



# WASTE NOT

# LEARNING LOG 4

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## "FROM WASTE TO WONDERFUL"

As you watch the film "From Waste to Wonderful", take notes and write a few answers in response to the questions below. You will find this information very useful when preparing your written summary.



EM Bokashi

1. Describe what EM Bokashi is.
2. Describe how EM helps to address the food waste problem.
3. Describe the problem we are facing with our landfills.
4. What are some ways that technology has helped us with our waste stream?
5. On the back of this page, create a diagram that shows how matter and energy are transferred during decomposition.



EM liquid

**WASTE NOT****LEARNING LOG 5**

NAME \_\_\_\_\_

DATE \_\_\_\_\_

**DESIGNING AN EXPERIMENT**

**Challenge:** Work with your team to design an experiment to find out more about how EM affects decomposition. Start by making a list of your observations about EM.

**Our Research Question:** What do we want to find out?

Develop a question that you want to investigate about EM.

**Hypothesis:** Develop a hypothesis that you will test with your experiment. If we do [describe your change]...then... [describe what you believe will happen and why].

**Procedure:** Describe your procedure. Keep in mind that you will need a way to measure the amount of change. You will need a "control" for your experiment where you do not change anything so you will have a comparison.

**Results:** Record your observations after three weeks.

**Conclusion:** What actually happened? Did your results validate your hypothesis? Use the back of this page to explain.



## WASTE NOT



## LEARNING LOG 6

## OBSERVATIONS

NAME \_\_\_\_\_

DATE \_\_\_\_\_

Use this data sheet, or design your own to record observations of your experiment.

Date 	1) Waste with EM Bokashi  Observations (Record what you see and smell.)	2) Waste with Sand  Observations (Record what you see and smell.)	3) Waste with Soil  Observations (Record what you see and smell.)	4) Control: Waste with nothing added  Observations (Record what you see and smell.)
Day 1				
	Open this container <b>first</b> and record what you see and smell.	Open this container <b>second</b> and record what you see and smell.	Open this container <b>third</b> and record what you see and smell.	Then open the control container <b>LAST</b> and record what you see and smell.
Day 21				

**WASTE NOT****LEARNING LOG 7**

**NAME:** \_\_\_\_\_ **CLASS:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**LAB REPORT**

In this lesson we have:

- Learned about EM Bokashi
- Designed an experiment comparing decomposition of food with EM Bokashi, soil, sand, or nothing.

To assess your learning, write a one-page lab report.

1. Research question
2. Hypothesis in an "If...then..." format
  - Describe the variable.
  - Describe the control.
  - Describe how other factors were controlled.
3. Procedure
4. Results: how did the different groups compare? Visually, smell, etc.
5. A well-written scientific conclusion includes the following:
  - The purpose / problem / question of the experiment should be restated.
  - Data obtained in the experiment should be used to support or refute the hypothesis.
  - New concepts learned or demonstrated in the experiment should be stated.
  - No vague words such as 'it', 'they', or 'things'
  - Discuss any possible causes for error in the data or any problems you had with the experiment.
  - You should include any new questions or experiments suggested by your experiment.



Grading will be as follows:

Mechanics: Spelling, neatness, punctuation and grammar	_____/5
Content: Lab report contains all sections listed	_____/20
Total	_____/25

Lab reports should be written on folder paper, or typed on a computer and attached to this Learning Log sheet. Use the criteria above to check your report before you turn it in.