**WHAT IS COMPOSTING AND WHY DO IT?**

Composting is nature’s way to recycle. It is the controlled, natural decomposition of organic matter. Microorganisms and macroorganisms break down organic materials into compost, or humus, a nutrient-rich soil amendment that improves the health and efficiency of your garden ecosystem from the ground up.

**COMPOSTING HAS MANY BENEFITS FOR THE HOMEOWNER AND THE ENVIRONMENT:**
- **GREENS**
  - Benefits your yard and garden by improving soil health and fertility, which increases plants’ resilience to pests, disease, and other environmental stresses.
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
  - Diverts valuable organic resources from becoming hazardous materials in the landfill, and encourages natural nutrient cycling.
  - Saves money by conserving water and replacing the need to purchase commercial fertilizers and soil amendments.
  - Microorganisms and macroorganisms break down organic materials into compost, or humus, a nutrient-rich soil amendment that improves the health and efficiency of your garden ecosystem from the ground up.
- **BROWNS**
  - A mix of these ingredients makes composting possible.
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
  - Diverts valuable organic resources from becoming hazardous materials in the landfill, and encourages natural nutrient cycling.
- **WATER**
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
- **AIR**
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.
  - Helps soil hold more moisture, which reduces the need for frequent watering and minimizes erosion, runoff, and nutrient loss.

**WHAT GOES IN THE COMPOST PILE?**

**GREENS**
- Fresh yard trimmings, fresh green prunings, grass clippings, fresh weeds with mature seeds, manure*, fresh manure, fresh grass, fresh grass clippings, fresh flowers, fresh garden foliage, fresh vegetable scraps, fresh fruit scraps, fresh vegetable scraps, fresh fruit scraps
- Dog, cat, & human feces
- Fruits, vegetables, and paper products
- Water helps ensure efficient processing of organics. Ideally, the pile is kept as moist as a wrung-out sponge. Too little moisture will inhibit decomposition, but too much water can produce smelly, anaerobic conditions.
- **BROWNS**
  - Woody materials, dead or dried plant debris, chopped branches and logs, bark, straw, stems, coffee filters, tea bags, shredded paper and paper products
  - Oils, grease, & lard
  - Charcoal or firelog ashes
  - Charcoal or firelog ashes
- **WATER**
  - Fresh yard trimmings, fresh green prunings, grass clippings
  - Charcoal or firelog ashes
  - Oils, grease, & lard
  - Charcoal or firelog ashes

**COMPOSTING IN STYLE**

There are several different styles of composting. Some require more time and effort, but yield quicker results. Many composters find they maximize their efficiency by practicing more than one type of composting, or by setting up multiple bin systems to have several stages of decomposition occurring simultaneously. Which style of composting best fits your needs and lifestyle?

<table>
<thead>
<tr>
<th>COMPOST STYLE GUIDE</th>
<th>PASSIVE COMPOSTING</th>
<th>ACTIVE COMPOSTING</th>
<th>VERMICOMPOSTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions to Ask</td>
<td>Low effort, infrequent maintenance</td>
<td>Engaged effort, frequent maintenance</td>
<td>Low-moderate effort, moderate maintenance</td>
</tr>
<tr>
<td>Purpose of compost</td>
<td>Light weight compost, kitchen scraps, vegetable trimmings</td>
<td>Heavy weight compost, molecular weight compost</td>
<td>Heavy weight compost, molecular weight compost</td>
</tr>
<tr>
<td><strong>Passive Composting</strong></td>
<td>Outdoor area with additional space for turning and harvesting</td>
<td>Apartment or condo, limited yard space</td>
<td>Apartment or condo, limited yard space</td>
</tr>
<tr>
<td><strong>Active Composting</strong></td>
<td>Low effort, infrequent maintenance</td>
<td>Engaged effort, frequent maintenance</td>
<td>Low-moderate effort, moderate maintenance</td>
</tr>
<tr>
<td><strong>Vermicomposting</strong></td>
<td>Apartment or condo, limited yard space</td>
<td>Apartment or condo, limited yard space</td>
<td>Apartment or condo, limited yard space</td>
</tr>
</tbody>
</table>

