

Name: _____

Start Date: ___/___/___

Unit 2: Cell Structure

NY State Science Standards: 1.1a, 1.1b, 1.1c, 3.1, 3.2, 3.3; 1.2a, 1.2b, 1.3a, 1.3b, 2.1, 2.2, 2.3a, 2.3b, 2.3c, 2.4, 3.4a, 3.4b, 3.4c, 3.5a, 3.5b

Common Core Learning Standards: 9.RST.1, 9.RST.2, 9.RST.3, 9.RST.4, 9.RST.5, 9.RST.6, 9.RST.7, 9.RST.8, 9.RST.10, WHST.9-10.9

****Links to all web activities are available at www.bellino.weebly.com****

Layer C – Basic Understanding (650 PTS)

- You must earn 650 points to complete Layer C and move on to Layer B
- You can earn the remaining points you need in each category using any combination of assignments including lecture notes, videos, textbook reading, graphic organizers, handouts, and internet activities
- All assignments will be graded based on an **ORAL QUIZ** and/or **REFLECTION QUIZ**.
- Depending on the assignment you will be graded on both the assignment and/or *an oral or reflection quiz*
- Any work that is not completed in class can be completed at home for homework.

Objectives: *When I complete layer C, I will be able to:*

1. Identify levels of organization of structures and their function including genes, organelles, cells, tissues, organs, organ systems, and whole organisms. (1.2a)
2. Explain what makes something alive.
3. Describe the structure and function of the cell membrane, cell wall, cytoplasm, mitochondria, ribosome, vacuole, chloroplast, and nucleus of the cell (1.2c, 1.2f, 1.2i)
4. Compare and contrast cells from prokaryotes, plants, and animals considering cell structures and functions (1.2f, 1.2i, 1.3a)
5. Analyze the ways in which the structure of the cell membrane enable it to perform its various functions including separation from its outside environment, controlling which molecules enter and leave the cell, and recognition of chemical signals (1.2g, 1.2h, 1.2j)

1. MINI-LESSON – FLIP CLASSROOM: You will watch the videos the night before class, take notes and be prepared with questions and to participate in discussions. 50pts each

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|---|------------|--------------|
| • Mini-Lesson 1: Levels of Organization and Living Things | DATE _____ | POINTS _____ |
| • Mini-Lesson 2: Types of Cells | DATE _____ | POINTS _____ |
| • Mini-Lesson 3: Cell Structures and their Function | DATE _____ | POINTS _____ |
| • Mini-Lesson 4: Cell Membrane | DATE _____ | POINTS _____ |
| • Mini-Lesson 5: Transport | DATE _____ | POINTS _____ |

OBJECTIVE 1: LEVELS OF ORGANIZATION AND LIVING THINGS

2. LEVELS OF ORGANIZATION MINI-POSTER (PRODUCT, REFLECTION,& ORAL DEFENSE)

50pts

Create a mini-poster showing the levels of organization of structures including genes (DNA), organelles, cells, tissues, organs, organ systems, and whole organisms. Make sure to include definitions, functions and examples of each. On the back of your poster, attach and answer two Regents questions about levels of organization. (CCLS RST.9-10.)

3. LEVELS OF ORGANIZATION TOUR (PRODUCT, REFLECTION,& ORAL DEFENSE)

50pts

Create a written script for a tour guide who is conducting a group of microscopic visitors on a tour of an organism. First, describe the organism and then move into smaller and smaller structures until you get to a gene (DNA). (CCLS RST.9-10.7)

OBJECTIVE 2: TYPES OF CELLS

4. CELL TYPES FIGURE REDRAW (PRODUCT, REFLECTION,& ORAL DEFENSE)

50pts

Redraw figure 7-14 on page 206. Write a description of the drawing and each of the different cell types(CCLS RST.9-10.4)

5. GIST: PROKARYOTES AND EUKARYOTES READING (PRODUCT, REFLECTION, & ORAL DEFENSE)

100pts

Read and complete a GIST to summarize pages 193-194 in your textbook. (CCLS RST.9-10.1)

6. CELLDATE.COM (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Write a personal ad for a plant cell, an animal cell, and a prokaryote to help them find their perfect match on the new website that helps cells make connections (celldate.com). In your ad include what is special about you, what you can do, and who should be interested in you. A reader must be able to distinguish among your three ads, knowing which type of cell is which so the right connects are made. (CCLS RST.9-10.3, CCLS RST.9-10.7)

OBJECTIVE 3: CELL STRUCTURES AND THEIR FUNCTIONS

7. CELL STRUCTURES MINI POSTER (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Create a mini-poster showing the main structures of a plant cell and an animal cell including the cell membrane, cell wall, cytoplasm, mitochondria, ribosome, vacuole, chloroplast, and nucleus. Make sure to include the name and function of each organelle. On the back of your poster, attach and answer two Regents questions about cell structures. (CCLS RST.9-10.5)

