Example Animals Explanations Handout

Cellular Respiration

A. The cow's food is broken down into glucose. The glucose is broken down into CO_2 and water. The glucose makes heat and motion energy allowing the cow to move.

B. A cow gets energy to move from the foods it eats and the amount of air it takes in. In a cow's cells, glucose in the grass it eats breaks down and the energy stored in glucose is released as heat and motion. CO_2 and water are released by the chemical reaction. The cow breathes out the CO_2 and sweats out the water during movement.

Digestion

A. A cow gets food to a cell in its leg by eating food, which is large organic molecules as well as water. The large organic molecules are broken down in the stomach, then sent to the small intestine to be broken down further and put into the bloodstream as small organic molecules. The energy starts as chemical energy in the high energy bonds in the large organic molecules. After the chemical change, the energy is still chemical energy, but it is in the small organic molecules.

B. The cow eats food and grows. It gets food to the cell of its leg by digesting the polymers into monomers. Then, the monomers are carried to the small intestine which there the monomers are absorbed by the blood stream and are then send to the cells in the cow's leg. Energy allows this all to happen.

Biosynthesis

A. The cow grows because it is taking in nutrients and atoms over time causing it to increase in mass. The food and carbon make more leg. Chemical energy in the food stays the same then leaves the cell and goes out of the cow.

B. After digestion, the small organic molecules are used to make more of that cow cell by being put together into different large organic molecules and stay in the cow's cells. The cells may divide as they get larger from the additional large organic molecules. The energy starts as chemical energy in the high energy bonds and stays as chemical energy, since no high energy bonds are broken.