

Grade: Kindergarten & PreK-4 (mixed age group)

Course Name: Introduction to Composting

Unit:

Overview and Goal of the Lesson: This lesson expands children's understanding of recycling, reducing, and reusing. Students will develop an understanding of composting as a process that cleans the environment by reducing waste and recycling composted materials to make soil. The overall goal is to inspire children to become caretakers of our earth.

Essential Question(s):

1. What is composting?
2. Why is composting important?
3. What items can be composted?
4. How can I be a composter?

NGSS Emphasized and Addressed in this Lesson Sequence:


Performance Expectations	Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
K-ESS3-3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas.	ESS3.C: Human Impacts on Earth Systems <ul style="list-style-type: none"> Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. 	Cause and Effect <ul style="list-style-type: none"> Events have causes that generate observable patterns.


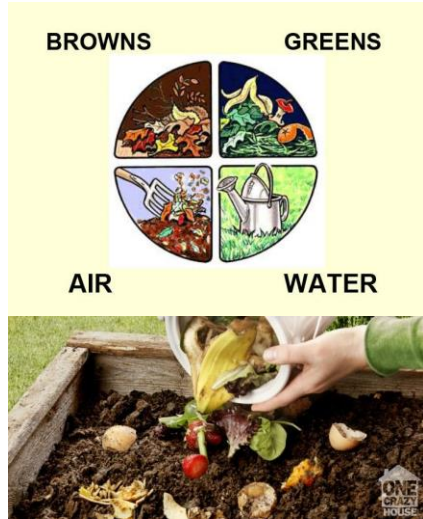
Materials




Item	Quantity	Purpose
Food Scrap	1 sample	introduction artifact
Soil	1 sample	introduction artifact



Chart Paper		for recording student observations
Composting Photos	depends on number of students	10 samples provided
Compost Stew”by Mary McKenna Siddals		to become familiar with many composting materials. Alternatively, youtube videos can be shown.
“Sing Along Compost songs” website		website has lyrics for two songs about composting.
materials for drawing compostable items		Science Journals can be used.

5E Lesson Sequence

Total Duration: 40 minutes				
5E Model Stage	Duration	Teacher and Student Actions		Notes
Engage	5 minutes	What Teacher Does	<p>“Today we are going to talk about some ways to be good citizens of our environment.” Guide and link children’s responses to concepts of reduce, reuse, and recycle. Encourage participation with the following questions:</p> <ol style="list-style-type: none"> 1. As good citizens of our classroom, what can we do to keep our room nice and clean? 2. As good citizens of our home, what can we do to keep our home clean and tidy? 3. As good citizens of our neighborhoods, what can we do to keep our neighborhoods clean and beautiful? <p>“Today, we are going to learn about another way we can help keep our earth nice, clean, and beautiful!! We are going to learn about composting.” Ask if anyone knows what composting means.</p> <p>“Composting is turning old food we will not eat and dirty paper into soil.” Show children actual samples of leftover food and soil.</p> <p>Ask children, “Why do you think composting helps keep our earth clean?” Use responses to develop understanding that composting results in less garbage going to landfills, and soil (filled with nutrients).</p>	<p>Prerequisite for this lesson is a basic understanding of The 3 Rs -- reduce, reuse, and recycling. Students should also be familiar with the term landfills.</p> <p>Potential new vocabulary words are highlighted in blue.</p> <p>For additional resources and DGS background information, see the following links: https://dgs.dc.gov/page/dgs-healthy-schools https://dgs.dc.gov/node/1177106</p>
		What Students Do	Students share their thoughts on how to be good caretakers of their various environments.	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Explore	5 minutes	What Teacher Does	“Let’s examine some pictures of composting and try to figure out how to turn our leftover food into soil for planting.”	

			<p>Partner each student with a buddy and give each group a photo of the composting process. In multi-age classroom, you may choose to group a Kindergartener with a PreK. (If you have an on-site composting bin, you may choose to do first-hand observation at the bin site.)</p> <p>Give students a couple of minutes to explore and then have each group share what they observed about their photo. Record shared observations on chart paper.</p>	
		What Students Do	<p>Each group examines and discusses the composting photo they are exploring. You may choose to have students record their observations in their Science Journals.</p>	

				  
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5E Model Stage	Duration	Teacher and Student Actions		Notes
Explain	10 minutes	What Teacher Does	<p>Read “Compost Stew: An A to Z Recipe for the Earth.”</p> <p>Describe the composting process as making a habitat for small organisms such as bacteria or worms. Discuss how in this habitat composting occurs. Food scraps and paper decompose or break down and turn into soil. Ask students what materials can be used to create the composting habitat.</p> <p>If children show interest in the role of worms, talk about how red worms eat food scraps, which become compost as they pass through the worm’s body. Compost exits the worm through its’ tail end.</p>	<p>“Compost Stew” is by Mary McKenna Siddals</p> <p>Optionally, teacher could show one of the following youtube videos:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=dRXNo7Ieky8 (Informative but high-level for younger students. - https://www.youtube.com/watch?v=8PEIbErayZg (UK cartoon)

			<p>Explain essential green and brown ingredients:</p> <ol style="list-style-type: none"> 1. Nitrogen Greens provide protein to make rich soil. Greens include fruit and vegetable bits, breads, coffee grounds and filters, and grass clippings 2. Carbon-Heavy Browns provide energy for worms. Browns include shredded newspaper and other paper, dry leaves, and food-soiled paper napkins. <p>Summarize the composting habitat: It needs food, water, and air. Greens and Browns are mixed. Water is added. The habitat also needs the air around it and after a time period of time, bacteria or worms will help the materials break down into soil.</p>	
		What Students Do	After listening to the book read by teacher, students will use the information to talk about a composting habitat. Record habitat components on chart paper.	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Elaborate	10 minutes	What Teacher Does	<p>Use “Sing Along Compost songs” website to teach students songs about composting: Design and incorporate accompanying movements:</p> <ul style="list-style-type: none"> - Kindergarten Had Some Worms - Worm Bin Boogie 	http://resourcefulschools.org/sing-along-composting-songs/
		What Students Do	Students learn lyrics and sing composting song(s).	
5E Model Stage	Duration	Teacher and Student Actions		Notes
Evaluate	10 minutes	What Teacher Does	Have each child draw a picture of an item from their breakfast or lunch that could be composted. Students should label their picture or dictate ideas to teacher.	
		What Students Do	Students draw a composting item and write (or dictate) corresponding label(s).	

