Waltz of the World

The equator is the same distance from the North and South Poles and divides Earth into the northern and southern hemispheres.

The Approach

Billy utilizes comprehensive sensory integration through song, dance, audience participation and a multi-dimensional backdrop to communicate the reasons for and the effects of seasonal changes.

Scientific concepts determined by the age level of the audience are presented in respect to the relationship between planet earth and the star (sun) that it orbits. Questions such as why we have four seasons and what happens to the animals and plants when the seasons change will be addressed. Billy B portrays the responses of the natural world to, and the reasons for, changing seasons in a manner that students will enjoy, understand and retain.

Suggested Pre-Performance Activities

Grades K-2:
Discuss with students; "day time" and "night time" in relationship to one 24 hour day, the four seasons, the current season and where they see the sun in the sky.

Grades 3 and above:
Discuss with students; the tilt and dimensions of planet earth, migration versus hibernation, and changes in water temperature in relationship to the intensity of sunlight.

The Objective

Students in grades K-2 will learn about the length of the day, the intensity of sunlight and progress through the process of seasonal changes.
Students in grades 3 and above will examine the tilt of the earth's axis, changes in water temperature, photosynthesis, migration, and other animal and plant adaptations.

The Result

Billy B's "Waltz of the World" was great. He was easy to work with and he changed the shows significantly to work with our groups of (k-3) + (4-6).

Principle

Grades 4-6 enjoyed the show immensely. I got several unsolicited positive comments and a "thank you" afterwards.

PTA Representative

Waltz of the World In the Classroom

Vocabulary Words

Vocabulary (K-3)

acorn - the hard fruit of an oak tree, consisting of a smooth single-seeded nut that is set in a cup-shaped base and ripens from green to brown.

adapt - to change something to suit different conditions or a different purpose, or be changed in this way.

fall - the season between summer and winter when leaves change color and fall to the ground.

freeze - to change into a solid by the loss of heat, or cause liquid to do this, especially to change into ice.

frost - crystals of frozen water deposited on a cold surface.

hibernate - to be in a dormant state resembling sleep over the winter while living off reserves of body fat, with a decrease in body temperature and pulse rate and slower metabolism. Animals that hibernate include bears, bats, and many amphibians.

melt - to change a substance from a solid to a liquid state by heating it, or be changed in this way.

migrate - to move from one habitat or environment to another in response to seasonal changes and variations in food supply.

oxygen - a colorless odorless gas that is the most abundant element, forms compounds with most others, is essential for plant and animal respiration, and is necessary in most cases for combustion.

solar energy - energy radiated from the Sun in the form of heat and light, used by green plants for photosynthesis and harnessed as solar power.

spring - the season of the year between winter and summer during which many plants bring forth leaves and flowers. It runs from March to May in the northern hemisphere, and from September to November in the southern hemisphere.

summer - the warmest season of the year, falling between spring and autumn. It runs from June to August in the northern hemisphere and from December to February in the southern hemisphere.

thaw - become less cold through exposure to heat.

winter - the coldest season of the year, which runs in the northern hemisphere from around November or December to February or March and in the southern hemisphere from June to August.

Vocabulary (4 - 6)

axis - an imaginary straight line around which an object such as Earth rotates.

carbon dioxide - a heavy colorless odorless atmospheric gas. Used during photosynthesis, in refrigeration, carbonated drinks, fire extinguishers. Formula: CO2.

chlorophyll - the pigment in plants that captures the light energy required for photosynthesis. In plants and algae, chlorophyll is contained within numerous minute membranous sacs chloroplasts within cells of the stems and leaves.

chloroplast - a membranous sac plastid that contains chlorophyll and other pigments and is the place where photosynthesis occurs within the cells of plants and algae. While plant cells contain numerous chloroplasts, algal cells often have just one. Each consists of interconnected stacks of disk-shaped membranes in fluid, surrounded by a double membrane.

equator - the imaginary great circle around Earth that is the same distance from the North and South Poles and divides Earth into the northern and southern hemispheres.

frost line - the point below the surface of the ground beyond which frost will not penetrate.

H2O - water, each molecule of water is formed by two hydrogen atoms and one oxygen atom.

northern hemisphere - the half of the Earth that lies to the north of the equator.

orbit - the path that an astronomical object such as a planet, moon, or satellite follows around a larger astronomical object such as the Sun or a single revolution of an astronomical object around a larger astronomical object.

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.

revolution - one complete circular movement made by something round or cylindrical, e.g. a wheel, around a fixed point.

rotate - to turn like a wheel around an axis or a fixed point, or make something turn around an axis or a fixed point. Earth rotates around the axis through its poles.

southern hemisphere - the half of Earth that is south of the equator.

stomata - a tiny pore in the outer layer epidermis of a plant leaf or stem that controls the passing of water vapor and other gases into and out of the plant.

National Science Education Standards

Waltz of theWorld conveys connections to the following standards:

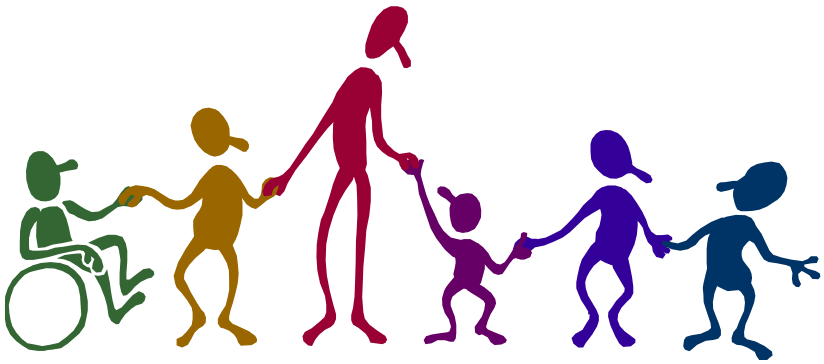
Physical Sciences

_Properties of objects and materials

_Transfer of energy

_Properties and changes of properties in matter

_Position and motion of objects



Life Sciences

_Characteristics of organisms

_Life cycles of organisms

_Organisms and environments

_Structure and function in living systems

_Diversity and adaptations of organisms

Earth and Space Science Standards

_Objects in the sky

_Changes in earth and sky

_Structure of the earth system

_Earth in the solar system

Personal and Social Perspectives

_ Changes in environments

_Populations, resources, and environments

_Characteristics and changes in populations

_Natural hazards

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