

Glendale Recycles – Lesson Plan



Aspects of each module can be lengthened, shortened, or removed to accommodate students' learning needs and teachers' scheduling.

The Four Rs! (Reduce, Reuse, Recycle, Rot/Compost)

Grade Level: 2-4
Total Time: Approx. 40-60 minutes



Learning Objectives:

Students will be able to:

- Name and briefly explain the Four Rs (Reduce, Reuse, Recycle, Rot/Compost).
- Identify what can and cannot be recycled and composted.

Lesson Context:

In today's environmental and sustainability discourse, the three R's (reduce, reuse, recycle) are well known as ways in which we can help reduce waste while saving materials and energy that would otherwise go into the unnecessary manufacturing of products from scratch. More recently, the addition of a fourth R (rot/compost) includes how we can reuse and recycle food and organic waste.

The Four R's are outlined as follows:

Reduce the amount of waste you create

This means to lessen or refuse the consumption of goods that contain excessive plastic, packaging, and other materials that may not be recyclable. The easiest way to do this is to simply reduce the amount of material you consume and instead opt for an alternative. This is especially relevant today, as many cities are deciding to reduce the use of single use plastics by implementing bans (this has mainly been fueled by concerns about plastics contamination in the oceans). Reducing typically goes hand in hand with reusing.

Reuse items or use them differently

Reuse means to use items more than once or as many times as possible, thereby reducing your consumption and environmental impact. Some items have a limited reuse period, such as lightly used sandwich bags or plastic shopping bags that you decide to use for trash later on, while others have a much longer reuse period. Reusable items with a longer life include durable non-toxic straws, utensils, to-go containers/tupperware, bottles, bags, and other everyday items. Choose glass, paper, stainless steel, wood, ceramic and bamboo over plastic.

Recycle products after use

What you can't refuse, reduce or reuse should be recycled. Recyclable materials include bottles, cans, and other properly labeled packaging containing glass, metal, paper, or plastic. Pay attention to the entire life cycle of items you bring into your life, from source to manufacturing to distribution to disposal. Make sure that recyclable products are not contaminated with residue or food waste, are put into the appropriate bin, or taken to the right place (for example, many grocery stores take used shopping bags, which typically cannot be recycled in ordinary residential recycling bins).

Rot or Compost organic materials

So we know we can recycle materials like glass, paper, plastic, and metal, but what about organic material like food waste or yard waste? Under the correct conditions, organic materials can be recycled through the process of decomposition. By using a compost or worm bin for organic waste, we can recycle food scraps and make the nutrients contained within them available for use in the soil again. This is what makes compost such a good fertilizer! Fruits and vegetable scraps, tea bags, used coffee grounds, meat and bone scraps, egg shells, leaves, and grass are all compostable. Some consumer products like cups, utensils, and napkins, are also being made with compostable materials. Try to purchase these when possible.

We should always strive to first reduce and reuse items made with wasteful materials before recycling or disposing of them. In general, reducing the amount of packaging is best, reusing a package is second best, recycling/composting comes in third, and trashing/landfilling is a last resort.

Stage/Materials	Procedure	Time	Interaction
<p>Warm up: Engaging students on what they already know</p>	<p>Ask the class what the Four Rs are and what they've heard about them.</p> <p>For older students split them into groups and have the groups share what they talked about with the whole class.</p> <p>Write or illustrate responses on the board.</p>	5-10 minutes	Discussion/sharing
<p>Introductory Lesson and Discussion</p> <p>or in-class visit/general assembly (optional - see below for details)</p> <p>Materials: Computer Video Projector</p>	<ul style="list-style-type: none"> Introduce the concept of the Four Rs: Reduce the amount of waste you create Reuse items or use them differently Recycle products after use Rot or Compost organic materials For each of the Rs, come up with examples so that students can begin making parallels to their daily life. Show the following videos introducing the concepts of recycling and composting: How Recycling Works! https://www.youtube.com/watch?v=VIRVPum9cp4 1-Minute video - What you can and can't compost https://www.youtube.com/watch?v=YuH_R_Ljtw Explain the hierarchy of priorities: Reducing and reusing is best, followed by recycling/composting. Landfilling is a last resort. 	6-7 minutes (30-60 min. for visit)	Traditional lesson with video and discussion/sharing or in-class visit/assembly (with activities)

