



**Planet Earth:
The greatest
recycling
center!**

Recycle Mania

The Approach

Billy utilizes comprehensive sensory integration through song, dance, audience participation and a multi-dimensional backdrop to convey science based information related to the many ways in which the earth's ecosystem recycles air, water, rocks and soil.

Scientific concepts anchor the lyrics used during the show as participants are energized and have fun learning how nature recycles all living matter, the natural resources and energy used in producing recyclable products we use every day, the common problems communities have in dealing with their garbage and the practical everyday recycling activities each of us can do.

The Objective

Students will correlate earth's air, water, soil and rock cycles to a highly efficient recycling center. During this process student knowledge will expand in the areas of; renewable and non-renewable natural resources, landfills and recycling. Students will also link the vital role of photosynthesis to their daily survival.



The Result

His rapport with the kids is outstanding. He actually conveys a great deal of useful information in his show, and the kids don't realize how much they are learning because they are having such a good time. He has a perfect mix of solo talk and audience participation. The kids would happily sit there all day with him; it's like a party when he comes!

Suggested Pre-Performance Activities

1. Generate a list of items students are recycling at home. Add any items students have missed. Discuss different types of recycling collections available in your community.
2. Challenge students to identify the natural resources used in making each product they recycle. Ask students to identify possible locations these resources originated from. Discuss resource harvesting and transportation methods. Assign upper elementary students to investigate the basic processing procedure of a natural resource into a product used in their daily life.
3. Have the students identify any of nature's many recycling processes.
4. Invite students to relate stories of landfill visits or recycling runs.

Recycle Mania In the Classroom

Vocabulary Words

aluminum - a silvery white, light metallic element that is ductile, malleable, and resistant to corrosion.

bauxite - a rock containing aluminum hydroxides that is the principal ore of aluminum.

compost - a mixture of decayed plants and other organic matter which can be used for enriching soil.

exhaust - the discharge of waste gases, vapor, and fumes created by and released at the end of a process, especially from the working of an internal-combustion engine.

fuel - something that is burned to provide power or heat.

leeching - to draw off or deplete a supply of something.

metal ore - an element that is malleable and ductile, usually solid, has a characteristic luster, and is a good conductor of heat and electricity, e.g. copper or iron.

minerals - a substance that occurs naturally in rocks and in the ground and has its own characteristic appearance and chemical composition.

landfill - the disposal of waste material or refuse by burying it in natural or excavated holes or depressions.

natural resources - a naturally occurring material, e.g. coal or wood that can be utilized by people.

photosynthesis - a process by which green plants and other organisms turn carbon dioxide and water into carbohydrates and oxygen, using light energy trapped by chlorophyll.

processed - treated by a chemical or industrial process.

pulp - crushed wood or other materials that are used to make paper.

recycle - to save or collect used or waste material for reprocessing into something useful.

reduce - to become smaller in use, size, number, extent, degree, or intensity.

reuse - to use something again, often for a different purpose and usually as an alternative to throwing it away.

saw dust - a by-product of cutting lumber with a saw composed of fine particles of wood.

soil - the top layer of most of the Earth's land surface, consisting of the unconsolidated products of rock erosion and organic decay, along with bacteria and fungi.



Post Performance Activities

1. Review with students the possibilities for protecting the environment as well as saving energy by recycling.
2. Allow students to demonstrate the transpiration process by placing a clear plastic bag over a plant and placing in a warm, sunny location.
3. Have the students research the local landfill history by answering the following questions:
Is there a local landfill?
If not, was there one in the past?
Was it a dump or landfill? What is the difference?
If there is a local landfill/dump that has been closed has a park or buildings been built upon the old site?
If there is not a local landfill does your community have to ship its garbage to another location?
Are there any estimates as to what this costs? Can this cost be equated into a daily cost?

Teacher Resources

CLASSROOM READING

1. *About Garbage and Stuff*- Author–Anne Zane Shanks, Viking Press
2. *Recyclopedia*- Author–Robin Simons, Houghton Mifflin
3. *Where Does the Garbage Go?*–Author - Paul Showers, Crowell
4. *Too Much Garbage*- Author–Patricia Lauber, Garrard

National Science Education Standards

Recycle Mania conveys connections to the following standards:

Science and Technology Standards

- _Abilities to distinguish between natural objects and objects made by humans
- _Abilities of technological design
- _Understanding about science and technology

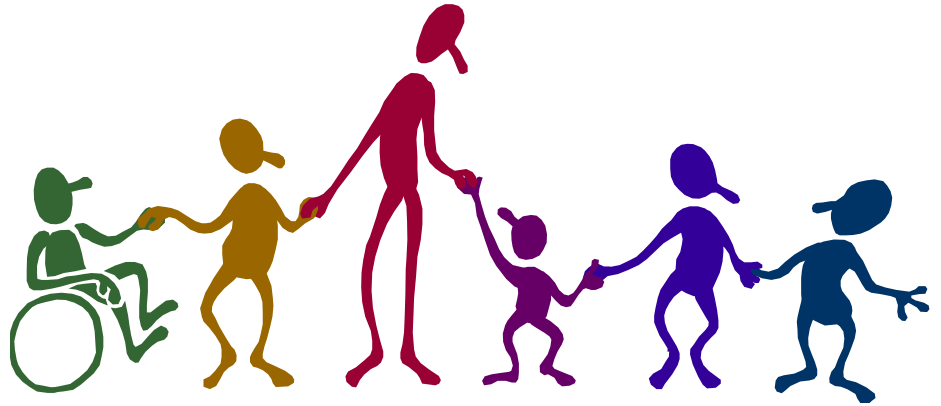
Physical Sciences

- _Properties of objects and materials
- _Transfer of energy

- _ Properties and changes of properties in matter
- _ Light, heat, electricity, and magnetism

Life Sciences

- _ Characteristics of organisms
- _ Life cycles of organisms
- _ Populations and ecosystems
- _ Organisms and environments
- _ Structure and function in living systems



Earth and Space Science Standards

- _ Properties of earth materials
- _ Changes in earth and sky
- _ Structure of the earth system
- _ Earth's history

Personal and Social Perspectives

- _ Personal health
- _ Risks and benefits
- _ Science and technology in local challenges
- _ Types of resources
- _ Changes in environments
- _ Populations, resources, and environments
- _ Natural hazards
- _ Risks and benefits

National Research Council. *National Science Education Standards*. Washington, D.C.: National Academy Press, 1996.