**Doodle Sheet: Chemical Reactions in Living Organisms**

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| A. Challenges | |
| B. The WHAT: What they need.  *What do organisms need to survive and reproduce?*  1.  2.  3.  4.  5. | The HOW: How they get it.  *How does the organism meet the need at left?*  1.  2.  3.  4.  5. |
| C. Poster Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *My notes:*  Inputs Uses Outputs | |
| D. Why do organisms (including humans)  need \_\_\_\_\_\_\_\_\_\_? My ideas… | E. Top Three  1.  2.  3.  One more I noticed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Questions I have: |
| F. “You are what you eat.” My thoughts… | |

**Looking a bit closer…**

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| G. Big Molecule Component Molecule Chemical Formula Elements    Carb  Glucose  Fat  Triglyceride  Amino acid  -isoleucine  -phenylalanine  -glycine  Protein |
| H. Some “Big Ideas” from the Protein Reading |
| I. Commonalities and Differences between Proteins, Fats, and Carbs  Commonalities  Differences |

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| J. Stuff we know about Matter and Energy:  1. What is energy?  2. What do you know about energy?  3. What are some examples of energy?  4. Do you know of any “rules” about energy?  1. What is matter?  2. What do you know about matter?  3. What are some examples of matter?  4. Do you know of any “rules” about matter? | |
| K. Refined Question: | |
| L. Outputs  What is poop?  What is pee?  Other things… | |
| What is mucus? | |
| M. What’s happening to the matter we take in?  [This is a model idea.] | |
| N. Why do living things rearrange matter? | |
| O. Model idea: | |
| P. Burning Food  Questions  Observations | |
| Q. Burning Ethanol: Tracking Matter  Inputs  Outputs  (ethanol)  **+**  Evidence  Observations | |
| R. What do you want to test for and why?  Record what happened in your class during the tests for substances.  Record final equation. | |
| S. Definitions | |
| T. Observations of energy before, during, and after the reaction:  🡪Where does it come from? | |
| U. Ideas about energy  in the reactants and products: | V. Our representation:  Molecular Energy  TIME |
| W. Model: | |