Stage/Materials	Procedure	Time	Interaction
Group Activity	<ul style="list-style-type: none"> Write a list of 10-20 common waste items on the board. Have the students think about whether the items listed can be reduced, reused, recycled or composted. If you like, split the students into groups and have them discuss. Ask the students (or groups) what they decided. If the students are partially incorrect, explain why, emphasizing the way in which many items can be reduced or reused before disposing. 	10-15 minutes	Discussion
<p>Computer Activity (optional): How do we implement the 4 Rs?</p> <p>Materials: Computer or Tablet (computer lab recommended)</p>	<p>Have students explore the Recycle City site to see how people reduce waste, use less energy, and save money by doing simple things at home, at work, and in their neighborhoods.</p> <p>Recycle City (EPA website) https://www3.epa.gov/recyclecity/</p>	20 min.	Computer activity/game
Wrap-up/review:	Now the students are more informed. Ask them for at least one way they can/will implement the 4 Rs in their everyday life.	5 min.	Discussion

How Long Does Trash Last?

Grade Level: 3-4
Total Time: Approx. 15-25 minutes



Learning Objectives:

- Students will be able to:
- Estimate how long some trash items might last in a landfill.
 - Learn about environmental consequences of not recycling.

Lesson Context:

We have options about what to do with products once we are done using them. Disposing of it as garbage is the most harmful to the environment. In today's society we often throw things away without thinking about the long term consequences of disposal. When we throw something in the trash it is usually sent to a landfill. Most modern landfills compact waste, reorder it, cover it up, and landscape the site once it reaches capacity. Chemicals from the waste leach into the soil and waterways and can have harmful long term effects on humans and other organisms.

It is important to note that almost everything that gets placed in the landfill will sit there for a very long time, with some things having the potential to remain infinitely. The following chart shows some of the most common items sent to the landfill and how long it takes each of them to decompose¹. Keep in mind that some items may take shorter or longer depending on item composition and environmental conditions like temperature and humidity. So with this information in mind, it is always a good practice to reconsider before throwing items away, and see if we can carry out one of the Four Rs instead!



Item	Rate of Decomposition
Food	1-6 weeks
Paper	2-6 weeks
Clothing	25-100 years
Tin (Steel) can	50 years
Aluminum can	200-250 years
Plastic bag	Never
Plastic jug	Never
Styrofoam	Never
Glass bottle	Never

¹ Source: <http://recycling.about.com/od/Resources/fl/How-Long-Does-It-Take-Garbage-to-Decompose.htm>

Stage/Materials	Procedure	Time	Interaction
<p>Warm up: Engaging students on what they already know</p> <p>Materials: Aluminum can (soda can) Banana Cigarette butt Cotton rag Glass bottle Leather boot Paper bag Plastic 6-pack rings Plastic jug Rubber sole of the leather boot (above) Styrofoam cup Tin can (soup or vegetable can) Wool sock</p> <p>(Write the above list of items on a chalkboard or chart.)</p>	<ul style="list-style-type: none"> • Display for students the materials you have collected (see Materials section above). Provide a chart on which you have written the names of those materials. • Draw students' attention to the items you have gathered. You might ask, What do all the items have in common? If your students are too young to figure out the answer to the question, you can share with them that each of the items will likely end up in a landfill one day. • Ask what will happen to these items when they end up in the landfill? How long do you think they will last there? Do they disappear, disintegrate, or degrade immediately? Or will they continue to take up space in the landfill? Let students freely discuss those questions. 	5-10 minutes	Discussion/sharing

