

## Life Science Curriculum Map

The experiments in this module fall under eight topics that relate to two aspects of life science: **Habitats and Communities; and Plant Growth & Changes.**

In each section you will find teacher notes designed to provide you guidance with the learning intention, the success criteria, materials needed, a lesson outline, as well as provide some insight on what results to expect when the experiments are conducted. Suggestions for differentiation are also included so that all students can be successful in the learning environment.

### Introduction:

- At a Glance – List of Skills
- Introduction
- Table of Contents
- Teacher Assessment Rubric
- Student Self-Assessment Rubric

### Lesson Topics:

#### Lesson One: What is a Habitat?

- Students will learn about what a habitat is, and what living things co-exist in a local area.

#### Lesson Two: Habitat Investigation

- Students will learn about different types of habitats, and choose one to study.

#### Lesson Three: A Habitat Creation

- Students will learn about how wood lice depend on their habitat to meet their needs, and how to create a living habitat.

#### **Lesson Four: Food Chains and Webs –Part One**

- Students will learn about and build food chains and food webs consisting of different living things.

#### **Lesson Five: Food Chains and Webs – Part Two**

- Students will learn about the role of living things as producers, consumers, or decomposers; investigate the benefit of earthworms in making nutrient rich soil.

#### **Lesson Six: Balance in the Natural World**

- Students will learn about the biomes of the world and study an ecosystem existing within one.

#### **Lesson Seven: The Human Factor**

- Students will learn about the usefulness of plants and animals to humans; consider the positive and negative impacts of human interactions on natural habitats.

#### **Lesson Eight: Plant Parts**

- Students will learn about how the main parts of a plant work to help it survive.

#### **Lesson Nine: What Do Plants Need?**

- Students will learn about the basic needs of plants in order to grow healthy, and the importance of plants to people and to all living things in the natural environment.

# FOOD CHAINS AND WEBS – PART ONE

## LEARNING INTENTION:

Students will learn about and build food chains and food webs consisting of different living things.

## SUCCESS CRITERIA:

- describe the connection of living things, beginning with the sun
- identify and record a list of herbivores, carnivores, omnivores, and insectivores
- create a food chain using pictures and written descriptions
- determine the connection between living things using given pictures to create a food web
- create a food web using pictures and written descriptions

## MATERIALS NEEDED:

- a copy of “It’s A Chain Reaction” worksheet 1 and 2 for each student
- a copy of “What Kind of Eater Is It?” worksheet 3 and 4 for each student
- a copy of “Linking It Together” worksheet 5 and 6 for each student
- a copy of “Make a Food Web” worksheet 7 and 8 for each student
- a copy of “A Food Web Challenge!” worksheet 9 for each student
- access to the internet or local library
- glue, scissors, clipboards, chart paper, markers, pencils, pencil crayons

## PROCEDURE:

**\*This lesson can be done as one long lesson, or can be done in five or six shorter lessons.**

1. Using worksheets 1 and 2, do a shared reading activity with the students. This will allow for reading practise and breaking down of the

larger words. Along with content, discussion of some vocabulary would be beneficial for comprehension.

Some interesting vocabulary words to focus on are:

- |              |               |
|--------------|---------------|
| • producers  | • primary     |
| • molars     | • contained   |
| • omnivore   | • provide     |
| • consumers  | • grind       |
| • secondary  | • insectivore |
| • herbivores | • directly    |
| • predator   | • carnivores  |

2. Divide students into pairs and give them worksheets 3 and 4. They will engage in a ‘think-pair-share’ activity to discuss and record some examples of herbivores, carnivores, omnivores, and insectivores. Some students may require access to the internet. *A follow up option is to come back together as a large group to record some students’ responses for each category on large chart paper. This compiled list could be posted in the classroom for future learning opportunities.*

3. Give students worksheet 5. Read the information and discuss to ensure students’ understanding of the material. Give students worksheet 6 to complete. Students may need access to the internet or a local library to get information to complete their food chain. *A follow-up option is to have students present their food chain within a small group. This will enhance their knowledge of different food chains that exist on our Earth, and reinforce the understanding that every living thing has a purpose.*

*\*As a further activity to enhance the learning about food chains, show students The Magic School Bus episode called “Gets Eaten”. Accessing the internet, go to [www.youtube.com](http://www.youtube.com) for the full episode. A follow-up option is to have students illustrate the food chain in this episode.*



4. Broaden students' knowledge by discussing food webs. Explain that all plants and animals are interconnected. Many connections exist within a small group of plants and animals. Using worksheets 7 and 8, students will create a food web.
5. Give students worksheet 9. They may need access to the internet or a local library to get information to complete this food web challenge. A follow up option is to have students explain their food web in words, and then attach it to their food web display. The food webs could be displayed on a bulletin board.
6. Play the 'Lap Sit Game'. Have students form a **tight** circle, with each student facing forward, looking at a peer in front of them. Once students are still, instruct them to slowly sit down, resting upon the peer behind them. If done correctly, they will support each other in

a sitting position. Upon success of this activity, ask students to stand. Pose these questions:

- Why were you all able to sit without falling?
- How can this activity related to a food chain?
- What would happen if one person in the circle fell?
- What would happen if one species in a food chain was not available?
- Would or could this food chain sustain?

