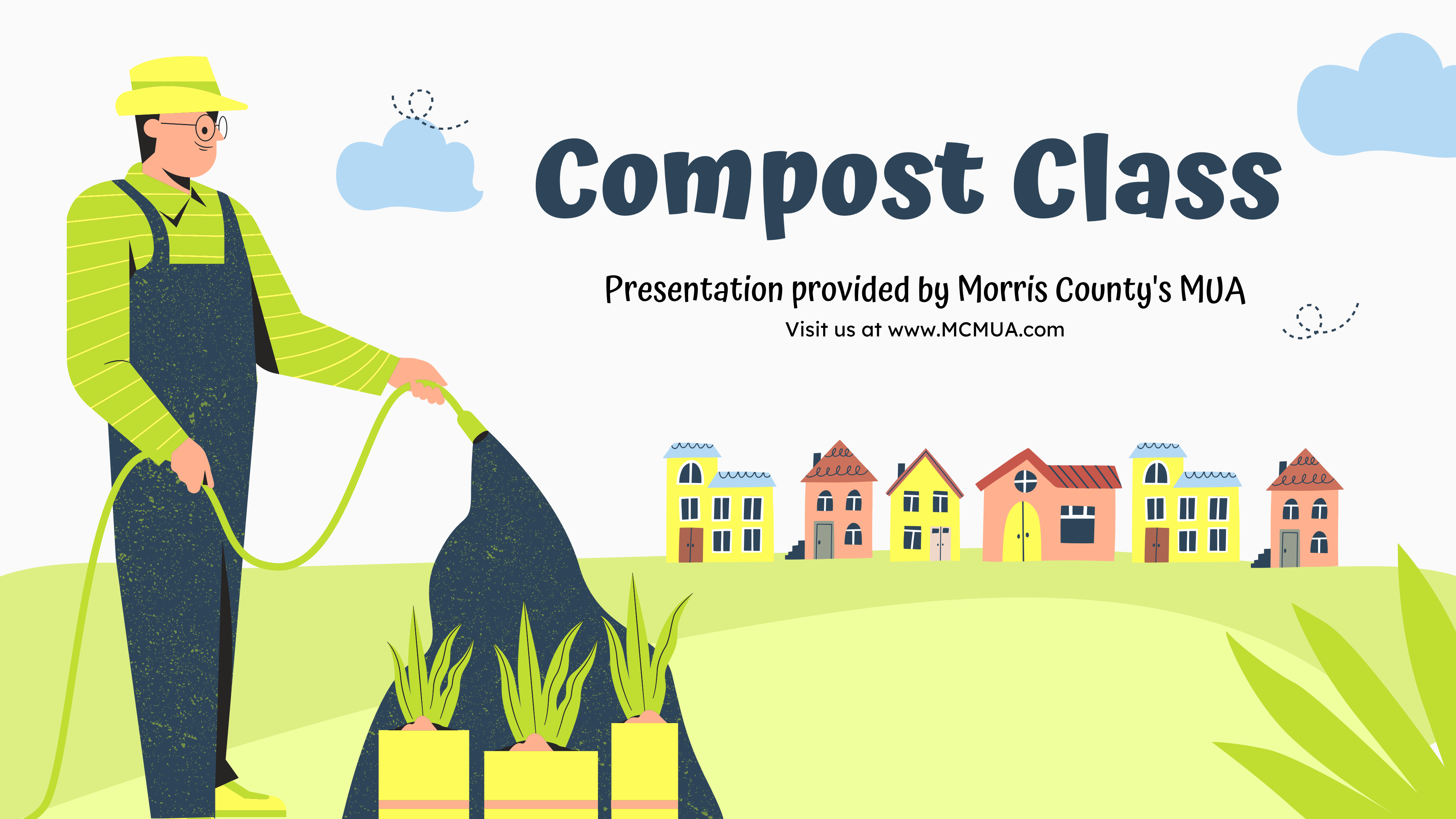




Compost Class

Presentation provided by Morris County's MUA

Visit us at www.MCMUA.com

The importance of compost

40% of all food in America is never consumed, that's 126 billion pounds wasted per year according to Feeding America. Despite this, many American families live in food insecurity.

Food waste in landfills makes up 8% of human-generated gas emissions per year producing 170 million metric tons of CO2 emissions as per NC Heath News.

Composting diverts food waste from landfills and also provides essential nutrients for fertile soil. Household compost is an excellent way to reduce waste and to encourage a healthy home garden.





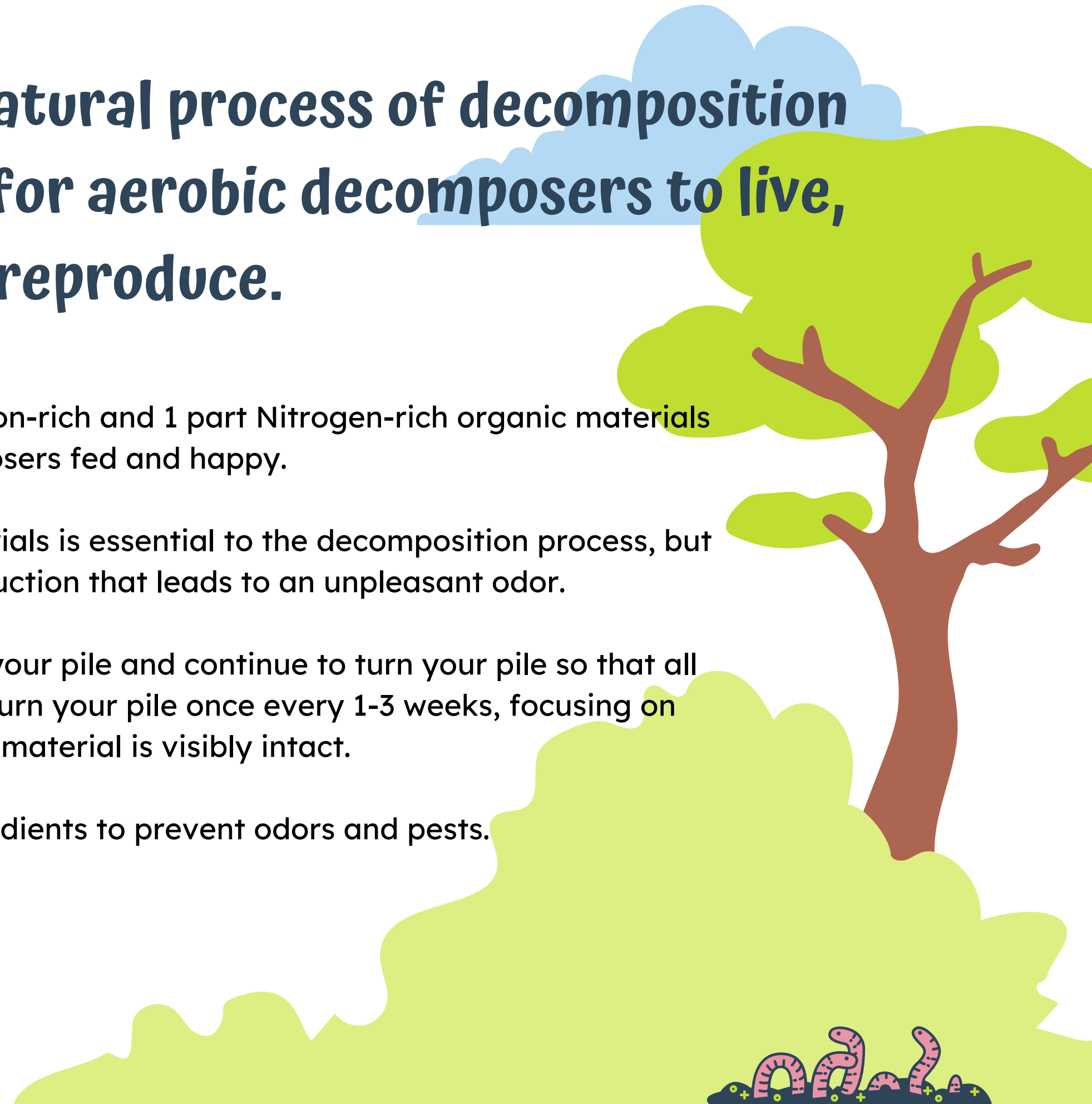
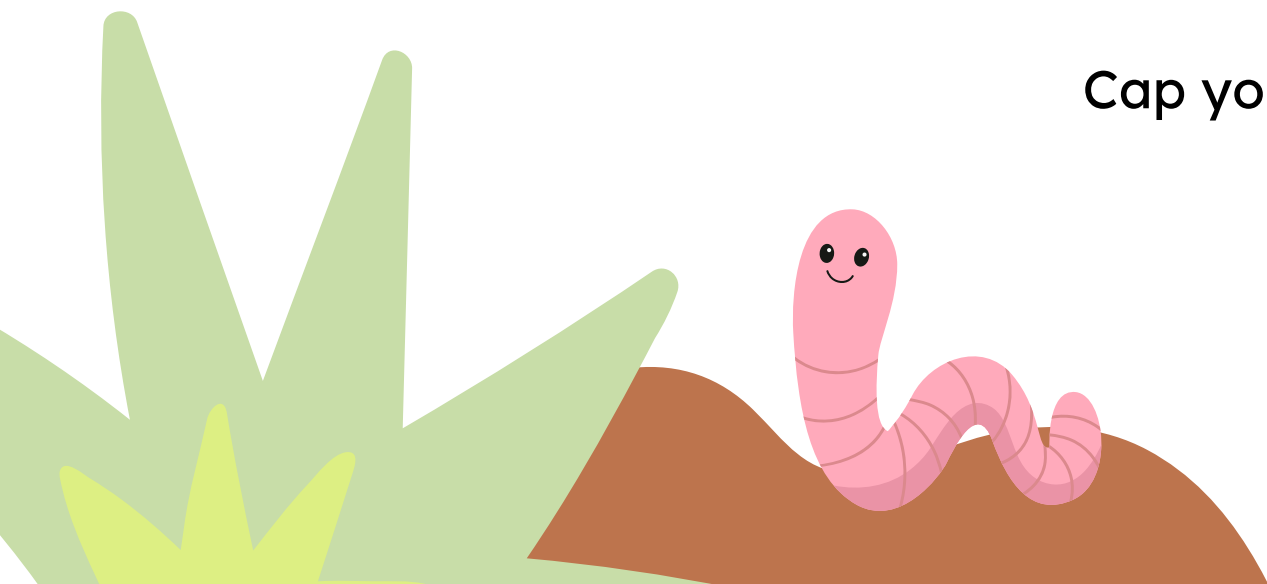
Compost is human aid in the natural process of decomposition providing suitable conditions for aerobic decomposers to live, work, & reproduce.

It is important to keep a ratio of 2 parts Carbon-rich and 1 part Nitrogen-rich organic materials to keep decomposers fed and happy.

The moisture provided by Nitrogen-rich materials is essential to the decomposition process, but too much can cause ammonia production that leads to an unpleasant odor.

Mix your ingredients before adding them to your pile and continue to turn your pile so that all the organic material can be decomposed. Turn your pile once every 1-3 weeks, focusing on areas where organic material is visibly intact.

Cap your pile with brown ingredients to prevent odors and pests.



THE COMPOST RECIPE

INGREDIENTS:

(2 parts) Browns: Carbon-rich, dry materials

- Dry leaves and pinecones
- Shells of nuts & eggs
- Woodchips and sawdust
- Dry flowers, grass, & garden clippings
- Straw
- Corn cobs
- Newspaper and shredded cardboard

(1 part) Greens: Nitrogen-rich, fresh and moist materials

- Fruit & vegetable scraps
- Peelings
- Coffee & tea
- Fresh grass & garden trimmings



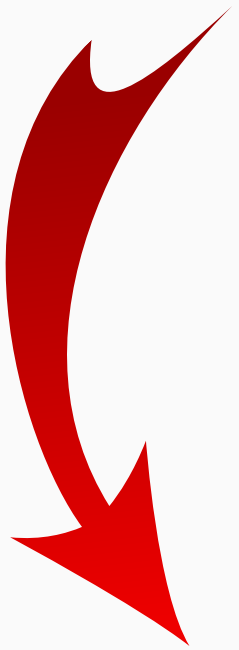
Size of Ingredients

The size of the ingredients affects how quickly decomposition is able to occur.

Breaking, cutting, or shredding materials increases the surface area that is available to decomposers and speeds up the decomposition process.

It is important to diversify the size of your ingredients to increase surface area while also retaining pore space for airflow.