Stage/Materials	Procedure	Time	Interaction
<p>Main Activity</p> <p>Materials: same as above</p>	<ul style="list-style-type: none"> • Draw students' attention to the list on the board or chart. Ask students to copy the list. Then ask them to: <ol style="list-style-type: none"> 1. think on their own about how long each of the items on the list might last when buried in a landfill. 2. recreate the list by writing each item in order according to how long they think it might last in a landfill. Students should start their lists with the item they think will degrade fastest and end with the one that will last the longest. • Arrange students into small groups (groups of 4 to 5 students will work best). Let students share their lists and discuss what they believe to be the correct sequence. Ask each group to come to a consensus about the correct order of the items. • Call on one group to share their answers first. Have them tell you the sequence they decided on. As they call out "sheet of paper — number 1," write a number 1 on the chart next to the words sheet of paper. Do the same for the other groups. • When that activity is completed, draw students' attention to the discrepancies on the chart. For example, Why did some people list the sheet of paper before the banana? At the conclusion of the discussion, reveal to students the best guess-timates of scientists, who say the following is the correct sequence: <ul style="list-style-type: none"> • banana • paper bag • cotton rag • wool sock • cigarette butt • leather boot • rubber sole of the boot • tin can (soup or vegetable can) • aluminum can (soda pop can) • plastic 6-pack rings • plastic jug • Styrofoam cup • glass bottle 	10-20 min.	Listing/sharing/discussion

Stage/Materials	Procedure	Time	Interaction
Main Activity (continued)	<ul style="list-style-type: none"> Point out to students that conditions could result in some items degrading more or less quickly than the list indicates. Turn the assignment back to students. Now that they know the correct order, ask them to brainstorm in their groups how long (how many weeks, months, or years) each item will last. Repeat the procedure above as groups discuss, then share their best guesses about how long items will last. Then share scientists' approximations listed below: <ul style="list-style-type: none"> banana — 3 to 4 weeks paper bag — 1 month cotton rag — 5 months wool sock — 1 year cigarette butt — 2 to 5 years leather boot — 40 to 50 years rubber sole (of the boot) — 50 to 80 years tin can (soup or vegetable can) — 80 to 100 years aluminum can (soda pop can) — 200 to 500 years plastic 6-pack rings — 450 years plastic jug — 1 million years Styrofoam cup — unknown? forever? glass bottle — unknown? forever? 		
Wrap-up/discussion	<p>Discuss the following questions:</p> <ul style="list-style-type: none"> What does the data tell you about landfills? Do items continue to degrade and make room for new garbage? Or will those landfills eventually fill up? Do the life spans of these items say anything to you about the importance of recycling? Why or why not? 	5-10 minutes	Discussion

Stage/Materials	Procedure	Time	Interaction
Extension Activity (optional)	<ul style="list-style-type: none"> Have students create posters to encourage recycling the items listed on the chart. Display those posters where students in the school will see them or in prominent public places, such as the library or a grocery store. <p>Materials: Poster paper Markers/pens/pencils</p>	15-20 min.	Extension/awareness raising



Composting/Environmental Lunch

Grade Level: 3-4
Total Time: Approx. 15-25 minutes



Learning Objectives:

Students will be able to:

- Understand the basic process of composting, its environmental significance, and some of the organisms involved.
- Determine what can be composted, reused, recycled, or landfilled.

Lesson Context:

So we know we can recycle materials like glass, paper, plastic, and metal, but what about organic material like food waste or yard waste? Under the correct conditions, organic materials can be recycled through the process of decomposition/rotting. Composting is an excellent way to recycle organic waste and reintroduce nutrients back into the soil. The two main kinds of composting that are used are conventional (aerobic) composting and worm composting (vermicomposting).

Conventional composting simply utilizes microbial activity from the decomposition of food scraps and green waste and can be practiced indoors or outdoors. Bins can exist in a range of sizes, and the compost within them should be turned occasionally. The compost should start forming on its own, but existing compost works as an activator, speeding up the process when mixed in. Worm composting uses worms to break down food scraps. The earthworm species used most frequently are red wigglers. Vermicomposting has gained popularity in both industrial and domestic settings because it treats organic wastes more quickly than conventional composting. Because the earthworms grind and uniformly mix minerals into simpler forms, it is easier for plants to absorb these nutrients from the soil. The worms' digestive systems create environments that allow certain species of microbes to thrive to help create a "living" soil environment for plants.

All forms of composting increase the total amount of available nitrogen and phosphorus, and vermicomposting has even been reported to increase the removal of heavy metals in soil. This is what makes compost such a good fertilizer! Fruits and vegetable scraps, tea bags, used coffee grounds, meat and bone scraps (not in worm compost), egg shells, leaves, and grass are all compostable. Some consumer products like cups, utensils, and napkins are also being made with compostable materials. Try to purchase these when possible.



