

LETTER FOR FOSS MIDDLE SCHOOL COURSES

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Hello Students, Teachers, and Families,

To facilitate science teaching and learning during school closures, the FOSS team has provided additional Home/School Connections on the FOSS website <https://www.fossweb.com>. Students and families gain access to resources on FOSSweb through the class pages set up by the teacher. The teachers can leave notes on the class pages for students. Students can read those notes with assignment instructions from the teacher when they sign in to FOSSweb. Note that teachers may, instead, send FOSSweb assignments to students through other established parent communication apps or emails.

The new Home/School Connections for each course are active investigations that can be conducted at home (inside or outdoors), online readings, or online multimedia experiences including research. Most of these activities are part of the existing course that the students are learning, now formatted for students to access at home.

The teacher will decide which of the suggested activities are appropriate for students based on the classroom science experiences students have had through the year. Please refer to the teacher's communications home for specific expectations for assignments. The teacher may assign *FOSS Science Resources* readings, videos, and multimedia from investigations in the module or course.

For Students and Families: To sign in to FOSSweb, use the student user name and password provided by your teacher. Here's a short video to get you started on FOSSweb.

For Student Sign in Video: <https://youtu.be/Fcfjbt7Li2k>

For FOSSweb help: <https://www.fossweb.com/student-parent-help>

Preview the **Course Summary** from the Student Page. The **Module Overview** is available to download as a PDF. The first few pages of the Overview will help to set the context for the Home/School Connections.

For Teachers: For help in setting up and using Class Pages, use the Walk-through Videos on FOSSweb: <https://www.fossweb.com/fossweb-walkthrough-videos>

Visit the Home/School Connection for each module or course you teach, select the specific assignments that will be most relevant to your students at this point in instruction. Communicate with families about which content you are assigning through the Class Pages Notes on FOSSweb or through any other established parent communication channel your school has in place.

Tech support on FOSSweb: <https://www.fossweb.com/contact-us#jotform>

Together we will continue to make progress in science teaching and learning during school closures. Now, more than ever, we appreciate the role that science plays in our lives, and how important it is for citizens of all ages to understand and act based on scientific evidence

Sincerely, The FOSS Team at the Lawrence Hall of Science

FOSS Earth History, Home/School Connections, Families version COVID-19 School Closure Instructional Opportunities—March 20, 2020

NOTE: For all online research projects, we suggest that students use our [Internet Disclaimer](#) to help guide their independent evaluation of digital sources.

Discuss human history at the Grand Canyon.

Students can look at the list “Human History in the Grand Canyon” in *Foss Science Resources*, Data p142 and use the list in the following ways.

- Discuss how human activity at the Grand Canyon changed over time or how it relates to other events occurring at the same time.
- Prepare a timeline showing the events in the human-history chart.

Use the information as a starting point for more research.

Research Native American Activities.

Students can research the Native American peoples who live and have lived in and around the Grand Canyon. Challenge them to find out about these subjects. [National Park Trips](#) is a place to start.

- The [Nankoweap granaries](#)
- Pre-Pueblo people
- Hopi people
- Havasupai people
- Sipapu

Landform postcard

Have students select a local landform and create a “postcard” with a photograph or sketch of a local landform on the front and a note on the back describing the landform to a friend or relative.

Tour National Parks

Students can view tours of many national parks and monuments presented by the [US National Geological Survey](#). They can use the images to identify landforms and rocks similar to those found at the Grand Canyon and parks located near the Grand Canyon.

[American Geological Institute resources](#)

Students can access a variety of videos and other resources. For example, a search on their site leads to a short video from PBS on “[Uncovering the Layers of the Grand Canyon](#).” Another links to an overview of all the videos, photography, and audio from

the [US Geological Survey](#). What interesting information can your students find and share?

Online activity: “Sand Types”

Students use the online activity (“[Sand Types](#)”) and “Sand Comparisons” from the FOSS Science Resources Book Image and Data section (p241) to determine if sands are beach, desert, or mountain-stream sands.

Study “Mystery Sands”

Have students turn to “Mystery Sands” in *FOSS Science Resources* (p163) and describe and make inferences about the environments in which they might find sands 1 and 2.

Explore National Parks

Students can take 360-degree tours of a few of the remote US National Parks: Kenai Fjords in Alaska, Hawai’i Volcanoes, Carlsbad Caverns in New Mexico, Bryce Canyon in Utah, and Dry Tortugas in Florida. The [Hidden Worlds of the National Parks](#) is a Google Arts & Culture exhibit.

Read about the Ogallala Aquifer.

The Ogallala Aquifer is the primary water source for irrigated agriculture and cities in the High Plains states. Students can research online to learn what an aquifer is, how deposits of shale and sandstone create aquifers, how water is trapped in aquifers, and the problems associated with removing water from aquifers faster than it recharges. Two sources of information on concerns are an article from Scientific American - “[The Ogallala Aquifer: Saving a Vital U.S. Water Source](#),” and an article from NOAA - “[National Climate Assessment: Great Plains’ Ogallala Aquifer Drying Out](#).” Students could also research local aquifers, and investigate issues associated with groundwater.

USDA Soil Education

The US Department of Agriculture Natural Resources Conservation Service has compiled a list of resources to help teach about soils. It includes resources such as videos and other multimedia, fact sheets, links to state soil resources, posters, and soil map tools. Go to FOSSweb to access the link.

View fossil gallery

Looking for images of fossils? [The Paleontology Portal](#) includes a fossil gallery with downloadable images. You can click on a group of fossils on the introduction page, select

a geologic time period, search for taxonomic groups, or use pull-down menus that include locations (e.g., states) and time periods to find the fossils of interest.

Grow Rock-candy Crystals

Students can use a sugar solution to grow crystals. One recipe can be found at the [Exploratorium](#).

Research gigantic crystals

Crystals found in Mexico's Cave of Crystals astonished scientists with their massive size. The crystals precipitated from solution, so they are more similar to salol than to the crystals found in igneous rocks. They make a fascinating case study of the extreme limits of crystal formation and human exploration in caves. Find out more from [Wikipedia](#) and from [HowStuffWorks, Mexico's Giant Crystal Cave is Beautiful But Deadly](#).

Explore Shenandoah National Park

Students can explore Shenandoah National Park through an [online tour](#) and samples of rocks (in the kit) similar to those at the park. Students use this information and a stratigraphic column of the park's rocks to interpret the geologic history of the area.

Photo challenges

Students can take photos to answer one of the challenges below and create their own website, social media collection, or share the files with their teacher/classmates.

- [Rocks Photo Challenge](#)
Rocks are all around us! Take pictures of rocks such as pebbles, boulders, exposed bedrock (outcrops and roadcuts), in your local environment.
- [Landforms Photo Challenge](#)
Are there valleys, canyons, mountains, or plains in your part of the country?
Take pictures of local landforms.
- [Cool Geology Photo Challenge](#)
Have you ever seen any cool geology, such as fossils, minerals, crystals, caves, or hot springs? Caves or hot springs?
- [Sediments Photo Challenge](#)
Sedimentary rocks are made of sediments (mud, clay, silt and sand).
Take pictures of different kinds of sediment found in your local environment.
- [Weathering Photo Challenge](#)
Rocks are important building materials. Take pictures of rocks used inside and outside your home or in and around large buildings.