# Assignment Summary

For this assignment, you will develop a model to describe the cycling of matter and the flow of energy among living and nonliving parts of an ecosystem. This project includes both an individual and a group part. On your own, you will research an organism that is assigned to you. In your group, you will combine your organism with the organisms researched by other students to create a food web. Together, you will write two short paragraphs explaining how energy and matter move through the food web.

Background Information

Each organism plays a role in the movement of energy through the ecosystem. Energy enters most ecosystems in the form of sunlight. This sunlight is used by producers, or autotrophs, to make food. Producers convert energy from the sun into chemical energy, or food energy, through the process of photosynthesis. Organisms that cannot make their own food, called consumers or heterotrophs, eat other organisms to get energy. Decomposers are a type of consumer that break down waste and dead organisms, recycling nutrients like nitrogen and phosphorus back into the environment.

The feeding relationships between organisms in an ecosystem can be illustrated using a food chain or a food web. Food webs show interconnected food chains.

Materials

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| * Organism, assigned by teacher * Paper * Large poster board | * Pen, pencils, or markers * Scissors * Glue |

# Assignment Instructions

**Part One**

**Step 1: Research your organism.**

1. Receive the name of an organism from your teacher.
2. Type your name and the name of your organism at the top of the page.
3. Research and add the following information about your organism.
4. Where it lives
5. What organisms it eats
6. What organisms eat it
7. Ask your teacher where you should save your work. Your teacher may also have specific guidelines about the file name you should use.
8. When you have completed this step, return to the virtual classroom and use the “Browse for file” option to locate and submit your assignment.
9. Print a picture of your organism.
   1. Print the picture approximately in 4 6 inches.

**Part Two**

**Step 1: Work in a group to create a food web.**

1. Combine the information you gathered about your organism with the information from other members in your group.
2. Create a food web on a poster board that accurately shows the feeding relationships between all of the organisms.
3. The producer will be provided by your teacher.
4. Include a drawing of the sun providing energy for the producer.
5. Arrange and glue the printed images of organisms on the poster board.
6. Draw arrows to show the feeding relationships between all of the organisms.

**Step 2: Write a paragraph explaining the flow of energy through your food web.**

1. Work with your group members to write a paragraph explaining how energy moves through the food web. Write this paragraph on your poster.
2. Write the names of all group members on the back of the poster.
3. Start by connecting sunlight to the producer.
4. Explain energy flow from producer to consumer.
5. Explain energy flow from consumer to consumer.
6. Your explanation should include the role of decomposers.

**Step 3: Write a paragraph explaining the flow of matter through your food web.**

1. Work with your group members to write a paragraph explaining how matter moves through the food web. Write this paragraph on your poster.
2. Explain the flow of matter from producer to consumer.
3. Explain the flow of matter from consumer to consumer.
4. Your explanation should include the role of decomposers.

**Step 4: Evaluate your project using this checklist.**

If you can check each box below, you are ready to submit your project.

**Part 1**

* Did you include where your organism lives?
* Did you include what your organism eats?
* Did you include what organisms eat your organism?
* Did you submit the document with this information in the virtual classroom?
* Did you print a 4 6 inch photo of your organism?

**Part 2**

* Did your group create a food web on a poster that accurately shows the feeding relationships between all of the organisms in your group?
* Did your group write a paragraph on your poster explaining the flow of energy through your food web?
* Did your group write a paragraph on your poster explaining the flow of matter through your food web?
* Did your group make sure to include the roll of decomposers in both paragraphs?

**Step 5: Revise and submit your project.**

1. If you were unable to check off all of the requirements on the checklist, go back and make sure that your individual and group work is complete.
2. When you have completed your individual work, submit your document through the virtual classroom. Make sure that your name is on it.
3. When you have completed your group work, submit your poster to your instructor. Make sure that the names of all group members are on it.

**Step 6: Clean up your workspace.**

1. Clean up your workspace making sure to throw away any trash. Put away any other materials that you used to create your poster.
2. Congratulations! You have completed your project.