

# COMPOSTING

## LESSON 1

### WHAT IS COMPOSTABLE?

#### BACKGROUND

Compostable materials are “materials that can break down with 90 days with the help of water, carbon dioxide and various decomposing organisms and leave no toxic or harmful residue” (<http://worldcentric.org/about-compostables/definition>). This is different from biodegradable means it can be broken down but there is no time limit and may introduce toxic or harmful residues into the environmental. If given enough time, just about anything will break down; for example plastic water bottles will biodegrade after an expected 400 years. This means that they are biodegradable, but not compostable.

For our worm and compost bins, we want to make sure that we put in compostable materials. Once in the worm bin, various organisms, such as the worms, bacteria, fungi and isopods can help break down that compostable materials within a matter of weeks and leave us with nutrient rich soil that we can then grow plants in.

One quick way to find out if something might be compostable is to soak it in water and see if it breaks apart with some agitation, or movement. In this lesson, we are going to test a few items this way and see if we can find out what is compostable and maybe come up with a reason why.



Vector Design by [Vecteezy](https://vecteezy.com)

**LESSON PLAN****MATERIALS NEEDED (PER GROUP OF 2 YOUTH)**

- One bowl or food storage container (such as a Rubbermaid TakeAlong with lid) that can hold over 2 cups of water
- 1-2 cups of water
- 3 sheets of Toilet paper
- 1 small piece of banana or other soft fruit.
- 1 aluminum can tab
- 1 lid from a plastic water or soda bottle
- 1 old dried up leaf from the ground
- Optional—Worksheet
- Optional—Small magnifying glasses, kids tweezers, etc. ([https://www.amazon.com/Learning-Resources-LER2777-Magnifier-Tweezers/dp/B004DJ367S/ref=sr\\_1\\_5?ie=UTF8&qid=1523899259&sr=8-5&keywords=kids+magnifying+glass](https://www.amazon.com/Learning-Resources-LER2777-Magnifier-Tweezers/dp/B004DJ367S/ref=sr_1_5?ie=UTF8&qid=1523899259&sr=8-5&keywords=kids+magnifying+glass) is a good option for \$10.99 per set)

**SET UP**

- Collect all the needed supplies and set them in the containers. Do not add the water until with the youth.
- Bring enough water for every group to have around 1 to 2 cups of water.
- Prepare an area for the youth to conduct the experiment. This experiment may get a little wet depending on the youth, so if possible you may want to be outside or in an area that can get a little bit wet.
- Print out worksheets if you want to do that part.

**LESSON PLAN****LESSON**

1. Give each pair of youth a container with the items already included.
2. Ask the youth to hypothesize which ones will be compostable (use the introduction to find a way to explain the concepts of compostable and biodegradable to the youth. Please do not read directly to them. If you need kid friendly definitions, please see the worksheets).
3. Have the youth put all their items into the container and let it sit for 1 minute.
4. After one minute, have the youth pick up and shake the container for 30 seconds.
5. Repeat steps 2 and 4 two more times
6. Have the youth open the containers and mark what materials have broken apart in the water easily in water (highly compostable), some what broken apart (somewhat compostable) and have not broken down (not compostable).
7. Use this to help decide what can go in your compost or worm bin.

Optional: Have extra supplies on hand and small magnifying glasses and tweezers. Let the youth get a close look at the different materials now that they know most compostable each material is. Give the pairs of youth no more than 3 minutes to formulate an idea on why compostable materials are compostable.



Image from <http://compostcoalition.com/>, an Austin based Composting group. Check out their website form more Austin based Composting info or see <https://www.eventbrite.com/o/city-of-austin-composting-rebate-program-696877231> for City of Austin free Composting Classes.

WORKSHEET

**COMPOSTABLE: ANY MATERIAL CAN BROKEN APART BY AIR, WATER AND SMALL ORGANISMS LIKE WORMS AND BACTERIA WITHIN 3 MONTHS**

**BIODEGRADABLE: ANY MATERIAL THAT CAN BE BROKEN APART IN NATURE OVER TIME (CAN BE 3 MONTHS OR CAN BE 3000 YEARS!).**



**Compostable**



**Biodegradable**

	Very Compostable— falls apart completely	Somewhat Compostable— falls apart some	Not Compostable— Does not fall apart
Toilet Paper			
Plastic Lid			
Dead Leave			
Aluminum Can Tab			
Banana			

Given this, what can go into your composting or worm bin? \_\_\_\_\_

\_\_\_\_\_

What do all of the compostable materials have in common? \_\_\_\_\_

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