

Compost Monitor Training!



Grades 2-6

Lesson Summary

Students learn and review how to be Compost Monitors for their school's *Food to Flowers!* composting program.

Overview

In this lesson, students will:

- Recognize that a lot of what we throw away can be recycled and composted instead.
- Learn what can and cannot be recycled in San Francisco.
- Learn about the decomposition cycle and about compost.
- Review what we put in the green compost bin.
- Practice being compost monitors in their classrooms.

Time



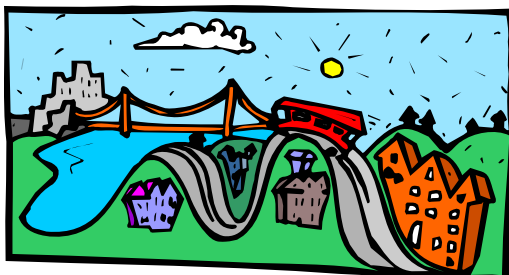
1 hour

Background

Every day, people in the City of San Francisco make four million pounds of garbage that gets sent to a landfill sixty miles away. We can keep much of this waste out of landfills by recycling and composting. Recycling paper, bottles, and cans helps conserve natural resources and wildlife habitat. Composting helps build precious topsoil and reduce the use of chemical fertilizers by providing nutrient rich compost that is used on local farms and orchards.

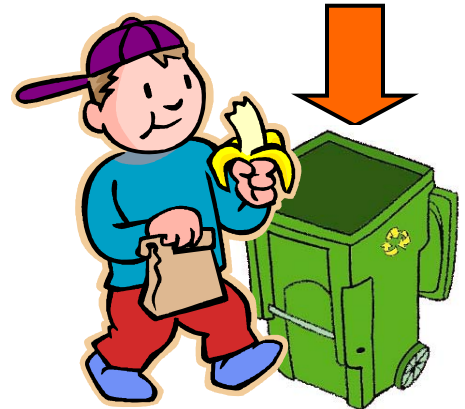
When we recycle and compost, little is leftover that needs to be thrown into the trash and sent to the landfill. The City of San Francisco and Recology, the local waste hauler, have teamed together to create an innovative garbage collection program called *The Fantastic 3 (FAN 3)* which uses three different colored bins: green for compostables, blue for recyclables and black for trash. By using all three bins, San Francisco residents can keep thousands of tons of waste out of the landfill while helping save energy and natural resources.

The following presentation will help you to prepare your students to be compost monitors in your school's lunchroom.



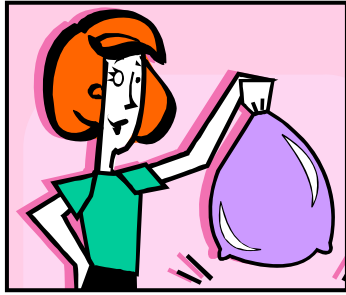
Vocabulary

- Recycling
- Decomposition
- Organisms
- Enzymes
- Compost



Materials

- *The Dirt on Composting* fact sheet and comprehension questions
- Bag of "garbage" containing:
 - ❑ **recyclables** – old homework written on both sides, newspaper, cardboard, plastic bottle and jug, soup can, aluminum can, glass jar, plastic yogurt tub and lid;
 - ❑ **trash** – aseptic juice boxes, Styrofoam cup, plastic wrapping, straw, plastic utensil, chip bag;
 - ❑ **compostables** – apple core, old bread, dirty paper napkin, dirty cardboard lunch tray or paper food container, milk carton
- Classroom recycling bin
- *FBI* visual
- *Nature Recycles* visual
- Compost monitor apron
- Game cards (attached)
- Game items: spork with wrap, lunch tray, granola bar in plastic wrapper
- Bin graphics (attached)



Preparation

- ❑ Read *The Dirt on Composting* fact sheet.
- ❑ Gather items from the materials list.
- ❑ Prepare bag of “garbage” to be used in Part 1 of this lesson by doing the following:
 - Make sure all recyclables, trash, and compostables are clean enough to touch with bare hands
 - Pick a plastic bag that is **not see-through** and small enough to just hold all the items so that it is easy to reach all of them.
 - Organize items so that you can get to them easily during the game.
- ❑ Have your classroom recycling or blue bin visible.
- ❑ Organize all visual materials so that they are readily available during the presentation including cutting out the attached game cards and bin graphics. If not colored yet, color one bin blue, one green and one black to mimic San Francisco’s FAN3.
- ❑ Gather sample items for compost monitor practice including as many items that are used at your school during lunch. Some examples are a paper lunch tray, milk carton, spork w/plastic wrap, plastic food container, granola bar in plastic wrapper or chips in a plastic bag, juice box, aluminum can, foam plate, plastic tub and lid, and a plastic bottle. **(It is easy to reuse some items from the bag of “garbage” in step #3.)**

