**Composting Lab**  Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Introduction:** Composting of organic compounds is one of the ways that nature recycles. Composting allows needed nutrients to recycle uninterrupted in the ecosystem. Given the right conditions, organic wastes can be decomposed and recycled.

Composts rely on living organisms. If the life forms are given enough air, water and food (organic wastes) the decomposing organisms (especially bacteria) thrive and reproduce. These organisms eat, decompose, and produce energy which is visible as heat. The finished product is called compost which is an excellent source of nutrients for plants.

**Purpose:** To construct and observe a small compost model and investigate the decomposition of various types of waste.

**Materials:**

scissors soil

rubber band 2-L pop bottle

paper towel saran wrap

tape composted material (various types such as plastic, food bits,

Styrofoam, foil, paper, etc.)

**Procedure:**

1. Use heavy duty scissors to cut 2-L pop bottles into 2 halves. (You may want to tape the edge if it is jagged to prevent cuts)
2. Plug the pour spout with cotton or paper towel.
3. Add alternating layers of soil and garbage.
4. Begin by lining the bottom of the container with soil, and set the top portion into the bottom as shown in the illustration.
5. Find the mass of each material to be composted and record the mass in Table One.
6. Add the material and cover it with a thin layer of soil.
7. Continue layering soil and garbage until all types of items have been included (plastic, organic food scraps, foil paper, Styrofoam, oil, etc.).
8. Cover the compost container with saran wrap and a rubber band.
9. Spray each compost container with water every other day to keep them damp.
10. Observe your compost container once a week and record your observations.

**Data Table One**

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| --- | --- | --- |
| **Composted Material** | **Mass Before Composting** | **Mass After Composting** |
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**Observations:**

Complete your observations on a separate sheet of lined notebook paper.

Write and UNDERLINE the date of each observation followed by general observations as well as specific observations of each material. As you mist your compost, be sure to take note of any odors coming from your column. Observe any insect activity or growth of other organisms in or on your compost. You may also record the temperature of your compost and compare it to room temperature.

**Temperature Data Draw a picture of your compost column below. Label each layer.**

|  |  |  |
| --- | --- | --- |
| **Date** | **Room Temp** | **Compost Temp** |
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**Analysis and Conclusion:**

1. For each of your items, how did the mass change over time?

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| --- | --- | --- |
| **Item** | **Change in Mass** | **Thoughts?** |
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1. Which types of items showed the greatest decrease in mass?
2. Which types of items showed the least decrease in mass?
3. How does this lab show decomposition?
4. Explain why some things showed more decomposition than others.
5. Describe any organisms growing in your “landfill”.
6. How could you tell there were microorganisms growing even if you didn’t see them?
7. Describe the leachate from your landfill.