

LESSON PLAN Worms! Nature's Recyclers

GRADE 2 (BC, YK)
3 (ON, MB, NB, NL, NS, PE, SK)
4 (AB, NU, NT)
Cycle 2 (QC)

SUBJECT Science

TIME NEEDED 95 minutes (total)

- Motivational Hook (10 minutes)
- Open (5 minutes)
- Body (70 minutes)
- Close (10 minutes)

VOCABULARY

• Composter	• Compost
• Inorganic waste	• Compostable
• Organic waste	• Recycling
• Terrarium	• Waste



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LEARNING OBJECTIVES/OUTCOMES

Students will:

- Create and use a composter in the classroom
- Create small composters to take home
- Learn how worms turn organic waste into soil
- Identify organic and inorganic waste
- Discuss how human waste impacts soils

MATERIALS REQUIRED

- Wonderful Worms, by Linda Glaser (one copy per small group)
- 1 small plastic container (ie margarine container) per student (ask students to bring from home ahead of time)
- Terrarium
- Soil
- Worms
- Gloves
- Large Sheet of Paper
- Food scraps left over from lunch (tell the students prior to lunch)

DESCRIPTION OF ACTIVITY

Students will learn the process of composting, including materials which will and will not decompose, and create composters to take home and use in class. Students will also discuss the impact of humans on soils.

Motivational Hook (10 minutes)

- Engage the students in a discussion on recycling. Ask them what recycling means (taking something old and using it to make something new), what kinds of things their families recycle, and why it is important to recycle (it reduces waste).
- Show the students two recycling bins. Ask them how to sort recycled materials (paper products in one bin, glass, plastic, and aluminum in another). Show them examples of materials and ask them which bin they should go in.
- Show the students the terrarium, and say that they are going to sort a third kind of material into this bin.

Open (5 minutes)

- Ask the students if they can think of examples of how nature recycles (the air cycle, the water cycle, and the soil cycle).
- Focus the discussion on the recycling of soil; ask the students how nature recycles soil. If they are unsure, ask the class if any of their families compost or have a green bin at home.
- Tell the class that they are going to create a composter in the classroom, using the terrarium.

Body (70 minutes)

- Put the students into small groups, and pass out one copy of Wonderful Worms to each group. Have the groups read the book together. (15 minutes)
- After reading, have the students discuss the book. How do worms help recycle soil? (they eat organic waste, and poop out soil). Discuss organic and inorganic waste briefly as a reminder to students. Can worms eat inorganic waste? What do you think happens to inorganic waste? (The worms can't eat it so it can't be turned into soil [decompose], so it stays in the landfill). What can we do to make sure the worms have lots of waste to eat so the soil stays healthy? (try not to produce inorganic waste). (10 minutes).
- Work with the students to create small individual composters to take home. Provide each student with a small plastic container and have them place a thin layer of soil, followed by a layer of lunch scraps, and another layer of soil. Have the students lightly water their composters. While the students are working, create a large composter in a terrarium (this can be used as the example while you go through the steps). (25 minutes).
- Have the students wash up and approach the terrarium in small groups to add worms to the composter. (10 minutes).
- Have the students record their observations of the terrarium using words and/or diagrams in their science journals. (10 minutes).

Close (10 minutes)

- Using gloves, sort through the classroom garbage and decide as a class which items are organic. Put the organic items in the classroom composter.
- Discuss examples of things that can be put in the composter. During the discussion, create a list of things which can be put in the composter to be displayed in the class as a reminder to use the composter when possible.

EXTENDED ACTIVITIES

- Have the students write a short letter to their families, explaining how their composter works and why they should use it at home.
- Have students create a poster illustrating the process of composting.
- Discuss the importance of minimizing inorganic waste in further detail. Challenge the class to a week of “Litterless Lunches”, where they do not create any inorganic waste.
- Students can continue to observe the changes in the class composter, and continue to record their observations in their science journals.
- Students can research the advantages and disadvantages of composting.

ASSESSMENT

- Observation during class discussion, recorded using a diagnostic checklist
 - Did students participate in discussions?
 - Did students create a composter?
 - Did discussion indicate an understanding of the relationship between worms and soil? Between humans and soil?
 - Could students identify which items were compostable?
- Science journals can be checked for completion and content (on-going assessment)
 - Are journal entries complete?
 - Do entries accurately describe the process of composting? (Can students identify decomposition, etc)
- Do entries indicate an understanding of the relationship between worms and the soil?

PRINT AND WEB SITE REFERENCES

- http://curriculalessons.suite101.com/article.cfm/spring_lesson_plans
- Ontario Curriculum: Science and Technology, Grade 3