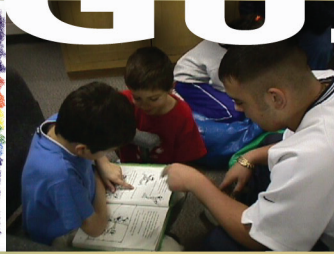
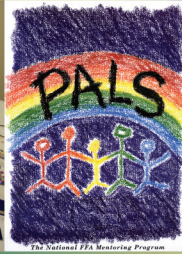


GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

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ACTIVITY

1.9

Build a Compost Bin

Unit: TEAMWORK

PRECEPTS

E. Awareness

E1. Perform leadership tasks associated with citizenship

NATIONAL STANDARDS

ESS.04.02.04.b. Explain scientific principles related to composting.

NS.K-4.3 – Life Science

NS.K-4.4 – Earth and Space Science

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- Explain the process of decomposition.
- Create a compost bin.
- Discuss the necessary ingredients for composting.





TIME

Instruction time for this lesson: **45 minutes.**



NUMBER OF STUDENTS

From a pair of students to an entire class.



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ **Wire enclosure for bin** – This is something that can be constructed before you meet with your PALS. Chicken wire or another type of mesh can be secured in a circle to fit over the compost bin area.
- ✓ **Water source**
- ✓ **Composting materials (leaves, grass, clippings, etc.)**
- ✓ **Soil**
- ✓ **Shovel**
- ✓ **Hand gardening tools**



DESCRIPTION

Teams will work together to create a compost bin. During the activity, discuss what citizenship means and a citizen's role in protecting the environment. It is amazing how “trash” can be turned to “treasures” with just a little work and planning.

DIRECTIONS

1. *Create a discussion about the meaning of citizenship. Connect this concept to protecting the environment by doing earth-friendly things like recycling and composting. Lead with the following questions.*



What does citizenship mean to you?

What are some things that people do to exhibit good citizenship?

2. *Briefly discuss what composting is.*



Just as some of us recycle our trash, composting is how Mother Nature recycles the goods left over on earth. Composting is a method used to recycle organic material.

Nature recycles leaves and plants. In a forest, leaves fall to the ground, forming mulch that protects the soil. Over time, they decompose into nutrients that feed forest plants. We can recycle leaves and other plant materials at home by setting up a compost bin.

Organic waste is waste from plant or animal sources that can be broken down by other organisms. What are some examples of organic waste? *Examples: apple cores, leaves, etc.*

What does your family do with the organic waste?

3. *Discuss the requirements for a good composting site and then take your PALS to select a site for the composting bin. At home, a good place might be near a garden or in a back corner of a yard. At school, we would locate it in a corner of the playground or within easy walking distance of the kitchen because there is a lot of organic waste that could be generated from the kitchen.*



A site for a compost bin must be carefully selected. It should be out of the way but convenient to reach with plenty of room to work around. Another important factor is to choose a location that is close to a water source.

Where do you think a good location would be? Why did you choose that location?

4. *Discuss the requirements for creating actual compost. Create layers of ingredients including brown or carbon-rich nutrients, green or nitrogen-rich materials and micro-organisms gained through the soil.*



Our compost pile will be built in layers of brown or carbon-rich nutrients, such as dead leaves; green or nitrogen-rich materials, such as green grass cuttings; and microorganisms through the soil. We will build in layers, and throughout each layer we will mix in soil to provide microorganisms. Microorganisms are the critters that actually break down the materials to create compost; they need green nutrient-rich and brown carbon-rich materials to work.

Between the layers, we will want to mix up the ingredients between the layers to add air and wet them down to add water.

5. Begin layering the ingredients for the compost bin in the selected location. Start with “brown stuff” by spreading a layer of leaves or pine needles about six inches thick.



To build our compost pile, we will need several layers of ingredients. Let’s start with “brown stuff” or carbon sources. Examples would be dried leaves, pine needles, newspaper and sawdust. We need about six inches of carbon sources to begin with.

What materials would you like to collect for this layer?

6. The next layer includes nitrogen sources. With your PALS, collect items such as food scraps, grass clippings, coffee grounds and horse manure.



Great job on the brown or carbon layer! Next we will build a green or nitrogen layer. We will go looking for food scraps, grass clippings, coffee grounds and/or horse manure. We need to collect about two inches of green or nitrogen material.

What would you like to include in the “green” layer?

7. Around the compost pile, place the wire enclosure to prevent animals from getting into the compost pile. This would be a great time to strike up a conversation about pets; ask your PALS to share about their pets and share the same information with them.



To keep the compost bin away from animals, we will put a wire enclosure around it. There are items that we do not want to include, such as meat or milk products, because pets and other animals may try to dig them up.

What pets do you have?

8. Preview what will happen in the compost pile once you are done working today.

Our work today is almost done, but the work on the compost has just begun. The tiny microorganisms will begin breaking down the organic matter in a process called decomposition. Later as the compost cools down, we will see larger organisms such as millipedes, sow bugs and earth worms. The tiny organisms will work hard and produce high nutrient compost we could use to grow plants. As we generate more compost, we can continue to add to the bin.

9. Connect the compost pile to the role of being a good citizen.



What would have happened to all of the waste we collected today if we did not compost it?

How does participating in recycling and composting make you a good citizen?

10. Encourage your PALS to share their new knowledge with others and to encourage citizenship in others.



If you become a diligent recycler and composter, you will be demonstrating acts of a good citizen. If you share your new knowledge with others, you could make an even greater impact.

Who could you share your new information with to encourage more recycling and composting?

11. Lead a final discussion focused on the connection questions on the next page.

CONNECTION QUESTIONS

Discuss with your PALS the following questions:

1. What does it mean to be a good citizen?
2. How do you create a compost bin and what are the necessary ingredients?
3. Explain the process of decomposition.

WRAP UP



Composting is just one way we can demonstrate good citizenship and attempt to leave this world in a better condition for future generations. Not only do we prevent items from going into the land fill, but we also create a home for decomposers and have the benefit of compost to use in our garden. Composting is good for everything involved.