Worcester Polytechnic Institute
Teaching Practicum at
Forest Grove Middle School

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Abstract

I was given the chance to complete my teaching practicum at Forest Grove Middle School in Mr. Kahira's 8th grade class during the fall of 2015. I was able to observe the classroom and eventually teach all of the classes. I learned how to manage students, learn their individual personalities, teach different learning styles, and adjust and be flexible in the classroom. Though this experience, I have obtained the confidence to teach in a classroom of my own.

Dedication

I would like to dedicate this paper to several people that have influenced me to become a teacher and follow my dreams. Firstly, I would like to thank the students at Forest Grove Middle School for proving wrong what everyone told me about how challenging it is teaching middle school students. They were also essential to me learning how to teach and were good sports when my lessons did not go as planned. I would also like to thank Mr. Kahira who was a great mentor and really helped me improve as a teacher. I would like to thank Mrs. James-Peters for inspiring me in high school to pursue the career as a teacher. Without her push I would not be where I am now. Lastly, I want to thank the Worcester Polytechnic Institute staff John Goulet, Katie Elmes, and Shari Weaver for all of their help and resources without which I would have been lost.

Introduction

During the fall of 2015 I was given the chance to do my teaching practicum at Forest Grove Middle School in Mr. Kahira's 8th grade class. I was able to observe the classroom and Mr. Kahira's instructional style. After a few weeks I taught a lesson in one of the classes and soon had taken over teaching all the classes. I learned how to manage students and learn about their individual personalities. I gained skills such as how to teach multiple types of students with different learning styles, adjust and be flexible in the classroom. I grew as a teacher and

have the confidence to teach on my own. This paper will describe the school and classes I taught in, as well as the multiple ways that I demonstrated that I am a qualified teacher.

Chapter 1 - Background

The state of Massachusetts has one of the best education systems in the United States[1]. I was eager to see the difference in classrooms style and management between Massachusetts and my home state of California. Massachusetts has a population of six million people and around 20% of the population is under the age of 18 years old[2]. The city of Worcester is the second largest city in the state and has a population of around 180,000 people and around 22% of the the population is under the age of 18 years old[2]. Forest Grove Middle School (FGMS) is one of the eight middle schools that can be found in Worcester. FGMS has 985 students and teaches both 7th and 8th grades. Below is a chart from the Massachusetts' Department of Education website which breaks down the school's ethnicity.

Enrollment by Race/Ethnicity (2015-16)			
Race	**% of School**	**% of District**	**% of State**
African American	10.8	14.9	8.8
Asian	5.7	7.5	6.5
Hispanic	30.1	40.8	18.6
Native American	0.1	0.2	0.2
White	47.9	32.5	62.7
Native Hawaiian, Pacific Islander	0.0	0.0	0.1
Multi-Race, Non-Hispanic	5.5	4.1	3.2

[3]

This chart shows the difference in ethnicity enrollment between FGMS, Worcester, and Massachusetts. The majority of students that attend FGMS are of Hispanic origin and white. There are also large percentages of African Americans. Vice Principle of FGMS, Richard

[1] "State Profiles Home Page." *National Center for Education Statistics*. U.S. Department of Education Institute of Education Sciences, n.d. Web. 20 Feb. 2016.

[2] "Massachusetts QuickFacts from the US Census Bureau." Massachusetts QuickFacts. US Census Bureau, 1 Dec. 2015. Web. 30 Jan. 2016.

[3] "State Profiles Home Page." *National Center for Education Statistics*. U.S. Department of Education Institute of Education Sciences, n.d. Web. 20 Feb. 2016.

Houlihan, told me that there has been a 5-8% increase of in English Language Learners (ELL) students over the last couple of years. A majority of the students don't speak English as their first language but come speaking to the school speaking only Spanish, Viennese, Twi, Arabic, Portuguese, and Albanian. The chart below shows that FGMS has a high percentage of ELL students. This really dictates how a classroom lesson is structured and the students are taught. A teacher must modify a lesson for ELL classes to make sure that students can have a clear understanding and successful meet both learning and language objectives.

Title	% of School	% of District	% of State
First Language not English	42.3	50.8	19.0
English Language Learner	23.9	38.4	9.0
Students With Disabilities	22.0	19.1	17.2
High Needs	58.3	74.3	43.5
Economically Disadvantaged	40.5	52.4	27.4

[4]

The table above compares the percentage of students with disabilities, high needs, and those who are economically disadvantaged of FGMS with the Worcester Public School District and all schools across the state. These attributes are more than number on a page; they affect how a student learns in the classroom. FGMS has a free breakfast and lunch program for all the students. This helps the student's whose home life might not provide the essentials like a healthy breakfast and packed lunch. I came to learn about students how were in and out of foster care, those who were homeless, and some that worked more successfully when they had access to prescribed medication for their ADHD. Each student had their own story and deserved to be treated as an individual rather than a percentage.

GRADE LEVEL 8 - SCIENCE AND TECH/ENG

	School								District								State							
	Stud. Incl	Part. Rate	% at Each Level				CPI	SGP	Incl. in SGP (#)	Stud. Incl	Part. Rate	% at Each Level				CPI	SGP	Incl. in SGP (#)	Stud. Incl	Part. Rate	% at Each Level				CPI	SGP	Incl. in SGP (#)
Student Group	#	%	A	P	NI	W				#	%	A	P	NI	W				#	%	A	P	NI	W			
All Students																											
2015	424	99	1	33	41	25	66.6	N/A	N/A	1,622	99	1	19	42	38	55.5	N/A	N/A	71,861	99	3	39	40	18	72.4	N/A	N/A
2014	505	99	3	30	39	28	65.8	N/A	N/A	1,753	99	2	21	41	36	57.2	N/A	N/A	71,951	99	4	38	41	18	72.4	N/A	N/A

[4] "State Profiles Home Page." *National Center for Education Statistics*. U.S. Department of Education Institute of Education Sciences, n.d. Web. 20 Feb. 2016.

