



COMPOSTING AT SCHOOLS

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What is Composting?

- Composting is the accelerated biological decomposition of organic (carbon-based) solid waste under managed aerobic conditions resulting in a stabilized product that can be used as a soil additive, fertilizer, growth media or other beneficial use.



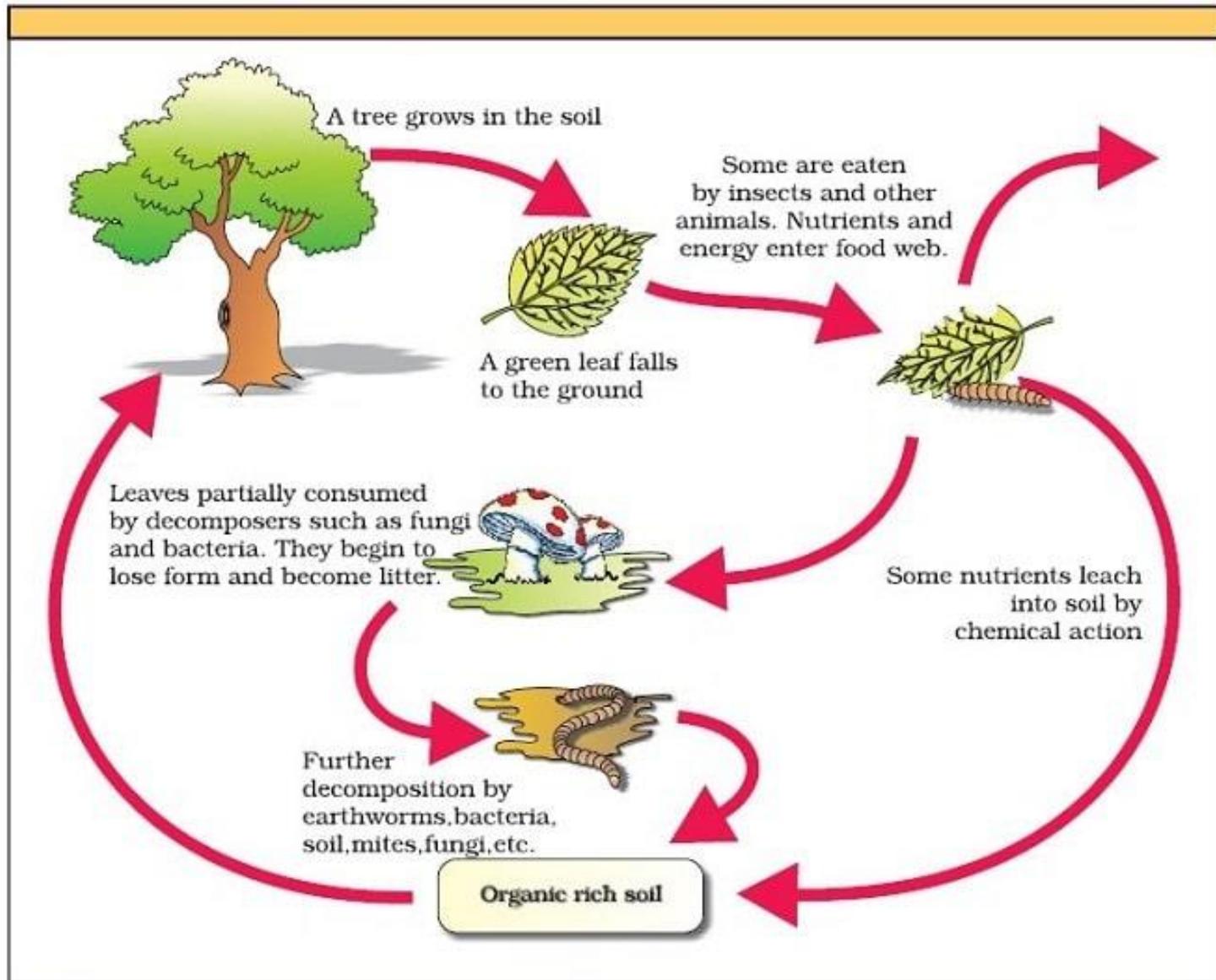
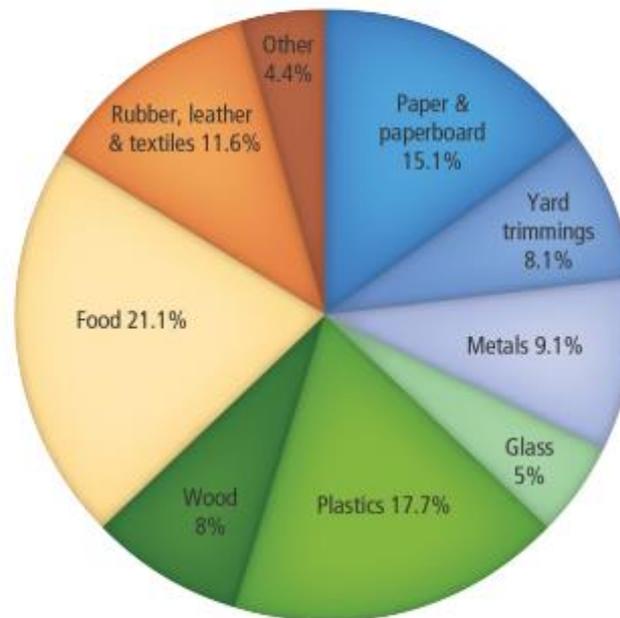


