LETTER FOR LIVING SYSTEMS MODULE

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 module or course are active investigations that can be conducted at home (inside or outdoors), online readings, or online multimedia experiences including research. For elementary grades, there are also math problems related to the science. Most of these activities are part of the existing module or 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 **Module/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 Connetion 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

HOME/SCHOOL CONNECTION—WEEK 1, A

Investigation 1: Systems

(This is best done if students have completed Investigation 1, Part 1, Everyday Systems)

Review:

In class, your teacher may have asked you to name the parts of an efficient transport system for clothes—a suitcase. You and your classmates may have named the parts of this system and how they interacted to make the whole system perform a function. You named things like the wheels, the zippers, and handles.

Next you may have thought about a train system and were introduced to the term *subsystem*. A subsystem exists when a complex system, like a railroad system, has many parts. The subsystem is one part of the larger system. In this case, the locomotive is one complex subsystem.

Please read (or reread) the article called "Introduction to Systems" on FOSSweb in the eBook *FOSS Science Resources: Living Systems.* It is a two-page article.

Then do the following:

1) Turn to the next blank page in your science notebook, record the date, and then write the definition of the word *system* in your own words in your science notebook.
2) Next look around your home or think about your life, what are some possible systems you see or experience. You might see a lamp, a toaster, a fish aquarium, a closet, or a cell phone. You may think about the community park near your home, the neighborhood garden, or even the bus system you use to get to and from places.

   Make a list of the systems you see around you or are thinking about in your community. See how many systems you can list in about 10 minutes.
3) Record the focus question in your notebook: ***What are important parts of a system where I live or in my life?***
4) Now, look at your list, and pick out one of the systems. Pick a good one, one that you care about.
5) In your notebook, write about your system. Analyze it. What are the parts, how do they work together (how do they interact), and are there any subsystems?
6) Write down any questions or thoughts you have about your system. You might want to use these sentence frames:

   a. I wonder…
   b. I think that… because…
   c. I noticed…
   d. One of the subsystems includes…
7) Draw a scientific drawing of your system.

Continue to add to your list of systems in your notebook throughout the week. Analyze another system of interest to you.

HOME/SCHOOL CONNECTION—WEEK 1, B

Investigation 1: Systems

Review:

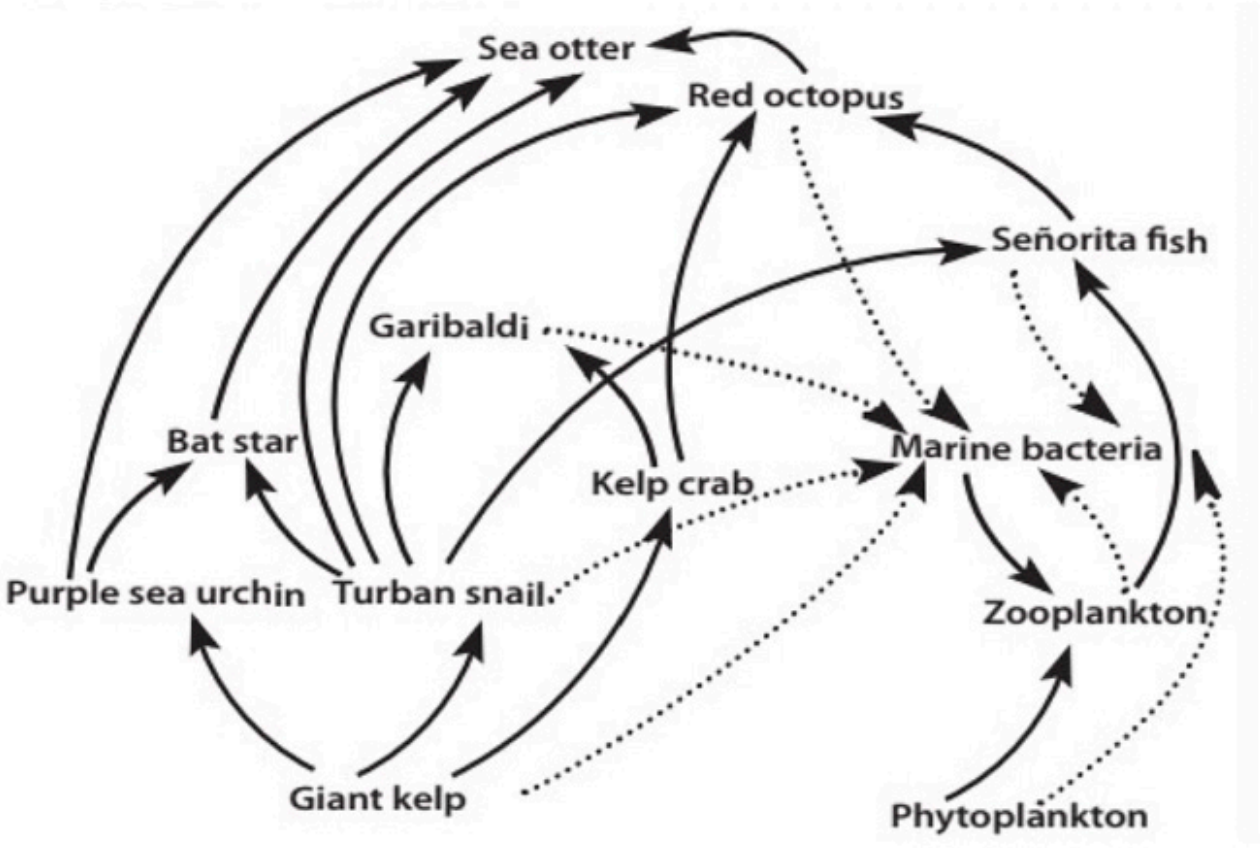
In class, you may have done an activity called "The Earth System" where you studied the Woods Ecosystem cards and then arranged them into a **food chain**. Two examples of food chains in the woods ecosystem are:

