

Online Teaching FOSS Science during COVID-19 School Closures

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NOTE TO ADMINISTRATORS:

Students and teachers are under extraordinary stress. As the FOSS team has provided support to districts all over the US during these past few weeks, we've noticed the greatest success for students and teachers when lessons are scaled to new expectations. This is a time for teachers to connect with their students, provide support, and encourage scientific engagement, not to push forward with instruction as normal. Students now have the opportunity to engage with their natural environment (when safe) and explore in-depth research topics that are of interest and/or relevant to current events. This can support the original scope and sequence for the year, but does not need to be identical to the original scope and sequence. FOSS will continue to develop new resources to support teachers for as long as the closures continue.

Introduction

This document is organized into different categories based on the range of distance learning experiences we have observed in various districts and schools. Please choose the category that best meets your district needs.

- A. Packets sent home to students—limited technology (can be optional)**
- B. Ongoing digital assignments**
- C. Daily online instruction (primarily for middle school)**

NOTE: FOSS is granting free eBook access to all users until June 2020. Visit <https://www.fossweb.com/news> for more details.

A. Packets sent home to students—limited technology (can be optional)

Check the “Home and School Connection” section on FOSSweb for each module/course to access current a list of appropriate projects created by the FOSS developers to support COVID-19 school closures. Elementary installments (labeled as Week 1, Week 2) and other updates are posted on Fridays.

- **Grades K–2:** Suggested list of parent-guided activities as PDFs that can be accessed by the family or sent home as packets. Includes hands-on activities in science and math with optional online interactive eBook readings and multimedia activities. Outdoor activities are included.
- **Grades 3–5:** Home activities posted every Friday as PDFs for you to send home (for use in the following week). Activities include firsthand experiences with common materials or natural materials from outdoors. Student media library (readings, video, virtual investigations) are optional. Outdoor activities are included.
- **Grades 6–8:** Suggested list of possible course assignments (readings and notebook sheets). Note that the list points you to appropriate resources but the teacher must decide how to scaffold them for students based on where they were in the course and student needs. You will only be able to proceed through the course for about a week using course materials as handouts. Then, switch to the provided list of recommended extension projects related to the course.

B. Ongoing digital assignments

This option assumes that students have good Internet access at home and you are sending home “assignments” on a weekly basis, using email, GoogleClassroom, etc. For older students, as you suggest activities for engagement, you might post a question on a collaborative document (like GoogleDocs) where students can respond and build upon each others’ ideas. Set a timeframe for the discussion and ask students to read and add on to each others’ comments.

- **Grades K–2:** Activities as PDFs can be accessed by the family. Included are hands-on activities in science and math, and interactive eBook readings and multimedia activities to be done by students with families. Outdoor activities are included. Posted every Friday.
- **Grades 3–5:** Home activities posted every Friday as PDFs for families to download (for use in the following week). Teachers can select one or more activities to assign to students. Activities include hands-on investigations with common materials or natural materials from outdoors. Student media library (readings, video, virtual investigations) are integrated into the activities. Outdoor activities are included.
- **Grades 6–8:** Suggested list of possible course assignments (online activities, readings, and notebook sheets). Note that the list points you to appropriate resources but the teacher must decide how to scaffold them for students based on where they were in the course and student needs. Consider occasional video demo lessons or other creative ways to support the course instruction. You will only be able to proceed through the course for a few weeks without more direct instruction. Then, switch to the provided list of recommended extension projects related to the course.

C. Daily online instruction (primarily for middle school)

This option assumes that students have reliable Internet access at home and you are meeting with them virtually at specific times using Hangouts, Zoom, etc. You may have been asked to proceed with regular instruction. Video lessons will provide the closest approximation of a hands-on experience for students. Teaching a hands-on lesson by video is going to require some creativity! You can conduct the hands-on component as a demonstration that students can observe from afar. Plan how you will keep students engaged, including:

- Talk through what you are doing and observing
- Ask questions to provoke student thinking as you go
- Use real-time chat features to ask a question and see students respond

The richest student learning takes place as students wrestle with new ideas and make sense of data. Practice using the mute and screenshare features of your selected technology, so that you’ll be able to manage the discussion and make sure students have a chance to be heard.

For All Grades—Be There for Your Students

Your students might be scared or confused about the coronavirus pandemic. You can be a familiar friend in a stressful time. Don’t worry about doing online learning perfectly; just try your best to keep science in your students’ lives. Realize that any contact with you will provide a reassuring sense of normalcy. Make yourself available to answer questions, related to science or non-science events, just as you would in the classroom. Staying connected is more important now than ever, and your students will be very happy to see and hear from you.