

VII. Reflections on Your Differentiated Literacy Lesson Plans

My first lesson with Jimmy was designed to find out where we all stood. I wanted a chance to gauge his reading/comprehension level. I photocopied a section from our current 9th grade Biology book about cells and their internal structures (organelles). There is a lot of vocabulary in this topic and I knew it was something we needed to work on right away. I first modeled for Jimmy what I wanted him to do. I read an opening selection, with him following along. This way he could see that voice and pace at which I was hoping for him to work toward. Rasinski and Samuels state that it is important to discuss how voice is used when reading and how they can add meaning to the passage. Sometimes reading too fast or too slow can make comprehension more difficult (Rasinski, 101). Jimmy began to read for me. I kept track of the words he read correctly/incorrectly then asked him to begin reading. His reading skills are high, only missing a few words (See Appendix D).

More interesting was the comprehension piece. I had a few questions specifically outlined before we started to read, knowing I would periodically stop and ask what a section was about. Additionally, those naturally flowing and/or unexpected questions came about. Jimmy read the words, but only was picking up parts here and there. This really shouldn't be too surprising, even fluent readers of various languages have to translate in their head to make an overall sense of the passage. Jimmy could give me some very basic ideas of what was being read, but not the details. He had a small amount of previous experience with cells in Shanghai, but that was in Chinese. One very unexpected occurrence was when we were simply discussing some of the inner workings of the cell. The book compared the cell to a factory, illustrating parts as sections or departments within a place like this. The book used the word "mechanical," after we read it, I asked Jimmy what it meant. He

said he didn't know. I talked about cars being made and the machines that did that, he shook his head and then said he understood. The chloroplast of the plant cell was compared to a solar panel, being able to take the Sun's light energy and trap it for future use. I asked him if he could tell me what a solar panel was. Again, he was not sure what the word solar was. I gave my explanation, etc. and again he said, oh, I understand now. These two small words sent me into somewhat of a tailspin. How was I going to teach him about biology, when he is still learning the normal parts of English language. More importantly, I felt so terrible for Jimmy. He wasn't just facing these issues in my class, but across the board...especially in his German class. I cannot even imagine how to tackle a new country, school, language, etc, as a 15 year old kid. This moment truly gave me the feeling that I was really doing a good thing, taking time and giving this kid a chance. He needed it more than anyone else I can think of.

I was already planning on it, but to simplify things for Jimmy, I provided a very specific vocabulary list for this topic. I asked him to define the words, using any resources he liked. I found a website that has all kinds of biology topics and the entire page can be translated into Chinese. I asked him to define the words in English, but to find the Chinese characters that matched these words too. If he could make connections to something he was familiar with, then maybe this would allow him to be more successful in the future. Jimmy and his classmates were given a quiz over these structures and their functions. Previous quizzes from this year were scored around 50%. This quiz scored 83% (See Appendix E)

If I were to do this lesson over again, I would have instructed Jimmy to involve his parents more. He is an only child and I know his mother does not speak very much English (his father has done all of the speaking when we all have met a few times, mother just said Thank You). Even though there isn't sufficient data to support parental involvement in significant student reading improvement, there has been some data that demonstrates more academic success when parents are

involved at school and at home (Allington, 250). Being a parent and a teacher, personal experience can give me some insight and lead me to believe there would be more opportunities to discuss the topics and bring them into memory.

The other lesson Jimmy and I specifically worked on was still geared toward vocabulary. Since the pre-assessment, it was most evident that reading was not a problem, but the deriving of meaning from the passages were more important. As I worked with some other students in lecture time, I asked Jimmy to view two Youtube videos (Green, Crashcourse). These videos covered Animal cells and Plant cells. I use these videos in my classes often, created by Hank Green, one of two brothers, the Volgbrothers, have created many useful videos on Biology, History, Literature, etc (The other brother is John Green, author of *The Fault in Our Stars*). I noticed that Youtube has a Closed Captioning button on the screen. Upon further investigation, you can select various languages for those captions. I provided Jimmy with a school Chromebook and headphones. I showed him the 2 videos and how to manipulate the captions. I asked him to view each video, using both the Chinese and English subtitles. Once he was finished with this and along with his classmates, cell drawings were created. Student were asked to illustrate their own animal and plant cells, labelling the correct organelles and their functions (See Appendix F). This experience allowed Jimmy to have a different kind of exposure to reading. Obviously, listening is a very important piece of reading and comprehension.

