



COMPOST FAMILY FEUD: BUILDING A VERMICOMPOSTER CHALLENGE

Grade 6, Science & Technology

Source: Adapted from *Compost Family Feud: Building a Worm Compost Challenge* by Foodshare

DESCRIPTION

In this lesson, students will learn how to build a vermicomposter and will participate in the Vermicomposter Challenge. They will explore the different materials needed to create compost and will think critically about design and implementation.

CURRICULUM LINKS – SCIENCE & TECHNOLOGY, GRADE 6

Understanding Life Systems – Biodiversity

Overall Expectations: 2,3

Specific Expectations: 2.1, 2.4, 2.5, 3.1, 3.2, 3.6

PLANNING NOTES

Materials

- Buzzer/noise-maker (1/team)
- Empty bins (lids must have holes)
- Shredded paper/cardboard
- Food waste
- Gloves
- Trowels
- Spray bottle
- Worms (red wigglers)
- Completed/professional vermicomposter
- Egg cartons (optional)
- Woodchips (optional)
- Straw (optional)
- *Know Your Worms Challenge Questions* (Appendix 1)
- *How to Make Compost* (Appendix 2)

Prior Learning

Compost is nutrient-rich soil resulting from the process of decomposition – food waste rotting and breaking down turning into soil, i.e. food for plants, organic matter, derived from plant and animal waste. Compost increases the organic and nutrient content of soil, improving the texture, draining, and fertility of the soil that plants can grow well.

Learning Skills & Work Habits

Collaboration, initiative, critical thinking

Recommended Class Time

- 1-2 periods

TEACHING/LEARNING STRATEGIES

PART ONE

Introduction

Welcome students to the Vermicomposter Challenge. Tell the class you will be splitting the group into two teams (the Greens and the Browns) and that they will be competing with each other. Teams will accumulate points by correctly answering questions about composting. Before starting the game, discuss the following questions:

- What is compost?
- Why do we want to make compost?
- How do you make compost?

Know Your Worms Challenge!

Split the class into two teams and give each team something to use as a buzzer. Teams are only allowed to ring the bell once the whole question is read out loud. When a team rings the bell, they have five seconds to discuss with their teammates the answer. If the first team gets the question wrong, the question automatically goes to the other team. Tally the votes. See list of *Know Your Worms Challenge Questions* (Appendix 1) for suggestions and feel free to add your own.



APPENDIX 1

COMPOST FAMILY FEUD: BUILDING A VERMICOMPOSTER CHALLENGE KNOW YOUR WORMS COMPOST CHALLENGE QUESTIONS

1. A vermicomposter is a:

- a. home for worms
- b. compost producer
- c. living ecosystem

d. ALL OF THE ABOVE

2. What do we call the types of materials that go in the vermicomposter?

a. GREENS AND BROWNS

- b. blacks and whites
- c. yellows, oranges, and greens

3. The main ingredients needed to make compost are:

- a. water, greens, and browns
- b. greens and browns

c. AIR, WATER, GREENS, AND BROWNS

- d. green, browns, and air

4. What are other creatures that might live in an indoor vermicomposter?

- a. beetles and snails
- b. caterpillars and bees
- c. ants

d. MICRO-ORGANISMS, PILL BUGS, AND MITES

5. Worms have teeth. Yes or No?

Answer: No

6. Worms eat:

- a. bananas

b. BACTERIA

- c. cardboard

7. Foods that worms like are...

Name as many as you can:

Answer: fruits and vegetables (apple cores, mangoes, banana peels), grains, eggshells, coffee grounds, plain bread, plain rice, etc.

8. Worms don't like certain conditions or foods...

Name as many as you can:

Answer: light, cold weather, onions, garlic, lemon and orange peels, oily foods, hot peppers, etc.

9. What are castings?

- a. fishing pole and hook you attach worms to use as bait

b. WORM POO

- c. auditions for actors in a film or TV show

10. Worm bins require a green and brown layering ratio of:

a. 1:1

- b. 2:1

- c. 4:1

- d. 6:1

11. Worms breathe through their skin.

True or False?

Answer: True



APPENDIX 2

COMPOST FAMILY FEUD: BUILDING A VERMICOMPOSTER CHALLENGE HOW TO MAKE COMPOST

1. To make compost, you need a combination of “greens” and “browns.” Greens are materials that are high in nitrogen or protein, e.g., vegetables, coffee, fruits. Browns are materials that are high in carbon and carbohydrates e.g., shredded paper, dry leaves, newspapers, wood chips, dry grass clippings. When composting you need a **BALANCED** ratio of 1:1 greens and browns.
2. You can make compost in various ways:
 - a. Outdoor composting – large bins outside.
 - b. Indoor composting – vermicomposting with red wigglers in relatively small contained bins so that you can compost even if you live in an apartment and do not have access to a backyard. Red wigglers are not like the earthworms that are native here that dig deep into the ground. They come from a warmer climate than Ontario, and actually live in the layer between the soil and leaf matter, which is why they can't survive Ontario winters. Red wiggler worms speed up the process of decomposition or composting. They actually eat the bacteria that are breaking down the food scraps (“greens”) or bedding (“browns”). There are other decomposers such as pill bugs, micro-organisms such as microbes, centipedes, pot worms, millipedes, etc. They are part of the worm bin ecosystem community.

