**Experiment Background:** We have read a few books on recycling over the past week. This week we will begin experiments that will help us understand these issues more.

**Project Instructions:**

**Activity 1: Waste Management**

Attach a medium-sized plastic bag to your belt or backpack. Put into it every bit of waste you generate for a 24 hr. period. At the end of the period, weigh and examine the contents of your bag. Complete the worksheet titled “Waste Management”.

**Activity 2: What is Biodegradability?**

**Materials:**
- 4 cups of potting soil
- Objects from home that you consider biodegradable or non-biodegradable (fruit, bread, meat, plastic, paper, or cardboard . . .)
- Metal tray or bread pan

1. Place soil in a metal tray or bread pan (Soil should be 2 ½ inches deep.)
2. Divide the pan into 6 areas, and bury a small piece (1 cc) of material in each area.
3. Place a plant label or ice cream stick in each area, telling what material is buried there.
4. Complete the top half of the Scientific Process Form.
5. Every other day for two weeks, dig up the substance and describe its appearance, smell, etc.
6. Record your results in your lab notebook.
7. After two weeks of observations complete Scientific Process Form.
8. Answer these questions in your lab notebook:
   - How did your materials change? Why?
   - What materials show little or no change? Why not?
   - How does biodegradability affect our world?
   - What are some practical things you can do about this problem?

**Criteria:**

**Waste Management:**

1. All questions must be answered.
2. Conclusions are drawn about individual waste and the environment

**What is Biodegradability?**

1. Observations are recorded in the lab notebook.
2. All assigned questions are answered in the lab notebook.
3. Scientific Process Form is completed.
Waste Management

Answer the following questions after your 24 hr. period of waste management.

1. How much did your bag weigh? ____________________________

2. List the contents of your bag: _____________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

3. How did you feel while you had the bag attached to you all day? ____________________________
________________________________________________________________________________________
________________________________________________________________________________________

4. Did you notice any changes in your waste-making behavior while you were wearing the bag?
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

5. How much of your waste came from over-packaging? ____________________________
________________________________________________________________________________________
6. Was there anything in your bag that you didn’t really need? __________________________________________

_________________________________________________________________________________________

7. What conclusions can you come to about the waste that individuals accumulate during one day?

_________________________________________________________________________________________

_________________________________________________________________________________________

Waste Management Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Questions Are Answered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conclusions are drawn about individual waste and the environment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biodegradability Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>1</th>
<th>3</th>
<th>5</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations are Recorded</td>
<td>0-2 days of observations are recorded</td>
<td>3-4 days of observations are recorded</td>
<td>5-6 days of observations are recorded</td>
<td></td>
</tr>
<tr>
<td>All assigned questions are answered completely in lab notebook</td>
<td></td>
<td>Most assigned questions are answered completely in lab notebook</td>
<td>Assigned Questions are answered completely in lab notebook</td>
<td></td>
</tr>
<tr>
<td>Scientific Process Form Completion</td>
<td>Some of the form is completed accurately</td>
<td>Most of the form is completed accurately</td>
<td>All of the form is completed accurately</td>
<td></td>
</tr>
<tr>
<td>Scientific Process Form – Results and</td>
<td>Relationships are not drawn between results</td>
<td>Relationships are drawn between results and conclusions</td>
<td>Relationships are thoroughly drawn</td>
<td></td>
</tr>
</tbody>
</table>

___\(X^2 = \frac{____}{20}\)
Conclusions

Conclusions and conclusions between results and conclusions

No ideas of how biodegradability affects our environment and how we live

Ideas of how biodegradability affects the environment are evident

\[ \chi^2 = \frac{____}{20} \]

Total Score: \[ \frac{____}{35} \]

Scientific Process Form

**Name ______________________________**

**Title of Experiment ______________________________**

**QUESTION:** What do you want to find out?

**HYPOTHESIS:** What do you predict will happen?

**MATERIALS:** What items do you need in order to do this experiment?
PROCEDURE: How will you find out? (number step-by-step)

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

RESULTS: What happened during this experiment?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

CONCLUSION: What did you learn from this experiment?

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________