Purpose:
This is lesson one of the unit on the “food chain.” So far the students have learned about aquatic and terrestrial habitat. Now that the students have this prior knowledge I will introduce the food chain to build a better understanding of how the animals and plants interact within the habitat. This first day will focus mainly on the idea that most food chains begin with the sun and plants. We will review the steps of photosynthesis in order to discuss that plants are called producers, and how plants are able to produce their own food. After five days of this unit the students will learn what a food chain looks like and understand the importance of food chains in their own lives.

Virginia SOL:
Science 3.5: (Living Systems) The student will investigate and understand relationships among organisms in aquatic and terrestrial food chains. Key concepts include
a) Producer, consumer, decomposer;
b) Herbivore, carnivore, omnivore; and
c) Predator and prey.

Computer Technology 3-5.1 (Basic Operations and Concepts) Demonstrate an operational knowledge of various technologies.
a) Use various types of technology devices to perform learning tasks.
   • Use a keyboard, mouse, touchscreen, touchpad, and other input devices to interact with a computer.
   • Demonstrate the ability to perform a wide variety of basic tasks using technology, including saving, editing, printing, viewing, and graphing.
b) Communicate about technology with appropriate terminology.
   • Use basic technology vocabulary in daily practice.

Objective:
Given a blank piece of paper and five cards containing the words “sunlight energy, water, carbon dioxide, oxygen, and glucose/sugar,” the students will be able to draw, and color, the process of photosynthesis while correctly labeling at least four out of five parts of photosynthesis.

Procedure:

Introduction
• While students sit in groups at their desks tell students that this week, we will be talking about the food chain. Pass out scrap pieces of paper, and ask students to take 2 minutes to write anything that they know, or think they know to be true about food chains. Give them time to talk with their group then ask for students to share things they wrote. Create a KWL chart
to hang in the classroom and add to it throughout the unit (auditory & visual)

- Possible questions:
  - What are the different parts of a food chain?
  - Why do you think food chains are important?
  - Where are you on the food chain?

- Explain that every living thing needs energy in order to live. Every time animals do something, such as running or jumping, they use energy to do so.
- Animals get energy from the food that they eat. All living things get energy from food, including plants. Energy is necessary for living things to grow.
- Plants use sunlight, water and nutrients to get energy. This process is called “Photosynthesis.”
- A food chain shows how each living things get food, and how nutrients and energy are passed from one creature to another. Food chains begin with plant-life, and end with animal-life. Some animals eat plants, some animals eat other animals.
  - Using cut-out pictures, give a quick example of a simple food chain.

Development

- Have students move to the carpet, in order to sit around the white board. Tell students to bring their clipboards.
- Hand out Photosynthesis Vocabulary Worksheet: (visual)
- Write on board, “Plants are called producers.” Explain that this is because they produce their own food! They do this by using light energy from the Sun, carbon dioxide from the air and water from the soil to produce food - in the form of glucose/sugar. Note that glucose/sugar is the energy, or food, for the plant. (auditory)
- While students are seated with their photosynthesis worksheet, draw on the whiteboard, the steps of photosynthesis (beginning with the sun). As you draw, have students name out the different steps of photosynthesis. They can use their worksheets, and fill in the blanks as the steps are listed out. (auditory/visual)

- Possible things to say while describing photosynthesis:
  - Photosynthesis is the cycle of plants and how they make energy!
  - The sun (light energy), water, minerals and carbon dioxide are all absorbed by the plant. The plant then uses them to make glucose/sugar, which is the energy/food for the plant.
  - Oxygen is also produced by the plant in this cycle, which is then let off into the air!
  - Have you noticed how clean and pure the air feels when there are plants around? They are filling the air with oxygen!
Summary

- Have students move back to their seats. On the smartboard share the following game that illustrates the process of photosynthesis: http://www.wonderville.ca/asset/photosynthesis

- Have a few students come up to the board and drag the items to complete the animation of photosynthesis. (tactile, visual)
- Preview that within the food chain, some animals eat plants in order to have energy.

Materials:

- Photosynthesis Worksheet, found at: http://www.education.com/worksheet/article/photosynthesis/
- Animal Cutouts (Used in introduction)
- Many of the facts and information on food chains was adapted from various websites, including:
  - http://www.wonderville.ca/asset/photosynthesis
  - http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/producersconsumers.htm

Evaluation A:

- The students will demonstrate their understanding by drawing and labeling the process of photosynthesis.
- The students must correctly label 4 out of the 5 parts of photosynthesis, and show the order in which the cycle flows using arrows.
- For strugglers: Have the picture still up on the whiteboard but without the labels.
- For advanced students: Give them cards with more vocabulary words from the lesson so they have to choose the appropriate ones for their picture. Could also not give them cards at all and have them produce the terms on their own. Have these students label any other terms they remember from the lesson.
- The students will be given 5-10 minutes to complete this assignment and then it will be turned in to be graded by the teacher.