## DIFFERENTIATION:

Slower learners may benefit by working with a partner to make a food web on worksheet 9.

For enrichment, faster learners could work as a small group, choosing one of their food web challenge creations, to create a skit/short play to demonstrate how the living things in this food web are connected. They could perform this skit for the rest of their classmates and/or for students in other classrooms.

# It's a Chain Reaction

All living things need energy to grow. Without energy, you and all other living things would not survive. What is energy? Where do all living things get the energy they need?

Energy comes from the sun in the form of heat and light. The only living things that can trap the sun's energy are plants. Plants store energy for all living things to use.



Everything that we eat started with energy from the sun which was trapped by plants.

Without plants, there wouldn't be any life on Earth. We get the energy we need to survive from the food that we eat. The energy from plants is passed to all other living things through food chains.

Everything we eat is part of a food chain. Plants are **producers** because they trap the sun's energy and use it. Plants then provide food for other living things. Some animals are **herbivores** because they eat only plants. The energy from plants is passed on to the herbivores that eat them.



Herbivores are called primary consumers because they get energy directly from the plants. A deer, a rhino, and a turtle are examples of herbivores. Did you know that many herbivores have wide molars that help them grind up leaves and grasses?



Rabbits are primary consumers because they only eat plants. When a rabbit eats a plant, the energy in the plant is passed on to the rabbit. This energy helps the rabbit grow and reproduce. When the rabbit is caught and eaten by a **predator** such as an owl, the energy that is contained in the rabbit is then passed on to the predator.

Animals like the owl, which eat herbivores, are called **secondary consumers**. They are also called **carnivores**. Carnivores are animals that eat only meat.

An **omnivore** is a living creature that eats both plants and animals. Most humans eat both plants and animals, so we are considered omnivores.



Many carnivores eat herbivores, but some eat omnivores and other carnivores. A crocodile, an eagle, and a lion are examples of carnivores. Did you know that many carnivores have long sharp teeth and claws that help them grab prey and eat its' meat?

## FOOD FOR THOUGHT



Think about some of *your* favorite animals. Are they herbivores, carnivores, or omnivores? What do you think an *insectivore* is?

# What is the Harm?



With a partner, discuss your ideas about herbivores, carnivores, omnivores, and insectivores. Record some examples of each type of eater.

**Herbivores:**

**Carnivores:**



## Omnivores:

## Insectivores:

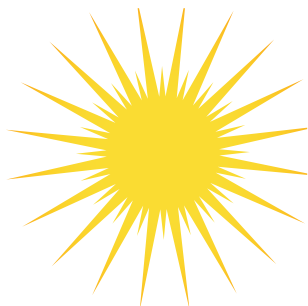
### FAST FACT!

Omnivores have a diet that is made up of both plants and animals, so they have a better chance of survival during difficult conditions.

For example, a bear eats berries, insects, and fish. If fish or other small animals were not available the bear would still survive, but a big cat such as a lynx that is carnivorous, would not.

## Linking It Together

You have learned that the energy that starts with the sun is passed from one living thing to another through food chains. Animals get energy from plants and other animals because they provide food for each other. They are all part of a food chain. Let's link this together!



