Lesson 3.1: Worms and Composting: About the Worm

Time: 1hr

Common Core Standards

NGSS.4.LS1.1
Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. [Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.] [Assessment Boundary: Assessment is limited to macroscopic structures within plant and animal systems.]

Objectives:

- Discuss how compost can be made using worms.
- Have students learn about the anatomy, diet, and habitat of worms.

Key words: **Vocab Tree**

Vermicomposting; Anatomy; Anterior; Posterior; Cilia; Prostomium; Clitellum; Red Wigglers; Esophagus; Gizzard; Intestines

(Using Key words: Students can create a glossary, in books or on wall in classroom. Students are encouraged to practice using vocab in written or verbal sentences - perhaps writing example sentences and displaying them. Students could earn points for using the vocab in novel sentences each week)

Resources:

- Worm anatomy blank picture
- Worm anatomy key
- Colored pencils or crayons
- Powerpoint: Worms: What's Crawling Through Our Dirt?

Activities:

Introduction
In order to give students a better idea of how this method of composting works we will introduce them to the anatomy of the worm. This activity can be altered for the age and level of the students by excluding or including terms as you see fit.

Class Activity:

- Each student will receive the blank image of the worm.
- As a class, go through each blank area of the worm diagram and discuss which anatomic part it is and what purpose it serves (it is assumed most students will not have previous knowledge of these parts)
    - For younger students focus on the brain, mouth, anus, and heart.
    - For older students, include other terms such as the intestines (The intestines are a long, continuous tube running from the stomach to the anus. Most absorption of nutrients and water happen in the intestines. The intestines include the small intestine, large intestine, and rectum), esophagus (tube in throat through which food travels to the stomach), and gizzard (specialized stomach constructed of thick, muscular walls is used for grinding up food, often aided by particles of stone or grit).
    - Point out common anatomic parts that the worm does not have such as ears, eyes, legs, or arms.
- After the parts have been labeled allow the students to color in their pictures.
- Ask students to name their worms and come up with a creative backstory about them answering these questions:
    - Where is your worm from? What does he/she like to eat? What does he/she not like to eat? Where do they live now? Do they live with lots of friends and family or alone?

Recap

The anatomy of the worm is much different from that of a human or other mammal. They are blind creatures with a very simple cardiac and gastrointestinal system, but the job they do as decomposers is incredibly important. Without decomposers like them the food cycle would be broken, nutrient rich soil would no longer be regenerated, and plants would no longer grow. For this reason, understanding more about the worm and this process is pivotal for students to understand where their own food comes from.

Further Activities/ Homework:

- Have students go out into their neighborhood and find a worm. Have them note the location of the worm, the length, what is surrounding it, what it was doing when found, and how far underground it was.