

Vermicomposting

Age Group: 6th grade

Time: 20 minutes

Materials:

- LGL notebook
- Pencil
- gloves
- Worm binder
- worm observation form
- newspaper
- spray bottle

Prep in advance:

- Make copies of worm observation form for each student.

Description:

After a brief tour of the vermicomposting bins, students will receive a lecture about vermicomposting and worm survival. Students will then further examine the bins, using the worm observation form, followed by practicing adding bedding to the bins.

Objectives:

Students will be able to.....

- Understand what it means to close the loop between the school cafeteria and the garden.
- Understand the connection between food and soil.
- Make detailed observations.
- Record and communicate data.
- Monitor the health of a vermicomposting/composting system.

Environmental Education Guidelines:

- Questioning & Analysis
- Knowledge of environmental processes & systems:
 - The earth as a physical system: processes shape the earth, changes in matter, and energy.
 - The living environment: Organisms, populations and communities, systems and connections, flow of matter and energy.

Major Life Science Themes:

- Living/non-living things
- Structure & Function
- Ecosystems
- Populations
- Change over time
- Animal relationships

Vocabulary:

Vermicomposting:

“Composting is the process where organisms such as bacteria, worms, and insects help turn fruit and vegetable wastes into a nutrient-rich soil amendment called compost. Worm composting uses red worms in an enclosed container to create worm castings, or vermicompost.”

- Metro “Worm bin basics” guide

Safety:

- General garden safety, as expressed in the rules section below:
 - stay on the paths,
 - ask before you eat,
 - stay within sight of an adult

Instructional Sequence:**Tour worm station** (5 minutes)

- Give a tour of the worm station, showing students the worm bins.
- Explain how the worms are new and we are starting with establishing a small section of a small bin. As they grow and thrive, we will expand their home and eventually, the worms will end up in the bigger condo. It's a slow process and we want to ensure that are worms are happy and healthy.

Facts & Observations (10 minutes)

- Define vermicomposting using above definition.
- Describe what worms need to survive.
 - worm bin, food, bedding air, water, darkness, and moderate temperatures.
- Explain the ideal conditions for a worm bin habitat.
 - bedding-:
 - shredded newspaper, cardboard, dry leaves, straw
 - pre-soak before adding to bin
 - balance of air and water
 - moisture like a wrung-out sponge
 - keep bin $\frac{3}{4}$ full of bedding at all times
 - food
 - fresh fruit and vegetable scraps every week
 - small pieces, hide in bedding
 - primary food source is bacteria that grows on food and bedding
 - worms will migrate towards food source
 - temperatures between 55-80 degrees Farenheit
- Examine the established bin.
- Fill out Worm Observation Form together.
- Have students add bedding to worm bin.

Closure (5 minutes)

- Ask students to share one thing worms need to survive
- Answer any questions students may have.

Assessment/Evaluation:

- Asking students to share one thing worms need to survive.
- Asking students to write in their journals about what they learned about worms and the things they need to survive.

Additional / Optional Activities:

- Future Routine
 - AM class- bring veggie/fruit scraps from Lane cafeteria to LGL
 - PM class- return bin to cafeteria
 - weigh/record food scraps
 - observation of worms and worm activity
 - worm count
 - distinguish adult/young/cocoon
 - worm anatomy
 - compare data to previous visits
 - examine biodiversity and compost food web