Making a Compost Pile

**What You Need**
- large plastic trash can with lid
- shovel
- 500-mL beaker
- high-nitrogen fertilizer
- gardening gloves
- water in a watering can
- fruit and vegetable scraps
- plant waste material

**Find Out**
Do this activity to see how new soil is made.

**Process Skills**
- Hypothesizing
- Measuring
- Observing
- Communicating

**Time**
- One hour the first day
- 15 minutes every two weeks for eight weeks
**What to Do**

1. Write a **hypothesis** about what you think will happen when organic material is left to break down.

2. Bring scraps of fruits and vegetables to school. The vegetables can be raw or cooked, but be sure they do not contain any oil or grease. Do not bring scraps that include meat. **Be sure there is adult supervision when sharp objects are used.**

3. Have your teacher punch 20 or 30 holes in the sides and top of the trash can. This is so your compost has good air circulation.

4. Find a warm, sunny spot outside for your trash can. Fill the bottom with bulky, lightweight plant material. Use dead leaves, grass clippings, sawdust, or shredded newspaper. **Wear gloves when handling plant material.**

5. Put the scraps in the can and cover with more plant material.

6. Have your teacher **measure** 500 mL of the fertilizer and add it to the trash can. Add just enough water to moisten the mixture.

7. Use the shovel to mix the compost mixture well. Put the lid on and leave the can. **Don’t touch the compost with your hands. Hold your hand above it to see if you can feel the heat.**

8. Check your compost in one week. The center of the pile should be warm. **Record your observations.**
9. Every two weeks, have your teacher help you use the shovel to turn the pile over. What’s on top of the pile needs to be moved to the center so it can decay. Keep the pile damp, but not wet. **Observe** how the pile changes from one turning to the next.

10. Compare your **hypothesis** with your observations. Was your hypothesis correct?

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Hypothesis: What do you think will happen in your compost pile?

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<table>
<thead>
<tr>
<th>Changes in a Compost Pile</th>
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<tbody>
<tr>
<td><strong>Time</strong></td>
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<tr>
<td>After 1 week</td>
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<td>After 2 weeks</td>
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<td>After 4 weeks</td>
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<td>After 6 weeks</td>
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<td>After 8 weeks</td>
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</tbody>
</table>
Conclusions

1. How did your compost pile change during the first week?

2. How was it different at the end of the second week?

3. What natural factors work together in the process of producing compost?

New Questions

1. What could compost be used for?

2. Write a new question you have about making compost.
Classifying Rocks

Record your observations in the table below.

<table>
<thead>
<tr>
<th>Name of Rock</th>
<th>Drawing of Rock</th>
<th>Description</th>
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</table>
Activity Journal
Lesson 1 • Rock Types and Formation

Name ________________________________

Conclusions

1. Did you change your original groupings? Why or why not?

2. Are your groups like your classmates’ groups? Is there only one way to group the rocks? Explain.

3. Did some rocks fall into more than one category? Why or why not?

Asking New Questions

1. Explain why you grouped your rocks the way you did. What characteristics did you look for?

2. What other characteristics could you look for?

3. After looking at the different properties of the rocks, try to describe how each rock could have been formed.
**Activity Journal**
Lesson 2 • Earth’s Minerals

Name ________________________________

## Activity

### Naming Minerals

**Record your observations** on the chart below.

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Luster</th>
<th>Streak Color</th>
<th>Heaviness</th>
<th>Softness/ Hardness Rank</th>
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</thead>
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*UNIT B • Chapter 4: Rocks, Minerals, and Soils*
Conclusions

1. Did any minerals produce a surprising streak?

2. Which samples stood out as being heavy? Can you suggest a reason why this might be?

3. Which sample was the hardest? Which was the softest?

4. Which samples could be scratched by a fingernail? By a penny? By the steel file? Which could scratch glass?

Asking New Questions

1. Which tests seemed to be best for classifying minerals? Which tests were not so good?

2. Why are some of these minerals harder than others?
Testing Soil Characteristics

Record your observations in the table below.

<table>
<thead>
<tr>
<th>Soil Sample</th>
<th>Characteristics</th>
<th>Which Soil Is Harder?</th>
<th>Soaking Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>2</td>
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</table>
Conclusions

1. What similarities and differences did you find between the two soil samples?

2. Where was water absorbed more quickly?

3. Remember the results when you poked the soil at each spot with your pencil. Do you think there is a relationship between soil characteristics and water absorption? Explain.

Asking New Questions

1. Explain the relationship between your findings and the growth (or lack of growth) of plants at the soil locations.

2. How might you get grass to grow better on bare spots where little grass grows?
Modeling Earth’s Limited Resources

Draw a circle and divide it to show the different parts of your model. Try to keep the same proportions as your clay model.
**Conclusions**

1. **Why are there more yellow sections than green sections?**

2. **Why should we try to conserve topsoil for growing crops?**

3. **On which section of your model do you live?**

**Asking New Questions**

1. **Where else on Earth could people look to produce food?**

2. **What can we do to keep the green part of Earth from getting even smaller?**