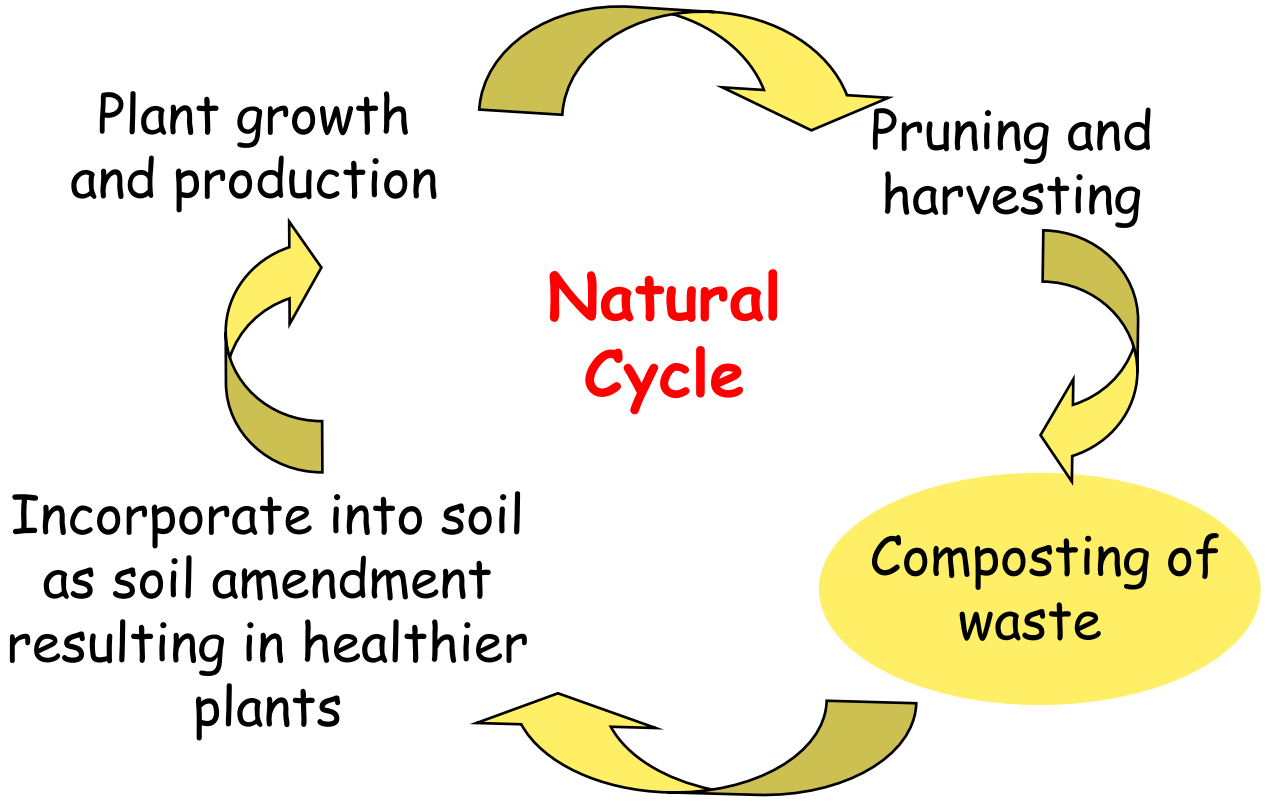
What is Composting

- Controlled decay of organic material
- All techniques are based on natural processes
- Produces a humus rich material from yard and food waste which would otherwise become part of the waste stream

Composting is one step in an ongoing backyard process



Why Compost?

- Reduces landfill pressures
  - Source reduction
- Makes environmental sense even if your city has a yard waste composting program
- Produces a wonderful soil amendment
  - improves soil structure
  - reduces or eliminates the need for fertilizer
  - results in healthier plants
  - reduces watering needs
  - captures carbon back into the soil
- It's fun and rewarding
  - wholesome exercise

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zbest composting

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Types of Composting

- Grasscycling
  - leave lawn clippings on the lawn
- Mulching
  - spread yard waste under plants
- Backyard Pile
- Vermicomposting (worms)
- *more….*

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Grasscycling

- Leave grass clippings on lawn

- Mulching mower best
- Mow dry, no more than 1/3 of total grass blade height
- Does not cause thatch

➢Clippings are 75% water by weight
➢The rest is a nitrogen rich (green) material
➢Such a shame to throw it away

- Reduce waste
- Provides needed nitrogen to lawn
- Supplies organic material to soil

