UH Rocks!

A Virtual Field Trip of UH Campus Building Stones

Physical Geology - Spring 2024

Name:

myUH ID number:

# Academic Honesty (Acknowledgement Required)

The UH Rocks! virtual field trip is to be completed by yourself; you should not work with a partner or group. Do not search for answers on the internet because 1) it is cheating, 2) answers that are posted are incorrect, and 3) many of the questions change every semester. It is a violation of UH Academic Honesty Policy to upload any of this material to sites such as Chegg and CourseHero. If you are unfamiliar with a word or geologic concept, it is okay to look it up online to find the correct spelling and definition. If you find yourself needing help, go to the [Geoscience Learning Center](https://uh.edu/nsm/earth-atmospheric/undergraduate/learning-center/index).

By submitting this work, I, Type Your Name Here attest that I have not violated the UH Academic Honesty code. I completed this assignment by myself and did not copy any portion of my answers from another student, a website, or any other source.

# Instructions

The buildings, boulders, and sculptures on the University of Houston campus use a number of geologic materials. This tour takes you to many stops on campus to learn about them. At each stop you will need to read about the rocks, look at images, and answer questions.

Each location has a short description of the stone and several photos. In spring 2023, we added some 3D montages using photos and LiDAR imaging. Be sure that you click on both the photos and link to the 3D images to see the details of the building stones. The process of combining creating these 3D images isn’t perfect; so, some of the 3D images have gaps and irregular edges.

## Accessing the Trip

This virtual field trip has been built in Google Earth. [Click here to access the trip](https://earth.google.com/web/data%3DMj8KPQo7CiExaXFOVVBlbUNMYU5QRk1rTjZqYlM2QVNuOXpLSmRKeWYSFgoUMEY5Rjg4NjFEQzE2MUZGMTE3REM). The first page that comes up is a summary of building stones. Use the menu on the bottom left to move between stops. At each location a box will appear on the right side of the screen with information about each stop and images. Click on the images to make them larger.

## Written Answers

All answers should be written in complete sentences and typed in the supplied boxes. Your responses will appear in a green-colored font, do not change this. Any answers not written in complete sentences will be marked as incorrect and will not receive credit.

Each stop has several questions. Look at the instructions to see how many questions you need to answer per stop. You can choose which of the available questions you want to answer. You should have answers for 18 questions for your submission.

## Assignment Submission

Save your completed PDF assignment as “yourlastname\_firstname\_VFTCampusTour”. **Email your completed documents to file to** **easglc@cougarnet.uh.edu** **with the subject “UH Rocks VFT.”** You will not get confirmation that it has been received.

Teaching Assistants (TAs) will begin grading submissions after the deadline. You will receive an email from a TA when your assignment is graded. If your assignment requires resubmission, you will have 48 hours (2 days) to do so.

# Introduction Slide

Be sure to read the introduction to the Google Earth trip, it contains important information that can help you answer some questions. Access the trip [here](https://earth.google.com/earth/rpc/cc/drive?state=%7B%22ids%22%3A%5B%221iqNUPemCLaNPFMkN6jbS6ASn9zKJdJyf%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22111044525520816793780%22%7D&usp=sharing).

# Stop 1 SR1 Lobby (Answer five of these questions for Stop 1)

## Fake Rock (look at 3D image to find this)

1. Why did UH use this fake rock?

## Sedimentary Rock

1. Why is this rock red colored?

1. This stone is only used for decorative purposes. Why?

## Igneous Rock

1. What textures do you see to determine if this is an intrusive or extrusive igneous rock?

1. What are some of the tectonic environments where you could find this rock?

## Metamorphic Rock

1. Marble is not foliated. Explain.

1. Marble is often used for sculptures. Why?

# Stop 2 SR1 Mineral Cases (Answer three of these five questions)

This summer, the mineral cases were updated. The changes are mostly cosmetic except we are about to add some UV fluorescent minerals to a case on the second floor.

1. After seeing the movie, have you visited the mineral displays? If not, what should we do to make these more cases interesting?

1. Describe differences between some of the prehnite samples.

1. What type of sedimentary environment does salt form in?
2. What kind of rock are the dinosaur footprints preserved in?

1. In what class offered by the EAS department would you learn about minerals?

# Stop 4 SR1 Rock Garden (Using the 3D image, answer one of these four questions) Since this 3D image was made in spring 2023, some new samples have been added. So, if you walk by this rock garden you will see about 6 more samples.

1. There are >5 igneous rocks here. List these numbers.

1. There are >5 sedimentary rocks here. List these numbers.

1. List the numbers for 3 minerals.

1. List the numbers for any metamorphic rocks.

# Stop 5 Fleming Ledge (Answer one of these three questions)

1. How old is this granite?

1. Is this an intrusive or extrusive igneous rock?

1. What is the name for the black regions in this ledge? Did they form before or after the granite?

# Stop 7 Cullen Hall Sandstone (Answer one of these three questions)

1. What is a trace fossil?

1. What types of organisms may have produced the burrows in the ancient sediment?

1. Click on the image to see the burrows. These burrows are no longer hollow but filled a different material. What is its color and grain size. What is sedimentary rock name for this fill?

# Stop 10 Student Service Center Ceiling (Answer one of these three questions)

1. Stalactite is made calcite. How can you identify this?

1. Where else can you find stalactites?

1. Why are these forming on this ceiling?

# Stop 11 Student Service Center Ledge (Answer one of these three questions)

1. What is the name for the texture seen in this rock and how does it form?

1. Do you think this formed on the Earth’s surface? Why?

1. What type of rock is the protolith (parent) rock for slate       (Fill-in, complete sentence not required)

# Stop 13 Statue of Four Lies (Answer one of these three questions)

1. Watch a [Youtube video](https://www.youtube.com/watch?v=DbJcU5LR_zg) by the two artists as they describe some of their thoughts about this statue. What would you do to dress up this sculpture?

1. In addition to bivalves, what other fossils are present in this rock?

1. Did you notice the fake rock (concrete plus shells) that forms the base of the statue was one of the lies?

# Stop 14 Cullen Auditorium Lobby (Answer one of these three questions)

1. What type of metamorphism forms serpentinite? Burial (pressure increase), Hydrothermal (hot water), Impact (pressure and temperature increase due to collision with a meteorite), Regional (both pressure and temperature increase during convergence) or Contact (temperature increase when an igneous intrusion cools)?

1. Have you ever been to a performance in Cullen Auditorium? If so, describe your experience. Did you notice the rock when you came here?

1. Have you ever been in the other side of Cullen Hall and walked up or down the stairs? If so, the stone steps are also made of serpentinite. Describe the differences between these two stones?

# Stop 17 Cornerstone Melcher Hall (Answer one of these three questions)

1. How is cross-stratification produced?

1. What kind of marine environment can produce different directions of cross-stratifications?

1. What are oolites?

# Stop 19 Boulder at Library Loading Dock (Answer one of these three questions)

1. Describe the felsic dike? Use full sentences.

1. What is the tectonic setting for the gneiss and felsic dike?

1. During the 200 million years between metamorphism and intrusion of the dike, what happened to gneiss?

# Stop 21 Benches at School of Architecture (Answer one of these three questions)

1. You have seen a several igneous rocks on this trip. Which other stop had a similar rock. Note, the similarities between these. For example, compare size of the minerals between these two. Or are they the same color?

1. Have you tried sitting on these artistic benches? If so, describe your reaction to this stone.

1. Do you have a favorite song or art work that is similar to this stone bench? Why?