Evaluation B:

- Did the students meet your objectives?
- How do you know?
- Did your lesson accommodate/address the needs of all your learners?
- What were the strengths of the lesson?
- What were the weaknesses?
- How would you change the lesson if you could teach it again?
Day 2 Lesson Plan: Animals as Consumers - Herbivore, Omnivore, Carnivore

**Purpose:**
This is lesson two of the unit on the “food chain.” The focus of today’s lesson is on the idea that in the food chain, animals must rely on plant life, and other animal life, in order to survive. Animals are called “consumers” because they cannot make their own food. We will discuss about different kinds of consumers (herbivores, carnivores, and omnivores), why they are called consumers, and the interdependency of plants and animals.

**Virginia SOL:**
Science 3.5: (Living Systems) The student will investigate and understand relationships among organisms in aquatic and terrestrial food chains. Key concepts include:
- a) **Producer, consumer, decomposer**;
- b) **Herbivore, carnivore, omnivore**; and
- c) **Predator and prey**.

Science 3.10: (Earth Resources) The student will investigate and understand that natural events and human influences can affect the survival of species. Key concepts include:
- a) **The interdependency of plants and animals**;
- b) The effects of human activity on the quality of air, water, and habitat;
- c) The effects of fire, flood, disease, and erosion on organisms; and
- d) Conservation and resource renewal.

Computer Technology 3-5.1 (Basic Operations and Concepts) Demonstrate an operational knowledge of various technologies.
- a) **Use various types of technology devices to perform learning tasks**.
  - Use a keyboard, mouse, **touchscreen, touchpad**, and other input devices to interact with a computer.
  - Demonstrate the ability to perform a wide variety of basic tasks using technology, including saving, editing, printing, viewing, and graphing.
- b) **Communicate about technology with appropriate terminology**.
  - Use basic technology vocabulary in daily practice.

**Objective:**
On a worksheet, given eight pictures of animals such as “cow, rabbit, lion, shark, deer, bear, human, and cat,” the student will be able to correctly identify at least 6 out of 8 pictures as either herbivore, omnivore, or carnivore.

**Procedure:**
**Introduction**
- Have the students meet together on the class carpet, around the class bulletin board. State that today we will continue to talk about the food
chain. Remind the students that a food chain shows how each living thing gets food, and how nutrients and energy are passed from one creature to another.

- Remind them that yesterday we were talking about producers. Ask for a student to remind the class what a producer is, and why they are called producers. Then, ask if any students can give a few examples of producers. (auditory)

- Discuss how animals and plants rely on one another. Some animals need plants to get energy. But, also some plants need animals in order to grow. Give example of how flowers rely on bees to carry pollen from one flower to another in order to be pollinated.

- Remind students that every living thing needs energy in order to live, and that animals get energy from the food they eat. Some animals eat mainly plants. Some animals eat mainly meat. And, some animals eat both plants and meat.

- Write down the word “Consumer” on the bulletin board. State that animals are called consumers because they cannot make their own food, so they need to consume, or eat, plants and maybe animals. Write definition of consumer next to the word “consumer.” (visual)

Development

- Write the following terms on the board: Herbivore, Omnivore, and Carnivore.
  - Ask the students if they can say what each is. If accurate, write down students’ responses next to each term. (auditory)
  - For the teacher’s use, here are the accurate definitions. Write these if students are unable to generate definitions. (visual)
    - Herbivores: animals that eat only plants.
    - Carnivores: animals that eat only animals.
    - Omnivores: animals that eat both animals AND plants. (Tell students that humans are also omnivores!)

- Have students copy these definitions in their science notebooks.
- Under each category write – ask students first if they can come up with any examples on their own
  - Some herbivores are deer, horses, rabbits, cows, bees, and sheep. They eat plants such as leaves, grass, seeds, roots, and fruits.
  - Some carnivores are lions, tigers, other cats, eagles, hawks, sharks, frogs and spiders. They eat meat such as insects and other animals.
  - Some omnivores are bears, raccoons, some monkeys and birds. And humans.

- Read the book Who Eats What by Patricia Lauber. (auditory)
  - Before reading, have students look at the cover and make predictions about the story.
  - Ask them if they can see how the cover illustrates the food chain.
  - During reading, stop when appropriate to discuss the terms “Herbivore, Omnivore, and Carnivore.”
After reading the book, ask students to take a few minutes to write or draw 2 examples of herbivores, omnivores, and carnivores in their science notebooks. After a few minutes, ask students to share what they wrote. **(visual, auditory)**

- For advanced students, ask them to draw a chain connection between a plant, a herbivore, and a carnivore/omnivore.
- For strugglers, ask them to write only one example of each category or draw a picture (English Language Learners).

