**Biology STAAR Review Activities**

**Day 1**

**Category #1 Cell Structure and Processes (4.A, 4.B, 4.C)**

4.A compare and contrast prokaryotic and eukaryotic cells;

4.B investigate and explain cellular processes, including homeostasis, energy conversions, transport of molecules, and synthesis of new molecules

4.C compare the structures of viruses to cells, describe viral reproduction and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza.

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|  | **4.A** | **4.B** | **4.C** |
| **Interactive Quizzes** | **Structures and Organelles**<http://glencoe.mcgraw-hill.com/sites/0078802849/student_view0/unit2/chapter7/section3/self-check_quizzes-english.html> | **Cellular Transport**<http://glencoe.mcgraw-hill.com/sites/0078802849/student_view0/unit2/chapter7/section4/self-check_quizzes-english.html> | **Viruses and Bacteria**<http://www.braingle.com/trivia/17880/viruses-and-bacteria.html> |
| **Prokaryote vs. Eukaryote**<http://www.proprofs.com/quiz-school/quizshow.php?title=prokaryotic-vs-eukaryotic-cells&q=6&next=n&sid=60489514> |
| **Graphic Organizers** | Create a Venn Diagram comparing prokaryotic and eukaryotic cells. See handout | **Cell Processes Matching-Match up titles to the appropriate descriptions of cell processes.**[**http://www.biologycorner.com/worksheets/cell\_membrane\_images.html**](http://www.biologycorner.com/worksheets/cell_membrane_images.html) | **Make a graphic organizer that compares the structures of a virus and of a cell.****See handout** |
| **Virtual Labs** | **Under What Conditions Do Cells Gain or Lose Water?**[**http://www.glencoe.com/sites/common\_assets/science/virtual\_labs/LS03/LS03.html**](http://www.glencoe.com/sites/common_assets/science/virtual_labs/LS03/LS03.html) | **Osmosis and Diffusion**[**http://content.bfwpub.com/webroot\_pubcontent/Content/BCS\_4/Bres1e/Activities/Exercise\_5-Activity\_3/resources/e5a3.html**](http://content.bfwpub.com/webroot_pubcontent/Content/BCS_4/Bres1e/Activities/Exercise_5-Activity_3/resources/e5a3.html)**Diffusion and Osmosis**[**http://content.bfwpub.com/webroot\_pubcontent/Content/BCS\_4/Bres1e/Activities/Exercise\_5-Activity\_3a/Diffusion.html**](http://content.bfwpub.com/webroot_pubcontent/Content/BCS_4/Bres1e/Activities/Exercise_5-Activity_3a/Diffusion.html) | **Making Vaccines**[**http://www.pbs.org/wgbh/nova/bioterror/vaccines.html**](http://www.pbs.org/wgbh/nova/bioterror/vaccines.html) |
| **Vocabulary** | **Cell Structure and Function Flashcards**<http://quizlet.com/172368/chapter-7-cell-structure-and-function-flash-cards/> | **Viruses**<http://quizlet.com/35592660/viruses-flash-cards/> |
| **Video Clips** | **Prokaryotic and Eukaryotic Cell Video**<http://www.youtube.com/watch?v=ruBAHiij4EA> | **Membranes and Transport Video**<https://www.youtube.com/watch?v=dPKvHrD1eS4&edufilter=_2nXFUMaB1_cnY78uKT5qQ> | **Viruses**<http://www.wimp.com/virusinvades/> |

**4.A, 4.B, 4.C Critical Thinking Questions**

**Write answers in your notebook!!!!!!**

1. What are the differences and similarities between prokaryotic and eukaryotic cells (**4A**)?

2. How does the structure of the cell membrane relate to it’s function (**4B**)?

3. How can you evaluate the movement of molecules across a biological membrane (**4B**)?

4. Discuss how a cell maintains homeostasis (**4B**).

5. How does virus structure relate to function (**4C**)?

6. Explain how viruses reproduce, both cycles (**4C**).

7. Describe how some diseases are caused by viruses (**4C**)?

**4.A Graphic Organizer**

Create a Venn Diagram comparing prokaryotic and eukaryotic cells. Include the following terms:

Eukaryotic Cells

Prokaryotic Cells

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Word Bank

nucleic acids, nucleus, DNA, nuclear membrane, Cell membrane, Membrane bound organelles, Ribosomes, Mitosis, Binary Fission,

Large, Small, RNA, Regulate the flow of nutrients and waste

Helpful links:

<http://www.invive.com/cells.html>

<http://etap.org/demo/biology1/instruction3tutor.html>

**4.C Graphic Organizer**

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| **Viruses and Cells** |
| **Characteristic** | **Virus** | **Cell** |
| Structure | **DNA or RNA in capsid** |  |
| Reproduction |  | **Divides on own; asexually or sexually** |
| Genetic Code |  | **DNA** |
| Growth and Development | **No** |  |
| Obtain and Use Energy |  | **Yes** |
| Response to Environment | **No** |  |
| Change Over Time | **Yes** |  |