Figure 1. Diagrammatic representation of decomposition cycle in a terrestrial ecosystem

Why Compost?

- It conserves energy and natural resources.
- It can be used to improve the much-needed topsoil.
- It can reduce landfill space and the production of methane.

Figure ES-5. Material Discards* in MSW, 2013
167 Million Tons (after recycling and composting)



*Discards in this figure include combustion with energy recovery

Get Food Smart TN

- Food comprises 21 % of the waste stream
- Releases greenhouse gas emissions
- Represents wasted resources
 - Water
 - Energy
 - Land
- 1 in 4 Tennesseans are food insecure
- What is the percentage of food insecurity in your county? [Click here.](#)



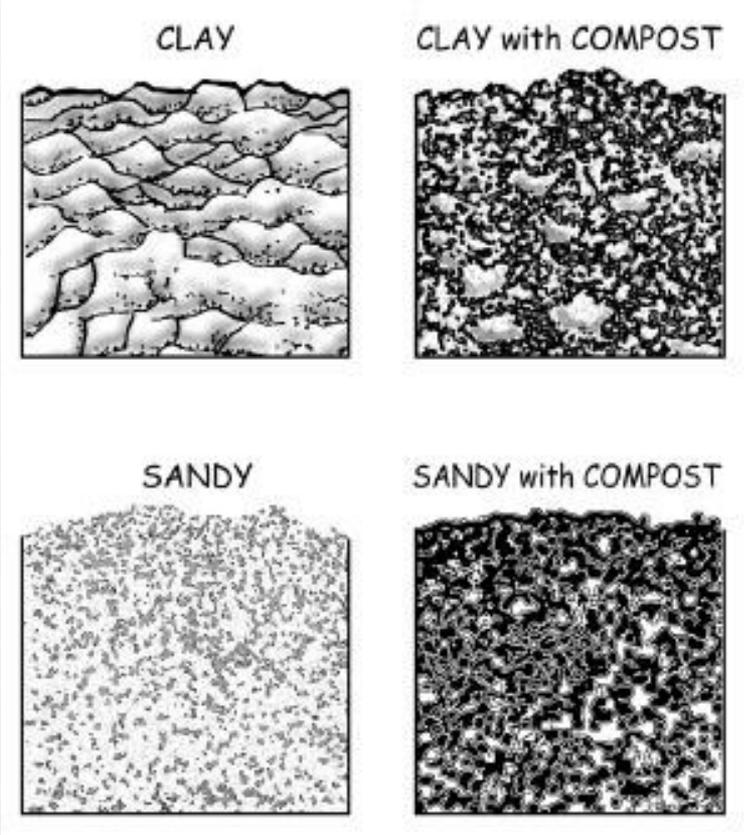
What Can You Do With Compost?

