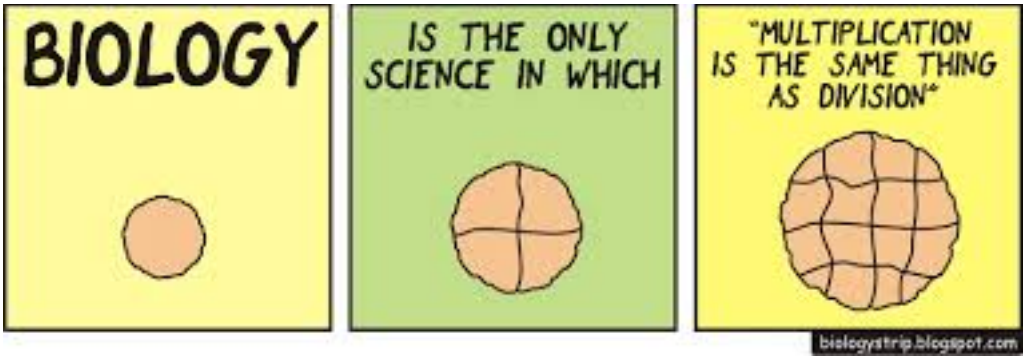
Name_____ Period: _____ Cycle 2: Biology Nov 28 – Jan 20

Biology Study Guide
Cycle 2: Weeks 1 & 2

"The cause of nutrition and growth resides not in the organism as a whole, but in the separate elementary parts – the cells."
— Theodor Schwann

"The actual organization of behavior goes on the level of the individual nerve cells and their connections, and we have a hundred billion nerve cells, probably a hundred trillion connections. It's just mind-boggling to think of all the different ways in which they're arranged in a baby's head."
— Steven Pinker



Overview and Objectives

Cells are the basic unit of life. All living things are composed of one or more cells that come from preexisting cells. Cells perform a variety of functions necessary to maintain homeostasis and life. The structure and function of a cell determines the cell's role in an organism. Living cells are composed of chemical elements and molecules that form large, complex molecules. These molecules form the basis for the structure and function of cells. (USOE Std. 2)

Essential Questions:

- How do chemical structures relate to and influence the way your own living body functions?
- How do living and nonliving microscopic cyclical patterns impact our macroscopic spaces: our body, region, globe, solar system?

Week 1: DUE Friday, December 2

_____ _____1. Read the quotes and overview with the class and mark them up.

_____ _____2. Participate in and take notes on the Lesson: Cellular Respiration (The Krebs Cycle)

_____ _____3. Begin further research and composing the body of your Bioethics report.

_____ _____4. Participate in and take notes on the Lesson: Structure of the Cell and Cell Theory

_____ _____5. Complete the activity: Respiration Storyboard

_____ _____6. Read pp. 97-100 of the Biology textbook and be prepared to answer the questions on p. 100.

_____ _____7. Complete the Reading and Worksheet: Wonderful Water

_____ _____8. Read pp. 101-102 of the Biology textbook.

Week 2: DUE Friday, December 9

_____ _____9. Receive and Participate in the lesson: Plant and Animal Cell Structures

_____ _____10. Complete the Graphic Organizers: The Plant Cell & The Animal Cell

_____ _____11. Read pp. 102-108 of the Biology textbook.

_____ _____12. Answer questions 1-9 on p. 108 of the textbook.

_____ _____13. Complete the Mitotic phases quiz.

_____ _____14. Read pp. 109-113 of the Biology textbook.

_____ _____15. Submit your second draft of the body of your Bioethics report.

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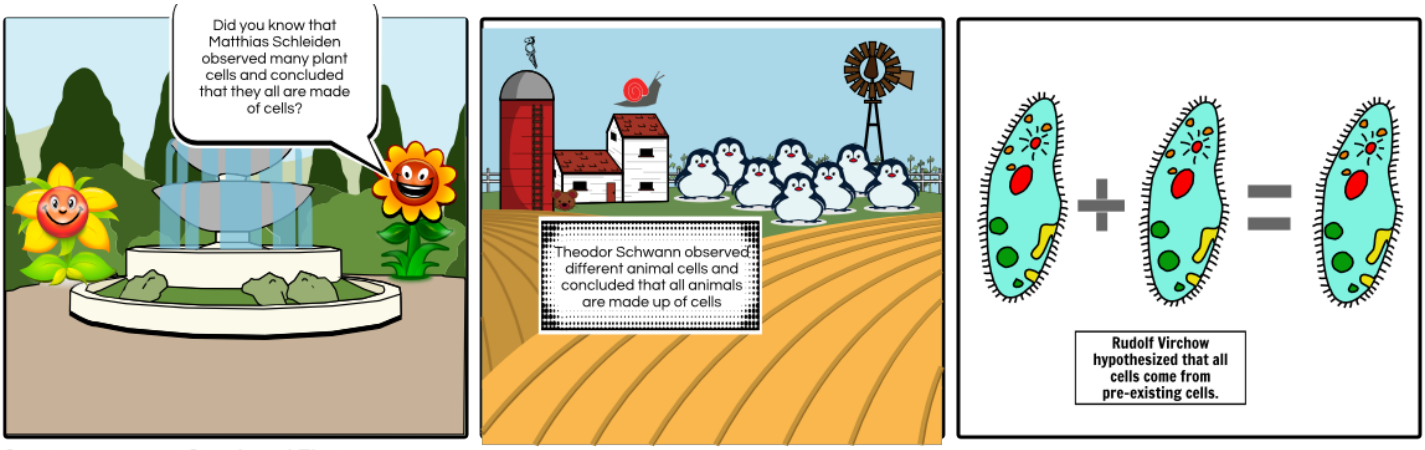
Biology Study Guide
Cycle 2: Weeks 3 & 4



Essential Questions:

- How do chemical structures relate to and influence the way your own living body functions?
- How do living and nonliving microscopic cyclical patterns impact our macroscopic spaces: our body, region, globe, solar system?

