

Understanding Our Changing Earth as a System



How is the Earth presently changing? How do we know?

GRADE 5

Post Visit Teacher Resource Packet

Fall 2019

Dear Visiting Classroom Teacher,

It is hoped that you and your students enjoyed the Science Center's "Understanding Our Changing Earth as a System" program.

The resource activities enclosed in this packet are designed to help students continue Earth Science studies back at school by having the students engage in investigating local Maryland environments using NASA GLOBE protocols and report findings. Truly the BEST way to learn science is by engaging in real-world science. Everything learned and done is necessary to answer the science questions being investigated.

The staff of the Howard B. Owens Science Center looks forward to your next visit. Program offerings listed by quarter may be viewed on the Howard B Owens Science Center website at: <u>http://www1.pgcps.org/howardbowens/</u>

Sincerely,

Sallie M. Smith

Sallie M. Smith, Science Instructor Howard B. Owens Science Center







Understanding Our Changing Earth

Post Visit Activity # 1: GLOBE Air Temperature Student Monitoring Investigation

Q. How does the air temperature at your school change <u>during the school year</u>?

Description: Following the NASA GLOBE Air Temperature Monitoring protocol student teams will monitor the air temperature at their school, graph and analyze their collected data to explain with evidence how temperatures change seasonally, monthly or even daily at their school location. Data may also be entered into the GLOBE data entry app or website. Student teams may share their data with other student GLOBE teams and compare findings with other schools.

GLOBE Current Temperature Protocol Link: https://www.globe.gov/documents/348614/93d4bb3c-79e3-4255-9fc8-

537fc4f870dc

Atmosphere Integrated 1-Day Da	Investigation	* Required Field
School Name:	Study Site:	
Observer names:		
Date: Year Month	Day Universal Time (hour:min):	
Air Temperature Current Temperature (°C): Maximum Temperature (°C): Minimum Temperature (°C): Comments:	(record only when collected at Local (record only when collected at Local	l Solar Noon) Solar Noon)

GLOBE Data Entry App Link:

https://www.globe.gov/globe-data/data-entry/data-entry-app





Understanding Our Changing Earth

Post Visit Activity # 2

GLOBE Cloud Monitoring Field Investigation

Clouds play an important role in governing temperature and precipitation.

Q. What cloud types can be observed at our school location?

Description: In this NASA GLOBE Cloud Investigation Activity students learn about cloud types in the context of making and recording cloud observations at their school site

GLOBE: "Observing, Describing and Identifying Clouds" protocol https://www.globe.gov/documents/348614/bcee1e0a-57e4-43ae-b390-b3d3d2995ff0

GLOBE: Student Cloud Identification Sheet

https://www.globe.gov/documents/348614/50bab4c6-d6b6-451c-84e3-2877d382f4ac







Post Visit Activity # 3 GLOBE Precipitation Student Monitoring Activity

Q. What are the precipitation patterns like at your school location?

Description: In this GLOBE Precipitation Monitoring Activity, students make rain gauges and learn about local precipitation patterns in the context of investigation local precipitation and analyzing the collected data.

GLOBE Precipitation Teacher – Student Power Point Presentation https://www.globe.gov/get-trained/protocol-etraining/etraining-modules/16867642/12267

GLOBE Precipitation Monitoring Protocol Link: https://www.globe.gov/documents/348614/97b9939c-7fb5-4b12-8113-59f988781bf5

GLOBE Student Precipitation Atmosphere Monitoring Data Collection Sheet

https://www.globe.gov/documents/348614/81a42f5e-8f77-4d23-8fb0-9006b0b27063

School Name: Study Site:			
Observer names:			
Date: Year Month Day Universal Time (hour:min):			
Rainfall select one: Measurable Trace Missing (if measurable is selected, complete the following fields) Accumulation (mm):			
Rain pH Measured With (select one): D pH Paper D pH Meter			
pH of Rain: (pH measurements only allowed when liquid amount is 3.5 mm or	more)		
Comments:			

GLOBE Data Entry App Link:

https://www.globe.gov/globe-data/data-entry/data-entry-app

Understanding Our Changing Earth as a System" 5th Grade Visiting Teacher Program Evaluation Form

School Name: ______Program Instructor: _____

Date: _____Grade level: _____Class size: _____Total number of visiting Teachers____

Visiting Teacher Name______& E-mail _____ Have your students filled out the PGCPS public release form? ___yes ___no ___ I don't know

Please rate student performance outcomes and experiences using a scale from low of 1 to a high of 5.

Please write N/A for any activity not conducted. Thanks!

Outcome: The students in my class were able to:	Rating 1-5
Accurately measure air temperature, light and CO2 in model atmosphere chambers.	
Explain how temperature increases with radiant light.	
Describe what happens to temperature when CO2 is added to the atmosphere.	
Apply model concepts to real-world atmosphere.	
Estimate personal CO2 contributions using a NASA Footprint Calculator Wheel.	
Provide evidence that Potomac Cliffs was once a marine environment.	
Identify Potomac Cliff marine fossils.	

Experiences	Rating 1-5
The visiting teacher and students were exposed to a variety of hands-on activities and	
teaching strategies.	
The lesson presented modeled the 5E's/NGSS 3-D format for delivery of science lessons.	
The majority of my students were involved throughout the lesson.	
The delivery of this program met the instructional needs of my students.	
I would recommend this program to other teachers.	
I rate this visit to the Howard B. Owens Science Center	

1. What instructional strategies observed will be integrated into your classroom instruction?

2. What new science/math content presented to the students will benefit you as a teacher?

Please provide any comments you would like the Program Administrator or teacher to have in the space below: