

Name \_\_\_\_\_ Date \_\_\_\_\_

## How long will that litter last?

To *biodegrade* means to break down naturally. Sunlight, air, water and microorganisms help materials to biodegrade. Different materials break down at different rates.

**Directions:** Rank the following commonly littered items from 1 to 9. Use 1 for the item that will biodegrade the fastest, and 9 for the item that will biodegrade the slowest. Assume these items are on a roadside, and are exposed to the same conditions.

\_\_\_ Aluminum can

\_\_\_ Paper

\_\_\_ Glass bottle

\_\_\_ Plastic bottle

\_\_\_ Cigarette butt

\_\_\_ Orange peel

\_\_\_ Milk carton

\_\_\_ 6-pack ring holders

\_\_\_ Gum

1) **Items that go to the landfill are compacted several times by large machinery. Each day, the portion of the landfill that is currently in use is covered with several inches of ash or sand. Do you think the items above would biodegrade in the landfill? Why or why not?**

2) **Do you think that things like apple cores and orange peels are litter? Why or why not?**

## How long will that litter last?

Because conditions vary widely, there are many different rates of biodegradation for the items on the list. The rates below are averages based on exposure to the elements. Ranking them allows students to think about what would degrade faster and why instead of guessing at the number of years, though the rates are given for discussion and illustrative purposes.

	Biodegradation Rate
__5__ Aluminum can	200 years
__1__ Paper	1 month
__7__ Glass bottle	1 million years
__8 or 9__ Plastic bottle	Never
__4__ Cigarette butt	13 years
__2__ Orange peel	6 months
__3__ Milk carton	5 years
__6__ Six-pack ring holders	450 years
__8 or 9__ Gum	Never

**3) Items that go to the landfill are compacted several times by large machinery. Each day, the portion of the landfill that is currently in use is covered with several inches of ash or sand.**

**Do you think the items above would biodegrade in the landfill? Why or why not?**

Sunlight, air, water, and microorganisms are needed for biodegradation. The inside of a landfill lacks some or all of these things, which slows down the rate of biodegradation considerably. *The Garbage Project*, an archaeological study of trash, found food scraps that were very well preserved after 20 years.

William Rathje and Cullen Murphy. *The Garbage Project*. 1992. Harper Collins Publishers.

**4) Do you think that things like apple cores and orange peels are litter? Why or why not?**

Litter is any piece of trash that doesn't end up in the trash can. Littered apple cores, for example, can attract flies, roaches and rats, and aren't pleasant to sit next to or step on while at the beach. Composting apple cores keeps them out of the landfill and is a good choice for disposing of them properly. Otherwise, they belong in the trash can with the rest of the trash.