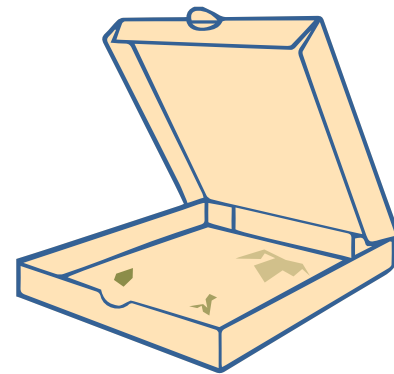
We have come to depend on the many convenience products that are available to us, and this can be especially noticeable in school lunch rooms. Most parents pack lunch items in single-use plastic bags, aluminum foil, or wax paper, or they purchase single-serving items that come in their own disposable package. While these products are extremely convenient, they come at an environmental cost. On average, a school-age child using a disposable lunch generates an estimated 67 pounds of waste per school year. That equates to 18,760 pounds of lunch waste for just one average-size elementary school. The following activity will help students learn about where their lunch waste ends up, and consider alternative ways their lunches could be packed or served at school.

Stage/Materials	Procedure	Time	Interaction
Warm up/review: Engaging students on what they may already know.	<ul style="list-style-type: none"> Ask the students what they know about composting, if anything at all. If this follows a more introductory lesson, ask what they can remember. 	5-10 min.	Discussion/sharing
Introductory Lesson and Discussion or in-class visit/general assembly (optional - see below for details)	<ul style="list-style-type: none"> Show the following videos. Be sure to provide enough context for general comprehension. <ul style="list-style-type: none"> Make the most of Compost! (general overview) https://www.youtube.com/watch?v=Q5s4n9r-JGU&list=PLaSegn4AdJAwSecBReHgCyM4ckX8p44NP Composting for Kids (explains the environmental benefits) https://www.youtube.com/watch?v=dRXNo7Ieky8 Leave time to summarize and/or answer questions that your students might have following the videos. Conclude by mentioning that composting is a great way to reduce waste and recycle nutrients, especially food waste, and segway into the environmental lunch activity. 	Approx 15 min. (30-60 min. for visit)	Traditional lesson with video and discussion/sharing or in-class visit/assembly (with activities)



Stage/Materials	Procedure	Time	Interaction
Hands on Activity: Environmental Lunch Materials: Lunch discards from cafeteria or home lunches (You may want to gather some extra materials from the cafeteria, just in case). Environmental Lunch Log Sheets (below) Four bags or buckets labeled: Compost, Recycle, Reuse, and Landfill Chart paper for making a graph	<ul style="list-style-type: none"> Much of the material we throw away can be reused, composted, or recycled. What people buy and how it is packaged can have a big impact on the garbage problem, as well as other environmental problems. Looking through their lunches and finding ways to reduce the amount of garbage empowers students to find their own ways of helping the earth. Students will also have the opportunity to learn what natural resources were consumed to make this waste. To begin, make enough copies of the log sheet for the students to use (you can choose to do this activity 1-5 days). Set up buckets with signs which read Reuse, Recycle, Compost, and Landfill. Put a tarp under buckets to keep classroom neat. Before lunch, ask your students to bring everything left over from their lunch back into the classroom. Hand out used bags if needed. Students should include all uneaten food and packaging materials. Nothing should be thrown away or recycled until the log is filled out. For the next few days, when students are finished eating, they bring their lunches back to the classroom to fill out their log sheets. They must include what type of material it is: reusable, recyclable, compostable, or material that must be sent to the landfill. Students then put materials in the appropriate bucket. Make sure to have a lid for the compost bucket and mix in small amounts of dry shredded paper or sawdust from untreated wood to avoid smells and suppress flies. Have the students fill in the totals on the log sheet each day. Graph class totals each day for Recycled, Reused, Composted, and Landfilled materials. Repeat for each day you resume the activity. In small groups, students can brainstorm ideas for reducing the amount of lunch trash they create. 	15-20 min.	Hands on Activity/ Game

