LESSON PLAN

Environmental Sustainability in the Garden

Engage

Read *Farmer Will Allen and the Growing Table* by Jacqueline Briggs Martin

Activities

Garbage Sort

- Ask, how can we reduce the amount of trash we send to landfills?
- Prior to the activity, fill a garbage bag with a variety of "garbage." Include things that could be repurposed, recycled and composted.
    - Some examples: egg cartons, toilet paper tubes, banana peel/apple core, partially used notebook, take out containers, plastic straws, dryer lint, pet hair, newspaper, colorful foil paper that cannot be recycled.
- Label four bins: ReUse, Recycle, Compost, Landfill.
- Have each student take a piece of garbage and decide if the item can be ReUsed. If not, have them decide if it can be composted. If not, have them decide if it can be recycled, and if not then finally consider, must it go to the landfill?
- Optional extension: Add a fifth bin for Refuse.
    - The Refuse bin is for items that you can choose to not buy or use. The students can consider if there is a better alternative. For example, can you refuse plastic straws? Could you carry your own reusable straw? Could you choose compostable egg cartons rather than styrofoam?

Compost Cake

- Have students read one of the informational texts on composting.
  Composting for Kids - University of Georgia Extension
  Create a Compost - National Geographic Kids
- Using your compost bin from the Garbage Sort activity, determine what items are appropriate for composting and sort those according to browns and greens.

Grade Level: 4

Anchor Texts:
Farmer Will Allen and the Growing Table by Jacqueline Briggs Martin
Composting informational texts

Primary Standards:
ELA
RL.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RL.4.3 Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text.
RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.10 By the end of grade 4, read and understand informational texts within the 4-5 text complexity band proficiently and independently for sustained periods of time. Connect prior knowledge and experiences to text.
Math
NC.4.MD.3 Solve problems with area and perimeter.
- Find areas of rectilinear figures with known side lengths.
- Solve problems involving a fixed area and varying perimeters and a fixed perimeter and varying areas.
- Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Science
4.L.1.1 Give examples of changes in an organism's environment that are beneficial to it and some that are harmful.
4.L.1.3 Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion).

Links & Resources:
go.ncsu.edu/stemlessonplans

- Make a compost cake following our How-to Guide with the browns and greens.

Area and Perimeter

- Measure two different size garden beds for area and perimeter. Using the square foot spacing guide, determine how many spinach plants and radish plants will be needed for each bed. Given the fixed area of each bed, consider how the perimeter could vary. Given the fixed perimeter of each bed, consider how the area could vary. Allow students to use snap cubes to represent each square foot. Does changing the perimeter change the number of radish or spinach plants? Does changing the area change the number of plants?

Secondary Standards

4.L.2.1 Classify substances as food or non-food items based on their ability to provide energy and materials for survival, growth and repair of the body.

4.L.2.2 Explain the role of vitamins, minerals and exercise in maintaining a healthy body.

Your Notes & Ideas