A Single Page Before Student Co-Creation

This is the original page before the student reads strategically. Underlined text and blank space invite students to contribute their ideas. On this page, the tasks require students to activate prior knowledge in writing and visually.

Introduction

In *Environmental Dynamics I*, we studied the flow of energy through an ecosystem. The origin of energy for ecosystems is our Sun, Earth's primary external energy source. However, only one group of organisms can convert radiant energy to chemical energy. What group of organisms can do this? Give two different names used to describe this group:

For consumers, the task of creating chemical energy involves the ingestion of food. In *Food, Nutrition and Fitness I*, we learned that much of the energy humans ingest is absorbed through the villi of the small intestines. Glucose and other monomers are absorbed into the bloodstream and are further transformed when these molecules reach our cells. Cellular biochemical pathways that are important for the human's quest for energy involve glucose, oxygen gas, and water.

In the last lab, we investigated materials that humans use to extract fuels for everyday activities, such as heating our homes, driving our cars, and cooking our food. Society's quest for energy is not too different from an individual human's quest for energy. We quest for different reactants to fuel our *metabolism*, the sum of all chemical reactions in the human organism. These metabolic processes require a constant input of fuel to maintain systemic organization and counteract entropy, as you learned in your study of food webs and ecosystems. In this lab, we move beyond the reactants we ingest (glucose and water) and focus on the reactant we breathe: oxygen gas. We also will study a common waste product of metabolism, carbon dioxide gas.

Look back at the *Environmental Dynamics I* materials, and find your work/notes on the carbon-oxygen cycle. To the best of your ability, and using whatever resources you like, diagram the carbon-oxygen cycle below.

Figure 1: The Carbon-Oxygen Cycle

The Same Page After Student Co-Creation

The student has taken several actions to personalize the text and has made changes over time as the unit is completed. All actions are not taken as part of one assignment.

The student has responded to the underlined prompts in purple text, has created a key for strategic highlighting that she employs beyond this page, has made personal connections to the content, and has rendered her own Figure 1 using a draw program she selected. The student engaged in peer review and made revisions to Figure 1 before creating this final version.

Introduction[ ]

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Plants perform photosynthesis, they, unlike humans, can create their own sugars from the suns energy. Humans need sugar, so this is one, of many, ways we rely on the planet to keep us alive. Plants are also called autotrophs.

[▲ For consumers, the task of creating chemical energy involves the ingestion of food.] In *Food, Nutrition and Fitness I*, we learned that much of the energy humans ingest is absorbed through the villi of the small intestines. ● Glucose and other monomers are absorbed into the bloodstream and are further transformed when these molecules reach our cells. Cellular biochemical pathways that are important for the human's quest for energy involve glucose, oxygen gas, and water.

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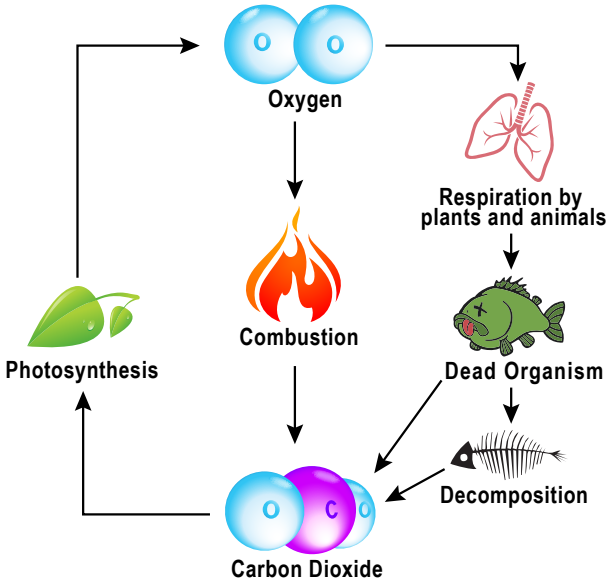

My highlighting

KEY:
● Blue - references to chemical and other reactions

▲ Green - Steps to things that happen inside our bodies

This paragraph and task really struck home for me because I'm very aware of our environmental issues and when I think about this particular topic I truly realize how we are destroying the planet, but in the long run, we're only destroying it for the human race. Plants really deserve our respect, because without them we could not survive, however, without humans, they could survive and thrive.

My dream job is to work with people who have eating disorders, given that, this statement seems really powerful to me. I have multiple friends with borderline eating disorders and my partner is anorexic (she's recovering, but once you have an eating disorder, it's there forever). This says people need food and the truth of that is so profound to me given my experience and interests for the future.