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Backyard Compost Pile

Ingredients of a Compost Pile

- **GREENS** - Nitrogen rich materials
- **BROWNS** - Carbon rich materials
- **AIR** (fluffed like a salad)
  - aerobic composting
- **WATER** (wrung out sponge)

- Nature provides the organisms
- Time – patience

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Greens and Browns

GREENS (C:N < 30:1)
Immature plant material

- kitchen scraps
  - (vegetable 12:1, fruit 30:1)
- grass clippings (20:1)
- coffee grounds (20:1)
- cow, poultry, rabbit, horse manure
  - none from meat eating animals
- vegetable garden wastes
  - live plant pruning

BROWNS (C:N > 30:1)
Mature, woody plant material

- Leaves (40-60:1), naturally fallen
- Corn and sunflower stalks
- Dead plants/pruning
- Straw (100:1)
- Pine Needles (70:1)
- Shredded Paper (170:1)
- Wood chips, Sawdust (400:1)
  - no plywood or pressure treated

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Material to avoid

- Cat or dog feces
- Meat or dairy food wastes
  - **egg shells are welcome in the pile**
- Hard to control material
  - Bermuda grass, Bind weed (wild morning glory)
  - Ivy, unless it is finely chopped
- Wood ashes
- Plants treated with herbicides
- Use Oleander only in a hot pile
- Thorny plants unless shredded

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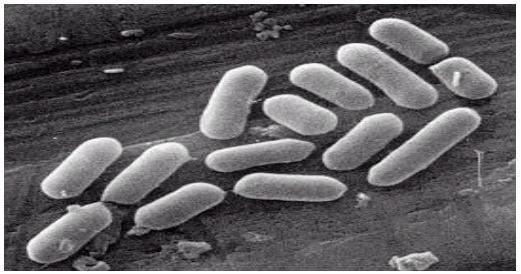
Organisms



- Psychrophilic: 0°F to 55°F - low temp
- Mesophilic: 70°F to 90°F - middle temp
- Thermophilic: 104 °F to 170°F - high temp

Aerobic Bacteria

Fungus

Actinomycete

Worm

Nematode

Mite

Springtail

Ant

Sow Bug

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Nature has you covered

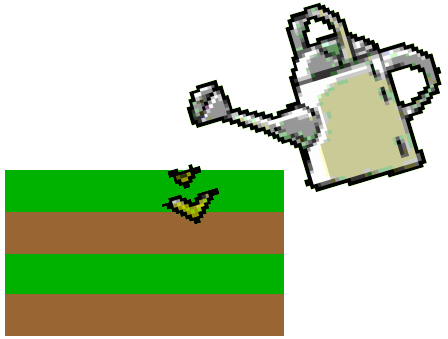
Building a Compost Pile

- Use **50%** **GREENS** and **50%** **BROWNS** by volume

- Chop the material if you want it to break down faster.
  - Wound for a cold pile
  - Chop to ½" to 1 ½" for a hot pile

- Build the pile in layers or mix together
  - Mix GREENS and BROWNS

  OR
  - 3" of GREENS
  - 3" of BROWNS
  - Water
  - Repeat



- Add water as required (as moist as a wrung out sponge)

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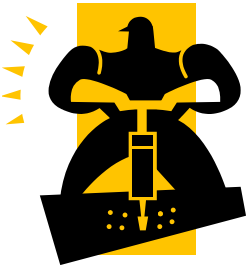
Hot Composting

- "Build all at once", ideal compost pile.
- Ideal hot compost pile needs:
  - > 1 cu. yd. of material. (3' x 3' x 3')
  - Material chopped ½" – 1 ½".
  - 50-50 greens/browns mix.

- If you build it…
  - …the bacteria will come (> 140F potentially)
  - >140F kills most weed seeds and plant disease pathogens.
  - Compost fast (2-3 months or faster)

- More labor to keep ideal air & water conditions
  - Turn every 1-2 weeks



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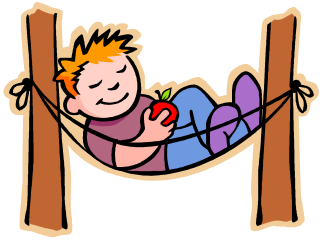
Cold Composting

- "Add as you go" compost pile
  - Add material as it becomes available (no minimum)
  - 50-50 greens/browns as much as possible
    - Food scraps mix with browns into center of the pile
  - Chop material as much as desired. Chopping will:
    - Reduce volume of material
    - Help speed decomposition, which also reduces volume

- Temperature is cool to warm
  - Weeds seeds and plant disease pathogens survive.
  - Compost slower (6-18 months)

- As much labor as you want.
  - Turn 1-2 months or pile too dry or too wet.



