

WASTE DISPOSAL



Pile It On

Grade Level : 3

Subjects:

Science 2.3, 3.3,
Social Studies 2.3, 5.3, 8.2
Math 4.1, 4.3, 4.13
Communication Skills 2.2,
4.2

Time:

homework assignment two
days before lesson
one class period for lesson
three to four weeks for
observation

Setting:

classroom or a protected
spot outside

Materials:

four 5-gallon buckets,
weeds, hay, grass clip-
pings, sawdust, coffee
grounds, fruit and veg-
etable peelings, leaves,
thermometer

Skills:

measuring, observing,
analyzing, classifying

Vocabulary:

composting
aerobic
anaerobic
decomposition
mass
volume

Source:

*Here Today, Here
Tomorrow...Revisited*
New Jersey Department of
Environmental Health

Summary: Students will observe different compost piles with various deficiencies in order to learn which components are necessary for proper composting.

Objective: Students will learn the basic components of a compost pile and see the result of proper composting.

Background: A compost pile is made of organic wastes and needs nitrogen, moisture, and air to allow the organic waste to decompose over time.

Leading Question: What does a compost pile need in order to function properly?

Procedure:

1. Have the class collect and bring in a good variety of organic waste a day or two before the lesson.
2. Prior to the lesson, a few students may be asked to look up information about composting (why and how) and other vocabulary. They can share information at the beginning of the lesson. Then ask the leading question above.
3. Begin preparing the four compost piles with help from the students.
4. Drill holes in the sides of three of the buckets, near the bottom.
5. Set up the following conditions in each bucket:
 - Compost Bucket #1**
(Compost which is low in nitrogen)
 - Place mostly leaves and some vegetable and fruit peels in the bucket.
Moisten, do not soak.
 - Turn over regularly, once every 3 days for the first 2 weeks, then once per week.

- Compost Bucket #2**
(Compost without enough moisture)
- Place a mixture of grass clippings (high in nitrogen—make sure the grass clippings are not very wet), leaves, vegetable and fruit peels in the bucket.
Do not water.
Turn regularly.

Pile It On (Continued)

Compost Bucket #3 - The one with no holes in the side
(Compost without adequate air circulation)

Place mostly grass clippings (high in nitrogen) in the bucket.
Place a mixture of leaves, vegetable and fruit peels in the bucket.
Keep moist.
Do not turn.

Compost Bucket #4
(Compost with optimal conditions)

Layer leaves, vegetable and fruit peels, and a small amount of grass clippings in the bucket.
Keep moist.
Turn regularly.

6. Keep daily record of temperatures in the piles.
Observe for several weeks.
Discuss results after several weeks:
 - Which compost is dark and crumbly?
 - Which is best? What ingredients/components did it have?
 - How does composting reduce the amount of vegetative waste?
 - Did all piles look and smell the same?

What Now?

Apply information learned about compost piles to modern landfills. Discuss how the two differ and explain each difference.