

Tricycle Press (2010) Grade Level: K-4



Books In Bloom: Compost Stew: An A-Z Recipe for the Earth Copyright © 2014, National Gardening Association. All rights reserved

# **Compost Stew: An A-Z Recipe for the Earth**



## What We Love About This Book

- Rich collage illustrations
- Celebration of rotting organic material



Mary McKenna Siddals and Ashley Wolff have created an ingenious alphabet book with a rhyming recipe for making compost. A group of children create "Compost Stew" by adding ingredients into the mix; apple cores (for the letter A) are followed by bruised bananas (B), and later by laundry lint (L) and teabags (T). This alphabet book passes the "Q" test with flying colors — not only is quarry dust an authentic "Q" term, but it also reflects the latest agricultural thinking about soil mineralization. Clever rhymes such as "Zinnia heads from flower beds" and "just add it to the pot and let it rot" work well linguistically and convey useful information. Even the helpful "Chef's Note" at the end uses rhyme to expand on composting. The cheery gardeners build their compost through the year, as reflected by the seasonal ingredients of autumn leaves, jack-o'-lanterns, Christmas tree needles, and old mulch, a harbinger of spring. Readers will enjoy following the participatory antics of the goose and Dalmatian on every page.

The vibrant colors and textures of the collage illustrations are captivating and entertaining. Scraps of every type of paper imaginable — textured paper, flecked paper, marbleized paper, newsprint — create an appealing three-dimensional effect. Wolff dresses the children in clothing made of photo images, newspaper, loud colors, and mixed textures that would make a hip new line of apparel. Even the dog wears a collar that is a subtle nod to the recycling theme of the book.

# Explore the Biology

Many of us realize that in nature, nutrients cycle through organisms. This book uses alphabet and rhyme to showcase how common organic material can be composted. Composting is the practice of collecting and managing the decomposition of organic material — that is, matter derived from living things. The final product, compost, is rich in essential plant nutrients and is often added to gardens. Proceeding from A to Z, this book catalogs many of the things that can be composted, such as eggshells and grass clippings, as well as some that are less obvious, such as "hair snippings" and "seaweed strands."

An obvious question that is often overlooked is: why do things rot? The simple answer is that organic material is a food source for many organisms, namely fungi, bacteria, nematodes (worms), and insects. Without the help of these small workhorses, organic material (including dead organisms) would just accumulate. Composting is all the rage today, and for good reason. When land is farmed or when plant debris is cleared from a yard, nutrients within that plant material leave with the crops and with the yard clippings. Over time, if these nutrients are not replaced, the soil will become deficient in key elements such as iron, nitrogen, and phosphorus — as well as many others — and plants will fail to grow well. Traditionally, fertilizers have been used to replace these lost nutrients. However, fertilizers can be energy intensive to produce, and few contain all the nutrients required for plant health. Making sure to replace all the nutrients is important, because if a plant is growing in soil that is deficient in one nutrient, it will not thrive even if all the others are present. The same is true for humans; consider an individual who is deprived of a single vitamin in an otherwise well-balanced diet. The brilliance of composting, and perhaps the most important concept in this book, is that decomposed plants are a near-perfect fertilizer because they contain all the elements necessary for sustaining other plants. This is why gardeners often refer to compost as "garden gold." (Keep in mind, however, that just as with vitamins for humans, a little compost may be good for a plant, but a lot is not necessarily better.)

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# 💆 Digging Deeper

### **Talking Points**

1. Which items in the "compost stew" in the book surprised you? Invite your readers to list the ingredients the children added to the compost. Which are plants? Which aren't?

### 2. What would you add to your own compost stew?

After reading the guidelines for making your own compost stew in the "Chef's Note" at the back of the book, discuss with your readers what they might add to their own compost stew from materials in their lives. Remember, if it is not originally from a living organism, you should not put it in your compost.

### 3. Why doesn't canned food rot?

Ask your readers why canned foods such as tomatoes, beets, beans, and peaches do not rot inside a can even though they would rot in a compost pile. Canned food has been sterilized; as a result, it is missing the requisite bacteria and fungi for breaking down organic matter. Once you open a can, no matter how carefully, bacteria and fungi have access to the contents and the food inside will begin decomposing.

### **Learning Experiences**

#### 1. Observe what's happening in that compost bin.

Ask your readers what happens to the ingredients in compost stew. If available, add materials to an existing compost bin and track your observations. Alternatively, fill a plastic bag with some "once living" materials (e.g., cut-up fruit, grass clippings, moist bread) to make mini-decomposition chambers. Leave in the classroom or bury outside. Readers may want to experiment by providing airholes, blowing in air, or adding soil to some containers. Have them observe the containers regularly, or dig them up after a month and examine the contents.