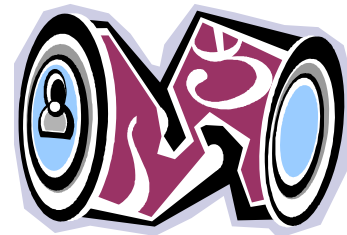
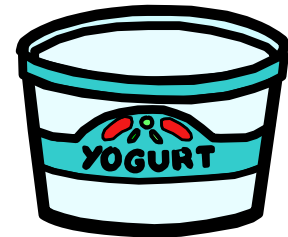
Pre-Activity Questions

- ❑ Tell students what you love about nature (*name something you love about nature*)
- ❑ Ask students:
 - What do you love about nature? (*Call on a few students raising their hands*)
 - What are some ways we can protect nature? (*Driving less, turning lights off, saving forests by using less paper, recycling, composting*)
- ❑ Today we’re going to refresh our memories about how we can protect nature and make less garbage here at school by being Compost Monitors and doing two simple things: recycling and composting!

Part One: Recycling

- ❑ One way we can all help protect nature is by recycling.
- ❑ Ask students:
 - Do you know what recycling means? (*Turning something old into something new; when we recycle old paper, it becomes new paper*)

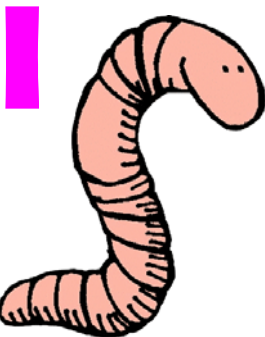
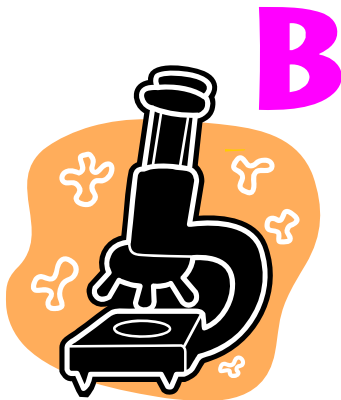
- Where do we recycle here at school? (*Have class point to where they recycle in the classroom and remind them that the BLUE bins are for recycling.*)
- Explain to students that you have in your hand what looks like a bag of garbage. (*Hold up the bag of garbage you prepared.*)
- Ask students if they think that everything in the bag is trash or if some of it can be recycled? (*Tell students a lot of the items in the bag can actually be recycled*)
- Instruct students that they are going to play a game to review what can and cannot be recycled. If you hold up something that **can** be recycled, instruct them to wave their hand in the air and yell out, “Recycle it!” If you hold up something that **can’t** be recycled, instruct them to point their thumbs down in the air and yell out, “Trash it!”
 - *Hold up different items from the plastic bag of “garbage”*
 - **Remember to explain that San Francisco recycles all paper like newspaper, school paper, cereal boxes and cardboard; all glass bottles and jars; metal cans and foil; and all hard plastic like water and juice bottles, clean yogurt containers, plastic clamshells, plastic cups and even things like broken plastic toys!**
 - *Hold up a yogurt tub and plastic water bottle as example of what can be recycled.*
 - Some examples of things that can’t be recycled are Styrofoam, potato chip bags, juice boxes (cartons lined with foil and plastic), plastic bags, plastic wrapping and plastic food trays and utensils that are dirty with food. (We don’t want to splatter food into the blue bin by recycling dirty food trays.)
- Great! You all remember what can and cannot be recycled.
 - We can recycle items in our blue bin here in the classroom and in the blue bin in the lunchroom.
 - As compost monitors, it’s our job to help the other students learn what to put in the blue recycling bin. It’s clear to me that you all are experts on what can be recycled. Let’s move on to composting!



Part Two: Decomposition

- We know we can recycle paper, bottles, cans, and plastic tubs and lids. But what about leftover food like apple cores and banana peels?
- Ask students:
 - What can we do with these things to keep them out of the garbage? (*Compost*)





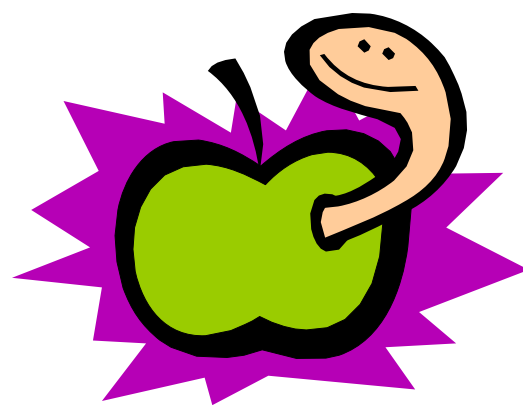
- ❑ That's right! The second way we can protect nature and make less garbage is by composting.
- ❑ Composting is when living things in nature help us **decompose** or break down, materials like food scraps and fallen leaves. It's nature's way of recycling.

