Reflection on Note-taking Process

Eric P.

I decided to take on thermochemistry since it's a topic that won't be entirely covered in physics or chemistry this year, and it hold some relevance to engineering (fuel combustion). I hope to enter the applied science faculty in UBC, so understanding heat and temperature would hold importance to me. In this unit, I gained a more accurate perspective on the concept of thermal energy. Previously, I had fully grasped that increased temperature meant higher kinetic energy in particles, but never considered the implications of this random movement within the system. Since thermal energy is completely random, it would hold relevance to concepts of chaos and disorder. What struck me especially was how we can only measure the change in enthalpy (or entropy), not a precise value. This emphasizes the lack of our ability to understand the movements of individual particles, and the general lack of control in a system. It's quite eye-opening, as science, the subject of definite answers and explanations, still surrenders to entropy. Personally, I thought that "randomness" would not exist in science, as we're looking for an answer to everything, but perhaps some details (such as the movements of individual particles) are too fine to be understood yet. This also clarifies some of the ideas presented in reaction kinetics. According to the second law of thermodynamics, the universe always moves to a state of more entropy. As it does this, bigger molecules break into smaller ones, and a trend of less enthalpy develops. I believe that this self-directed chemistry unit has given me an advantage while learning about these semi-abstract ideas of "chaos and order" in rates of reaction. Studying this subject can really help in the future, too, with such a pressing climate crisis. We need to use fossil fuels more efficiently (it won't go away overnight) and move towards finding effective clean sources of energy that will eventually replace our reliance on fuels. Internal energy, enthalpy, and thermal energy all relate to the uncontrolled particle movement that doesn't affect a system as a whole. Thermochemistry is really a study of random kinetic energy, which I was happy to learn about.

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|  | **Above Expectation**  **(4)** | **Meeting Expectations**  **(3)** | **Below Expectations**  **(2)** | **Incomplete**  **(1)** |
| **Reflective Thinking** | The reflection explains the student’s own thinking and learning processes, as well as implications for future learning. | The reflection explains the student’s thinking about their own learning processes. | The reflection attempts to demonstrate thinking about learning but is vague and/or unclear about the personal learning process. | The reflection does not address the student’s thinking and/or learning. |
| **Analysis** | The reflection is an in-depth analysis of the learning experience, the value of the derived learning to self or others, and the enhancement of the student’s appreciation for the discipline. | The reflection is an analysis of the learning experience and the value of the derived learning to self or others. | The reflection attempts to analyze the learning experience but the value of the learning to the student or others is vague and/or unclear. | The reflection does not move beyond a description of the learning experience. |
| **Making Connections** | The reflection articulates multiple connections between this learning experience and content from other courses, past learning, life experiences and/or future goals. | The reflection articulates connections between this learning experience and content from other courses, past learning experiences, and/or future goals. | The reflection attempts to articulate connections between this learning experience and content from other courses, past learning experiences, or personal goals, but the connection is vague and/or unclear. | The reflection does not articulate any connection to other learning or experiences. |

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| **Item** | **Value** |  | **Quantity** |  |  |
| **Journal Article Review**(Max 2 per Term) | **1** | x |  | = |  |
| **UTP Science Logo and Reflection**(Max 1 per Term) | **1** | x |  | = |  |
| **Personality Indicator Test**(Max 1 per Term) | **1** | x |  | = |  |
| **Life List**(Max 1 per Term) | **1** | x |  | = |  |
| **Chemistry in the News**(Max 2 per Term) | **1** | x |  | = |  |
| **Write a science related article for the Newsletter**(Max 2 per Term) | **1** | x |  | = |  |
| **Interview a UTP Grad or a Post Secondary Student**(Max 1 per Term) | **1** | x |  | = |  |
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| **Chemistry in Real Life**(Max 1 per Term) | **1** | X |  | = |  |
| **Meme Chemistry** (Max 1 per Term) | **1** | x |  | = |  |
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| **Crystal Growing Project**(Max 1 per Term) | **2** | x |  | = |  |
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| **Shelfari/Review – Science related**(2books max per Term) | **2** | x |  | = |  |
| **Time Management Project**(Max 1 per Term) | **2** | x |  | = |  |
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| **Visit and Review Virtual Tours with Friends**  (Max 1 per Term) | **2** | x |  | = |  |
| **Independent Scientific Study OR Updating Unit Notes**(Max 1 Project per Term) | **3** | x | 1 | = 3 |  |
| **Interview a Science Professor**(Max 2 per Term) | **3** | x |  | = |  |
| **Video/Episode Review – 30 min**  (Max 1 per Term) | **3** | x |  | = |  |
| **Study Group or Tutorial**(Min. 4 hours per month) | **4** | x | 1 | = 4 |  |
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| **Self Directed Project** (make me a deal) |  | X |  | = |  |

Attempted 7 points