Jimmy's final assessment for this study confirmed that his reading was still very good, missing few words in a different, but comparable Biology textbook over the same material. Again, his comprehension scores were lower, there was improvement from the beginning, but that there was still inadequate understanding happening. If I had better access and knowledge of the ESL paraprofessional our school uses for students like Jimmy, I think he could be more successful. Truly, I feel like I am only skimming the surface of reading strategies, confused by many of them and very

much unsure of how to use them in my classroom. Since I teach high school, where reading is a necessity, but not “taught” by me, I find this very difficult. Students that come to my school are from all over our county and must only pass a math test for placement, but really are the cream of the crop because they must maintain a passing test average to stay, otherwise they face being sent back to their home school district. Our curriculum is quite rigorous, the highly acclaimed International Baccalaureate program. Students that want to work hard stay and are successful. This means students the struggle, even when provided with the necessary accommodations, choose to go back to their home districts. I believe I could be more successful with more practice. I would love to observe a teacher that is already well versed in these methods. Not necessarily a science teacher, but at least a high school teacher would be most helpful.

VIII. Recommendations to Teachers and Parents/Caregivers

November 16th, 2014

Dear Mr. and Mrs XXXXXXXXXX,

Thank you so much for your support while I have been working with Jimmy. I believe we have put in some hard work and found some good techniques to help him out. The goal of our work was to assess Jimmy's reading and comprehension level, then find methods that both he and I can use to allow for him to be more successful not only in my Biology class, but in the rest of his classes from here on out.

Jimmy and I specifically worked on two lessons. We started out reading from our current biology textbook. I modeled some reading for Jimmy, then he followed by reading sections I selected. Along the way, we stopped and discussed what was being taught in these sections. Jimmy's reading is at grade level! He is an excellent reader, I know we talked about him working on this in his bilingual school in Shanghai. He read with relative ease, only small pronunciation mistakes here and there.

I found that my largest concern was Jimmy's comprehension of what we were reading. Biology can be a difficult subject because it brings it's own vocabulary/language as we move throughout. Since Jimmy is working on just the normal English words and conventions in addition to the science piece, his comprehension is much lower than I would like. He can understand the work, if we have lengthy conversations, where I explain many different words. Jimmy is a very hard worker, I can see evidence of this in his writing. He underlines words that he believes are important of one he needs to know the meaning of.

I think Jimmy could really grow with the use of a translator, maybe a small pocket version that includes a dictionary. Obviously, he is very well versed in his Chinese language and I believe that can be used as an aid, rather than being dropped other than at home. I think the more connections he can make to what he already knows, the better he can bring in the new pieces of the English language and the subject area he's working with. Probably the biggest thing Jimmy can do is practice. I don't necessarily mean reading all about Biology...just reading in general. It can be for fun or of his interest, just have that translator handy. Magazines are great for this too because they are full of short readings that don't have to take a long time to do. He can read aloud to you, working together as a family can be beneficial to all parties.

I did find an additional Biology book that I think might be helpful to Jimmy. It is a middle school book, but I believe it might be a good place for him to start his reading for our topics, then move onto our textbook. Please look into the textbook *Focus on Middle School Biology* by Rebecca W. Keller.

If there are any further questions or concerns with Jimmy, please don't hesitate to contact me. I will be continuing to work with him on strategies that will help him along the way. Thank you again for being willing to let me work with Jimmy!