- **If you teach 2nd grade:** Things like worms and other bugs are what help turn our leftovers into compost. ***(Now proceed to Part #3)***
- **If you teach 3rd grade and up:** There are three types of decomposers or living things in nature that break stuff down into compost and they are called the FBI.
 - *Show FBI visual*
 - **F** stands for fungus. Fungus is a group of **organisms** or living things that include mold and mushrooms. Like our bodies, mushrooms produce powerful chemicals that break down food. These chemicals are called **enzymes**. As mushrooms release enzymes, they are able to dissolve organic material around them like old food or fallen leaves.
 - **B** is for bacteria. Bacteria are so small that we cannot see them without the help of a microscope. While some bacteria make us sick, other bacteria are used in medicine to keep us healthy. Bacteria keep our eyelashes clean and give yogurt its sour flavor. Bacteria also help make compost. For instance, one type of bacteria warms the compost pile so that other bacteria can survive. As bacteria break down organic matter, like dirty paper or mowed grass, nutrients are released into the compost.
 - **I** is for invertebrates. Invertebrates are animals that do not have a backbone. They wiggle, crawl, and slide their way through the compost pile. Invertebrates break down organic matter by chewing and grinding. Slugs, snails, worms, beetles, mites, ants, and sow bugs are some important invertebrates in the compost pile.

Part Three: Compost

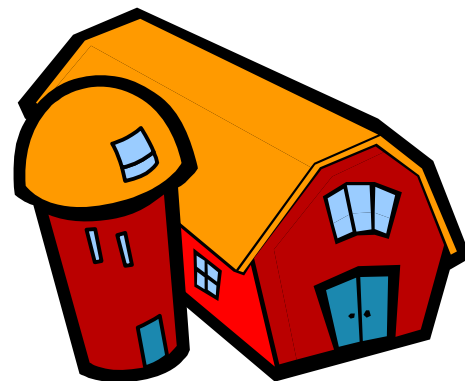
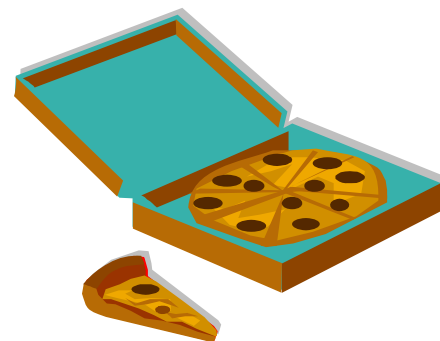
- ❑ **If you teach 2nd grade:** Decomposers like worms are constantly breaking things down in nature.
- ❑ **If you teach 3rd grade and up:** Decomposers like fungus, bacteria, and invertebrates are constantly breaking things down in nature.
- ❑ We can help decomposers break things down by making compost bins or piles for decomposers to live in. ***(Refer to Nature Recycles Visual)*** For example:

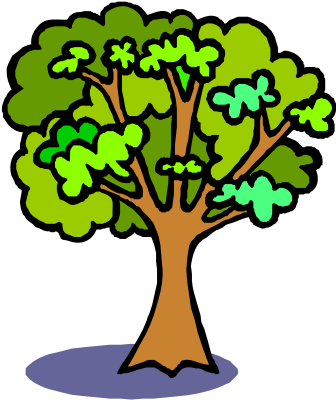
- After we pull carrots out of the ground in a garden, wash them and eat them; we can put the leftover carrot tops into a compost bin.
 - We can put all of our leftover fruits and vegetables into a compost bin. Things like banana peels, apple cores, and celery tops!
 - The decomposers living in the compost bin or pile will break down the food.
 - The final result is compost. Compost is dark brown dirt that's the color of chocolate. It is full of nutrients that grow strong and healthy plants.
 - The most important thing to remember about compost is that it naturally helps grow very healthy fruit and vegetables that are full of vitamins. When decomposers break down things like carrot tops, apple cores and banana peels, nutrients like nitrogen get released and end up in compost. It is the nitrogen that helps add vitamins to our food grown with compost.
- ❑ So, when we compost our food scraps, they get turned into compost that grows more food! It's a really neat cycle in nature!



