

FOSS LIVING SYSTEMS MODULE—WEEK 2

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Hello Students, Teachers, and Families,

FOSS students and families gain access to resources on FOSSweb through the class pages set up by the teacher (<https://www.fossweb.com>). Login using the user name and password provided by your teacher, and click on a module. You will have access to the **Home/School Connection** for that module as well as digital resources—online readings, videos, and multimedia experiences. To facilitate science teaching and learning during school closures, the FOSS team has provided **additional** Home/School Connections that engage students with firsthand experiences at home. Look for new downloadable activities every other Friday.

For teachers and students who have not registered for FOSSweb, you can use a direct link to get to the **Home/School Connection Center** from the home page without logging in. Select the appropriate module from the scope and sequence download the Home/School Connection and Math Extensions. Access is limited to the Home/School Connection Center for non registered users.

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>

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

You can add Manage your Class pages and add notes for the students. If your district does not have access, use the access code FOSSK8CVHS, valid through May 2020. For self-registered teachers only, enter this code from the green “Activate Your Access Code” button on the upper right corner of your Teacher page.

For District-registered Teachers: Your students automatically have access to the student pages on FOSSweb. You can add Manage your Class pages and add notes for the students. Content for rostered schools and districts is enabled and assigned during the onboarding process. If your students do not have access to eBooks, please contact your District IT Administrator or your Curriculum Coordinator.

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 2, A

Investigation 2: Nutrient Systems

Scenario

A father was cooking and asked his son to get the garlic from the dark cabinet. When he pulled out the garlic, it had started to grow a green plant-like structure at one end.

Has this ever happened at your house?

What questions or “I wonder_____” statements do you have about the garlic? Write them in your notebook. Do this before reading the rest of this page.

Perhaps you wrote down some of these:

- Could the garlic grow into a plant? If so, what part of the plant is the garlic in your kitchen?
- Are there other things in your kitchen that could grow?

Explore your kitchen and think about what might grow. Make a list in your notebook.

Investigation

Think about the things in your kitchen and the supplies you may have. Now look at the questions you recorded about the garlic from the cabinet. Are any of those questions ones you can investigate?

Write your focus question and a procedure you will follow to find the answer. Then ahead set up your experiment. Ask your guardian if you may use the equipment you would like to use.

Your teacher may want to check the procedure before you proceed. It will depend on how you are doing school these days. Do not forget to check on your seeds and water them when necessary. (Note: if you are using a coffee filter, don't let seeds sit in too much water for long (they do not need much)—they might mold. If anything gets moldy, throw those moldy items away and give the others a good rinse in the sink.)

Possible materials list

- Egg cartons
- Clean containers from the recycling bin (or before things are put into the trash)
- Coffee filters or paper towels
- Potting soil or soil from the yard (If soil is not available, are there other materials you could use on this list to grow things?)
- Garlic, small onions, dry beans (lima, kidney, black, pinto, garbanzo etc.), popcorn kernels



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HOME/SCHOOL CONNECTION—WEEK 2, A (Continued)

Investigation 2: Nutrient Systems

Read article in eBook on FOSSweb—*FOSS Science Resources: Living Systems*

After the Investigation is underway, login to FOSSweb, click on Living Systems Module, and go to the Media Library. Use the Table of Contents to find the reading “Producers” and read it.

Respond to the questions at the end of the reading on page 26. Record your ideas in your science notebook.

Also answer this question: “How do plants get the food they need?” You may want to include a drawing in the answer to your question.

Wrapping Up

When your growing experiment is done make sure to record your results in your notebook and answer your focus question.

HOME/SCHOOL CONNECTION—WEEK 2, B

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Investigation 2: Nutrient Systems

Review

When school was still in session, you may have done an experiment with yeast, determining what is needed to activate this living organism—flour or sugar? You may have also looked at plant nutrition and conducted an experiment in the light and dark with wheat seeds. You may have looked at how animals acquire nutrients, by studying painted lady butterflies. All of this was to better understand how living things get the nutrition they need to stay alive.