Sincerely, Ian Jones

IX. Appendices of work

Appendix D. Reading from the Textbook

****Please see this link for the complete document**

Section 7.3

Learning Objectives

- Identify the structure and function of the parts of a typical eukaryotic cell.
- Compare and contrast structures of plant and animal cells.

Review Vocabulary

enzymes: a protein that speeds up the rate of a chemical reaction.

New Vocabulary

- cytoplasm
- cytoskeleton
- lysosome
- nucleolus
- endoplasmic reticulum
- Golgi apparatus
- vacuole
- lysosome
- centriole
- mitochondrion
- chloroplast
- cell wall
- chromatin
- nucleolus

Structures and Organelles

Key Concept Eukaryotic cells contain organelles that allow the specialization and the separation of functions within the cell.

Real-World Reading Link Suppose you start a company to manufacture hiking boots. Each pair of boots could be made individually by one person, but it would be more efficient to use an assembly line. Similarly, eukaryotic cells have specialized structures that perform specific tasks, much like a factory.

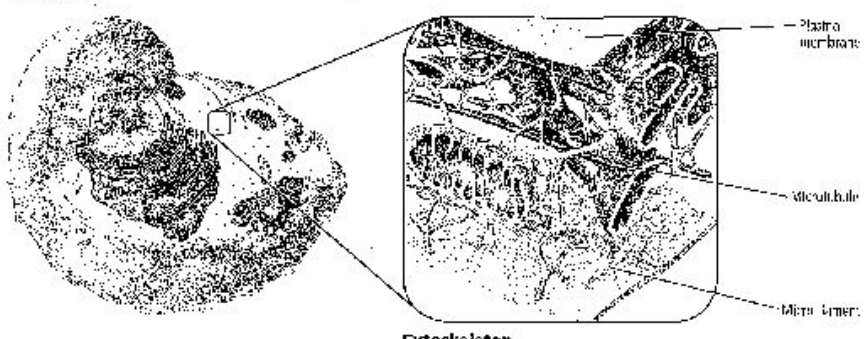
Cytoplasm and Cytoskeleton

You just have investigated the part of a cell that functions as the boundary between the inside and outside environments. The environment inside the plasma membrane is a semifluid material called **cytoplasm**. In a prokaryotic cell, all of the chemical processes of the cell, such as breaking down sugar to generate the energy used for other functions, take place directly in the cytoplasm. Eukaryotic cells perform these processes within organelles in the cytoplasm. At one time, scientists thought that cell organelles floated in a sea of cytoplasm.

More recently, cell biologists have discovered that organelles do not float freely in a cell, but are supported by a structure within the cytoplasm similar to the structure shown in **Figure 7.8**. The **cytoskeleton** is a supporting network of long, thin protein fibers that form a framework for the cell and provide **anchorage** for the organelles inside the cell. The cytoskeleton also has a function in cell movement and other cellular activities.

The cytoskeleton is made of substructures called microtubules and microfilaments. Microtubules are long, hollow protein cylinders that form a rigid skeleton for the cell and assist in moving substances within the cell. Microfilaments are thin protein threads that help give the cell shape and enable the entire cell or parts of the cell to move. Microtubules and microfilaments rapidly assemble and disassemble and slide past one another. This allows cells and organelles to move.

Figure 7.8 Microtubules and microfilaments make up the cytoskeleton.