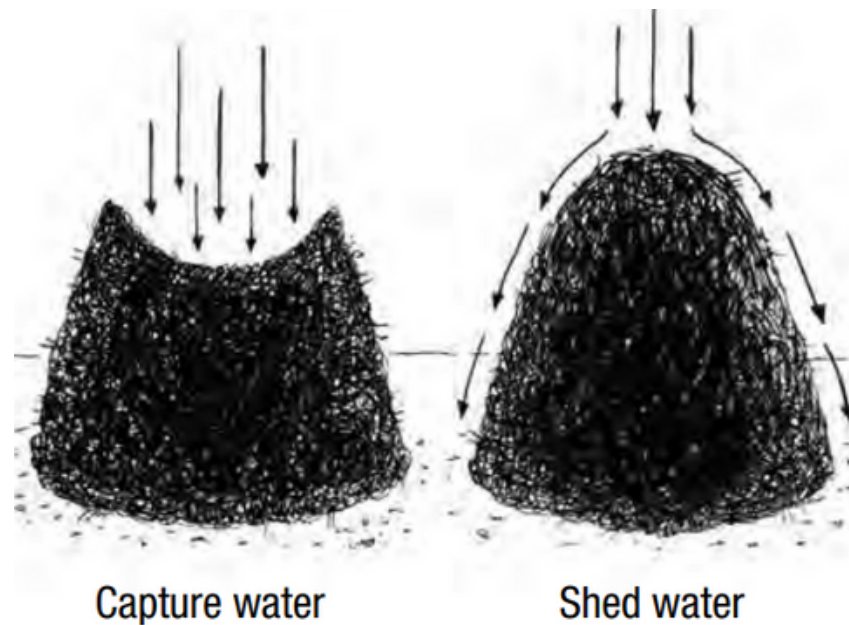
Bulking agents, or browns with structural support, can be added to diversify size and maintain airflow.



Maintain moisture in your pile

Aerobic decomposers prefer a pile that is not too dry, but not too wet. This again stresses the 2 parts browns:1 part greens ratio, but there are some other things that can be done to maintain proper moisture as well.

- Add more greens or water to a dry pile and more browns to a wet pile
- Consider adjusting the size and shape of your pile.
 - Piles that are 3-4 ft wide or high are optimal as they can retain moisture and still be penetrated by air.





Oxygen in your pile

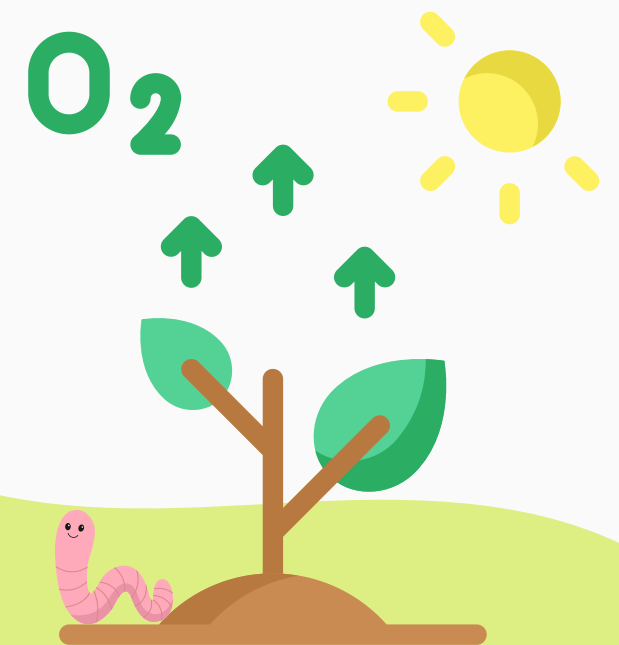
Aerobic decomposers are what make composting so effective. The word aerobic means these organisms require oxygen.

To attract aerobic decomposers and reduce odor, compost should be about 10% oxygen.

- For comparison, the air you breath is about 21% oxygen.
- A pile that is too compact or moist will lack oxygen.
- If compost smells bad or is decomposing too slow it likely lacks oxygen.

What can be done to maintain this 10%?

