Rubric for Pre/Post Assessment (Note: Bolded conceptions are the most commonly endorsed by students.)

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|  | **Multiple-Choice Prompt and Answer (1 pt each)** | **Accurate Explanations**  **(10 responses, 1 pt each)** | **Possible Misconceptions**  **(6 responses, 1 pt each)** |
| 1. Plants… C produce carbon dioxide and oxygen | * **Cellular respiration creates CO2** * **Plants do cellular respiration to produce CO2** * Cellular respiration is a chemical process to break down compounds * The purpose of cellular respiration is to transform energy * Plants and animals do cellular respiration at all times * **Plants do photosynthesis to produce O2** * **Photosynthesis creates O2** * Photosynthesis is a chemical process to store energy from sunlight or create energy-rich compounds (i.e., sugar, food) * **The purpose of photosynthesis is to transform the sun’s energy (e.g. produce sugar molecules, food)** * **Animals do not do photosynthesis or do not produce O2.** | * **Plants do not do cellular respiration or produce CO2** * Plants do cellular respiration/ produce CO­ only at night * **The purpose of photosynthesis is to provide us with oxygen and remove CO2** * **Photosynthesis is the process that provides plants with the energy the need for life’s processes** * **Animals respire through the lungs and trachea (conflate breathing with cellular respiration)** * Animals do not do cellular respiration at all times |
| 1. Plants…C perform cellular respiration and photosynthesis |
| 1. Animals… B produce oxygen |
| 1. Animals… A perform cellular respiration |
| **Mastered** | 4 | 6 or more | 1 or fewer |
| **Proficient** | 3 | 4-5 | 2 |
| **Needs Improvement** | 2 or fewer | 3 or fewer | 3 or more |