

## COMPOST - INTERMEDIATE ACTIVITY 2

# The "Doo Doo" Do

**OBJECTIVE:** To test the rates of decomposition for a homemade diaper versus a commercial disposable diaper.

**MATERIALS:** commercial disposable diaper, grated carrot and potato, shredded newspaper, water, blender, bowl, pantyhose, composter, note pad, pen, paper towel, cookie sheet, HANDOUT: **Diaper Diagram** (E51)

**VOCABULARY:** bacteria, compost, decomposition, disposable, experiment, groundwater, pile, surface area, waste

### BACKGROUND:

Diapers are a touchy environmental issue; both cloth and disposable diapers claim to be environmentally superior. Cloth diapers can be reused over and over but use water, detergents and possibly bleaches when cleaned. Manufacturers of disposable diapers claim their diapers will decompose in landfills. While this may be true it can cause problems. If the waste a disposable diaper contains is not removed before the diaper is disposed, this waste is also buried in the landfill. Water can percolate through the diaper and its waste carrying diseases and other hazards into groundwater supplies.

This activity will have the students produce their own homemade diapers and test the diapers' strength and absorbency. The students will be able to see how different materials decompose at different rates.

### PROCEDURE:

1. Explain the background information to the class. Tell the students they are going to conduct an experiment to test how decomposition rates vary.
2. The recipe for making a diaper is given on the HANDOUT: **Diaper Diagram** (E51), distribute it to the class.
3. When the homemade diaper is dry, compare it to the commercial diaper. Add 60 ml of water to test the absorbency of each diaper.
4. Place each diaper in separate compost piles. Make sure both diapers are buried at the same depth. If compost piles are not available place each diaper in the garden or another area. Cover both diapers with a uniform amount of soil.
5. Start a log. The first entry should include the date the diapers were buried, what the compost or soil surrounding the diapers looked like and a description of the diapers themselves.

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# The "Doo Doo" Do (cont.)

### **PROCEDURE (cont.)**

6. Keep a record of the weather for the two weeks after the diapers were buried. Make daily entries into the log detailing the temperature (daily high and low), whether the sky was cloudy, sunny, etc. and any precipitation that may have occurred.
7. After the two weeks have passed uncover the diapers. Describe the state of each diaper. Be sure to mention which one appears to have decomposed the most. Again describe the compost or soil around each diaper. Enter these observations into the log.
8. Each student should now write a conclusion as to whether or not the homemade diaper decomposed faster than the commercial diaper.
9. Lead a discussion in class. Have the students debate whether it is better to use cloth diapers or disposable diapers. The students should consider the resources used in making both types of diapers, the benefits and pitfalls of both products and more environmentally friendly alternatives.

### **EXTENSION:**

1. Continue the experiment until both the homemade and commercial diaper have completely decomposed.
2. Research what materials are used in the production of commercial diapers. Is a diaper made of natural vegetable material (potatoes or carrots) practical?
3. Do the experiment with other products such as biodegradable garbage bags, orange peels, etc.

### **EVALUATION:**

1. Did the students keep accurate logs?
2. Are advertisers being truthful when they say disposable diapers decompose?
3. Have each student state his or her view on the cloth versus disposable diaper debate.