- Incorporate with soil
- Make potting soil
- Top-dress lawn areas
- Mulch around plants
- Erosion control
- Bioremediation

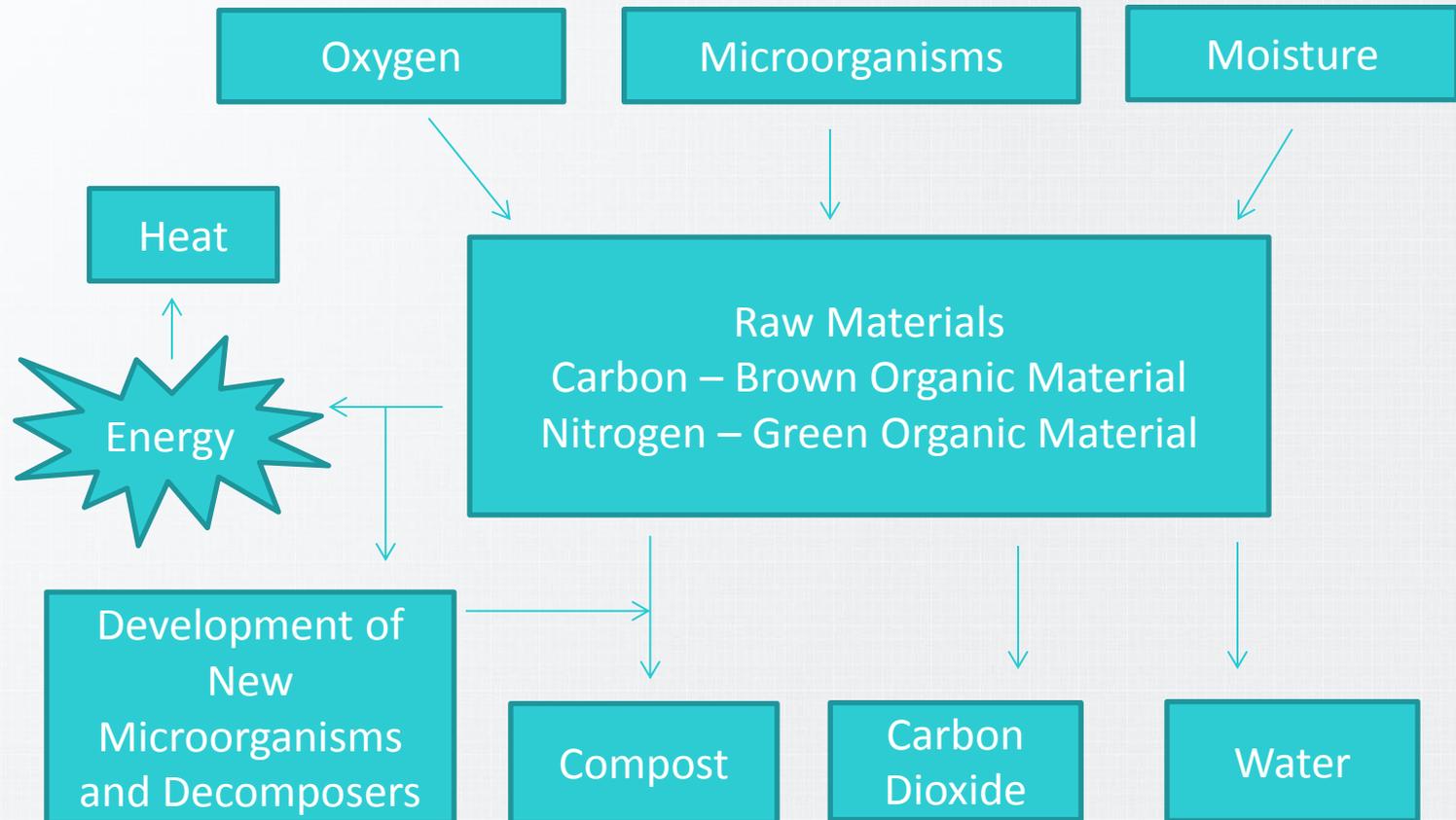


What are the Benefits of Using Compost?

