**Project: Drawing Cellular Respiration**

Performance based assessment:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Beginning** | **Developing** | **Accomplished** | **Exemplary** |
| **CONTENT****(STRUCTURE)** | Many of the components are missing or incorrectly used | The majority of structural components are correctly used, while some components are missing or incorrect | Almost all structural components are correctly used, with some minor errors. | All structural components are correctly used |
| *electron transport chain (carrier proteins & enzyme), ATP synthase, mitochondria, matrix, inner membrane, intermembrane space, citric acid, pyruvic acid, acetyl-CoA, 4 carbon molecules, 5 carbon molecule, oxygen, glucose, carbon dioxide, water, hydrogen ions, electrons, NAD+, NADH, FADH2, FAD* |
| **CONTENT (PROCESS)** | Many processes are incorrect or not included. | The majority of processes are correct and accurate, with some processes missing or incorrect | Almost all processes are correct and accurate, with some minor errors. | Entire process is correct and accurate |
| *Glucose to pyruvic acid, ADP to ATP, NAD+ to NADH, pyruvic acid to Acetyl-CoA, 4 carbon molecule plus Acetyl-CoA to citric acid, FAD to FADH2, citric acid to 5 carbon molecule, CO2 released, 5 carbon molecule to 4 carbon molecule, NADH and FADH2 releasing electrons moving down the electron transport chain, electrons plus H+ plus Ox to make water, hydrogen ions moving across the inner membrane, ATP synthase spinning* |
| **CLARITY** | Lack of colour or highlightingAlthough an attempt is made, it is difficult to understand most of the diagram. | Somewhat effective use of colourMost of the diagram is well organized with clear written communication, but some sections are not. | Effective use of colourEntire diagram is organized and clear; a few details take effort to decipher, and so could not be used as a teaching tool. | Original and highly effective use of colourEntire diagram is effectively organized with logical flow; diagram can be used as a teaching tool. |

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