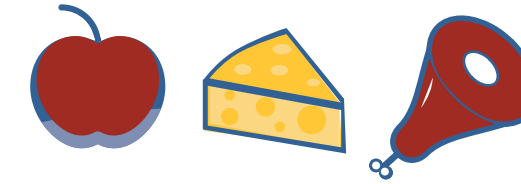
Stage/Materials	Procedure	Time	Interaction
Hands on Activity: Environmental Lunch (continued)	<ul style="list-style-type: none"> Optional - Instead of tracking for three to five days, have students multiply the results of just one day's totals by five to represent the amount of material generated in one week. 		
Wrap up/review	<ul style="list-style-type: none"> Have students share the results of their brainstorm (i.e. their ideas for reducing the amount of lunch trash they create). 	5-10 minutes	Discussion
Additional Options	<ul style="list-style-type: none"> Bring in a scale and have students weigh each category of discarded material. Have students examine their garbage with regard to natural resources. For example, write the following headings on a piece of butcher paper: Rock, Mineral, Oil, Plant, and Animal. Make a pie chart representing the percentages over a period of time. Have students organize a classwide or school-wide zero waste lunch day. The goal is to have no materials from lunch go to the landfill. 	Varies	Add-on



Environmental Lunch Log Worksheet



Name:



Date:

Describe Item	Reuse	Recycle	Compost	Landfill	Could Replace with:

Building a Mini-Composter

Grade Level:

2-4

Total Time:

Approx. 30-40 minutes



Learning Objectives:

Students will be able to:

- Recognize the ingredients necessary to successfully make compost
- Conclude that composting is a way to recycle plant and animal material

Lesson Context:

All forms of composting increase the total amount of available nitrogen and phosphorus, and vermicomposting has even been reported to increase the removal of heavy metals in soil. This is what makes compost such a good fertilizer! Fruits and vegetable scraps, tea bags, used coffee grounds, meat and bone scraps (not in worm compost), egg shells, leaves, and grass are all compostable. Some consumer products like cups, utensils, and napkins are also being made with compostable materials.

It's time to put your knowledge of composting to practice! At this point, you already know the basics of composting, but before you get started, it's important to know the three main components one should include in their compost mixture:

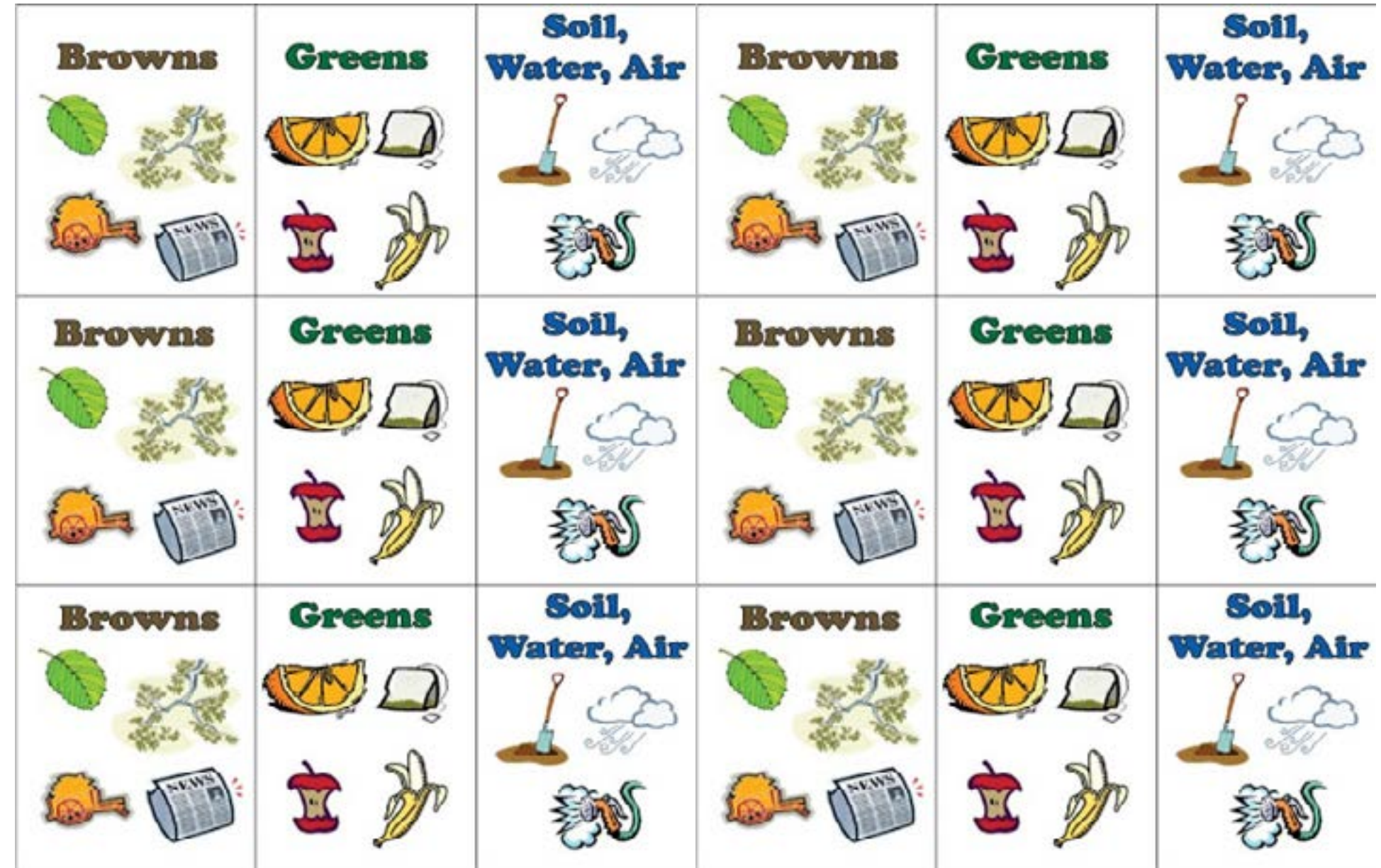
- a. Greens: Nitrogen-rich materials such as grass clippings and food scraps - items such as peelings, bread, rinds, meat/bones (not in worm compost)
- b. Browns: Carbon-rich materials such as dried leaves, straw, and newspaper
- c. Soil, Air, and Water: Compost piles often need "starter" soil rich in microorganisms, frequent turning of the pile to allow air in, and watering to encourage decomposition