Plasma membrane

Microtubule

Microfilament

Cytoskeleton

Section 3 • Structures and Organelles 191

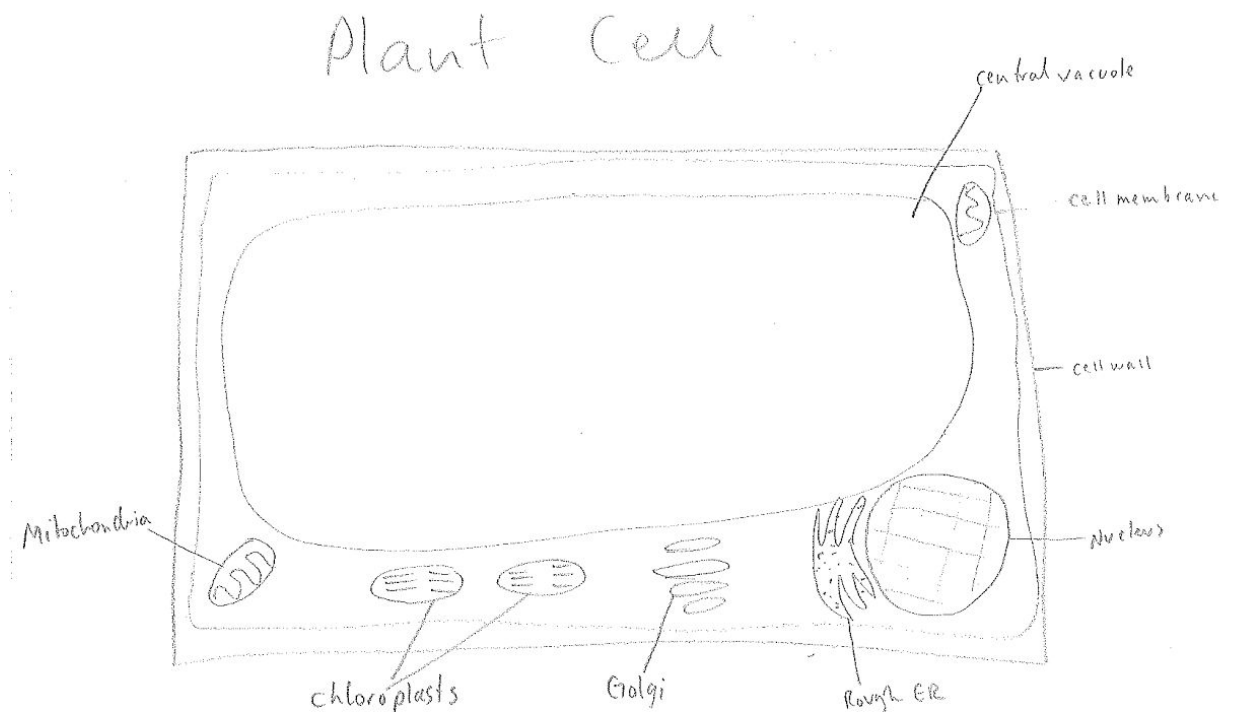
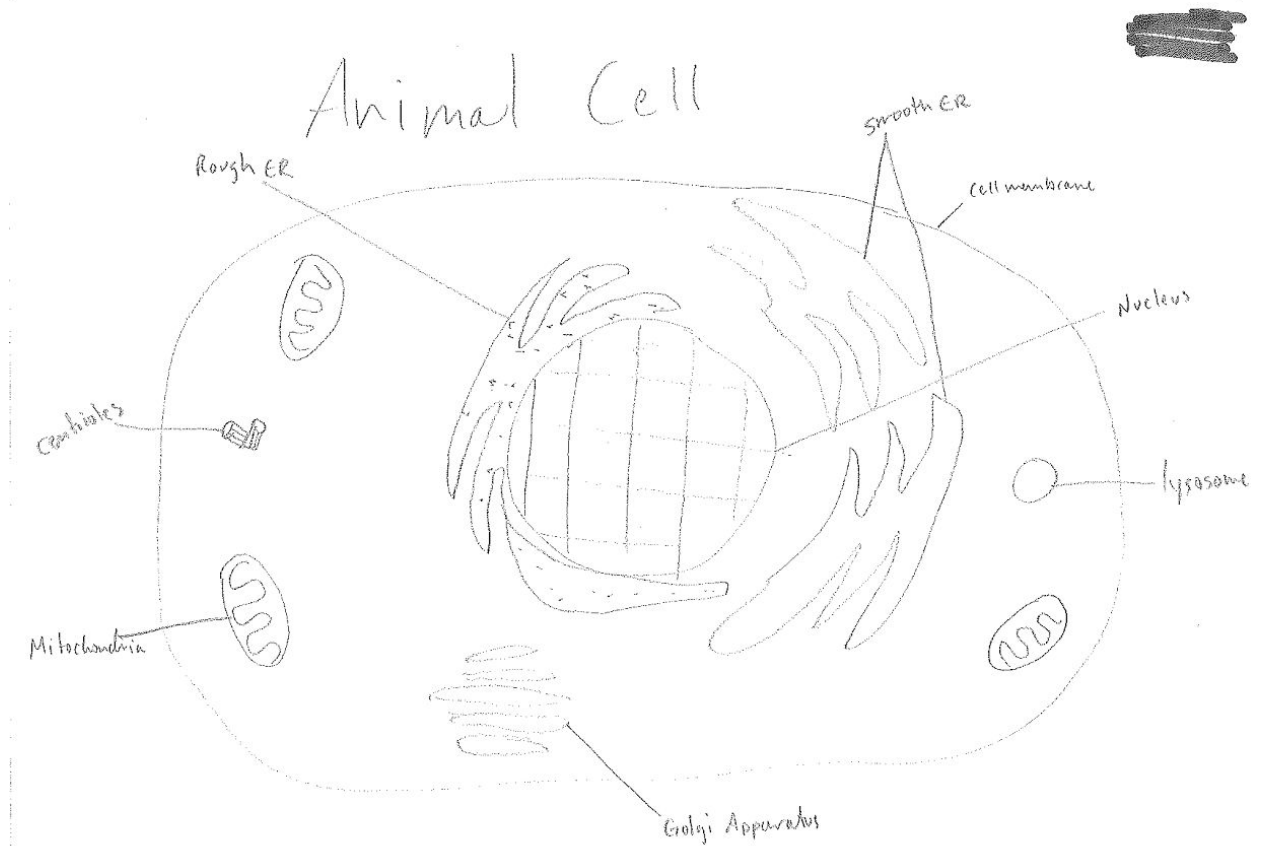
Organelles Quiz

