Name Mrs. Fettinger Date Class

Note-taking Worksheet

The Nonliving Environment

Section 1 Abiotic Factors

A. Living or once-living environmental features are called **biotic** factors; abiotic factors are nonliving physical features.

B. **Atmosphere**—the air that surrounds Earth

C. Water—the major ingredient of the fluid inside the cells of all organisms

D. Soil—a mixture of mineral and rock particles, the remains of dead organisms, water, and air

E. Sunlight—the source of energy for most life on Earth

F. Most organisms' body temperature should stay within the range of 0°C to 50°C for survival.

1. Temperature is affected by latitude; areas closer to the equator are warmer than areas farther from the equator.
2. Elevation—distance above sea level that affects temperature, wind, and soil

G. **Climate**—an area's average weather conditions over time, including temperature, precipitation, and wind

1. For most living things, temperature and precipitation are the two most important components of climate.
2. Heat energy from the Sun creates air currents called wind

Section 2 Cycles in Nature

A. Earth's biosphere contains a fixed amount of water, carbon, nitrogen, oxygen, and other materials that cycle through the environment and are reused by different organisms.

B. **Water cycle**—how water moves from the Earth's surface to the atmosphere and back to the surface again

1. **Evaporation**—when liquid water changes into water vapor and enters the atmosphere
2. Condensation—the process of changing water from a gas to a liquid

Meeting Individual Needs

Note-taking Worksheet (continued)

3. When water drops become large and heavy enough, they fall to the ground as rain or other precipitation

C. Nitrogen Cycle—the transfer of nitrogen from the atmosphere to the soil, to living organisms, and back to the atmosphere

1. **Nitrogen fixation**—a process in which some types of soil bacteria can form the nitrogen compounds that plants need
2. Farmers replace nitrogen in the soil by growing nitrogen-fixing crops or using fertilizers that contain nitrogen compounds that plants need for growth.

D. Carbon Cycle—how carbon molecules move between the living and nonliving world

1. Producers remove carbon dioxide gas from the air during photosynthesis.
2. Respiration—the chemical process that provides energy for cells

Section 3 Energy Flow

A. Matter can be recycled over and over again, but energy is converted from one form to another.

1. During photosynthesis producers convert light energy to chemical energy.
2. Chemosynthesis—the production of energy-rich nutrient molecules from chemicals

B. Energy stored in the molecules of one organism is transferred to another when one organism becomes food for another organism.

1. Food Chains—a simple way of showing how matter and energy pass from one organism to another
2. **Food web**—shows all the possible feeding relationships among the organisms in a community

C. Energy Pyramid—shows the amount of energy available at each feeding level in an ecosystem

Meeting Individual Needs