Stage/Materials	Procedure	Time	Interaction
<p>Warm up/review: Compost Card Game</p> <p>Materials: Compost cards (below), 1 of each type for each student</p>	<ul style="list-style-type: none"> Print out enough copies of the compost cards below so that each student has one of each card (Browns, Greens, and Soil, Water, and Air). Cards should be printed on colored or thick paper so that students cannot see through the back of the card. Discuss with students how materials are recycled in nature through a variety of means: decomposers, detritivores, and composting. Decomposers, such as mushrooms, get their nourishment from leaf litter or decaying matter. Detritivores are animals that eat decaying organic matter (leaves, bark, trees, etc.) such as earthworms or beetles. Remind students of the three basic things that are necessary to make compost: greens, browns, and soil (air and water). Arrange students in groups of three and give each student one of each card: Browns, Greens, and Soil, Water, & Air. Remind the students that this game will be played similarly to “Rock, Paper, Scissors.” The object of the game is for the group of three students to make compost with their cards. In order to make compost, each player will have to show a different card. For example, two “Greens” cards and a “Soil, Water, Air” card will not make compost Most groups like to count “One, two, three, go!” and then all players show a card without looking at which card they are choosing. When a group has one of each card played, they can say “Compost!” 	10-15 min.	Game

Stage/Materials	Procedure	Time	Interaction
Video	<p>Making a Homemade Composter! https://www.youtube.com/watch?v=kA3q07paNbE</p> <p>(This video will be a preliminary demonstration. Can be shared with parents too)</p>	3 min.	Video
<p>In-class Demonstration</p> <p>Materials: Two emptied and cleaned water bottles (one for mini compost, one for mini landfill) Soil (can be dug from school grounds or potting soil) A handful of food scraps such as orange peels or lettuce leaves chopped into small pieces Ruler Scissor Masking tape</p>	<ul style="list-style-type: none"> Explain to students that they will be able to view composting in the classroom on a small scale. Show students the materials collected. <ol style="list-style-type: none"> Using scissors and following the diagram, cut off the top two inches (below the mouth) of the bottle. Save this portion for later. It will be used in step 4. Place 1” of soil in the bottom of the bottle. Do not compact the soil. Place the food scraps on top of the soil and cover with another 1” of soil. Using scissors carefully poke 5-7 air holes in the top (cut off) portion of the bottle. Use the masking tape to secure the two sections of the bottle, being careful not to cover the air holes with tape. Place the bottle in a sunny place that is not too hot or too cold. Over the next 1-2 weeks, shake the bottle once daily to mix the soil and food scraps, being careful not to spill the contents. This represents the turning that would ordinarily occur in a backyard compost pile and allows air and moisture to circulate through the soil and scraps. 	10 min. (1-2 weeks overall)	Hands on Activity/ Game