- Mixing before adding and turning after adding will circulate air throughout the pile.
- Bulky, carbon ingredients can create air pockets and prevent compaction.
- Dry, absorbent materials can also help with oxygen levels.
- Spread out materials to expose more surface area to air (keep food scraps covered by browns to prevent pests)
- An aeration system can also be added such as perforated tubes, fans, or pipes.



What size should your bin/ pile be?

For beginner composters, bigger is not always better.

Though large piles are better for retaining heat through the winter, they are challenging to maintain. These larger piles may also be cause for complaining neighbors.

Smaller piles allow for more airflow as they're less compact. Be sure to keep a pile that you can maintain within your own zone.

More experienced composters may have larger bins and combat compaction using bulking agents.



Types of Compost Systems



Compost bins can be made from various materials



Worm bins are the only systems suitable for indoor composting.



Compost can also be maintained in an open pile. Works best to store browns/ yard waste before mixing into compost.



Metal compost bin



Wood compost bin



Chicken wire is a simple way to maintain a compost pile outdoors. Often used to hold browns/ yard waste before their added to a compost pile.



Tumbler compost bins are able to be spun, making turning easy.



Plastic compost bin

Types of Compost Systems

Homemade Systems:



Drilling holes in a plastic or metal bin make it a suitable environment for a worm bin. It can also serve as a regular compost bin with enough air flow.



Wood pallets can be connected into a square to keep in compost. Chicken wire can be added to line the inside, and a tarp or discarded carpet can be placed on top to maintain moisture.

There are endless creative possibilities for homemade compost bins!



Systems for Sale:



Walmart- Rotating Compost Bin
\$68.88



Amazon - Countertop Composter
\$32.35



Tractor Supply - Earth Machine
\$199.99



Home Depot - Worm Composter
\$83.74

Types of Compost Systems

Active (hot) Systems:

- Require more effort but yield quicker results
- Reach higher temperatures to kill seeds & weeds
- Stockpile materials & add all at once
- Add water & turn pile, let sit for 4 days
- After 4 days, turn every 2-3 days for 2 weeks

Passive (cold) Systems:

- Add materials as you go
- Alternate layers of moist greens & dry browns
- Turn every other week, add water when needed

Vermicompost:

- Indoor worm compost method
- Red wiggler worms are placed in a dark bin with bedding (shredded, moistened newspaper) & food scraps
- Worms digest the scraps and produce rich compost



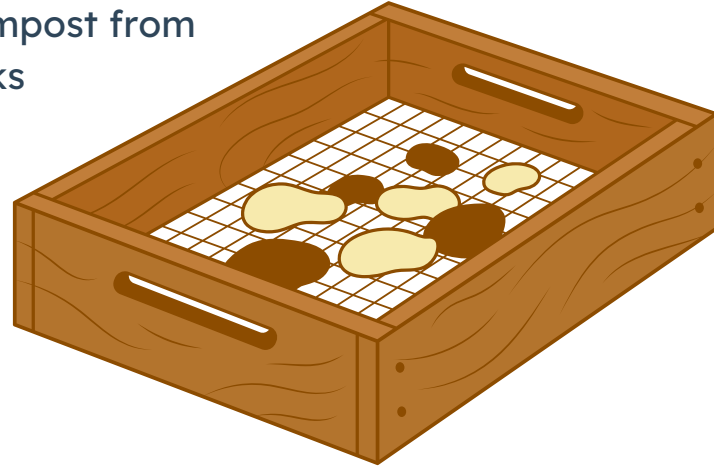
Outdoor Compost Location



- **Keep away from doors and windows**
- **Keep good distance from your kitchen or garden**
- **Access to a water source**
- **Sun or shade**
- **Place compost onto bare soil for on ground systems to attract bacteria and insects into compost**
- **Keep away from roots of trees or shrubs**

Tools for Gathering Compost:

Sifter - sift mature compost from coarse chunks



Scooping shovel



Gardening gloves



Woven bag or container with air holes - breathable storage

Supplies

Tools for Moistening Compost:



Rain Barrel - collect rain water
Watering can or hose - water pile & maintain moisture

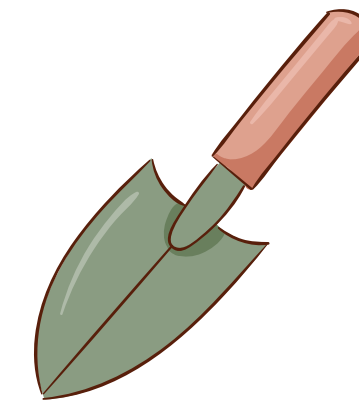
Tools for Breaking up Compost:



Pitch fork

Garden edger

Pruners



Spade shovel

Troubleshooting

Nothing happening?