8. INSIDE A CELL COMPUTER DEMO (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Work through the Inside a Cell computer demonstration at <http://learn.genetics.utah.edu/content/begin/cells/insideacell/>. Complete the Inside a Cell handout as you view the demonstration. (CCLS RST.9-10.4)

9. CELL TRAVEL BROCHURE (PRODUCT, REFLECTION, & ORAL DEFENSE)**100pts**

Create a brochure describing all the places someone could visit as a tourist in a cell including the cell membrane, cell wall, cytoplasm, mitochondria, ribosome, vacuole, chloroplast, and nucleus. Your brochure should include illustrations and descriptions of what happens at each structure. (CCLS RST.9-10.3, CCLS RST.9-10.5)

10. BRAINPOP: CELL STRUCTURES QUIZ (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Go to www.brainpop.com and login (Username: **environhs** Password: **brainpop**). Watch the "Cell Structures" video and take the **GRADED QUIZ**. E-mail the results (msbellinohses@gmail.com). (CCLS RST.9-10.4)

OBJECTIVE 4: CELL MEMBRANE

11. CELL MEMBRANE – JUST PASSING THROUGH (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

View the Cell Membrane Just Passing Through animation at <http://www.teachersdomain.org/resource/tdc02.sci.life.cell.membraneweb/>. Read the background essay and answer the discussion questions.(CCLS RST.9-10.2)

12. CELL MEMBRANE MINI-POSTER (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Create a mini-poster showing the structure of the cell membrane and illustrating the ways in which the structure of the membrane enables it to perform its functions including separation from its outside environment, controlling which molecules enter and leave the cell, and recognition of chemical signals. Use page 204 in your textbook for a close up. (CCLS RST.9-10.4, CCLS RST.9-10.7)

OBJECTIVE 5: TRANSPORT

13. DIFFUSION AND OSMOSIS READING (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Read and GIST pages 208-213 (Section 7.3) in your textbook. (CCLS RST.9-10.4, CCLS RST.9-10.7)

14. DIFFUSION AND OSMOSIS DEMONSTRATIONS (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Conduct diffusion and osmosis demonstrations and answer questions about what you observe.(CCLS RST.9-10.4, CCLS RST.9-10.7)

15. BRAINPOP: DIFFUSION QUIZ (PRODUCT, REFLECTION, & ORAL DEFENSE)**50pts**

Go to www.brainpop.com and login (Username: **environhs** Password: **brainpop**). Watch the "Diffusion" video and take the **GRADED QUIZ**. E-mail the results (msbellinohses@gmail.com). (CCLS RST.9-10.4)

VOCABULARY ASSIGNMENT

Organelle	Tissue	Organ	Organ System	Organism
Cell	Cell membrane	Cytoplasm	Mitochondria	Ribosome
Vacuole	Nucleus	Chloroplast	Diffusion	Osmosis

15. *ACTIVITY: VOCABULARY (PRODUCT, REFLECTION, & ORAL DEFENSE)

100pts

Create a crossword puzzle using graph paper with definitions or other clues(CCLS RST.9-10.4)

Layer B – Analysis & Application (150 PTS)

16. LAB 5. STATE MANDATED LAB: DIFFUSION AND OSMOSIS

150pts

Layer A – Evaluation & Synthesis (200 PTS)

17. 3D MODEL OF A CELL PUZZLE

200pts

Build the major organelles inside a plant or animal cell. Create a 3D puzzle with instructions on how to assemble the parts into a complete cell with a description of how each part works separately and together to maintain homeostasis in the cell. (CCLS RST.9-10.1, CCLS RST.9-10.6, WHST.9-10.9)

18. CELL VIDEO

200pts

Create your own cell video using images from the internet, models that you build, information from the textbook. The purpose of your video is to teach others (your peers) about how each cell organelles works separately and together to maintain homeostasis in the cell. The video should not be more than 3 minutes. (CCLS RST.9-10.1, CCLS RST.9-10.6, WHST.9-10.9)

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9/30 Go over unit syllabus	10/1 Mini-Lesson 1 Discussion LAYER C – Objective 1 Activity	10/2 Mini-Lesson 2 Discussion Layer C – Objective 2 Activity	10/3 Mini-Lesson 3 Discussion Layer C – Objective 3 Activity	10/4 Layer C Activities
10/7 LAYER B – DIFFUSION THROUGH A MEMBRANE	10/8 LAYER B – DIFFUSION THROUGH A MEMBRANE	10/9 LAYER B – DIFFUSION THROUGH A MEMBRANE	10/10 Mini-Lesson 4 Discussion Layer C – Objective 4 Activity	10/11 Mini-Lesson 5 Discussion Layer C – Objective 5 Activity
10/14 NO SCHOOL – COLUMBUS DAY	10/15 Layer C Activities	10/16 Layer C Activities	10/17 LAYER A	10/18 LAYER A
10/21 Layer A	10/22 Exam 2 Review	10/23 Unit 2 Exam	10/24 TEST CORRECTIONS	10/25 ALL LAYERS DUE