Introduction

Today you will go outside to find animals and will look for evidence to try and determine how each gets the nutrients it needs for life. If you are unable to go outside you may observe animals out a window.

Focus Question: How do animals get the nutrients they need?

Make sure you have guardian’s permission. Go outside to an outdoor space, yard, or nearby park. Once outdoors, you could sit on the ground, on a step or on a bench and look at bigger animals like birds or squirrels, or you can look for much smaller animals in leaf litter (leaves on the ground), under rocks, under things that have been lying around for a long time (sometimes flower pot), or under logs.

If doing the later, bring a clean plastic container with a lid and a plastic spoon (metal is better, but make sure you have permission to use it). Here’s a safety rule: If you don’t know what it is, don’t pick it up.

Search for some kind of living organism for 15 minutes. See if you can find birds, squirrels, butterflies, moths, snails, slugs, ants, isopods, worms. If possible collect and observe small harmless organisms. If you see things that you are not familiar with, you can observe them without collecting—perhaps sit next to a bush and observe what is on it. Can you observe the animal’s mouth parts—can you see what each is eating? If not, can you see evidence near where you found it that perhaps it is eating something in that spot? Can you see a leaf with holes in it?

If you want a closer look, use the spoon to transfer an organism to your container with a bit of the material you found it on—wood or leaf. Keep the container closed, but out of the sun as it will heat up rapidly.

No matter where or what you are looking at, observe carefully to see if you can see what structure of the animal it is using to eat. Collect evidence about what and how the animal eats. Try to observe at least two different animals.

In your notebook, complete scientific drawings for two animals you observed and write about how and what it eats. If necessary, return the organisms where you found them. You may want to keep this container for further exploration.

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HOME/SCHOOL CONNECTION—WEEK 2, B (Continued)

Investigation 2: Nutrient Systems

Read articles in eBook on FOSSweb—*FOSS Science Resources: Living Systems*

Login to FOSSweb, click on Living Systems Module, and go to the Media Library. Use the Table of Contents to find the two articles listed below.

Read and record key points in your notebook for the following two articles.

- “Getting Nutrients”
- “The Human Digestive System”

Remember you are reading for understanding. If you do not understand what you read, you need to go back, perhaps study the illustrations to get an idea of what the article is going to be about, and then read one section at a time.

When you are done reading, respond to the focus question in your notebook.

How do animals get the nutrients they need?

HOME/SCHOOL CONNECTION—WEEK 2, C

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Investigation 2: Nutrient Systems

Review

Recently, when doing science at home, you thought about how animals get their nutrients. Today we will continue this study by watching some videos about the same subject.

Task

Go to FOSSweb, find your Media Library, and go to Streaming Videos. Select the video called *Food Chain*. View chapters 1–7 of the video. Write the list of words (below) into your notebook. If you think you know the definition prior to watching the video, record it in your notebook before watching the video and consider adding to your definition if you learn something else while watching the video. Feel free to hit pause and record when you learn about a new word. It might be helpful to write a few examples of each.

Decomposers

Producers

Omnivores

Photosynthesis

Carnivores

Consumers

Predators

Herbivores

Prey

Scavengers

After watching the first video. Answer the following questions in your notebook:

1. What is the source of life on Earth and the basis for every food chain?
2. Describe the types of living things in a food chain. Give a few examples of food chains that include one of each type of living thing.
3. Out in the world, why are decomposers important? What are some types of decomposers?
4. Describe an energy pyramid. Where is the most biomass? How much energy is passed up on the energy pyramid?
5. What is one way humans might affect a food web?

View a second video:

Watch a second video from the Media Library— *Digestive and Excretory Systems*.

When you have finished the video, record 5 key points from this video in your notebook. These should be things that amazed you about the human digestive and excretory systems.