**QUESTIONS TO ASK**

- **How much effort do I want to put in?**
  - Low effort, infrequent maintenance
  - Engaged effort, frequent maintenance
  - Low-moderate effort, moderate maintenance

**How much space do I want?**

- Passive composting (requires moderate effort): Finished compost expected 6-12 months
- Active composting (requires engaged effort and frequent maintenance): Finished compost expected 3-6 months
- Vermicomposting (requires moderate effort): Finished worm castings expected 3-4 months

**COMPOSTING BASICS**

**GREENS & BROWNS + WATER + AIR**

**GREENS** are fresh organic materials that serve as sources of nitrogen. Greens are the primary energy source of the active macroorganisms, and are used as a supplementary source of moisture in the pile.

**BROWNS** are dried or dead organic materials that serve as sources of carbon. Browns are useful for retaining moisture, creating small air pockets, and supporting a diverse community of decomposers in the pile.

**WATER** and **AIR** are essential for an earthy-smelling compost pile. Turning the compost pile regularly will help to inhibit the growth of odor-causing anaerobic bacteria, and will result in faster decomposition.

**COMPOSTING TIPS**

- **WHAT GOES IN THE COMPOST PILE?**
  - **GREENS**
    - Fresh yard trimmings, fresh green prunings, grass clippings, fresh weeds, tree leaves, tree branches, certain types of seaweed
  - **BROWNS**
    - Woody materials, dead or dried plant debris, chopped branches and logs, bark, straw, stems, coffee filters, tea bags, shredded paper and paper products

**COMPOSTING BENEFITS**

- **What does composting cost?**
  - There are several different styles of composting. Some require more time and effort, but yield quicker results.

**WHAT HAPPENED TO YOUR COMPOST PILE?**

- **Purpose of compost:**
  - **Light weight compost, kitchen scraps, vegetable trimmings**
  - **Heavy weight compost, molecular weight compost**

**COMPOST CRITTERS**

A handful of compost contains more decomposer organisms than there are on the planet. These amazing little creatures are responsible for making the whole composting process happen.

**MACROORGANISMS**

- Microorganisms (like bacteria and fungi) do the majority of decomposition work. Although too small to see, they are on everything you throw into the compost pile.

**MICROORGANISMS** (like insects, worms, and grubs) are large enough to see. They usually emerge from the compost pile from the surrounding landscape in the later stages of decomposition.

**COMPOSTING BASICS**

**COMPOSTING INFORMATION**

- Fresh weed, organic, and paper products
- Water helps ensure efficient processing of organics. Ideally, the pile is kept as moist as a wrung-out sponge. Too little moisture will inhibit decomposition, but too much water can produce smelly, anaerobic conditions.

**COMPOSTING CRITICS**

- **Patrick Monks**
  - A handful of compost contains more decomposer organisms than there are on the planet. These amazing little creatures are responsible for making the whole composting process happen.

**COMPOSTING SUCCESS**

- Microorganisms (like bacteria and fungi) do the majority of decomposition work. Although too small to see, they are on everything you throw into the compost pile.

**MACROORGANISMS** (like insects, worms, and grubs) are large enough to see. They usually emerge from the compost pile from the surrounding landscape in the later stages of decomposition.
**COOL COMPOSTING**

Composting occurs on a spectrum; once you have the four ingredients, it is the amount of attention that you pay to the pile that determines its level of activity and how quickly it will yield finished compost.

- **WATER**
  - 20% moisture added to the heap.
  - Moisture is the single most important ingredient. Too much water will slow the composting process by anaerobically stunting the activity of your compost's microorganisms, while too little water will slow it down as well by causing drying out of the substrate.

- **THERMAL**
  - Temperatures of 90°F, 100°F or higher.
  - Hot piles are more effective at breaking down complex materials than cold piles are.

- **TIME**
  - 1-3 months, depending on the times required to breakdown the materials involved.

- **MAINTENANCE**
  - Turn the pile, add water, and re-spark the heat.

**ACTIVE COMPOSTING**

This model works the best when your pile is kept between 90°F and 100°F. A big advantage of this model is that it is constantly monitored and maintained to ensure the highest level of quality compost is achieved.

