Subject/Grade: Sci 9	**Lesson Title: History of the Cell**	**Teacher: Jaspreet Kaur**

Stage 1: Identify Desired Results

Outcome(s)/Indicator(s):

RE9.2 Observe and describe the significance of cellular reproductive processes, including mitosis and meiosis.

(d) Identify major shifts in scientific understanding of cell growth and division, including the role of microscopes and related technologies.

(e) Explain how the cell theory accounts for cell division.

Key Understandings: ('I Can' statements)

- Define spontaneous generation and recognize examples.
- Describe Redi's experiment and recognize his contributions to our understanding of reproduction
- Connect Redi's experiment to the three parts to cell theory

Essential or Key Questions:

1. What was Redi's main conclusion?
2. How did Redi disprove spontaneous generation?
3. How does Redi's conclusion connect to cell theory?
4. The Greek philosopher Democritus believed that when you mixed sweat and sawdust mice would grow. Why isn't this possible?

Prerequisite Learning:

Know the basics of cell structure
Know cells are living things
Understand that all living things carry out certain function

Instructional Strategy(ies)

Pre-Reading
Fill in the blank
PowerPoint visuals
Critical Thinking Questions

Stage 2: Determine Evidence for Assessing Learning

Formative - Students will fill in their books as we go through the notes. Students will be able to discuss with peers. Students will have an opportunity to ask questions.
Summative - Students will complete key questions

Stage 3: Build Learning Plan

Set (Engagement): Living Things and Life Functions **Length of Time:** 5-10

- (First two paragraphs in student duotang)
- Go through power point up to slide 5.

Development: Notes **Length of Time:** 40-50 mins

- (pgs 2 to top pg 4 student duotang)
- Go through power point up to slide 6-10
- Watch Redi video after student's attempt to fill blanks https://www.youtube.com/watch?v=Z9GtP3YhH1s
- Students attempt questions pg 3
- Watch Cell Theory Video https://youtu.be/4OpBylwH9DU
- pg 4 student duotang - CELL THEORY w slide 14

Anticipated Student Questions:

Where did people think babies came from, did they know it came from a man and a woman?

- They thought babies were parasites, and they knew that they came sometimes after a man and woman have sex, but they didn't understand until 1875 (over 200 years after Redi!)

Who created the idea of the cell?

- Robert Hooke did refining of microscope and actually saw a cell in 1665
  - Compared to the microscopes we have now, this picture wouldn't have been great quality.
  - Called them cells because it reminded him of the cells in a monastery
  - Looked at a cork from a bottle
- Antonie van Leeuwenhoek he called bacteria and protozoa animalcules
  - Also in 1600s

Learning Closure: Key Questions **Length of Time:** 5-10 mins

- Students fill Key Questions on their own. If time remaining, discuss answers as a class. If not, discuss at beginning of next class.
- As students are filling out their questions, they will receive immediate feedback from either Ms J or Ms H. Go around class and mark.

- If finished early, start next topic: Cells and Mitosis

Materials/Resources:

Slides
https://docs.google.com/presentation/d/11m3rF1gpmls-B3k0D1tMRmKdeB0cDSMm/edit?usp=sharing&ouid=105567674430050827567&rtpof=true&sd=true

Student Duotangs - pgs 2-4

Possible Adaptations/ Differentiation:

Management Strategies:

Walk around to ensure students are filling in notes correctly
Act excited about this topic!
Ask them questions as we move through lesson

Safety Considerations: none

Stage 4: Reflection

Johnna - I think that both of our PDPs went well (they were linked) - we didn't talk over one another and did a great job transitioning. Although it wasn't officially planned, I think our transition over to what we had planned for tomorrow went well. There is the case of some students who complete the readings and questions throughout the lesson significantly faster (CJ, Mohamed, Colby), I'm not sure if we should plan to give them some additional work or what to do. I thought the students were quite receptive to the lesson and stayed on task/paid attention extremely well (they don't really have any management needed). Need to learn to talk without pre-made notes - I think I'm relying on them because I'm nervous to get something wrong or teach the wrong information to students. I need to be confident that I know what I am teaching about.
We moved at a good pace for the slower students, but for those who are quicker they moved on to doing other things. Question: Do we increase speed to please the fast or do we keep the same speed so the slower students don't fall behind.

Kristin - good volume, slow enough for the slowest students, basic info, very clear

- *Too slow for many students, CJ for example filling in mitosis boxes from text, felt like my words were rehearsed and I got almost tripped up (next time have points instead of sentences on my presenter notes)*
- *Transitioned well from topic to topic, made sure kids knew how one topic connected to the next*

- *Wait time for questions*
- *Wait time after checking if they wrote it down*
- *We didn't circulate enough for the new stuff*
- *Let kids answer out loud, same ones were answering*
- *Some answers weren't on slides*
- ***Put class plan on whiteboard***

Wait time
Check for understanding
**Less assumptions that students are fine because many seem fine*
Get out of seats