



The Coriolis Effect

What I Will Be Learning In This Mastery Badge:

In this Mastery Badge we are going to learn about the Coriolis Effect. Including what causes it, and how it impacts atmospheric and oceanic currents.

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 the Coriolis Effect?
- What causes the Coriolis Effect?
- How the Coriolis Effect affects atmospheric currents.
- How the Coriolis Effect affects oceanic currents.

Name: _____

Date: _____



Discovering Lab

Learning Through Hands On Activities



Activity: Discovering The Coriolis Effect

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 Coriolis Effect

For this lab you are going to need a globe. If you do not have a globe, they are usually available at home decor or craft stores such as Hobby Lobby. We also sometimes make a limited number of globes available at HandsomeScienceTeacher.com. If a globe cannot be obtained, you can use a ball, though this will be more challenging.

Part I: Drawing Lines on A Non-Rotating Globe

For this lab you will be drawing on a globe. Please be careful to make sure you use something that will come off of the globe later, such as dry erase marker.

Step 1.

Have someone hold the globe perfectly still. For this part of the experiment, you do not want the globe to rotate. Place your marker at the North Pole.

Step 2.

While the globe remains perfectly still, draw a line going straight down the globe.

Step 3.

Observe and record the results. Were you able to draw a straight line? Explain.

Step 4.

Now we are going to draw a second line. This time while the globe is rotating. Have someone slowly rotate the globe. You do not want it to rotate very quickly. Just a few inches at a time is plenty.

Step 5.

As the globe rotates, once again bring your hand down in a straight line. Do not worry about what the line you are drawing looks like. Your goal is that your hand and marker move downward in a straight line, NOT that the line you draw is straight.

Step 6.

Compare this line to the first that you drew. How are they alike? How are they different? Explain why you think the two lines were different from one another. Be detailed.

Final Questions

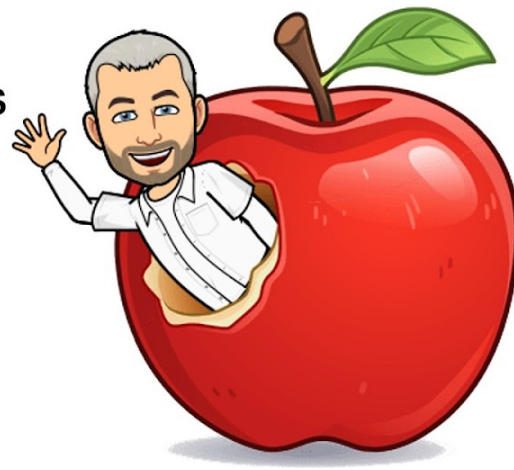
Remember to answer each question using complete sentences.

1. How does the rotation of the Earth affect things that are moving above it like wind, birds, and airplanes? In other words, as something moves in the air above the Earth (like an airplane) what is happening to the Earth below?

2. Do you think airplane pilots account for the rotation of the Earth when they fly their planes? Why or why not?

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.

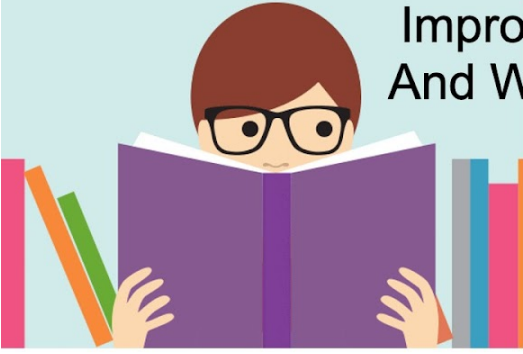
Now, Let's Connect These New Concepts To Things You Already Knew

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/the-coriolis-effect/>

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 the Coriolis Effect is and what causes it.

Blank writing area for the student's response.

Name: _____

Date: _____



Applying Lab

Proving That We Can Do It Ourselves



Activity: Applying The Coriolis Effect

Directions: Follow the instructions below to create a script for airline pilots to read at the beginning of flights.



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 the Coriolis Effect impacts the Earth.

Welcome to Uchtdorf Airlines, where we pride ourselves on excellence.

You have been hired as a communications specialist. Your job will be to write scripts for all of our pilots to read over the intercom before each flight. In the space below, write a detailed script for our pilots to read just before takeoff. In this script make sure to mention the Coriolis Effect... because our passengers deserve to know the truth about the rotation of the Earth! Have the pilot explain what the Coriolis Effect is, how it affects the Earth, and how the pilot will skillfully adjust the flight pattern to account for it.



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.