Grass➔Chipmunk➔Hawk or Green algae➔Aquatic snail➔Brook trout

In the first example the **producer**, grass, is eaten by the **consumer**, a chipmunk. The energy from the grass goes into the chipmunk—that is why the arrow is pointing to the chipmunk. The hawk, also a consumer, eats the chipmunk and the energy from the chipmunk goes into the hawk.

Next you used all the cards and made a giant **food web** of the wood ecosystem.

You then studied the kelp forest ecosystem. Here is an example of a food web using kelp forest organisms:



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HOME/SCHOOL CONNECTION—WEEK 1, B (Continued)

Investigation 1: Systems

Focus question: ***How do organisms interact with each other in an environment?***

Write the focus question in your notebook.

1. Now that you have had a little review, go to FOSSweb using a Chrome browser and go to the multimedia called "Food Webs." (Other browsers do not work as well.)
2. Use the map to select the food web that is closest to your home.
3. Click on "Visit Food Web" at the top right.
4. Read the "Overview" of that area first and then list five key points from the article in your notebook.
5. After a thorough reading, click on "Food Web" and begin to explore the organisms in that ecosystem by clicking on "Info."
6. Click on "Move" and drag two organisms (one that eats the other) into the correct box—composers, decomposers, or producers.
7. Click on "Connect" and draw a line from the organism that is being eaten to the organism that will eat it.
8. Once the arrow is in place click on "Check Link." If you are correct the organisms will turn green. (When things turn yellow you are "missing some links" and red means something is incorrect.)
9. Continue to add one organism at a time, connecting organisms in a food web, and after each add, click on "Check links." You will need to click on "Info" to find out what each organism eats and what eats it.
10. Do not move on until all organisms are green when you hit "Check Links."
11. Create a food web with as many organisms as you can (at least 10). It gets trickier.

When you are done please draw the food web in your notebook. Make sure the arrows are going in the correct direction. Respond to the focus question in your notebook.

Follow up activities:

1) Repeat what you did above with a second ecosystem.
2) Teach someone in your family to create food webs using this tool.
2) Conduct research on a local environment near your home. Write about it.
3) Go outside, sit quietly with your notebook, and make observations about the consumers, producers, and decomposers in your area. Where are each of these located? What do you think eats each? Draw some images of what you see. Write down questions and observations about this site.