Part Four: Food to Flowers!

- ❑ Who in this class remembers *Phoebe the Phoenix* and the composting program that we have here at school? Great! Starting this week, our class is going to be compost monitors in the lunchroom. So not only will we be composting our own leftover lunches, but we will be helping other students to compost their leftovers too!
- ❑ In San Francisco, we can compost anything that comes from a plant or an animal!
- ❑ Let's review.
- There are three types of things that can go in the green bin at school. Those things are:
 - Leftover food like pizza crusts, chicken bones, and banana peels.
 - Dirty paper like used napkins, empty milk cartons, dirty pizza boxes, and your cardboard lunch trays if they're dirty with food like ketchup or mayo. If your cardboard lunch trays are clean, they should be recycled like usual.
 - And...yard or garden waste from your school garden! Stuff like weeds, old flowers, raked up leaves and cut branches.
 - Whatever we put in the green bin is taken away and turned into compost. Then the compost is used on local Bay Area farms and gardens!
- ❑ Remember: Only leftover food and dirty paper can go into the green cart during lunchtime, so no plastic. Please repeat after me, "Only food and dirty paper, no plastic!"





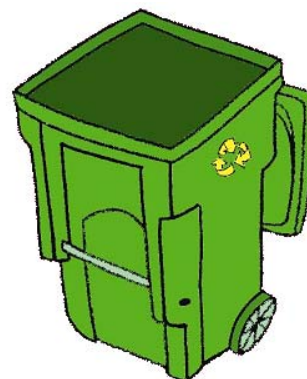
- Can you put an apple core, a leftover burrito, or a sandwich crust into the green bin? *Yes!*
 - Those items came from either a plant or an animal, so they can be composted in the green bin.
- Can you put a foil candy wrapper, a juice box, soft plastic wrap, or a plastic straw into the green bin? *No!*
 - Those are NOT compostable, because they did NOT come from a plant or an animal! A juice box is made up of plastic, metal, and paper all mixed up so you can't compost it.
- Now, can you put paper napkins, a dirty cardboard tray, or a pizza box into the green bin? *Yes!*
 - Those things should be composted. That's because it's made out of paper, and paper products come from trees, which are plants.

Part Five: Compost Monitors

- Being a compost monitor is an important job! We are going to take turns monitoring the green bin at lunch. Each of you will have a chance to stand by the bin, wearing this fabulous orange apron (*hold up orange compost monitor apron*).
 - Part of your job will also be to teach other students why something can or cannot go in the green compost bin or blue recycling bin.
 - Remember that if someone makes a mistake and puts a plastic or metal item in the green bin, I DON'T want you to stick your hands into the bin to get it out. It's okay to make a mistake, sometimes we all need a little time to learn new things.
 - Also remember that like homework, I don't want you to do the job for the other students.
 - Our job is to teach students where everything goes, not compost for them!
 - Let's say that a student comes up to the bins at lunch while you are monitoring and they need help sorting. Please point at their tray and say the name of the exact item and tell them where it goes. For example, "Your sandwich crust goes into the green bin!" or "Your juice can goes into the blue bin! Or "The soft plastic wrap goes into the trash!" This will help your classmates remember where everything goes next time.
 - You might need to help your classmates remember exactly what goes into the green bin. Remind them by stating in a firm but polite manner, "Please, only food and dirty paper, no plastic!"

Part Six: Game

- ❑ Now we are going to play a game to see how much you remember about what can be recycled and composted. This is compost monitor practice!
 - Separate class into groups that they are familiar with.
 - Pass out several of the game cards to each team to share along with one or two of the items listed as “game items” in the materials list.
 - Ask each team to work together as a group to figure out whether the items pictured on their game cards and the actual items in front of them can be composted (can a worm eat it?) or recycled or if it has to go in the garbage.
 - Place the colored graphics of the Fan3 bins up on the ledge of the chalkboard or desk.
 - Explain that you will call on a student representative from each team (one at a time) to bring their items up and place them in front of the bin that they think the item should go in. Can the item be recycled, composted (can a worm eat it?), or does it go in the garbage?
 - Give your students a few minutes to figure out how to sort their items using the Fan3 bins and come to a decision about where each item should go.
 - Quickly review after each student and discuss his or her answer. If not correct, go over what they should have done.
 - Review the more challenging items like juice box, granola bar inside wrapper, and milk carton.



Part Seven: Conclusion

- ❑ You all did a great job today! I want to finish by saying that you are all VERY good Compost Monitors and I look forward to seeing your good work in the lunchroom!