- **WATER**
  - 15-20% moisture added to the pile.
  - The amount of moisture added to the pile must be adjusted on a regular basis to maintain the correct balance for activity.

- **THERMAL**
  - Temperatures of 100°F, 110°F or higher.
  - Temperatures of 110°F or higher are the most effective at breaking down complex materials.

- **TIME**
  - 4-6 weeks, depending on the times required to breakdown the materials involved.

- **MAINTENANCE**
  - Turn the pile, add water and re-spark the heat.

**HOT COMPOSTING**

Starting with a large volume of material (filling the bin 70% full), the initial stages will be dominated by heat from natural degradation throughout the pile. Daily food scraps are added to the core of the pile.

- **WATER**
  - 15-20% moisture added to the pile.
  - The amount of moisture added to the pile must be adjusted on a regular basis to maintain the correct balance for activity.

- **THERMAL**
  - Temperatures of 110°F, 120°F or higher.
  - Temperatures of 120°F or higher are the most effective at breaking down complex materials.

- **TIME**
  - 2-4 weeks, depending on the times required to breakdown the materials involved.

- **MAINTENANCE**
  - Turn the pile, add water and re-spark the heat

**ADDITIONAL RESOURCES**

Visit Solana Center's composting demo site at 37 N. El Camino Real, Carlsbad, CA 92008 or check out our website www.solanacenter.org/ciy

**COOL COMPOSTING**

1. **Location**
   - Compost location must be indoors or outdoors in the shade.

2. **Composting Complements**
   - Keep your bin indoors or locate it outdoors in the shade to moderate temperature.

3. **Worms**
   - Adapt population size to available space and food resources.

4. **Bedding**
   - Create a damp bedding by soaking and wringing out torn newspaper, napkins, paper towels, and/or coconut coir.

5. **Starting a Composting Bin**
   - Make or purchase a bin specifically designed for vermicomposting.

6. **Food scraps**
   - Choose materials that will attract wiggler worms.

7. **Screening**
   - Decomposing can be done by hand or with the use of hardware mesh.

8. **Mulch**
   - Do not add weed seeds or diseased plants. Bury food scraps in the core of the pile to decompose.

9. **Harvesting**
   - Stop adding material 2-3 months before you plan to harvest.

10. **Maintaining**
    - Turn the pile, add water, and re-spark the heat.

**ACTIVE COMPOSTING**

1. **Location**
   - Compost location can be indoors or outdoors in the shade.

2. **Composting Complements**
   - Keep your bin indoors or locate it outdoors in the shade to moderate temperature.

3. **Worms**
   - Adapt population size to available space and food resources.

4. **Bedding**
   - Create a damp bedding by soaking and wringing out torn newspaper, napkins, paper towels, and/or coconut coir.

5. **Starting a Composting Bin**
   - Make or purchase a bin specifically designed for vermicomposting.

6. **Food scraps**
   - Choose materials that will attract wiggler worms.

7. **Screening**
   - Decomposing can be done by hand or with the use of hardware mesh.

8. **Mulch**
   - Do not add weed seeds or diseased plants. Bury food scraps in the core of the pile to decompose.

9. **Harvesting**
   - Stop adding material 2-3 months before you plan to harvest.

10. **Maintaining**
    - Turn the pile, add water, and re-spark the heat.

**HOT COMPOSTING**

1. **Location**
   - Compost location must be indoors or outdoors in the shade.

2. **Composting Complements**
   - Keep your bin indoors or locate it outdoors in the shade to moderate temperature.

3. **Worms**
   - Adapt population size to available space and food resources.

4. **Bedding**
   - Create a damp bedding by soaking and wringing out torn newspaper, napkins, paper towels, and/or coconut coir.

5. **Starting a Composting Bin**
   - Make or purchase a bin specifically designed for vermicomposting.

6. **Food scraps**
   - Choose materials that will attract wiggler worms.

7. **Screening**
   - Decomposing can be done by hand or with the use of hardware mesh.

8. **Mulch**
   - Do not add weed seeds or diseased plants. Bury food scraps in the core of the pile to decompose.

9. **Harvesting**
   - Stop adding material 2-3 months before you plan to harvest.

10. **Maintaining**
    - Turn the pile, add water, and re-spark the heat.