10/12

Name: _____

a. Plasma Membrane	d. Mitochondria	g. Nucleus	j. Cytoplasm (Cytosol)
b. Cell Wall	e. Chloroplasts	h. Lysosome	k. Ribosomes
c. Rough Endoplasmic Reticulum	f. Smooth Endoplasmic Reticulum	i. Golgi Apparatus	l. Centrioles

- ~~1~~ d Structures involved in animal cell division.
- b Structural support and protection of plant cells.
- ~~d~~ f Location of aerobic cellular respiration (using oxygen to make energy) in both plant and animal cells.
- h Contain digestive enzymes, used for cellular clean up.
- i Packaging and transporting items coming into and exiting the cell.
- g Contains the DNA, which are instructions for all cell functions.
- k Site of protein synthesis.
- c Responsible for packaging and transporting proteins.
- s Used in lipid modification and detoxification in the liver.
- j The area between the plasma membrane and the nucleus, contains all the organelles.
- e Structures that contain a photosynthetic pigment for capturing the Sun's energy.
- a A barrier between the cells contents and the environment, it regulates what goes in and out.



Appendix G. Pre and Post Reading Assessments

Assessing Interpretive & Meaningful Reading

Pre

	1	2	3	4
Expression and Volume	Reads in a quiet voice as if to get words out. The reading does not sound natural like talking to a friend.	Reads in a quiet voice. The reading sounds natural in part of the text, but the reader does not always sound like they are talking to a friend.	Reads with volume and expression. However, sometimes the reader slips into expressionless reading and does not sound like they are talking to a friend.	Reads with varied volume and expression. The reader sounds like they are talking to a friend with their voice matching the interpretation of the passage.
Phrasing	Reads word-by-word in a monotone voice.	Reads in two or three word phrases, not adhering to punctuation, stress and intonation.	Reads with a mixture of run-ons, mid sentence pauses for breath, and some choppieness. There is reasonable stress and intonation.	Reads with good phrasing, adhering to punctuation, stress and intonation.
Smoothness	Frequently hesitates while reading, sounds out words, and repeats words or phrases. The reader makes multiple attempts to read the same passage.	Reads with extended pauses or hesitations. The reader has many "rough spots."	Reads with occasional breaks in rhythm. The reader has difficulty with specific words and/or sentence structures.	Reads smoothly with some breaks, but self-corrects with difficult words and/or sentence structures.
Pace	Reads slowly and laboriously.	Reads moderately slowly.	Reads fast and slow throughout reading.	Reads at a conversational pace throughout the reading.

Scores of 10 or more indicate that the student is making good progress in fluency.

Score

Scores below 10 indicate that the student needs additional instruction in fluency.

Score **10**

Rubric modified from Tim Rasinski - [Creating Fluent Readers](#)

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Post

Appendix H. Lesson Plans

#1 Lesson Foci/Date	Objectives (include including performance, conditions, and criterion. State the <i>Common Core State Standard</i> at the end of each objective.	Instructional materials (what will use to deliver the main objectives of the lesson)	On-going assessment (to measure attainment of objectives)
<p>Skill/Strategy Focus: Exposure to and Beginning to Learn Vocabulary</p> <p>Date: October 1st, 2014</p>	<ul style="list-style-type: none"> ● Student will work on cellular vocabulary by reading the textbook with the teacher. ● Student will be assessed on the word recognition and comprehension by the teacher. ● Student will work to complete Vocabulary sheet. ● Student will find and translate english vocab words into chinese words. <p>B2.L2.p1 Cells B2.L2.p2 Cell Function</p>	<ul style="list-style-type: none"> ● Glencoe: <i>Biology</i> textbook ● Vocabulary sheet (Appendix C) ● Pen or pencil ● Online website, http://www.biology-questions-and-answers.com/ 	<ul style="list-style-type: none"> ● While other students will be working with their classmates to review at the beginning of class. Teacher will spend specific time with the target student. ● Student will be taking a short quiz with the vocabulary words. ● Student will present a poster with a classmate about an assigned organelle. Student can show his language and knowledge

#2 Lesson Foci/Date	Objectives (include including performance, conditions, and criterion. State the <i>Common Core State Standard</i> at the end of each objective.	Instructional materials (what will use to deliver the main objectives of the lesson)	On-going assessment (to measure attainment of objectives)
<p>Skill/Strategy Focus: Continued Vocabulary work and application.</p> <p>Date: October 21st, 2014</p>	<ul style="list-style-type: none"> ● Student will watch 2 Youtube clips. Teacher will assist the student in listening to the videos in English, with Chinese subtitles. Once perform, the student can view again with english subtitles. This technique can be done for many videos. ● Student will draw the basic cell structure of both plant and animal cells. ● Student will annotate the functions of each organelle again. <p>B2.L2.p1 Cells B2.L2.p2 Cell Function</p>	<ul style="list-style-type: none"> ● School owned Chromebook computer. ● View: Eukaryopolis - The City of Animal Cells: Crash Course Biology #4 https://www.youtube.com/watch?v=cj8dDTHGJBY ● View: Plant Cells- Crash Course Biology #6 https://www.youtube.com/watch?v=9UvlqAVCoqY ● Plain white paper ● Colored pencils and markers. 	<ul style="list-style-type: none"> ● Teacher and student will meet post videos to discuss what was observed, looking for comprehension. ● Student will turn in cell drawing, where feedback can be given. Teacher will be looking for appropriate shape, size, location of organelles, proper labels and functions.

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****This web address goes to a private online master course. It was downloaded to another format for viewing. Retrieved from**

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