

## Activity Series: What is Composting?

### Topics:

- What is composting?
- Benefits of composting?
- Feedstocks
- Composting process

### Teacher's Guide:

#### General Overview:

Students will learn the basics of the composting process through a series of mini-activities and games.

#### List of Activities:

1. **Sorting Activity: Can it be Composted?**
  - a. Overview: Students will be given images of compostable and non-compostable items. They will determine whether or not the items can be composted by sorting them into a YES and NO category.
2. **Ratios Activity: Compost Stew**
  - a. Overview: Students will learn about the ideal ratio to create a compost pile and create their own mini compost bin in a jar!
3. **Game: Microbes and the Compost Recipe**
  - a. Overview: Students will be assigned an “ingredient” required to make compost and will engage in an outdoor activity to recreate the ideal recipe.

#### Instructions:

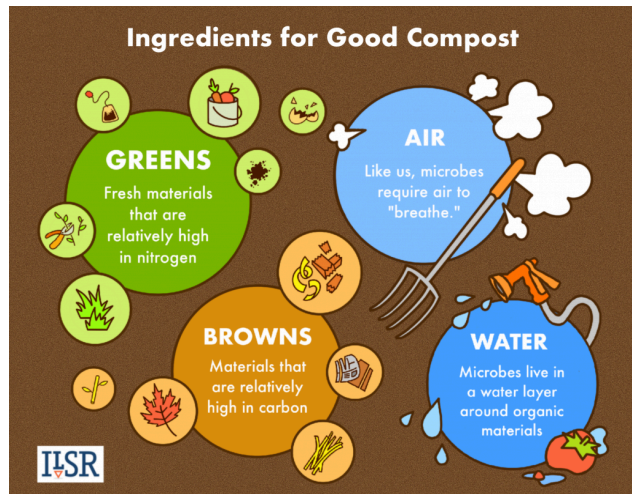
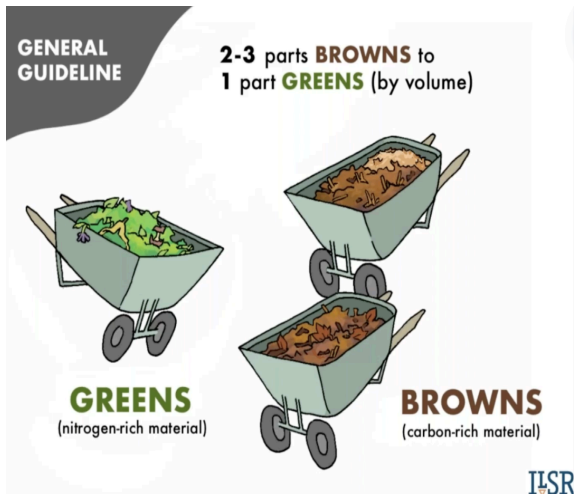
1. **Sorting Activity: Can it be Composted?**
  - a. *Prepare in advance*:
    - i. Print images of compostable and non-compostable items (Refer to *Supplemental Materials* section for graphics) and add tape, magnets, or velcro to the back side of the images. *Optional*: Laminate the cards to use for other activities!

- ii. Create a poster (or slide) with the following layout - Leave space for there to be an additional section titled "IT DEPENDS" to be added towards the end of the activity
- b. *Activity Instructions:*
  - i. Set up the poster or slide and hand out the playing cards (printed images) to your students (2-3 cards per student)
  - ii. One by one, have your students read their items aloud and place them in the section where they think they belong.
  - iii. After each of your students has placed their images on the board/poster, introduce the "IT DEPENDS" section
  - iv. Lead a discussion explaining why some items may fall under this new category

Title: <b>Can it be Composted?</b>	
<b><u>YES</u></b>	<b><u>NO</u></b>
Applecore Banana peel Grass clippings Hair snippings Nutshells Newspaper Tree clippings Crop Residues Coffee grounds Old flowers Mulch Eggshells Manure	Candy wrapper Produce stickers Plastic water bottle Cooking oil Glossy paper Cans
<b><u>IT DEPENDS</u></b> (*add this section towards the end of the game)	
Old jack-o-lantern, Tree branches, pine needles laundry lint, meat, tea bags dairy, bones, bread	

