Class Name: Biology CP/Honors

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Office Hours: Weekdays at 10am-11am and 2pm-3pm

Assignments for the week(s) of ___April 1, 2020- April 30, 2020_____

Required Work: Please see the "Biology Menu" on the back of this form**.**

Resources/Videos to be used in order to complete the Biology Menu activities:

1. Scientific Method/Inquiry Resources:
   - Unit Notes- find notes on Teams or teacher webpages
   - Textbook Pages: 4-26; 907-931
   - Extra resources for help if you need them: Amoeba Sisters "Nature of Science
   - Lab safety Crash Course: https://www.youtube.com/watch?v=VRWRmIEHr3A
   - Lab Safety Ameoba Sisters: https://www.youtube.com/watch?v=MEIXRLcC6RA
2. Biomolecules/Enzymes Resources:
   - Unit Notes- find notes on Teams or teacher webpages
   - Read textbook pages 45-54, 226-228
   - Extra resources for help if you need them: Amoeba Sisters "Biomolecules (Updated)",Amoeba Sisters "Enzymes"
3. Cells and Transport
   - Unit Notes- find on Teams or teacher's webpages
4. Pandemic/Viruses Resources:
   - Amoeba sisters viruses https://www.youtube.com/watch?v=8FqlTslU22s
   - How to stay safe https://www.youtube.com/watch?v=Zn6ih6mWn1o
   - Excellent stay safe https://www.youtube.com/watch?v=-kU8Xv2CYJM
   - How to wash your hands https://www.youtube.com/watch?v=bys8KJ-S6Ac
   - Things to do to keep safe from corona https://www.youtube.com/watch?v=f7J_Ca- N2IY
   - How to be safe with things are delivered https://www.youtube.com/watch?v=ECDcm_sq48U
   - General information about coronavirus https://www.cdc.gov/coronavirus/2019-ncov/index.html
   - Structure of coronavirus https://www.youtube.com/watch?v=jSH96UFpPRA
5. Energy:
   - Unit Notes - find on Teams or teacher's webpages
   - Textbook: Ch 8-9 Pg 224 -271
   - Extra Resources: ATP - https://www.youtube.com/watch?v=23ZzI6WZS28
   - Photosynthesis - https://www.youtube.com/watch?v=uixA8ZXx0KU&t=372s
   - Cellular Respiration - https://www.youtube.com/watch?v=4Eo7JtRA7lg
6. DNA / Protein Synthesis:
   - Unit Notes - find on Teams or Teachers Webpages
   - Textbook: Ch 12-13 Pg 336-389
   - Extra Resources: DNA vs RNA - https://www.youtube.com/watch?v=JQByjprj_mA
   - DNA Replication - https://www.youtube.com/watch?v=Qqe4thU-os8
   - Protein Synthesis - https://www.youtube.com/watch?v=oefAI2x2CQM

Honors Supplement: See Biology Menu: Honor's students will be completing supplemental assignments from the Biology menu.

Biology Menu

Honors Note: Your task is to build a meal for two!
CP: You must choose **1 appetizer, 1 sides, 1 entrées, and 1 dessert**
Honors: You must choose **1 appetizers, 2 sides, 2 entrées, and 1 desserts**

Appetizers

1. Design a model to explain and demonstrate how precision and accuracy are different and why they are both important in the scientific process.

2. Create a 10-question quiz over the Macromolecules. Questions should all of the following types: T or F, Multiple choice, Open response. An answer key must also be provided.

3. Watch the amoeba sisters about viruses and take notes to include virus structure and function and how viruses are spread and create an argument as to why viruses are not alive.

4. Make a chart for the following cells (prokaryote, plant, animal) and list the organelles that each cell has. Convert the chart to a Venn diagram

5. Write out the equation for photosynthesis and cellular respiration(label each equation)

6. Compare and contrast DNA/RNA. List all similarities and differences

Sides

1. Make a 4 section graphic organizer comparing and contrasting each of the following: Independent Variable, Dependent Variable, Constant Variables and Control Group.

2. Design social media page to Demonstrate ONE of the four Biomolecules (concept, you need not actually create a twitter, snapchat, FB page, etc)

3. Create a 3 minute infomercial (you can video you, a sibling, words, demonstrations etc.) about personal safety techniques to stay safe during the pandemic. See attached resources.

4. Describe social distancing and create an argument on the moral obligation people have to keep the virus from spreading. Have a family discussion and keep notes to turn in with the discussion and argument you created.

5. Write a 10 question quiz on energy. It can be in any combination of multiple choice, true/false, or fill-in-the-blank. It can include any information on ATP, photosynthesis, or cellular respiration.

6. Draw the process of DNA replication. Include helicase, DNA polymerase, 10 nitrogen bases, forms of DNA (chromosome, supercoil, double helix, gene) and 2 new semiconservative strands.

Entrées

1. Create and record yourself presenting a 5-minute lesson on why lab safety is important, and reviews at least 10 rules

2. Compare the food labels from 2 items in your house. Write a 5-7 sentence paragraph summary detailing which food would be considered "more healthy" based upon the amounts of carbs, lipids, proteins, vitamins, minerals, etc.

3. Create a children's book about the adventures of the prokaryote, plant, animal, and fungal cells. Be sure to include what makes them similar and what makes them different. Must have illustrations.

4. Create a model of the corona virus out of cardboard (cereal box etc.) and include an RNA nucleotide sequence inside. Leave an opening in the side so you can see the RNA. Label the structures and write a paragraph discussing the composition of the protein coat and what safety measures you could take to disrupt the protein coat to make it useless

5. Make a 4 flap foldable on EITHER photosynthesis or cellular respiration and include the following: title, pictures, steps, location, show inputs & outputs with locations. For photosynthesis label Light Reactions & Calvin Cycle. For cellular respiration label Glycolysis, Kreb's Cycle, and the Electron Transport Chain and amounts of ATP.

6. Create a drawing of the entire process of protein synthesis. Include translation, transcription, nucleus, DNA, mRNA, tRNA, rRNA, amino acids, anticodon and codon. Use at least 12 nitrogen bases

Desserts

1. Draw, color and label all parts of a compound light microscope

2. Draw a line graph comparing the energy and rate of reaction with and without the presence of an enzyme; label: Products, reactant, Activation energy, axes of the graph

3. Create a go fish game about cellular transport. Make up the rules and the cards. Play the game with your family.

4. Draw a spring picture only using the different organelles. Try to make connections with the organelle and what process they are involved in. Ex. A flower made of chloroplasts and bugs out of mitochondria etc. Be creative. Include a legend with organelle picture, name, function

5. Sketch out the ATP / ADP cycle. Must show and label the 3 parts of ATP as where the energy is found. Show how ATP changes into ADP and then how it changes back into ATP.

6. Sketch a model of the structure of DNA with a 10 nucleotide sequence, the complementary base paring, draw out the sugar and phosphate and have them label the sugar, phosphate, backbone.