- Reduces the need for synthetic fertilizers
- Improves soil structure
- Improves biodiversity in the soil
- Improves water quality by reducing runoff



Flow Chart For the Composting Process



What Should/Shouldn't You Compost?

GREENS	BROWNS
<ul style="list-style-type: none">• Fruit and vegetable scraps• Grass clippings• Bread and grains• Coffee grounds• Hair and fur 	<ul style="list-style-type: none">• Leaves• Twigs• Shredded newspaper• Cardboard rolls• Clean paper• Fireplace ashes 
<p>DO NOT ADD: dairy, meat, fats, bones, oils, pet waste, seafood scraps, plastic, stickers from fruits and vegetables, metals, glass, treated or painted wood</p> 	

How Do You Compost?

- Select a location
- Construct or purchase a bin
- Add organic material in proper amounts
- Stir and add water as necessary
- Wait until most bacterial activity diminishes
- Screen compost (optional)
- Age your compost (optional, but ideal)



Select a Location

- Dry
- Shady
- Near a water source (hose or rain barrel)
- Convenient location



Earth Machine Composter

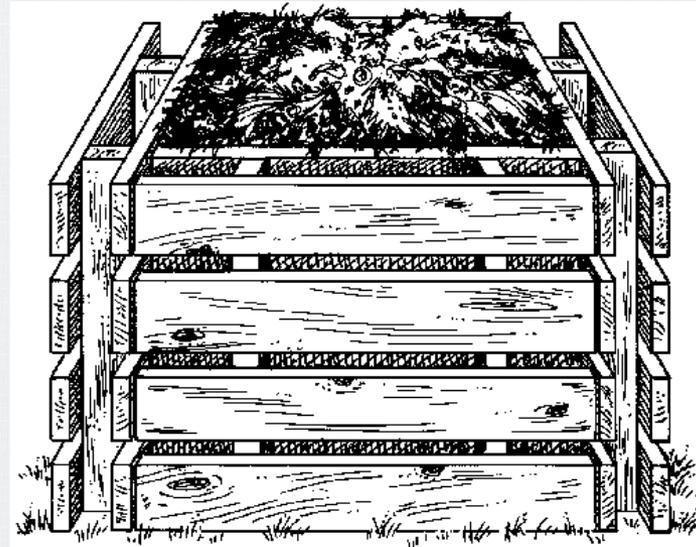
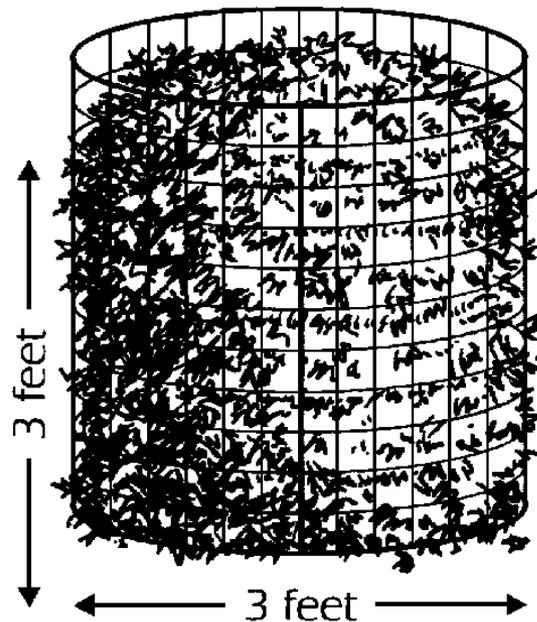
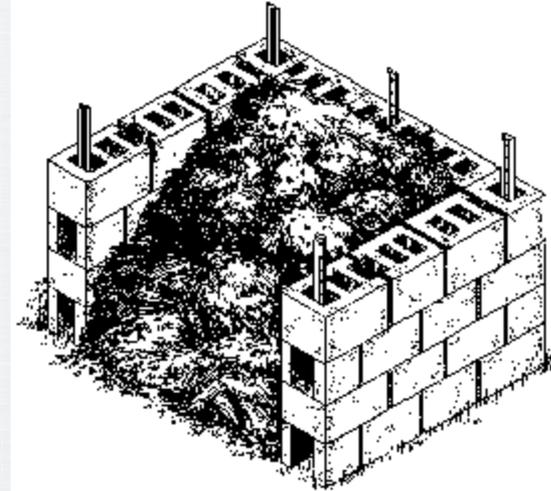
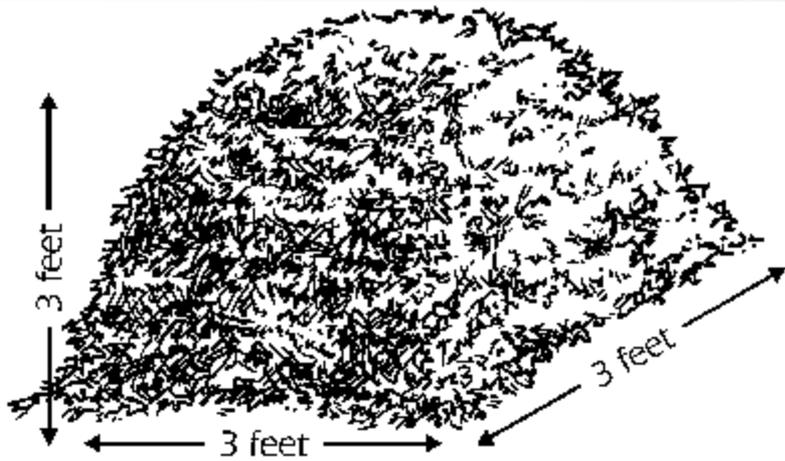
- https://www.earthmachine.com/how_to_compost.html



Tumbler Composter



Construct a Bin (Optional)

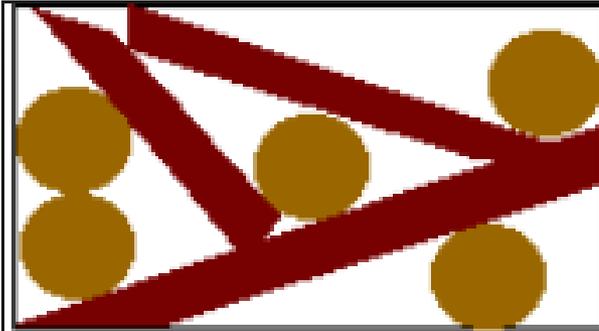


Add Organic Material in Proper Amounts

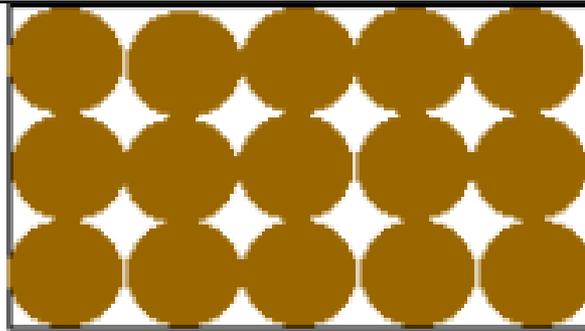
3:1 ratio of browns to greens

- **CHOP** - It helps to chop up larger items like watermelon rinds or corn cobs before putting them in your Kitchen Collector.
- **EMPTY** - Once your Kitchen Collector is full, take it to your Earth Machine™ and empty it out.
- **STIR** - Mix the new material into the existing pile using a Compost Turner, pitchfork or other garden tool. This also adds oxygen, a key component to successful composting.
- **COVER** - Cover your food waste with a handful of old leaves, other dried yard waste or soil. This will add carbon and reduce the chance of odors and fruit flies. Then put the lid back on and let it “cook”.