#### 2. Make your own "compost stew" out of collage material.

Using Ashley Wolff's style for inspiration, encourage your readers to collect scraps of varied types of paper. Include newspaper, wallpaper, paint chips, cardboard, discarded photographs, and tissue paper, among others. Provide an image of a large compost bin or "stew pot" and invite your readers to tear or cut the paper into a representation of what they would put in a compost pile.

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#### 3. Make compost using worm bins.

Worm bins use the voracious appetite of red wigglers to decompose organic matter, whereas a compost bin relies primarily on fungi and bacteria. To start your own worm "farm," you'll need an aerated container such as a plastic bin with numerous small holes punched in the top, bedding (such as shredded newspaper), a small amount of soil, and red wigglers. Red wigglers are not the familiar earthworm, but rather a species that is particularly good at decomposing food waste — they can eat their own weight in food scraps every day — and they are easily purchased online.

Fill your worm bin three-fourths full with fluffed-up, moist — but not wet — bedding material such as shredded newspaper (1-inch strips), dead leaves, or coconut fiber (coir). This is where you'll bury food waste. Add a handful of soil to provide the grit that worms need to digest food. Keep it vegetarian, provid-ing vegetable and fruit scraps, pulverized eggshells, coffee grounds, and tea bags. Avoid meats, dairy products, and oily foods, which can create foul odors or attract flies or rodents. Worm bins can be kept indoors or outdoors (out of the sun and heavy rains) as long as the temperature remains between 40 and 80 degrees Fahrenheit (4.4 and 26.6 Celsius).

After 2 to 3 months, most of the food and bedding will have been transformed into dark, rich compost made of worm castings, aka worm poop. If you want to keep your bin going, you will need to remove the compost and add more food. One method is to move the finished compost to one side of the bin, then place fresh bedding and food waste in the other side and let the worms migrate naturally, over time, to the fresh food and bedding. You can also dump the entire bin contents onto a plastic sheet and invite your readers to separate the worms manually. You may even see lemon-shaped cocoons, which contain between two and 20 baby worms. As your worms continue to reproduce, you will have enough to fill another bin, or to transfer to another garden.

## **Related Books**

#### Water, Weed, and Wait

Written by Edith Hope Fine and Angela Demos Halpin Illustrated by Colleen Madden

Tricycle Press (2010) Grade Level: K-2

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In the Garden with Dr. Carver (p.29) Written by Susan Grigsby Illustrated by Nicole Tadgell

Published by Albert Whitman & Co. (2010) Grade Level: 2-5

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#### Diary of a Worm

Written by Doreen Cronin Illustrated by Harry Bliss

Published by HarperCollins (2003) Grade Level: Pre-K-3





## **Decomposition Chambers**

Objective	To observe and understand the process of decomposition.
Time	3 to 4 weeks
Materials	<ul> <li>Quart-sized plastic bags</li> <li>Organic matter such as food scraps (no meat or dairy) and leaves</li> <li>Inorganic matter such as marbles or Styrofoam cups</li> <li>Soil</li> <li>Bulletin board</li> <li>Decomposition Observation Worksheet</li> </ul>
Laying the Groundwork	Ask readers: • What happens to leaves in the fall? If leaves and other natural materials are constantly dying and falling to the ground, why are we not buried under them? (Leaves break down or decompose.)
	• What happens when people throw trash like Styrofoam or plastic cups on the ground? Do they disappear on their own? (Plastic takes a very long time to decompose.)





#### Exploration 1.Collect an assortment of organic and inorganic materials. Possible items include fruit scraps, bread, leaves, paper, marbles, and Styrofoam cups.

#### 2. Separate the items into plastic bags.

Fill at least two bags with the same type of material. Identify the material placed inside each bag with a label.

#### 3. Add half a cup of moist soil to one bag of each type of material.

4. Hang your new mini-decomposition chambers on a bulletin board for observation.

#### 5. Using the Decomposition Observation Worksheet, ask readers to predict what will happen to the items in each bag. Younger readers can work as a group to develop a prediction. Older readers can work in teams or on their own.

6. At least once a week for 4 weeks, give readers time to examine the bags and make notes or draw pictures about their observations.

Do not open the bags, which may contain harmful bacteria or fungi.

# **7.At the end of 4 weeks, discuss findings as a group.** Ask:

- How did the materials in each of the bags change?
- Which materials changed the most?
- Did the addition of soil affect the changes? Why?

8. Generate a group list of what you learned about decomposition from this experiment.

Branching OutIf time allows, test the effect of additional variables.For example, place bags in the dark or the light, store<br/>them at warm or cold temperatures, or change the<br/>moisture inside the bags.