**Summary**

- Have students move back to their seats. On the smartboard share the following game that categorizes herbivores, omnivores, and carnivores: http://www.sheppardsoftware.com/content/animals/kidscorner/games/animaldietgame.htm

- Have a few students come up to the board and drag the items to complete the animation of photosynthesis. **(tactile, visual)**
- Tell students that tomorrow, we will look again at consumers and discuss predators and prey.

**Materials:**

- *Who Eats What* by Patricia Lauber.
• Herbivore, Omnivore, Carnivore Worksheet

Instructions: Label the following pictures as Herbivore, Omnivore, or Carnivore.

1. A cow is a ____________________
2. A shark is a ____________________
3. A rabbit is a ____________________
4. A human is a ____________________
5. A lion is a ____________________
6. A deer is a ____________________
7. A cat is a ____________________
8. A bear is a ____________________

• Many of the facts and information on food chains was adapted from various websites, including:
  o http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/producersconsumers.htm
  o http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/producersconsumers.htm

Evaluation A:
• The students will demonstrate their understanding by labeling pictures as herbivore, omnivore, or carnivore.
The students will correctly label at least 6 out of 8 pictures.
The students will be given 5-10 minutes to complete this assignment and then it will be turned in to be graded by the teacher. – The teacher will walk around room to help and encourage any struggling students

Evaluation B:
- Did the students meet your objectives?
- How do you know?
- Did your lesson accommodate/address the needs of all your learners?
- What were the strengths of the lesson?
- What were the weaknesses?
- How would you change the lesson if you could teach it again?
Day 3 Lesson Plan: Predators and Prey

Purpose:
This is lesson three of the unit on the “food chain.” The focus of today’s lesson is on the idea that within the food chain, some animals must hunt and eat other animals in order to survive. Animals that hunt other animals to get food are called “predators.” Animals that are hunted and eaten as food are called “prey.” Students will learn about what animals are predators and what animals are prey. They will learn about ways in which prey attempt to escape their predators, and features that help predators catch prey. Also, students will also play a game in order to simulate the predator-prey relationship.

Virginia SOL:
Science 3.5: (Living Systems) The student will investigate and understand relationships among organisms in aquatic and terrestrial food chains. Key concepts include
a) Producer, consumer, decomposer;
b) Herbivore, carnivore, omnivore; and
c) Predator and prey.

Physical Education 3.1: (Skilled Movement) The student will apply locomotor, non-locomotor, and manipulative skills in increasingly complex movement activities.
a) Demonstrate most of the critical elements (small, isolated parts of the whole skill or movement) for manipulative skills (e.g., throw and catch a variety of objects, kick to stationary and moving partners/objects, dribble with dominant hand/foot, pass a ball to a moving partner).
b) Use manipulative skills in movement combinations (e.g., perform manipulative tasks while dodging and moving in different pathways; catch a rolled ball while moving, and throw it back to a partner).
c) Demonstrate moving to a rhythm (e.g., perform simple dances in various formations, develop and refine a creative educational dance sequence).
d) Refine individual gymnastics skills, and perform educational gymnastic sequences with balance, transfer of weight, travel, and change of direction.

Objective:
Given a piece of paper with ten pictures of different animals, the students will be able to correctly identify each animal as being a predator or prey with 80% accuracy (8 out of the 10 pictures).

Procedure:
Introduction
• Have students join one another at the carpet.
• Remind students that yesterday we read a book about the food chain. Remind students of the following terms: herbivore, omnivore, and carnivore. Ask students to say what each term means.
• State that today we will talk about predators and prey within the food chain. **Ask a few students the following questions:** *(auditory)*
  o What is a predator?
  o What is a prey?
  o Are predators bad? Why or why not?
  o **What do you consider yourself?**
  o What physical features help predators catch prey?
  o What behaviors help predators catch prey?
  o What physical features, and behaviors, help prey escape predators?
• **Record students’ responses on the white board.** But, note the following: *(visual)*
  o Predators are animals that hunt other animals for food.
    • These animals can be both carnivores and omnivores.
  o The animals that are hunted and eaten by predators are called prey.
    • These animals can be herbivores, omnivores, and carnivores.
  o Physical features such as speed, sharp claws, sharp teeth, and strong senses of vision, hearing and smell help predators catch prey.
  o Running fast, or moving quietly are examples of behaviors that help predators catch prey.
  o Being fast helps some prey avoid predators. Also, moving in packs/groups helps some animals escape predators. Having a heightened sense of smell, vision and hearing also helps some prey escape predators.