Materials may be too dry, add water or greens and turn.

Pile may also be too small, add materials to create a pile that's 3x3x3.

Too soggy?

Materials may be too wet, protect bin from precipitation with a tarp or discarded carpet square. If there are too many moist, green materials add browns and turn.

Unhappy worms?

Worms may attempt an escape if conditions are not suitable. Make sure there is enough bedding and not too much food or worms in the bin.

Too smelly?

If the bin has a rotten-egg odor there may be too much moisture and not enough air. In this case, turn pile more frequently, add brown materials, remove lid to maximize air flow, and ensure proper drainage in the bin.

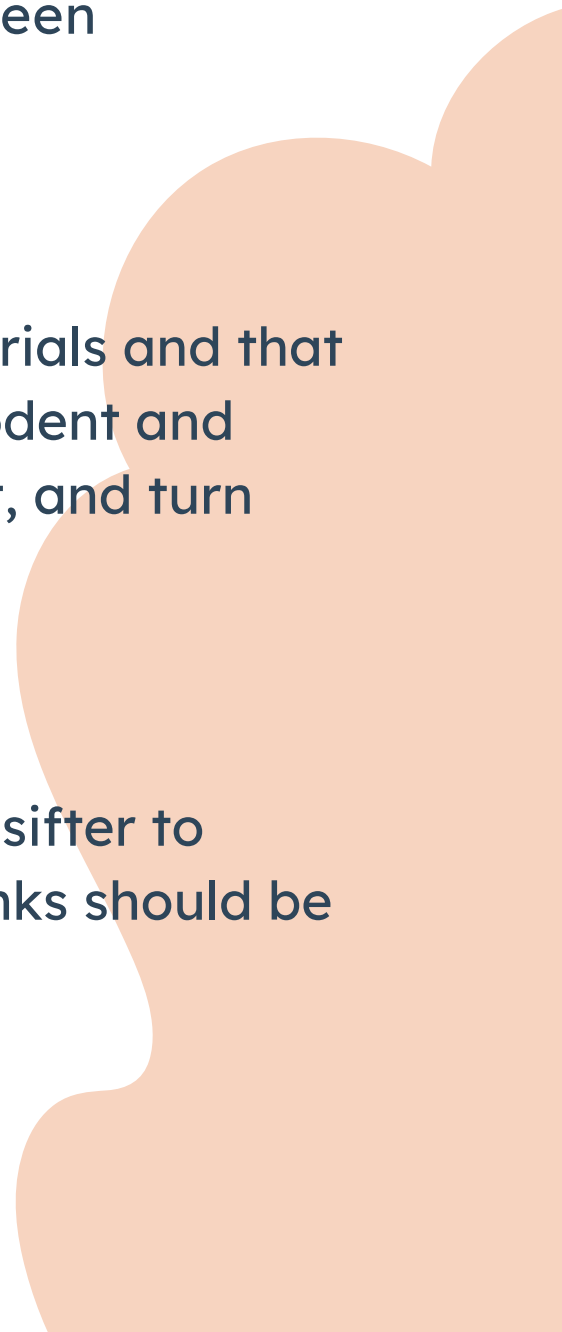
If the bin has an ammonia odor there are too many green materials. Add brown materials to neutralize this odor.

Attracting pests?

Make sure the food scraps are covered with brown materials and that no meat, dairy, or fatty foods are in the pile. For more rodent and pest resistance, add a screen barrier, keep the pile moist, and turn frequently to increase temperature.

Too Coarse?

Some brown materials take longer to break down, use a sifter to separate large chunks from mature compost. Large chunks should be put back into the pile to continue decomposition.



How to use your compost

Mature compost will be dark brown and crumbly with an earthy aroma.

Filter out larger chunks using a screen, or simply using a shovel or your hands.

