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| **Biology** |
| **Standard: B4B (readiness)** | **3.0 Items** |
| **Investigate** and **explain** cellular processes, including homeostasis, energy conversions, transport of molecules, and synthesis of new molecules. and synthesis  | Option one:(short answer)images (2).jpg1. Explain the different processes that occur in the cell above.
	1. Diagram and label an image that represents how the cell membrane regulates homeostasis.
	2. Explain a step by step process of how proteins are made in a eukaryotic cell.
	3. Explain how and where energy is processed in a Eukaryotic cell.

Option 2( more broken down needs something???)Match the cellular process with the product.1.Homeostasis2. Energy3. Protein1. Osmosis
2. Protein Synthesis
3. Cellular Respiration

Option 3: (leaves out information but could have more questions added like this or with this concept)4..During lab over osmosis two students concluded different results for homeostasis. Which Conclusion is correct?1. The cell membrane helps to regulate water movement in and out of the cell. This helps to maintain homeostasis. This was observed when the grape in a sugar solution shrank and in distilled water the grape swelled.
2. The cell membrane helps to regulate water and sugar movement in the cell. This helps to maintain homeostasis. This was observed when the grape in a sugar solution swelled and in distilled water the grape shrank.
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| **2.0 Items** |
| diff1.gif1. Which statement best describes what will happen in the model above.
	1. The sugar will pass through the membrane creating a hypertonic solution.
	2. The water will pass through the membrane to create an isotonic solution.
	3. The membrane is impermeable and the solution will not change.
	4. The water will pass through the membrane to create a hypotonic solution.

2. Select all potential organelles that are directly responsible for the creation of new molecules1. Nucleus
2. Endoplasmic Reticulum
3. Ribosomes
4. Mitochondria
5. Vacuoles
6. Cell Membrane
7. Golgi Apparatus
8. Nucleolus
9. Lysosomes

7a2a51e2598ce9b58747b9cce87a2b6d387894e5.png3. Which organelle would be responsible for creating the ATP needed to move the potassium molecule.1. Cell Membrane
2. Nucleus
3. Mitochondria
4. Ribosomes

4. Using the word bank fill out the chart below

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| --- | --- | --- |
|  | Photosynthesis | Respiration |
| Where? |  |  |
| When |  |  |
| Reactant? |  |  |
| Product? |  |  |
| Energy Source |  |  |
| Energy Result |  |  |

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| **Word Bank:**ChloroplastMitochondriaAll the timePresence of lightGlucose and OxygenCarbon Dioxide and waterLight Chemical BondsEnergy storedEnergy Released |

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| **Standard: B9A (readiness)** | **3.0 Items** |
| **Compare** the structures and functions of different types of biomolecules including carbohydrates, lipids, proteins, and nucleic acids. | Match the structure to the function

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| --- | --- |
| metallic-esters1.png1 | 1. Contains Genetic Information
 |
| 361px-Chitobiose.svg.png2 | B. Storing energy, signaling, and acting as structural components of cell membranes |
| Guanine_chemical_structure_2.png3 | C. Providing energy and regulation of blood glucose. |
| Adenosine-5-Monophosphoric_Acid_or_AMP_.jpg4 | D.structure, function, and regulation of the body's tissues and organs |

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| **2.0 Items** |
| 1. Select all the elements found in common in all four biomolecules.
	1. Nitrogen
	2. Carbon
	3. Hydrogen
	4. Chlorine
	5. Oxygen
	6. Phosphorus

2. Body Builders who need to build muscle must increase which biomolecule in their diet?1. Carbohydrates
2. Protein
3. Lipids
4. Nucleic Acid

3. Which Biomolecule plays an important role on organisms who live in cold harsh environments?1. download.jpg
2. ribose_structural_model (2).jpg

c. Guanine_chemical_structure_2.pngd. 220px-DC_chemical_structure.png |