4-H Vermicomposting

A school enrichment program for 5th grade youth

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Lesson 1 - Vermicomposting

- Objectives
  - What is vermicomposting?
  - How does vermicomposting take place?
  - How can vermicompost be used?
  - What are the benefits of vermicompost?
  - What are the categories of worms?

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What is vermicomposting and how does it take place?

- Use of worms and microorganisms to convert organic matter into nutrient-rich humus called vermicompost
- The organic matter in the worm bin is consumed by worms in the bin, making them consumers

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Where can vermicomposting take place and how is it used?

- Can take place in classrooms, offices and homes, wherever food scraps or other organic matter is being generated or delivered
- Being used to help solve N.C. hog waste problem

Food scraps that can be used in worm bins include fruits and vegetables. Don't use this as an excuse to not eat your vegetables!

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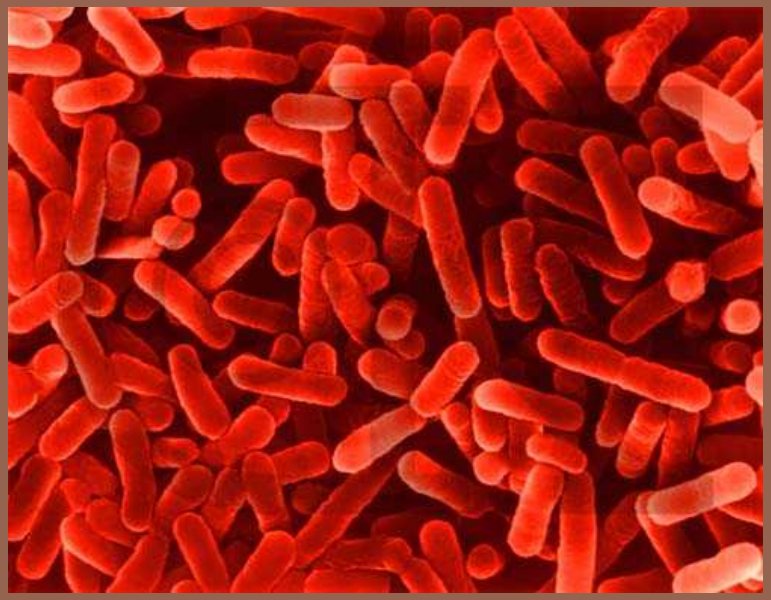
- Organic matter that worms eat passes through their digestive tract and is excreted as *castings*.

Worms and castings

- Microorganisms help to decompose the organic matter in the worm bin.



What are worm castings?

- Castings consist of undigested materials such as plant residues, bacteria, and soils.
- Castings contain humus, which improves soil and makes plants grow.

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How is vermicomposting beneficial to plants and soil?

- It breaks large particles of soil into smaller particles that allow air and water to permeate (enter into) the soil.
- It adds nutrients to the soil that is needed by plants to grow.

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How is vermicomposting beneficial to plants and soil?

- When castings are added to the soil, they boost the nutrients available to plants and improve soil structure and drainage.
- Castings can be mixed into the soil in gardens, around trees, and sprinkled on house-plants and on lawns as a soil conditioner.

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Advantages of vermicomposting in decomposition of food waste

- Reduces garbage disposal costs
- Produces less odor and attracts fewer pests
- Saves electricity and water associated with in-sink garbage disposals
- Produces free, high-quality fertilizer
- Requires little space, labor, or maintenance
- Produces free worms for fishing

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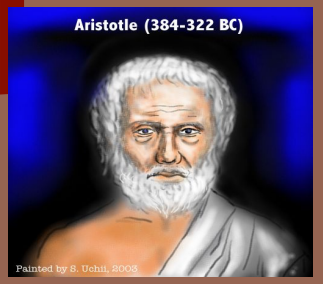
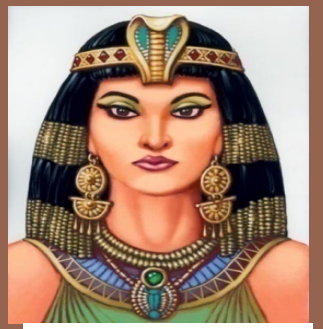
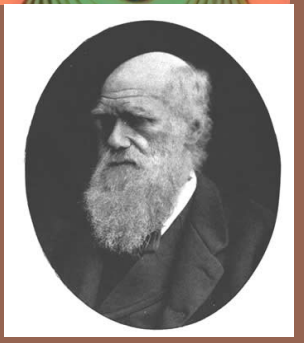
Earthworms through the ages

- Aristotle described them as the intestines of the earth.
- Cleopatra declared earthworms sacred and established laws to protect them.
- Charles Darwin demonstrated they improved soil condition & enhanced plant productivity.







Marcel Bouche's Categories of Worms

- Epigeic – (e-pi-ˈjee-ik) types live at the surface in freshly decaying plant or animal residues.
- Endogeic – (en-doe-jee-ik) types live underground and eat soil to extract nutrition from degraded organic residues.
- Anecic – (an-ee-sik) types burrow deep in the soil but come to the surface at night to forage for freshly decaying organic matter.

Worm facts

Over 4,000 species

Largest ever found - 22 feet

Smallest worm is 1/2 inch

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