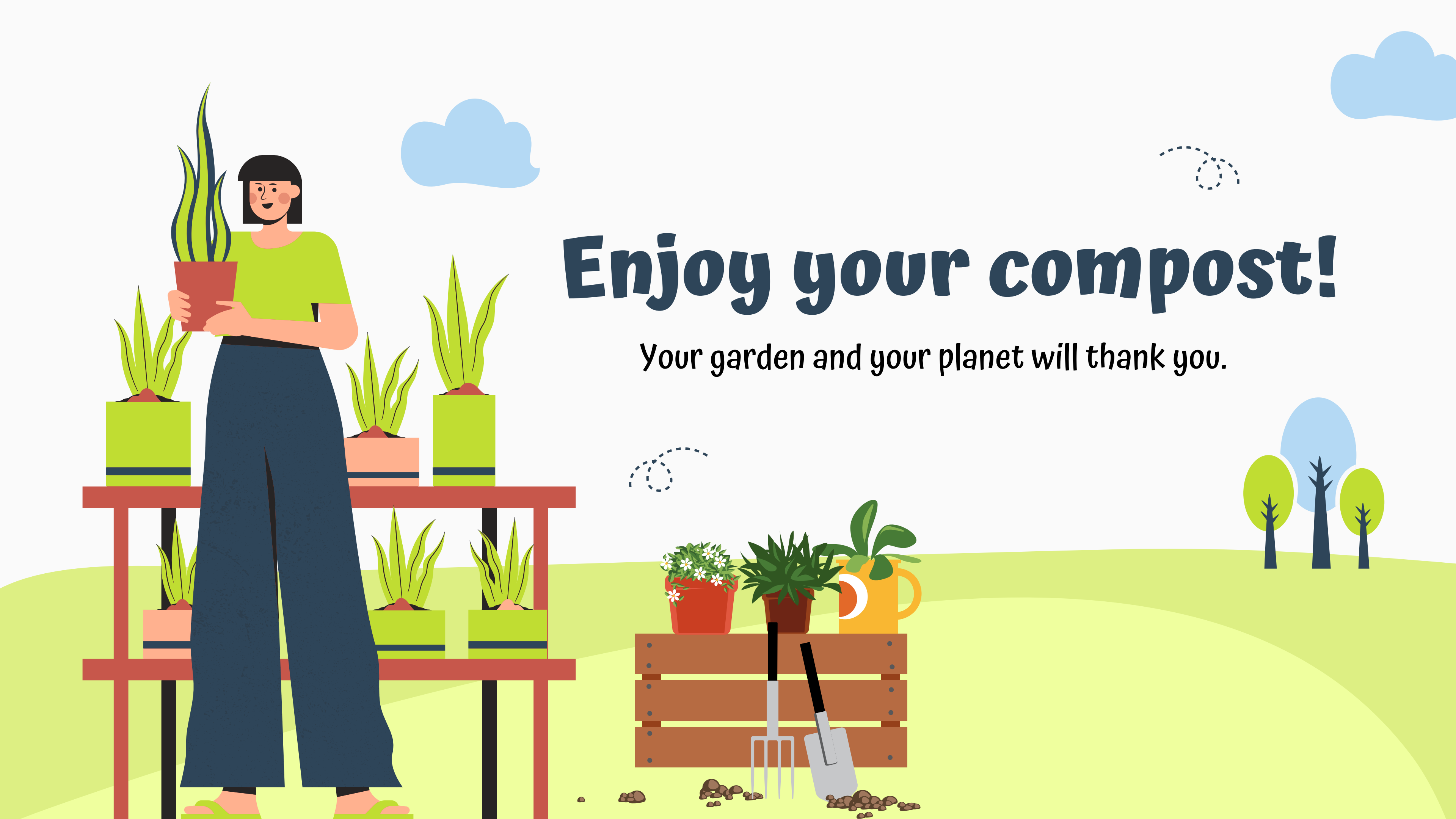
If a worm bin is being used, move compost to one side of the bin and fill the other side with fresh bedding. Overtime, the worms will move to the new bedding and the compost can be collected.

Store compost in breathable woven bags or containers with air holes until it is needed.

Compost can be mixed into garden soil, used in a thick or thin covering layer, or water can be added to produce a "compost tea" meant to nourish both indoor and outdoor plants.

- A 10% compost, 90% soil ratio is recommended.





Enjoy your compost!

Your garden and your planet will thank you.