

2.6. ACTIVITY: Building your own compost bin

Time of Year: any time

Grade Level: all ages

Core Subjects/Themes: science, decomposition, worms, life cycles

Materials/Supplies:

3-5 pallets per bin,

2 hinges for adding a door,

Wooden screws or 8 L Brackets per bin

Questions to ask and answer while building....

What is compost? Compost is partially decomposed organic matter made up of plants, manures of plant eating animals.

Why should we compost? compost is great to reuse and recycle waste and plant and manures. In return to the garden, it

- provides nutrition
- improves soil structure
- increases the ability of soil to retain water
- contributes to the health of the soil
- encourages soil microorganisms

How does decomposition happen in nature? Discuss the process of what happens in the forest floor. In nature, decomposition happens through the build up of animal scat, decaying animals, leaves, and other plant materials. Rainfall adds to the decomposition. Worms, insects, and mushrooms all serve as natural decomposers.

General Composting Rules

- The composting pile should be at least 1 cubic yard (3' x 3' x 3').
- Choose a location on level ground, with adequate drainage and a water source.
- Mix Greens (for nitrogen) with Browns (for carbon) at a 2:1 Green/Brown ratio.
- Moisten materials as you add them and leave a concave depression at the top of the pile to capture rain. The composting pile should be kept about as damp as a wrung out sponge. It is a good idea to cover the composting pile during periods of very high moisture.
- Add water as needed to maintain correct moisture.
- Turn, fluff or aerate the composting pile every week.
- The composting is complete (approximately 3 to 6 months) when it is dark brown-black, crumbly and sweet smelling. The temperature of the pile will also drop to ambient air temperature from a composting temperature of 120° - 150° F when composting is complete.

- Your compost should be fully decomposed (smell woody, dark brown or black and loose) before applying to garden.

Building a Pallet Bin (using 5 or more pallets)

- Place 1 pallet with slats up on the ground.
- Next, screw the corners of three remaining pallets together to make a three sided bin. Use either wooden screws or L brackets to secure corners.
- Attach the sides at each corner with wire, coat hangers, rope, etc.
- By using a total of 9 pallets you can transform the pallet bin into a multi-bin unit.
- Add a 2nd bottom pallet next to the side of the 1st bin.
- Fasten the 3 additional pallets around it. Making sure it is tied into the 1st bin.
- The last pallet can be used as a door or lid by attaching it with hinges to the other pallets.
- Use the 2nd bin to aerate the composting pile by move the composting pile from side to the other.
- By adding a 3rd bin (4 additional pallets), you can also have a bin to store the finished compost in while it cures for the month after composting is complete.

POSSIBLE PROBLEMS	POSSIBLE CAUSE	HOW TO FIX IT
ODOR	-Lacks air, because of compaction or overwatering -Lacks Nitrogen -Too Wet	Turn more often, add more brown materials. Your compost pile may be too small.
INSECTS	-Normal Process of Decomposition	Do Nothing
PILE DOES NOT HEAT UP	-Lacks air, because of compaction or overwatering -Lacks Nitrogen -Too Wet	Increase the size of the pile
MATERIALS DON'T BREAK DOWN	- Too Dry - Not Even Air - Not turned enough - Too little green	Check wetness, turn more often, add greens (fresh manure, blood meal, kitchen scraps)

POSSIBLE PROBLEMS	POSSIBLE CAUSE	HOW TO FIX IT
RODENTS and PETS	<ul style="list-style-type: none"> - Too Much Green Materials (food waste) - Possible wrong products (fish, meat, or bones) 	Stop adding food scraps, turn. Bury food scraps under one of material and put a lid (or additional pallet) over the bin Put a wire fence over pile, or switch to a bin with lid

BROWNS Carbon	GREENS Nitrogen	What not to Compost
straw	fruit peels	diseased plants
hay	eggshells	weeds gone to seed (unless you can wait and get your pile very hot)
cornstalks, pea and bean vines	flowers	coal ashes
leaf litter	manures from grass eating animals (cow, horse, sheep, goat, chicken, llama)	Cat and Dog Manures
wood shavings and sawdust	Coffee grounds	Dairy products
pine needles	Fresh grass	Meat products