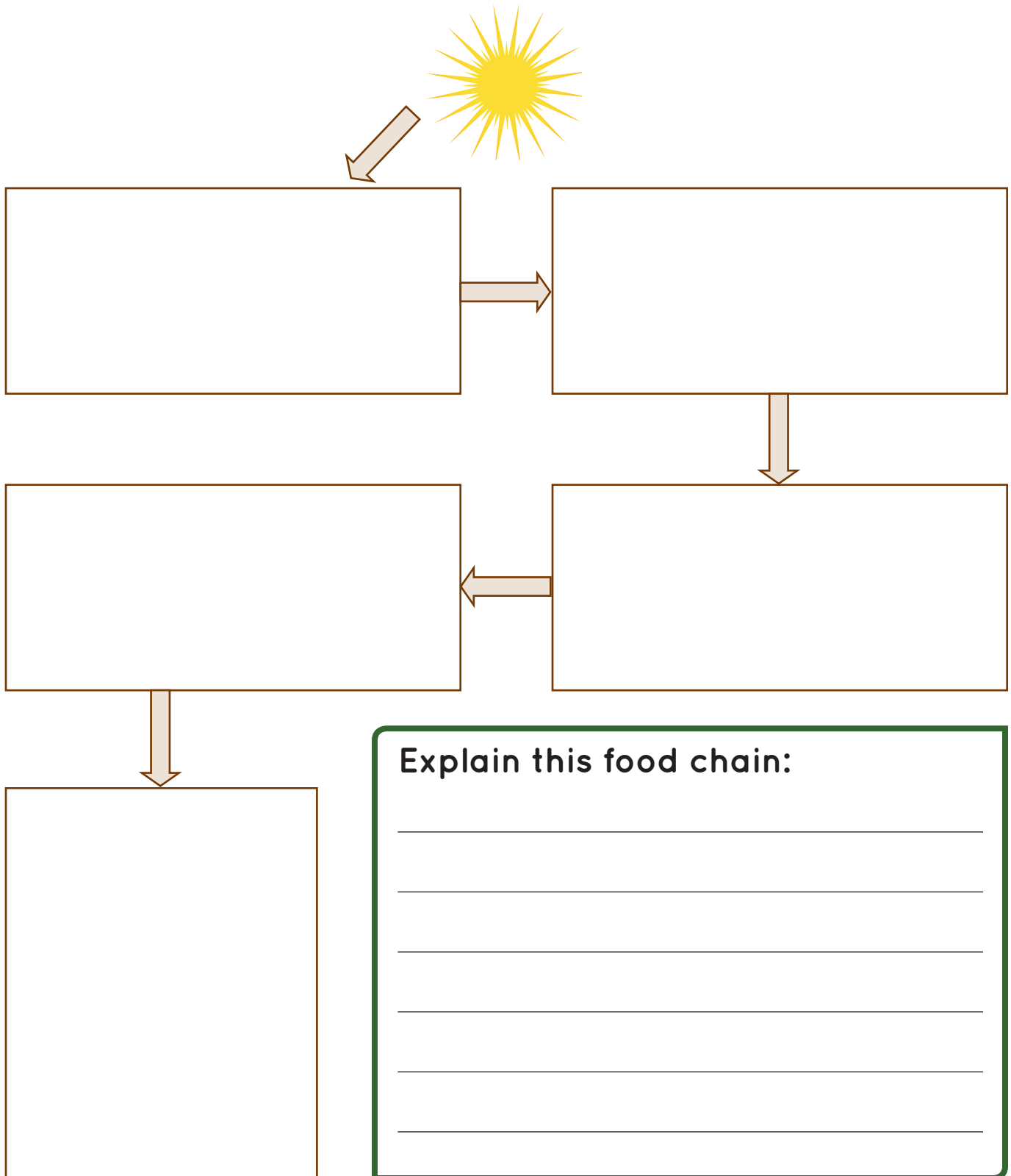
So, it all begins with the Sun. You see, the Sun's heat energy makes plants grow. Plants are food for some animals. Some animals are food for each other.



This is a food chain. Grass is food for a grasshopper. A grasshopper is food for a mouse. A mouse is food for a snake. A snake is food for a hawk.



It is your turn to create a food chain. In the boxes, draw the living things that are part of a food chain. Start with the Sun!



# Make a Food Web

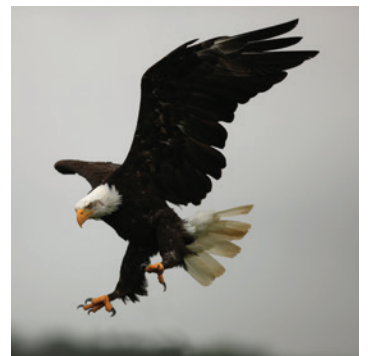
Food chains are all connected. A food web is a bunch of food chains. Let's create a food web!

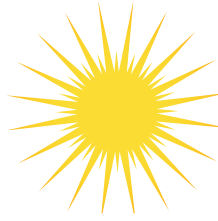
## Materials Needed:

- scissors
- glue

## What To Do:

1. Cut out the pictures on worksheet 7.
2. On worksheet 8, glue the pictures to make a food web.
3. Draw lines between plants or animals that eat each other.





Why is it called a food web and not a food chain?

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## A Food Web Challenge!

Create your own food web. In the boxes, draw pictures of living things that are connected in a food web. To complete it, draw lines between plants or animals that eat each other. Describe your food web to a classmate.

The diagram consists of a central sun at the top, represented by a yellow circle with radiating lines. Below the sun are eight empty rectangular boxes, arranged in two columns of four. These boxes are intended for drawing pictures of living things that are connected in a food web. Lines should be drawn between the boxes to show the flow of energy from producers to consumers.