Demo

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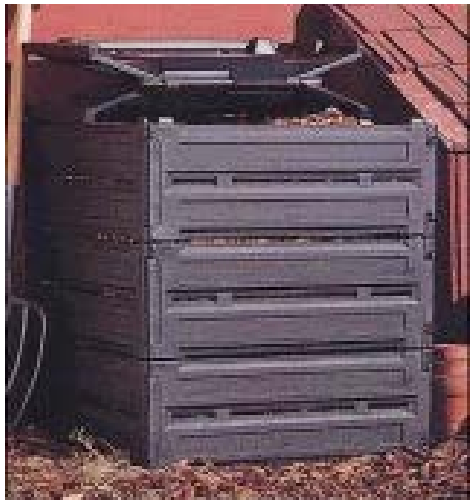
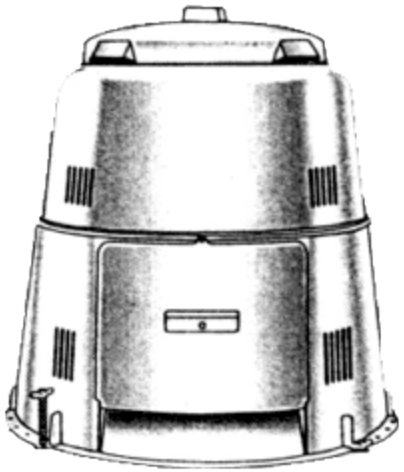
Nothing wrong with either method...Compost Happens!

Compost Piles

- Open pile (no bin)
  - can be used for hot composting
- Compost Bin
  - A bin can keep a pile neater
  - If food scraps are to be added to a cold pile, then use rodent proof bin
  - A bin with minimum volume of 3'x3'x3' is required for hot composting





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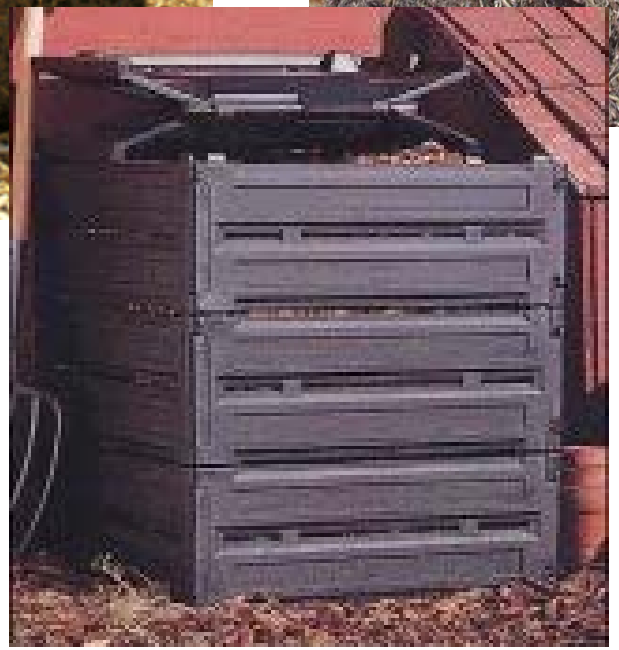
Examples of Compost Piles



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Tools

- Chop the materials
  - chipper shredder
  - lawn mower
  - weed eater
  - hand cutters
  - Sharp, light weight shovel on bare ground
- Maintain the pile
  - thermometer (fun)
  - turning fork (hot)
  - aerator (cold)
- Bins






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Harvesting the Compost

- A Hot pile is done with little or no heat being produced
- Material has turned dark brown and original materials are no longer identifiable (sight and smell)
- Screening can be used to remove large not decomposed items mainly in cold piles
  - Build your own screen

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Using Compost

- Improves soil structure by adding **humus** and **micro organisms**
  - A soil conditioner
  - Top soil restoration
  - Soil inoculant
- Typical Applications
  - Incorporate in soil prior to planting
  - Amend potting mixes
  - Mulch or "top dress" planted areas
  - Liquid extract
  - Compost Tea

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One teaspoon of good garden soil to which compost has been added contains

- 100 million bacteria
- 800 feet of fungal threads

Compost as a Mulch

- Saves water
- Nutrient reservoir
- pH Buffer

Incorporating Compost

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