**Decomposition Observation Worksheet** 

			What do you think will       What do you observe this week?								
Sample #	Contents		happen to the contents?	Date:	Date:	Date:	Date:				
		SOIL									
		NO SOIL									
		SOIL									
		NO SOIL									
		SOIL									
		NO SOIL									

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# **Common Core State Standards**

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### English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects

The literature spotlighted in this book could be used to achieve any of the Common Core State Standards for English Language Arts and Literacy. Here is a list of possible connections using the lessons and activities suggested in Books in Bloom:

	Suggested Grade Level						Literacy Standards						
Featured Book	Real A	K	1	2	3	4	5	<b>Literature</b> CCSS.ELA-Literacy.RL.	Information Text CCSS.ELA-Literacy.RI.	Foundation Skills CCSS.ELA-Literacy.RF.	Writing Standards CCSS.ELA-Literacy.W.	Speaking and Listening Standards CCSS.ELA-Literacy.SL.	Language Standards CCSS.ELA-Literacy.L.
A Fruit is a Suitcase for Seeds								K-2.1 K-2.2 K-2.7	K-1.1 1.6 K-2.7			K-2.2 K-2.3	K-1.5
Blueberries for Sal								K-1.1 K-1.3 K-1.9				K-1.2 K.6	
Compost Stew: An A-Z Recipe for the Earth								K-4.1 K-3.7	K-4.1 K-4.2 K-1.3 4.5			K-4.2 K-4.4 K-2.5	
Grandpa Green								K-4.1 K-4.2 K-4.3 K-4.7			K-4.3	K-4.2 K-4.3 K-1.5	
In the Garden with Dr. Carver								2-5.1 2-5.3	2-5.1 2-5.2 2-5.3			2-5.1 2-5.2 2-5.3 2-5.4	
Jack's Garden								K-3.1 K-3.3 2.4 K-3.7	K-3.1 K-3.2 K-3.3 1-2.6 K-3.7	1-3.4	K-3.2	K-3-1 K-3.2 K-3.4	K-3.5
Miss Rumphius						*********	**************************************	K-2.1 K-2.3 K-2.7			1-2.7	K-2.1 K-2.2	
Monarch and Milkweed								K-3.1 K-3.7	K-3.1 K-3.2 K-3.3 K-3.7			K-3-1 K-3.2 K-1.5	

# **Next Generation Science Standards**

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The literature spotlighted in this book could be used to help achieve many performance expectations from the Next Generation Science Standards. Here is a list of the performance expectations that could be connected to the discussions, activities and lessons suggested in Books in Bloom:

Featured Book	Pre	K				4	5
A Fruit is a Suitcase for Seeds		K-LS1-1 K-FSS3-1	1-LS1-2	2-LS2-2 2-I S4-1			
Blueberries for Sal		K-LS1-1 K-ESS3-1 K-ESS3-2					
Compost Stew: An A-Z Recipe for the Earth				2-PS1-1 2-PS1-2	3-LS1-1		
Grandpa Green						4-LS1-1	
In the Garden with Dr. Carver				2-PS1-1 2-PS1-2	3-LS1-1 3-LS3-2	4-ESS3-1	5-PS1-1 5-PS1-3 5-LS2-1
Jack's Garden		K-LS1-1 K-ES3-1	1-LS1-2	2-LS2-1 2-LS2-2 2-LS4-1	3-LS1-1		
Miss Rumphius		K-LS1-1 K-ESSE2-1 K-ESS3-1	1-LS1-2	2-LS2-2 2-LS4-1			
Monarch and Milkweed		K-LS1-1 K-ESS3-1		2-LS4-1	3-LS1-1 3-LS4-3 3-ESS2-2		
Pick, Pull, Snap Where Once a Flower Bloomed			1-LS1-2 1-ETS-1	2-LS2-2 2-LS4-1 2-ETS-1	3-LS1-1 3-LS3-1 3-LS3-2	4-LS1-1	
Plant Secrets		K-LS1-1 K-ESS3-1	1-LS1-2 1-LSE-1	2-LS2-2 2-LS4-1			
Priscilla and the Hollyhocks					3-LS1-1 3-LS4-3	4-LS1-1	
Pumpkin Circle: The Story of a Garden		K-LS1-1 L-ESS3-1	1-LS1-1 1-LS3-1	2-LS2-1	3-LS1-1 3-LS3-1 3-LS3-2	4-LS1-1	
Swirl by Swirl: Spirals in Nature		K-LS1-1 K-ETS-2	1-LS1-1 1-ETS-2	2-LS4-1 2-ETS-2			
Tell Me, Tree: All About Trees for Kids			1-LS3-1	2-PS1-1 2-LS2-1 2-LS4-1	3-LS1-1 3-LS3-2 3-ESS2-1	4-LS1-1	
The Gardener			1-LS3-1	2-LS2-1 2-LS4-1	3-LS3-2 3-LS4-3		
The Wind's Garden		K-LS1-1 K-ESS2-1	1-LS1-2	2-LS2-2 2-LS4-1			
Wanda's Roses		K-ESS3-1 K-ESS3-3	1-LS1-1	2-LS4-1			