Week 3: DUE Friday, December 16

_____ _____16. Receive and participate in the Lesson: Active vs. Passive Transport

_____ _____17. Complete the work: Iso-Hypo-Hypertonic solutions.

_____ _____18. Read pp. 114-119 of the Biology textbook.

_____ _____19. Complete and submit answers to the textbook questions on p.120 (1-14)

_____ _____20. Review and study for the Unit Final.

Week 4: DUE Tuesday, December 20

_____ _____21. Take the Biology Unit Final

_____ _____22. Enjoy two weeks off of Biology (unless you have a Bioethics report to work on)!

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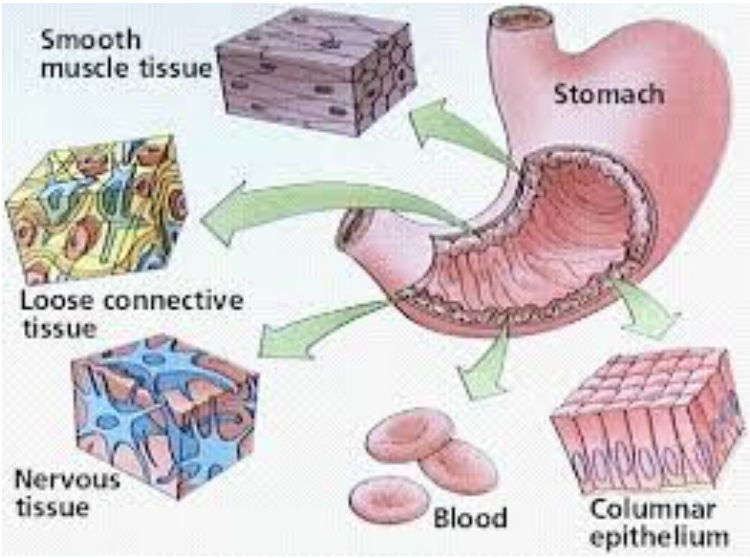
Biology Study Guide
Cycle 2: Weeks 5, 6, & 7

All living organisms are but leaves on the same tree of life. The various functions of plants and animals and their specialized organs are manifestations of the same living matter. This adapts itself to different jobs and circumstances, but operates on the same basic principles. Muscle contraction is only one of these adaptations. In principle it would not matter whether we studied nerve, kidney or muscle to understand the basic principles of life. In practice, however, it matters a great deal.
— Albert Szent-Gyorgyi

Overview and Objectives

In this unit of study we will build on our knowledge and understanding of cells and cellular structures. We will examine how cells, together, make larger structures called tissues. These tissues make up larger structures called organs that then make up organ systems. We will examine these levels of organization and relate their structure to their function. Organs and organ systems function together to provide homeostasis in organisms. The functioning of organs depends upon multiple organ systems. (USOE Std. 3.1-2)



Essential Questions:

- How do chemical structures relate to and influence the way your own living body functions?
- How do living and nonliving microscopic cyclical patterns impact our macroscopic spaces: our body, region, globe, solar system?

Week 5: DUE Friday, January 6

_____ _____23. Read the quotes and overview with the class and mark them up.

_____ _____24. Correct and review the Unit test.

_____ _____25. Read pp. 122-135 of the Biology textbook.

Week 6: DUE Thursday, January 12 [**This is the END of the Quarter; no more work accepted**]

_____ _____26. Choose your organ for your 3-D model and presentation (my organ: _____). This model and presentation is due JAN 30. You will present over the following several weeks as we cover the related organ systems.

_____ _____27. Receive your rubric for your 3-D model and begin brainstorming ideas for and researching the structure and function of your organ.

_____ _____28. Participate in and take notes on the lesson: Levels of Organization

_____ _____29. Watch the PBS Learning Media video presentation: Body Control Center. Answer the accompanying three questions.

_____ _____30. Complete the assigned reading from the Biology textbook: pp. 126-127.

Week 7: DUE Friday, January 20 [This marks the end of Cycle 2 work]

_____ _____31. Participate in and take notes on the lesson: Homeostasis: the respiratory, excretory, and endocrine balance.

_____ _____32. View the Scientific American video segment titled: Losing it, and discuss, as a class and in writing, your thoughts or opinions.

_____ _____33. Participate in and take notes on the lesson: 4 Tissue Types.

_____ _____34. Complete your graphic organizer on the 4 Tissue Types.

_____ _____35. Complete the Tissue types quiz/worksheet.

_____ _____36. Participate in and take notes on the lesson: The 11 Body Systems

_____ _____37. Create your life-sized body outline/model.