



This mini-landfill shows how garbage is layered and how landfills are designed to protect public health and the environment. The students may build their landfill individually or in groups.

For each landfill, follow these steps.

1. Use a plastic cake container from the grocery store as your landfill site.
2. Cut eight circles from heavyweight paperboard (cereal boxes) or cardboard. Cut one circle from a black garbage bag. The students will use these circles to represent the many layers of a landfill.
3. Have the students create the following.
 - a. **WATER TABLE** – Create a circle to represent the water table. Explain that the water table is the level below which the ground is saturated with water. Groundwater is the water below the Earth's surface that moves between soil particles and rock. This water supplies much of our drinking water. To make this layer, use crayons or markers to color the cut-out circle or – for a three-dimensional look – use clay or a salt and flour mixture colored with blue food coloring.
 - b. **DIRT LAYER** – This represents the ground. Have students color this layer brown or glue sand to the circle.
 - c. **PLASTIC LINER** – Use a circle cut from a black plastic garbage bag and glue it to a cardboard circle to represent the thick plastic liner in the landfill.
 - d. **LEACHATE PIPES** – Glue two straws together to represent the pipes that collect water in the bottom of the landfill. This water (leachate) is pumped from the landfill and treated at a wastewater treatment plant.
 - e. **TRASH LAYER** – Have the students glue a variety of trash to this circle.
 - f. **DIRT LAYER** – Prepare as before.
 - g. **TRASH LAYER** – For this layer have the students use only material that can be recycled.
 - h. **DIRT LAYER** – Prepare as before. Explain to the class that landfills are covered with a dirt layer at the end of each day.
 - i. **CAPPING LAYER** – When the landfill is filled to capacity, it is permanently covered with a combination of synthetic liner and compacted clay.
 - j. **FINAL EARTH COVER** – The soil is then planted with vegetation, like grass, to prevent erosion.
4. After the students prepare their landfills, discuss how garbage takes up space in the landfill. Then let them remove the recyclables from Layer G. Let the students see how keeping recyclables out of the landfill saves valuable space and resources. Explain that we must separate recyclable items from the garbage before it goes to the landfill.



SUPPLY LIST

You will need:

1 Plastic Cake Container

8 Paperboard or Cardboard Circles (cut to fit inside of the cake container)

A Plastic Circle (cut from black garbage bag)

Small Pieces of Garbage (including material that can be recycled)

Glue, Crayons and Markers

2 drinking straws

OPTIONAL: Sand, Salt and Flour Mixture, Blue Food Coloring or Clay

Landfills keep our garbage in place and help to protect the environment. Recycling helps save landfill space. When you remove from the waste stream the things that can be recycled, you reduce the amount of garbage disposed of in the landfill.

