Background Information:

Soil is essential to all life on earth because plants depend on soil. Soil is the place where plants are rooted, and it is the place where plants obtain the nutrients and water they need for growth and photosynthesis. The soil is composed of minerals, rotting dead plants and animal matter, water and air. It is also the home of fungi, bacteria, insects, worms and other animals and plants. The decomposition process and the activities of soil organisms produce an acid that increases the rate the soil minerals dissolve. When minerals dissolve they produce nutrients that plants can use for growth and health. Composting is a representation of the natural decomposition process of organic materials.

Recipe for Composting

- Oxygen - air
- Moisture - water
- Organic Matter – carbon and nitrogen sources
- Bacteria – soil

Carbon sources – dried leaves, pine needles, newspaper, sawdust

Nitrogen sources – grass clippings, food scraps, coffee grounds, horse manure

Not to use in compost: Meat, fat, pet droppings, bones, milk, diseased plants, cheese, oil

Instructions:

1. Ask youth to list what is essential for plant life. Make a list on the poster paper.
2. Ask youth to describe the necessary components of soil needed to support plant life. Make a list on the poster paper.
3. Instruct students to use the internet to research these two questions and the design of compost bins. If internet isn’t available, provide several library or extension services resources that contain the information.
4. Ask students to generate a ‘recipe’ for composting materials.
5. Bring students back together and discuss additions from their research to the two lists on poster paper. Make sure that the final recipe and ingredients list is in a simple format (similar to the one provided in the background information) for them to follow.
6. Either in teams or individually, have students design their compost bin; list ingredients they will need and the steps of constructing the compost.
7. When plans are complete, instruct students on the availability of ingredients for them to use and allow them to construct their bin. You can do this one of two ways:
   1. Gather the ingredients ahead of time, prior to leading this activity
   Or
   2. Allow youth to gather the materials on their own. Be sure to find a safe place outdoors for them to do this.
8. Each week, have students record the temperature, look of decomposing material and differences from prior week.

Resources:
http://sustainable.tamu.edu/slidesets/kidscompost/compostingforkids.pdf
http://www.epa.gov/epawaste/conserve/rrr/composting/basic.htm

Sample Table for Recording Weekly Results:

<table>
<thead>
<tr>
<th>Week</th>
<th>Temperature</th>
<th>Look and Feel</th>
<th>Changes Noted from Prior Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td></td>
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<tr>
<td>Week 2</td>
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<td>Week 3</td>
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<tr>
<td>Etc...</td>
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