Making Compost: Easy As 1.- 2.
Mission of the Maricopa County Master Gardener Program is to teach people to select, place, and care for plants in an environmentally responsible manner based on research specific to the low desert.
Why Make Compost ???

1. Make a soil amendment which recycles organic material and nutrients
   – add to gardens in our landscapes
   – use as a mulch

2. Reduce waste
   – Redirect green waste from landfills and sewage treatment plants
What is compost?

Organic “Stuff”

• Decomposed, once living, plant material
• Things that had leaves, stems and roots, not faces!
• Green waste and plant debris from our yards and gardens that otherwise would go out with the trash
• Kitchen debris that would go to garbage or disposal
2 Kinds of “Stuff”

• **Green Stuff**
  – Nitrogen rich
  – Recently alive

• **Brown Stuff**
  – Carbon material

– HINT—not all ‘brown’ is brown; not all greens are green!
Turning “Stuff” into Compost: Labor vs. Work

1. We do the LABOR-
We collect ‘stuff’:

• Green

• Brown
• We layer stuff to make the pile

• We turn the pile
We spread the compost
2. Bacteria, fungi, other organisms do the WORK

- The debris is a food source
- The colonies grow
- The debris becomes compost
- The nutrients tied up in plant debris are released
2 Kinds of Bacteria

1. Aerobic bacteria
   The good guys, the ones we want
   These need oxygen to live, breed, and work

2. Anaerobic bacteria
   The smelly ones, the ones we do not want
   Need no oxygen--but they decompose organic material too
Contained or Uncontained?

1. The Uncontained Pile
All sides and top exposed:

- Is easier to access
- Speeds drying
- Hard to keep moist
- Tends to lose shape: slows down composting process
- Looks messy
2. The Contained Compost Pile
Choose a system!
A Location for Your Pile

1. Convenient
   - Out of sight for collecting stuff
   - Easy access for working
   - Close to a source of water

2. Some shade
Making the pile

• Collect your “STUFF”
  – Equal volume of green and brown stuff

• Assemble the pile
  – Make 3-6 inch layers
  – alternate brown stuff and green stuff
  – make a pile 1 cubic yard in size
Good ‘Stuff’ from Outside

– Grass clippings
– Leaves – even oleander
– Fresh leafy debris from pruning
– Damaged, uneaten citrus or other fruits
– Spent vegetable and flower plants
– Young, not seedy, weeds
– Bedding from rabbits, chickens, grazing animals
Include ‘Stuff’ from the Kitchen and House

- Coffee grounds and filters, tea bags
- Kitchen peelings and parings
- Some table scraps and leftovers
- Cooking liquids, old coffee
- Shredded paper, some paper towels
- Pet hair and old pillow feathers
- Cotton from pill bottles
2. Bad “Stuff”

- Pet feces
- Diseased plant material
- Meat or fat, bones
- Weeds with seeds
- Fireplace or grill ashes
- Too much of any one thing, all at once, in one layer
- Worms! they will die
2. Layering the pile!
   This is ‘labor’

Start with a brown layer
Add a green layer
Add water
Repeat until pile is 3x3 feet
Make layers 2-4 inches deep
More Labor

Layers are not meant to last!

Turn the pile

– Once a week
– Twice a week
– Once a month…
– Move the edges, which dry out faster, to the middle
Benefits of Turning the Pile

1. Oxygen is added, enabling aerobic bacteria to thrive and multiply
   – The more bacteria, the faster and hotter they will work!

2. Moisture- add as needed to keep pile moist as a wrung out sponge
   – Things in the desert petrify they do not putrefy!
1. ‘Hot’ or ‘Fast’ compost

Requires about 1 cubic yard mass assembled at one time

Small pieces

Needs frequent turning

Reaches internal temperatures above 140

Can kill some disease organisms and weed seed

Decomposes quickly
2. ‘Slow’ or ‘Cold’ Compost

Easier: turned infrequently
Pieces are larger or less uniform
Layers are added over extended period of time
They are allowed to dry out
Will not damage weed seed
Requires less labor
Takes several months to decompose
Bacteria live that need cooler temperatures
Is It Done Yet?

25-40% of original pile
Can’t identify the original materials
Dark and rich looking
Smells earthy
Crumbles in your fingers
Something’s Wrong!

• My pile smells like ammonia
  – Too much nitrogen
  – Needs carbon--- BROWN material
  – Not enough oxygen—turn it!

• My pile has a putrid odor
  – May be too wet
  – Needs aeration (turning)
  – Needs more BROWNS
It’s Not Quite Right!?

• My pile has Bugs!
  – Great! They are part of the process
• My pile is not HOT
  – Needs nitrogen or ‘GREEN stuff’
  – Needs to be turned more frequently
  – Not enough mass, you need about 1 cubic yard for ‘hot’, or ‘fast’ compost
It is not composting fast enough!

- Turn it more frequently!!!
- Turn inside out
- Irrigate if pile is too dry
- Add nitrogen source
- Add additional materials to achieve mass
• My pile has no bugs
  – Water it
  – Stop watering it
  – Turn it
• I have flies
  – Add a layer of ‘brown’ after each layer of green.
  – Cover a newly turned pile with a thin layer of brown
You do not need!

- Store bought ‘Inoculants’
- A layer of soil to ‘inoculate the pile.’
- Manures
- Worms
  - Worms live in much cooler environments and this will kill them!
Alternatives to bin composting

• Bokashi
  – Closed system of fermentation
• Layer composting
  – Carbons and nitrogens are layered in the garden space and allow to decompose in situ
• Vermiculture
  – feeding red wiggler worms you household kitchen debris
Resources

• Compost for Dummies by Cathy Cromell
• ftp://phoenix.gov/pub/payf/compostflyer.pdf
• http://cwmi.css.cornell.edu/compostbrochure.pdf
• A Google ‘ucdavis.edu’ search of ‘rapid composting method’ yields a page of publications concerning composting research. Good reading!
• Arizona Master Gardeners Manual, on-line at: http://ag.arizona.edu/pubs/garden/mg/soils/improving.htm
  – Chapter 2 pages 38-43