of The Earth

In order to show how day and night work, we first need to build a model of the Earth. You can do this a number of ways. Just make sure your model is 3-dimensional and that it is round. You might use clay, paper mache, a styrofoam ball, or even a softball. Then paint the oceans and land on your globe.

Step 2: Create A Sun

For this lab, you are going to need something to represent the Sun. This can really be anything, as long as it produces light. You might use a lamp with the cover removed, a flashlight, or even a cellphone.

Step 3: Recreate The Darkness of Space

Take your earth and sun into a dark room, such as a bathroom. You want the only source of light to be your sun. Hold your earth a few feet away from the light source and slowly spin it around in your hand. Observe what happens and record your results below.

Describe what happens to the light as you spin the Earth around.

What part of the planet is the darkest? Why is it darkest?

What part of the planet is lightest? Why is it so bright?

Blank response area for the first question.

Based on what you have observed, what do you think causes day and night on the Earth?

Blank response area for the second question.



Questions That Make You Think:

Always answer thinking questions using complete sentences.

1. Where is the Sun at night? Why can't we see it?

Blank response area for question 1.

2. Why do you think it looks like the Sun moves across the sky each day?
What is really happening?

Blank response area for question 2.

3. Explain why you think it is colder at night than it is during the day.

Blank response area for question 3.

Video Instruction

Reviewing The Teacher's Instruction At My Own Pace



Handsome Science Teacher One Take Videos



Good Job On Completing The Discovering Lab!
Now let's connect your discoveries to the vocabulary. Mr. Bertoch has created a video for you to watch.

Take Your Time, Pause And Rewind As needed
You are not in a hurry! It is more important that you understand the video than that you finish it quickly. Take your time. If you don't understand something, pause the video and discuss with an adult.

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

I watched the video carefully and understood what Mr. Bertoch taught me.
(If not, that is okay. Watch the video again, and discuss it with an adult)

What I Learned From This Video



One very powerful way to help yourself remember what you learned from the video is to summarize it in your own words and in the form of pictures.

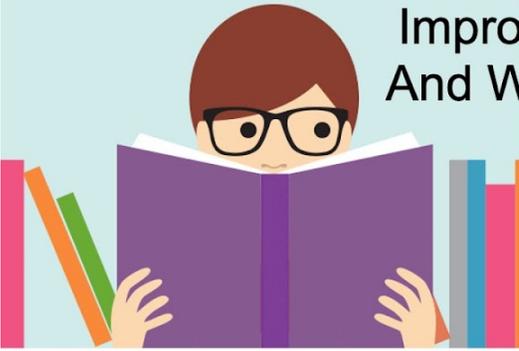
Write one sentence in your own words explaining what you learned from the video. Then draw a picture of something you learned from the video.

What I learned from this video (One Sentence):

A picture of something I learned from the video:

Literacy Practice

Improving Our Reading
And Writing In Search of
Knowledge



Activity: Reading And Writing



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.



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.



Read The Assigned Article Carefully For Understanding.

<https://handsomescienceteacher.com/Online-science-classes-kids/what-causes-day-night/>

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 sentences will understand them easily.

Writing Prompt: Write two sentences describing what causes day and night.

Name: _____

Date: _____



Applying Lab

Proving That We Can Do
It Ourselves



Applying Day & Night

Applying What We Have Learned.

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



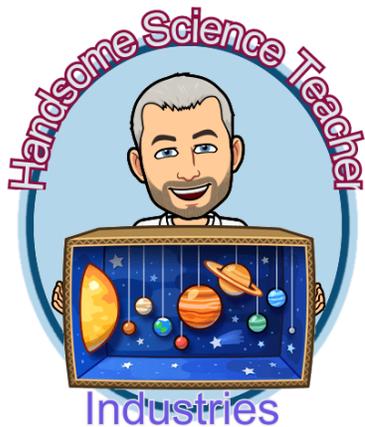
Proving The Earth Is Round

Your friend Flick insists that you are full of beans because you think the Earth is round. Flick says that he asked his father, and his father told him that the Earth was flat. Your other friend, whose name is Schwartz triple dog dares you to prove to Flick that the Earth really is round.

Use Day & Night As Evidence To Prove To Flick That The Earth Is Round

How can you use day and night to prove to your friends that the Earth is round? What do day and night tell us about the shape of the Earth?

Write a theme (a short essay) explaining how day and night prove that the Earth is round.



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.



The certificate features a decorative border with a repeating floral pattern. In the top-left corner, there is a circular logo with a cartoon man's face and the text "Handsome Science Teacher Industries". The main title "Mastery Badge Certificate" is centered in a large, bold, black font. Below the title, the topic "Topic: Day & Night" is written in a purple font. A line for the student's name is provided below the topic. The central text reads: "This certificate certifies that the person named above has completed all of the requirements to earn this Mastery Badge." At the bottom, there are two lines for signatures: "MASTERY BADGE COUNSELOR SIGNATURE" on the left and "DATE AWARDED" on the right. A small version of the "Handsome Science Teacher Industries" logo is in the bottom-right corner.

Mastery Badge Certificate

Topic: Day & Night

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