



Pressure & Weather

What I Will Be Learning In This Mastery Badge:

In this Mastery Badge we are going to learn about atmospheric pressure and how it influences the weather.

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 is pressure?
- High Pressure
- Low Pressure
- Air Parcels
- How Parcels of Differing Pressures Interact.
- Fronts

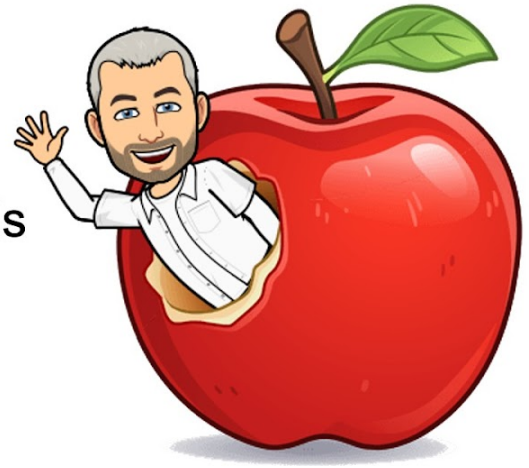
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Date: _____



Discovering Lab

Learning Through Hands On Activities



Activity: Discovering Minerals, Gems, and Rocks

Directions: Watch the news for the next ten days, and record both the pressure and the weather that are reported.



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 pressure affects the weather.

Part I: Recording The Pressure And Weather Conditions

Congratulations! You have been hired to audit (check) the effectiveness of local meteorologists. Your job is very important. For the next ten days, you will be watching a local newscast and recording certain things that are reported by the meteorologist using the chart below.

A Note About “Barometric Pressure”

One of the data points you will be collecting is called “pressure” or sometimes “barometric pressure.” If your local meteorologist does not report this you will have to look up the pressure online. There are many websites you can use to do this. Search “my local barometric pressure” to find a good website.

A Note About “High-Pressure / Low-Pressure”

This is not asking for a number but for the description offered by your local meteorologist. What did they say about high-pressures? What did they say about low-pressures? Briefly summarize their descriptions of high and low pressures in and around your community.

A Note About “Weather Conditions”

In this box, you should record the actual weather conditions for that day. Was it sunny? Was it raining? What it cloudy? Be detailed and specific.

Fill out this chart carefully and completely.

Observation Date	Barometric Pressure	High-Pressure / Low-Pressure	Weather Conditions

Part II: Interpreting Data

Scientists use data to understand the world around them. Using data is a very important skill. Look over your data and draw your own conclusions to answer the questions below. There are no wrong answers. What matters is only that your conclusions are supported by your data.

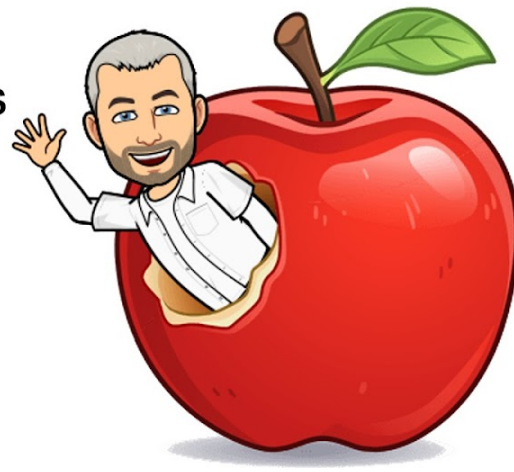
1. Do you see any patterns in your data?

2. Is there any relationship that you can see between pressure and weather?

3. What does atmospheric pressure refer to exactly?

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.

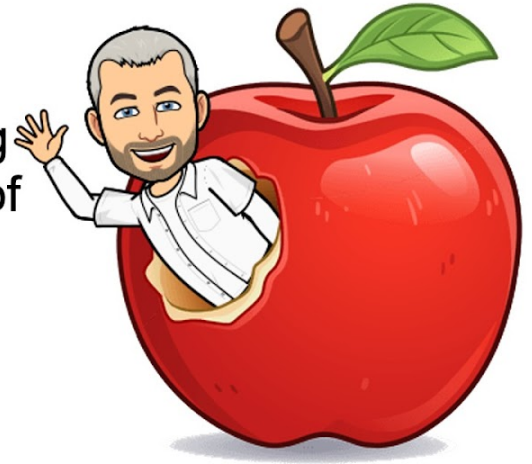
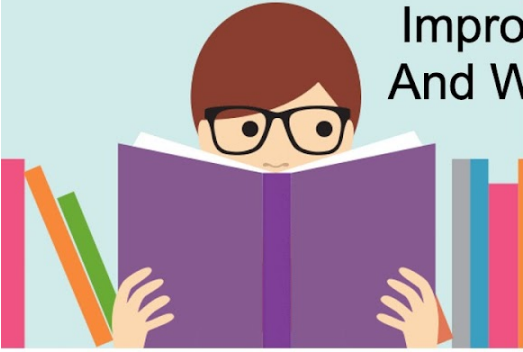
Now, Let's Connect These New Concepts To Things You Already Knew

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 The Formation of The Earth

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/atmospheric-pressure-2/>

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 explaining what pressure is and why the atmosphere has pressure.

Blank writing area for the student's response.

Name: _____

Date: _____



Applying Lab

Proving That We Can Do It Ourselves



Activity: Using Pressure To Predict The Weather

Directions: In the discovering lab you observed the predictions of others and looked for patterns. Now you are going to apply what you have learned to make your own weather predictions.



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 demonstrate your understanding of how pressure and weather are related.

Each night for the next six days you will record the atmospheric pressure, and then make predictions about the weather. Do not cheat by looking at the weather report. You want these predictions to be your own.

A Note About Making Weather Predictions:

In the early days of meteorology (the study of the weather) Meteorologists had very few tools they could use. One of the first of these was barometric pressure. As time has gone on, scientists have developed many more tools including satellite imagery and doppler radar. You will be using only barometric pressure, so do not feel bad if your predictions are not as accurate as the local meteorologist on television. Remember that they have more advanced tools than you have access to. In this lab, we are just trying our best to make as accurate of predictions as we can, based on the data we have access to.

A Note To The Mastery Badge Counselor:

When grading this mastery badge, do not grade it based on whether or not the student's predictions are correct. Even meteorologists, with all their advanced equipment, get the weather wrong. What you are looking for is whether or not the predictions made by the student match the data they collected. Ie, did they accurately forecast the weather based on the data, not based on the actual weather. For example, if the student's data shows a low pressure, did they forecast bad weather?

Collect Data And Predict The Weather

Observation Date	Barometric Pressure	My Weather Prediction

Final Questions:

Remember to answer each final question using complete sentences.

1. What is pressure?

2. How does a high-pressure system affect the weather?

3. How does a low-pressure system affect the weather?

4. When a high-pressure and a low-pressure system are side-by-side, where does the wind blow?

5. How do meteorologists use pressure to predict the weather?



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 is framed by a decorative, repeating pattern of stylized faces. On the left side, there is a circular logo featuring a cartoon man with a beard and glasses, wearing a white lab coat, holding a tablet that displays a solar system with various planets. The text "Handsome Science Teacher" is written in a pink, curved font above the man, and "Industries" is written in a blue, curved font below the tablet.

Mastery Badge Certificate

Topic: Pressure & Weather

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



A smaller version of the logo is located in the bottom right corner of the certificate.