## 2. Ratios Activity: Compost Stew

- a. *Prepare in advance:*
  - i. Collect feedstocks (green and brown material)
  - ii. Print *Compost Recipe Handout*
- b. *Set-up:*
  - i. Add your feedstocks and a hand trowel to each of the bins
  - ii. Fill a container or small bucket with water (include a cup that can be used to grab water)
- c. *Activity Instructions:*
  - i. Let students follow the ideal compost recipe to create their own compost starter!
  - ii. Allow students to troubleshoot how much water they add but ensure they follow the ideal compost ratio!



## 3. Game: Microbes and the Compost Recipe

- a. *Prepare in advance:*
  - i. Print images of the five main components of the compost recipe (green material, brown material, water, oxygen, and microorganisms) onto name tags
- b. *Set-up:*
  - i. Have students spread out - *Suggestion:* play this game outdoors or in an area with lots of space to move around
  - ii. Assign each student a component of the compost recipe
- c. *Activity Instructions:*
  - i. Each student will be a component of the compost process.

- ii. Students representing a “MICROBE” must find a student assigned “OXYGEN” and link arms.
  - iii. Together, the students will find a third student representing “WATER” and link arms.
  - iv. With their arms linked, they will find a fourth student representing “BROWN MATERIAL” and a final student representing “GREEN MATERIAL”.
  - v. The first group to create a complete compost pile wins!
  - vi. The last group to create a complete compost pile (or if there are not enough participants, the group that does not complete their pile) is eliminated.
  - vii. The round restarts until there is only one group standing.
  - viii. Students should spread out, far away from the same people they were previously in a group with.
  - ix. Students are not allowed to group with more than 2 of the same students as the previous round when the game restarts.
- d. *Rules:*
- i. Students must be linking arms at all times
  - ii. MICROBES must find the other compost components in the following order - OXYGEN (microbes need oxygen to breathe), WATER (microbes need water to move around), BROWN MATERIAL (microbes need brown material, a source of carbon, for energy), GREEN MATERIAL (microbes need green material, a source of nitrogen to build their bodies and reproduce).
  - iii. Each complete group should have FIVE students

## Materials List

### 1. **Sorting Activity: Can it be Composted?**

- ☐ Activity cards
- ☐ Playing board

### 2. **Ratios Activity: Compost Stew**

- ☐ Green material - food waste, coffee grounds, fresh garden trimmings, grass clippings, etc.
- ☐ Brown material - woodchips, mulch, shredded newspaper, shredded cardboard, dry leaves, etc.



- ☐ Large plastic bins - 1 per feedstock
    - i. *Suggestion:* cement mixing tubs
  - ☐ Clear plastic canisters with lids (1 per student)
  - ☐ Hand trowels (1 per bin)
  - ☐ Compost recipe handout
  - ☐ OPTIONAL: Gloves
3. **Game: Microbes and the Compost Recipe**
- ☐ Name tags

### Printable Materials:

1. **Sorting Activity: Can it be Composted?**
  - a. Activity cards - Available [HERE](#)
2. **Ratios Activity: Compost Stew**
  - a. Compost Recipe Handout - Available [HERE](#)

### Helpful Visuals:

1. **Sorting Activity: Can it be Composted?**



**Image description:** (Left) Trifold poster board and laminated activity cards with velcro strips. (RIGHT) Completed board with "IT DEPENDS" section.

2. **Ratios Activity: Compost Stew**



***Image description:*** (Left) Activity set-up: Five different feedstock types (old salad mix, fresh garden scraps, coffee grounds, shredded cardboard, and woodchips) inside black cement mixing bins, a five-gallon bucket with water and a cup, and clear plastic canisters with lids. (RIGHT) Canister with the correct ratio of greens to browns.