



EDIBLE LANDFILL

- I. Objectives
- Students will learn the importance of waste reduction and recycling to maximize the benefit of landfill space.
 - Students will recognize the value of protecting the ground water supply by building a landfill correctly.
 - Students will create an edible model of a landfill with the different layers required to protect the ground water supply.
- II. Materials
- Plastic cups, spoons, fruity pebbles, ground up cocoa pebbles, fruit loops, and milk.
 - Something that weighs 5 pounds.
- III. Introduction
- ??? Imagine... a small piece of trash... thrown into the trashcan. Where does that trash go?
- To the dumpster, in the garbage truck, and to the dump/landfill.
- ??? How much trash does each one of us throw away each day?
- The average person throws away 5 lbs. of trash per day.
 - Use something that weighs 5 lbs. to help students visualize this.
- ??? How many landfills does Lubbock have?
- Two
 - The original landfill out by the airport
 - The new one located near Abernathy. The total land acreage for the landfill is 1,100. 700 acres are for the disposal of trash.
- ??? Why is the new landfill located so far out in the country?
- The smell & obtaining permits to dig a landfill. Would you want a landfill in your backyard?
- IV. The Design of a Landfill
- A landfill is designed like a grid. Each square in the grid is called a "Cell." Trash is only put in one cell at a time. When that cell is filled up, a new cell is opened up for use. The new landfill has a total of 30 cells.
- V. The Layers of a Landfill (from the bottom up, by individual cell)
- Beneath Landfill: groundwater (Ogallala Aquifer)
??? Does anyone use this water? Anyone who digs a well (farmers, ranchers, people out in the country, etc.) Is protecting it important? Yes!
 - Layer 1: soft liner
 - Layer 2: hard liner
 - Both of these liners protect the groundwater from garbage.
 - Layer 3: soft trash (what comes from our houses)
 - Layer 4: dirt cover

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- Dirt is added every day (about 6 inches). This keeps blowing trash in and birds and bugs out. It also works as a firewall.
- One other option is slurry. Slurry is made from old newspaper being torn into strips and turned into pellets. This saves space because you only need 2 inches of slurry instead of 6 inches of dirt!
- f. Layer 5: more trash (added daily)
- Trash, when added, is compacted (??? what do I mean by “compacted?”). A compactor (describe) runs over the trash 2-3 times before another layer is added.
- g. Layer 6: dirt cover
- h. Layer 7: more trash (added daily)
- i. Layer 8: dirt cover
- On windy days, water is sprayed over the layer of dirt... why? (To keep the dirt down)

VI. Activity

- a. Each student receives one small cup
 - This represents the cell of a landfill
- b. Give each student ¼ caramel apple wrap
 - This represents the liner of the cell
- c. Scoop two tablespoons of fruity pebbles
 - This represents soft trash
- d. Scoop one tablespoon of ground cocoa pebbles
 - This represents the dirt cover
- e. Add a few fruit loops... ??? What do they represent and why are they bad?
 - Represent tires. Landfills do not accept tires because they do not compact. Must be recycled at garages / tire shops.
 - There are employees whose job is to look for tires and dig them out if they find them in the landfill.
- f. Add another two scoops of fruity pebbles (soft trash)
- g. Add one final scoop of ground cocoa pebbles (top layer of dirt)
- h. Add several squirts of milk
 - Represents the water used to cover the dirt on a windy day
- i. If you were one of those people who had to look for tires that had been in the landfill, and you saw one, what would you need to get it out? (A shovel!)
 - Give each student a spoon (shovel)

VII. Closing (while they are eating)

- a. Discuss the need to reduce the amount of trash they throw away by:
 - Reusing containers
 - Composting food scraps
 - Recycling at drop-off centers (especially cardboard from Christmas presents)
- b. Something to think about:

Lubbock has a fleet of 50 garbage trucks. Each one of these trucks goes out to the landfill with a load of trash 2-3 times a day (100-150 truckloads each day)! That’s how much trash Lubbock throws away! And that new landfill, which was built to last for 100 years, may only last 50 if we keep throwing away trash at that rate!



Lubbock Landfill

- 1. Where is the Lubbock landfill located and how big is it?*
- 2. Why do we place layers of dirt over each layer of trash?*
- 3. How could we make the landfill last longer?*
- 4. Using the space below, draw a diagram of a landfill and label each of the layers.*