Lesson Plan Template

Day 4

Grade: High School	**Subject: Biology**
Materials: notebook	**Technology Needed:**
Instructional Strategies: □ Direct instruction □ Guided practice □ Socratic Seminar □ Learning Centers □ Lecture □ Technology integration □ Other (list) □ Peer teaching/collaboration/ cooperative learning □ Visuals/Graphic organizers □ PBL □ Discussion/Debate □ Modeling	**Guided Practices and Concrete Application:** □ Large group activity □ Independent activity □ Pairing/collaboration □ Simulations/Scenarios □ Other (list) □ Hands-on □ Technology integration □ Imitation/Repeat/Mimic Explain:
Standard(s) **HS-LS1-2** Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. **ISTE-5 Computational Thinker** 5c. Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving. **ISTE-6 Creative Communicator** 6c. Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.	**Differentiation** **Below Proficiency:** **Above Proficiency:** **Approaching/Emerging Proficiency:** **Modalities/Learning Preferences:**
Objective(s) Students will be able to identify what makes a cell a cell. Students will be able to compare and contrast eukaryotic cells and prokaryotic cells. Students will be able to identify the different organelles of animal cells**.** Students will be able to effectively communicate an analogy between cell organization and the real world. **Bloom's Taxonomy Cognitive Level:**	
Classroom Management- (grouping(s), movement/transitions, etc.)	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)**

Minutes	**Procedures**
	Set-up/Prep:
2-3	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)**

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	Bell work: List 5 characteristics of all living organisms. (what classifies something as alive)
30	**Explain: (concepts, procedures, vocabulary, etc.)** Does anyone know what is all in an animal cell? These notes are also going to be in the form of 2 column notes. Students are encouraged to draw pictures in their notes to help associate the word with the organelle. Animal cells Define and discuss the organelles role in the cell Membrane bound organelles and nucleus Cytoplasm – jelly like substance that contains dissolved molecular building blocks Nucleus – storehouse for most of the genetic information (DNA) in the cells ER – interconnected network of thin folded membranes for protein storage and manufacturing Rough vs. smooth ER- one has ribosomes on the outer membrane Ribosome – tiny organelles that link amino acids together to form proteins Golgi Apparatus – processes, sorts, and delivers proteins Vesicle – small sac that transport materials from place to place within the cell Mitochondria – supply energy to the cell Vacuole – storage materials Lysosome – contains enzymes that break down excess cell parts Centriole – sort microtubules arranged in a circle, assist in mitosis Provide a picture of each organelle with initial description and after you have presented all organelles present the cell organelles all together and see if students can name them in their respective location. The students will have a white board. As the teacher present the cell on the projector and each organelle has a number. Either ask the students to give the name of the number you call out, or give the name and ask the students to write the number of the respective organelle.
15	**Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** Create real world example of a "cell. Think of something that has multiple working parts that have a common goal. Give example of a school. The building and its doors are the cell membrane they let students in and out of the school. The cytoplasm is the hallways and the classrooms. Lockers are the vacuoles because they store things. The office is the nucleus and maybe the principal is the DNA. The cafeteria could be the mitochondria (supplies the school with energy). Teachers are lysosomes (break down complex proteins). Golgi apparatus could be the school busses because it transports students to and from the school. Group the students into 3-4 people and have them brainstorm ideas and other examples. We will share the examples at the beginning of next class period.

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	Review (wrap up and transition to next activity):
Formative Assessment: (linked to objectives) **Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc.** whiteboard check in with organelle identification **Consideration for Back-up Plan:**	**Summative Assessment (linked back to objectives)** **End of lesson:** **If applicable- overall unit, chapter, concept, etc.:**
Reflection (What went well? What did the students learn? How do you know? What changes would you make?):	