Stage/Materials	Procedure	Time	Interaction
Wrap up/discussion	<ul style="list-style-type: none"> Directly after placing the mini-composter, ask the students what they think will happen and why. 	5-10 min.	Discussion
Follow up/discussion	<ul style="list-style-type: none"> Discuss with students what they observe each week. Is the food decomposing? Why or why not? What would happen if the bottle were not shaken? What would happen if there were no air holes in the bottle? Why was the soil added? 	5-10 min.	Discussion



Planting with Compost

Grade Level: 2-4
Total Time: Approx. 35-45 minutes



Learning Objectives:

- Students will be able to:
- Investigate some of the properties of compost, including how compost can be used to improve poor soils.
 - Compare a plant grown in plain soil with a plant grown in compost-amended soil.

Lesson Context:

Compost contains greens, browns, soil, air, and water. These components, along with the microbial activity of decomposition and/or worm digestion make nutrients like nitrogen, phosphorus, and potassium more readily available in the soil. How do these nutrients help plants? Well, the amount available for them to absorb determines the rate at which they can grow.

Nitrogen is used for leaf growth and the production of green photosynthetic pigment known as chlorophyll.

Phosphorus is used to help form new roots and make seeds, fruit, and flowers. It's also used by plants to help fight disease. Potassium helps plants make strong stems and sustain growth. It also helps fight disease.

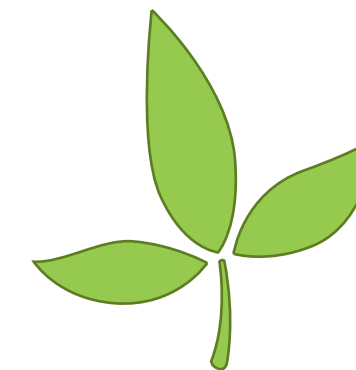
In sum, these nutrients are essential for plant growth, and because compost contains greater levels of them, it acts as a great fertilizer.



Photo by Oregon State University

Stage/Materials	Procedure	Time	Interaction
<p>Warm up/review: Engaging students on what they may already know.</p>	<ul style="list-style-type: none"> Ask the students what they have heard and seen about composting, if anything at all. Ask what they remember from a previous lessons on compost (if applicable). 	5-10 min.	Discussion/sharing
<p>In-class demonstration</p> <p>Materials:</p> <p>Soybean seeds</p> <p>Two identical pots or cups of soil (not potting soil - you may want to use soil dug from your school's grounds)</p> <p>Compost (perhaps try compost from mini composter activity)</p> <p>Water</p> <p>Permanent markers</p> <p>Lab sheets #1 and #2 (See Below)</p>	<p>Information about soybean plants:</p> <ul style="list-style-type: none"> Will germinate 3-6 days after planting. If they have not germinated after 7 days, throw out both pots and start over. Flowers will appear 4-5 weeks after planting. <p>• Soil only pot: Fill pot or cup with soil up to ½ inch from the top. Dig a small hole in soil (approx. 1 in. deep) with fingertip. Place 1 seed in the hole. Re-cover with soil. Add water to moisten soil. Explain to students that this is the “control” pot since it has only soil. Using a permanent marker, label this pot “Control”.</p> <p>• Compost-amended pot: Prepare amended soil by filling the pot or cup two-thirds full with soil. Fill the rest of the pot with compost. Mix thoroughly to distribute compost throughout soil (this may be done by emptying the contents of the pot into a zip-top bag and shaking well). Explain to students that this is the experimental pot since it contains soil and compost. Using a permanent marker, label this pot “Experiment”.</p> <ul style="list-style-type: none"> Return the compost-amended soil to the pot. Dig a small hole in the soil (approx. 1 inch deep) with fingertip. Place 1 seed in the hole. Re-cover with soil. Add water to moisten soil. Place seeded pots in an area where they will get sunlight (or in a grow-lab if available). Water daily or every other day, making sure that each plant gets the same amount of water each time. 	15-20 min.	<p>Traditional lesson/ video with discussion/sharing</p> <p>or in-class visit/ assembly (with activities)</p>