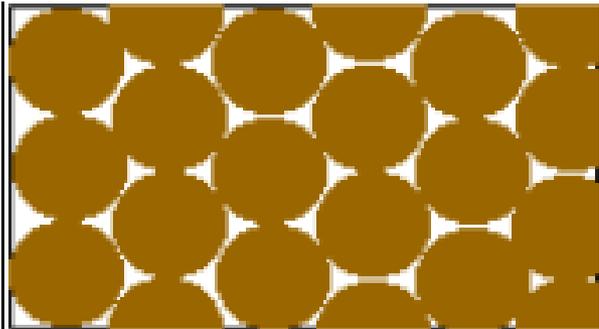
Proper Porosity



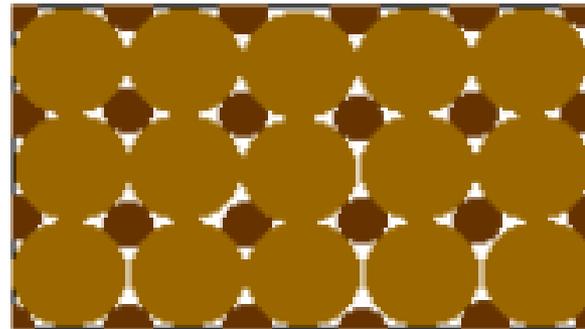
Loosely packed,
mixed particle size.



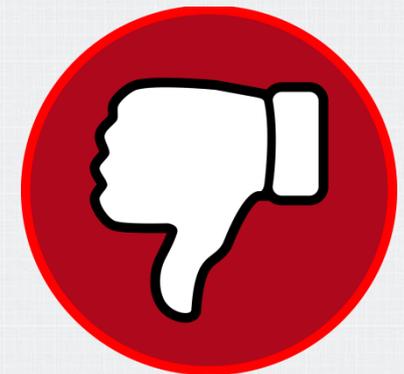
Loosely packed, uniform
particle size.



Tightly packed,
uniform particle size.



Tightly packed,
mixed particle size.



Stir and Add Water as Necessary



Wait until Most Bacterial Activity has Diminished.



How do You Know if Your Compost is Ready?

- The temperature of the pile drops to the temperature of the surrounding air.
- It smells earthy-not sour, putrid, or like ammonia.
- It no longer heats up after turned or watered.
- It looks like dark soil.
- It's crumbly, and doesn't have identifiable food items, leaves, or grass.



Screen Your Compost (Optional)



Age Your Compost (Optional, but Ideal)



Troubleshooting

- Materials not decomposing:
 - Add water
 - Turn pile or add bulking material
 - Add more greens
- Ammonia odor
 - Add browns such as leaves or straw
- Rotten odor
 - Turn pile
 - Add coarse, dry materials
- Vermin
 - Bury food scraps



Compost Uses

- Since your school does not have a permit, you can't sell the compost you generate.
- You can use it on site!
 - School garden
 - Landscaping
 - Athletic fields
 - Lawn areas

Resources

Earth Machine FAQ Page - <https://www.earthmachine.com/faq.html>

Earth Machine Links and Resources - <https://www.earthmachine.com/links.html>

TDEC Composting Page - <https://www.tn.gov/environment/program-areas/sw-mm-organics/sw-mm-residential-composting.html>

United States Composting Council – Composting for Teachers and Students - <http://compostingcouncil.org/composting-for-teachers-and-students/>

Questions?





THANK YOU

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