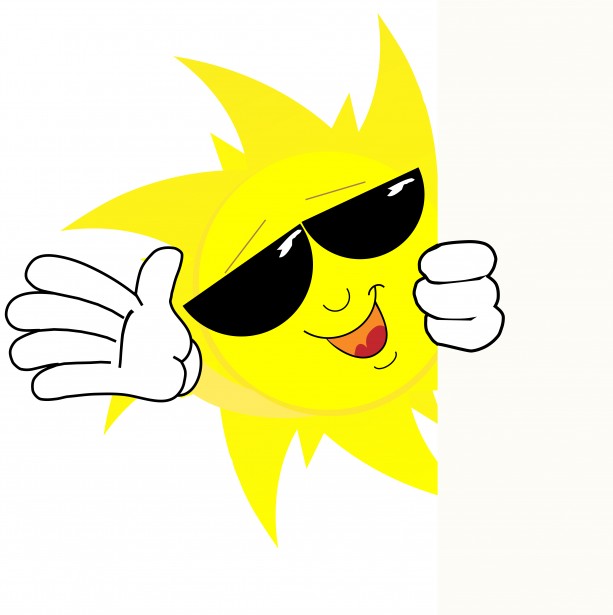
**Science in a Bag – Teacher Page**

**Grade Level:** 5th Grade

**Standards: Standard 3 – Flow of Matter and Energy**

**GLE 0507.3.1:** Demonstrate how all living things rely on the process of photosynthesis to obtain energy.

**Checks for Understanding 0507.3.2:** Design a graphic organizer that illustrates the difference between plants and animals in the movement of food energy through an ecosystem.

**SPI 0507.3.2:** Compare how plants and animals obtain energy.

**Task Objective:** The student will understand how food energy is transferred within an ecosystem by combining foam links to form model chains that will interlock to create a food web. The student’s chains will model the sequence of who eats what or whom in an ecosystem. When an animal has multiple ways to obtain their energy to survive, the students will overlap their food chains creating a network of many food chains known as a food web.

**Explanation:**

Energy flows into the living world from the sun into photosynthetic organisms. These organisms convert the light energy into the chemical energy of sugar. This energy is then consumed by other organisms in a food chain.

A food chain shows how each living organism gets its food. It only follows one path as animals find food. Remember that a food chain also contains the sun. A food web is made of several food chains connected together. A food web shows the many different paths plants and animals are connected.

Food chains and food webs describe the same series of events that happen when one organism consumes another to survive. You will find plants in every ecosystem of life. Plants use the sun’s energy to make food through photosynthesis. Plants also make loads of other nutrients for other organisms to eat. Consumers are the next link in a food chain. They can be classified as primary consumers (eat plants and fruits), secondary consumers (“meat eaters” eat the primary consumers), or tertiary consumers (eat meat, plants, and just about anything).

**Common Misconceptions:**

**Misconception: Food webs are interpreted as simple food chains.** Food webs most accurately depict the flow of energy within an ecosystem. They depict a complex set of relations that is not easily simplified to a food chain.

**Misconception: Organisms higher in a food web eat everything that is lower in the food web.** Organisms higher in a food chain eat some, but not necessarily all, of the organisms below them in the food web.

**Misconception: Food chains involve predator and prey, but not producers.** Producers are an essential part of all food chains and webs.

**Real World Connection:**

Everyone plays a specific role in the food chain of life. You are very important to the survival of the system no matter what role you play. All organisms need to obtain energy to survive. For example, plants get energy from the sun, some animals eat plants, and some animals eat other animals.

**Connections Across the Curriculum:**

**Reading:**

Read *Pass the Energy, Please!* by Barbara Shaw.

Construct an 8-page mini book including drawings of what they learned through the reading.

SPI 0501.3.8 Select vivid and active words for a writing sample.

**Music:** Learn and sing Bill Nye the Science Guy’s Food Web song.

MU.5.1.1.1 Sing, accurately, on pitch with good breath control, alone and with others.

**Math:** Tally the number of different organisms in the food web and then graph them.

SPI 0506.5.1 Depict data using various representations, including decimal and/or fractional data.

**References:**

Explanation:

Chapter 23: Ecosystems and Populations

Energy Flow and Food Webs

<http://wps.aw.com/bc_johnson_humanbio_6/177/45509/11650384.cw/index.html>

Unit 1: Food Chains and Webs

<http://www.myteacherpages.com/webpages/ttravis/science_class_3.cfm?subpage=1208481>

Common Misconceptions:

Common Misconceptions about Biomes and Ecosystems

<http://beyondpenguins.ehe.osu.edu/issue/tundra-life-in-the-polar-extremes/common-misconceptions-about-biomes-and-ecosystems>

Real World Connection:

Geography4Kids.com: Biosphere: Food Chains

<http://www.geography4kids.com/files/land_foodchain.html>

Food Chains and Food Webs

“What’s for dinner?”

<http://www.enchantedlearning.com/subjects/foodchain/>

Connections Across the Curriculum:

Reading/Language Arts:

Dawn Publications

Pass the Energy, Please!

<http://www.dawnpub.com/our-books/pass-the-energy-please/>

Music:

Bill Nye the Science Guy – “It’s The Food Web”

<http://www.schooltube.com/video/661b2cb3a331b29f9c2c/>