**Development**
• **Read the Scholastic’s book *Predator vs. Prey*, by Lee Marten.** *(auditory/visual)*
  o While reading have students identify the different animals that are examples of predators and prey.
    • Great horned owl (predator), Skunk (prey)
    • Shark (predator), Seal (prey)
    • Arctic Wolf (predator), Musk Ox (prey)
    • Tiger (predator), Muntjac (prey)
    • Grizzly Bear (predator), Salmon (prey)
    • Ask Students if they can give any examples, or let them give their favorite animals and then as a class determine predator/prey)
  o While reading, stop at times to discuss the before mentioned characteristics that help predators hunt, and the characteristics that help prey survive.
• **Have the students move back to their desks, and discuss the game Predator vs. Prey.** — *This game will give the students a chance to move around and use physical actions to help them learn the material*
• Rules to Predator vs. Prey: (to be played outside) (tactile)
  o Predators: the job of the predator in the game is to leave the “predator zone” and keep the prey from reaching their “safe zones” by tagging them. Note: students should not shove, or push, another student.
  o Prey: the job of the prey is to leave the “prey zone”, and make it safely to a “safe zone” before being tagged by a predator. Note: Depending on the class size, only 3 or 4 prey can be in each safe zone.
  o Here is a picture of the game layout:

<table>
<thead>
<tr>
<th>Predator Zone</th>
<th>Prey Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Game Layout Image" /></td>
<td></td>
</tr>
</tbody>
</table>

  o Divide the students into two groups (predators and prey).
  o Have students begin the game by standing in either the predator zone or the prey zone.
  o When the teacher blows the whistle, the prey must leave the prey zone and run to a safe zone. However, only 3 or 4 students (depending on class size) can fit into each safe zone.
  o While the prey are running to the safe zone, the predators must run and hunt (tag) members of the prey team. The game is over when all prey have made it to the safe zone, or have been caught.
• Take students outside to play the game a few times. Make sure that all students have been able to be both predators and prey.

Summary
• Bring students back inside to the classroom.
• Review that the game showed how certain features, such as speed and vision, help predators and prey either hunt or avoid being hunted. (auditory)
  o Before stating features, ask students if they can name the features that helped them either hunt, or escape from being hunted.
• To review before the evaluation, ask a few students to name some predator and prey groups that were mentioned during the book reading. (auditory)

• Materials:
• *Predator vs. Prey*, by Lee Marten.

• Predator/Prey Worksheet (Labels for each picture provided)

Name: __________________________

Instructions: Look at each pair of animals. Next to each picture, identify which one is the predator and which one is the prey. Write down *predator* or *prey* next to each picture.

1. Great Horned Owl: __________________________

   Skunk: __________________________

2. Musk Ox: __________________________

   Arctic Wolf: __________________________

3. Grizzly Bear: __________________________

   Salmon: __________________________

4. Tiger: __________________________

   Wombat: __________________________

5. Walrus: __________________________

   Great White Shark: __________________________

Many of the facts and information on food chains was adapted from various websites, including:

- [http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/producerconsumers.htm](http://www.sheppardsoftware.com/content/animals/kidscorner/foodchain/producerconsumers.htm)

**Evaluation A:**

• The students will demonstrate their understanding by correctly labeling pictures as either predator or prey.
• The students will correctly label at least 8 out of 10 pictures.
• The students will be given 5-10 minutes to complete this assignment and then it will be turned in to be graded by the teacher. (Be sure to make sure
there is still time left before the class is over for any students who need more time)

- For advanced students: encourage them to write or draw pictures and label them as predator or prey

**Evaluation B:**

- Did the students meet your objectives?
- How do you know?
- Did your lesson accommodate/address the needs of all your learners?
- What were the strengths of the lesson?
- What were the weaknesses?
- How would you change the lesson if you could teach it again?
This unit plan is important because it covers a third grade science SOL topic. The ideas of the SOL are spread out through 5 days to give proper time to understand the parts that work together to create the food chain. Students can apply this knowledge to their own lives because they are a part of a food chain themselves. Food chains are an important topic to understand because the idea can also be applied to other subject areas. This can help a student deepen their understanding of a subject matter through making connections.

UDL makes instruction easier when it is explicitly shown in a lesson plan. It is so helpful because there are so many different things to consider while in the moment of the lesson and it helps to have as reference. UDL is helpful for diverse classrooms and makes sure a lesson will try to meet the needs of the different students. A UDL lesson plan will increase the teacher’s ability to be flexible in the classroom. When a teacher considers the Universal Design for Learning as they create a lesson plan he/she will create an overall goal for their lesson and also consider what the barriers are for his/her specific students. The teacher looks at all the aspects of their lesson to increase the chances that a higher percentage of their students will learn and understand the material being taught.

This unit plan has been created as a 5 day-long unit with the 6th day as the final assessment. The remaining two days will be spent on decomposers and how all the parts come together to make a food chain. This fifth day will include a graded art activity where the students will have the choice of creating a collage or a hanging mobile to represent a food chain of their choice. The final assessment will be written test. The test will include multiple choice and short answer questions, which will include drawing and labeling.