Stage/Materials	Procedure	Time	Interaction
In-class demonstration (continued)	<ul style="list-style-type: none"> Have students make predictions based on their knowledge of compost as to which plant will grow best. Observe changes and measure growth of the plants (using a ruler) every day for 3 weeks. Record all observations and measurements on the observation lab sheet 1 & 2. 		
Wrap up/discussion	<ul style="list-style-type: none"> Discuss with students how they will measure which plant grew “best.” Should they measure plant height only? Should they measure the number and size of leaves or roots? 	5 min.	Worksheet and/or discussion
Follow up/discussion	<ul style="list-style-type: none"> If the plant grown in compost showed better growth, why? By process of elimination, have students conclude that the nutrient supply was different in the pot with compost since the plants were watered the same and were exposed to the same amount of light. 	5-10 min.	Discussion



Name:



Planting Lab Sheet #1 - Soil Only

Day	Observations	Plant Height (in.)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Name:



Planting Lab Sheet #2 - Soil + Compost

Day	Observations	Plant Height (in.)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Optional Lesson Plan Additions/Field Trips



In-class visit or School Assembly: Integrated Waste Management Staff Visit
Topic(s): Recycling and/or Composting
Grade Level: 2-4 (presentations are tailored by grade level)
Total Time: Approx. 30 minutes per topic (longer if both recycling and composting)

Learning Objectives:

Recycling:

- What to recycle
- How recycling is collected at the curb and processed
- Why recycling is important locally and globally
- Experience a virtual tour of the City recycling center

Composting:

- What 'compost' is
- How to correctly compost in your backyard and worm (vermi) composting
- Why composting is important, especially in Southern California
- Students will meet the City's own worms

Lesson Resources:

Teachers of Glendale Unified School District can schedule an in-class visit or school assembly with an Integrated Waste Management staff person. Both presentations have interactive games and activities and are participatory.

City Of Glendale Registration Form - GUSD Teacher Recycling & Compost Class

<https://www.glendaleca.gov/home/showdocument?id=36488>

City Of Glendale Registration Form - Glendale Teacher Compost Bin

<https://www.glendaleca.gov/home/showdocument?id=38264>

Glendale Recycles Schools Program (2019/2020 School Year Program listings):

<https://www.glendaleca.gov/government/departments/public-works/integrated-waste-management/refuse-trash-recycling/schools-program>

Optional Lesson Plan Additions/Field Trips



Field Trip Activity: Tour of Glendale Recycling Center
Topic(s): How the materials we recycle are processed at a recycling center
Grade Level: 2-4
Total Time: Approx. 90 minutes

Learning Objectives:

Students will witness and learn:

- How recycling is sorted
- The do's and don'ts of recycling
- How to redeem bottles and cans
- What e-waste collection is
- The overall importance of recycling

This is intended as a culminating activity, taking what students have learned from previous lessons and view their application in the field. It would be appropriate to schedule this field trip after at least an introductory lesson on recycling.

Lesson Resources:

Teachers of Glendale Unified School District can schedule a field trip to the Glendale Recycling Center. Tours are free, though transportation is not provided.

Tours will only be given to a minimum of 50 students or 2 classes and a maximum of 100 students or 4 classes.

The Recycling line operates from 7:30am-12pm. Recycling Center tours are available from 8am-5pm, Monday-Friday and are about an hour and a half long.

CITY OF GLENDALE REGISTRATION FORM - GUSD Recycling Center Tour:

<https://www.glendaleca.gov/home/showdocument?id=36490>

Glendale Recycles Schools Program (2019/2020 School Year Program listings):

<https://www.glendaleca.gov/government/departments/public-works/integrated-waste-management/refuse-trash-recycling/schools-program>