The table above shows the breakdown of Massachusetts Comprehensive Assessment System (MCAS) scores for FGMS's 8th grade Science and Technology/Engineering test from 2014 and 2015. Students are placed into four performance levels based on their scores; advanced, proficient, needs improvement, and warning. ELL students are required to take the MCAS with the exception of being exempt from the language arts portion of the test during their first year in the country. When analyzing the test scores FGMS has better test scores then other middle schools in the school district. However, FGMS does have lower test scores compared to the state as a whole. This data does not address the ethnicity, the gender, language skills, or other attributes that could effect test scores.

I noticed during my time teaching at FGMS how often, even at the very beginning of the school year, teachers and admin brought up the topic of MCAS. Mr. Kahira often reminded the students about how this information would be on the MCAS test in the spring when it was the second week of school. During teacher's preparation time Mr. Kahira would talk about preparing the students for the MCAS. The students take the Science and Technology MCAS at the end of 5^{th}, 8^{th}, and high school (9^{th} or 10^{th}) grade. By the end of the first semester Mr. Kahira was including examples from old MCAS questions into the lesson to introduce the students to the way questions in the MCAS are worded. The 8^{th} grade science teachers put a lot of emphasis on this test, not only because of it's importance of gathering information about how much the student's have learned but also how well the educators have taught.

Chapter 2 – Classroom Dynamic

Classroom dynamic is made up of the physical environment, classroom policies and procedures, and the class structure; a teacher must thrive in these area that they have control over to have a successful learning environment for the students. Forest Grove Middle School (FGMS) is placed along highway 122A near Indian Lake in Northern Worcester. The school contain both 7^{th} and 8^{th} grade students with the 7^{th} grade student's classrooms on the first level and the 8^{th} grade students on the second level. Each grade is broken into different clusters with each cluster having the same set of teachers. This helps the teachers collaborate in curriculum

development and student interventions. Mr. Kahira's 8th grade science class is part of the Revolution Cluster. The revolution cluster has four class groups called Red, Blue, Green, and Yellow. Each group is completely different academically and socially by the school and students are moved around depending on the type of environment where they would thrive. The Yellow class has the majority of ELL students with a variety of levels from low English to basic academic language skills. Red class is known as Inclusion and has multiple students with learning and social disabilities. Blue is known as AVID and has higher level ELL students and students who has mild learning disabilities. Green class is also an AVID class and has students who needed some help in certain area. Each class has their own personalities and as the Revolution Cluster teachers got to know the students better the teachers moved students to different color groups or moved certain student's seating location to meet their academic and social development needs.

Physical Environment

The class was set up in rows with the students sitting in doubles at lab tables. There is a large lab table in the front of the desk for the teacher with the white board behind it. There was a single desk to the right of the teacher's lab desk for students who were extra chatty or misbehaved often. There was also room between the student's lab tables for the teacher to walk down which promote student teacher interactions. I liked to do this when students were taking notes or working on assignments.

Classroom Policies and Procedures

The learning objectives, date, and unit vocabulary words were placed on the left hand side of the white board. A free standing white board is placed in the left hand corner of the room had the daily agenda and the class' bellwork. In the back of the room an other free-standing white board had the student's homework assignment listed and quiz reminders.

The school day started with homeroom which was green class for Mr. Kahira. In homeroom, his expectation was that students would be sitting in their seats silently so he could take attendance. However, I quickly noticed that 8th graders in the morning were not too excited for this. I decided to present interesting science findings and "How It's Made" videos to the class during the five-minute homeroom period to ensure that that the first few minutes of their morning were not filled with yelling or constrained by state framework but could

introduce interesting and relevant information that could not be found in their text books. I wanted them to understand that there is so much more to science than what is written in the text book. I had presentations on the The Great Pacific Garbage Patch, Tesla, Chili's Earthquakes, Cotton Candy Grapes, the Super moon, and more. Appendix A has link to a few of these examples. I used Prezi for my homeroom presentations because they were an entertaining way to present the information in the morning. Many students came up to me and asked questions about the subjects I presented which demonstrated their interest and engagement in this activity.

Class Structure

At the beginning of each class a student will pass out the classes' composition notebooks for the bellwork. I would read the bellwork out loud for the students and give them a text book page to go to for help. I would walk around to answer questions and encourage the students. When the student believed that they had answered the question correctly I would check off the answer or tell them to try again. When the class has worked through the problem on their own I go over the answer with all of them on the board. The bellwork question is normally something that was taught the day before. The bellwork helps the classroom prepare for the day's lesson and refreshes what the student's learned the day before diving into that day's lesson.

I would then present that day's lesson. While the students took notes I would walk around the class making sure each student was writing the notes instead of sleeping or talking. Each class took a different amount of time to write down the notes. I learned that note taking for 40 minutes straight was a lot for an 8^{th} graders concentration, so instead I would shuffle between two or three types of learning: listening, writing, speaking, or watching. This help holds their attention and make sure that the class was interacting. I always had a handful of students who I would check in with each day to make sure they were doing the work. The longer I taught the more in tune I became with each of their body languages. I became aware of when individual students, the entire class, or the cluster was having good or bad days. I would try my hardest to have my lesson reflect their feelings.

Chapter 3 - Well-Structured Lessons

To me a well-structured lesson means planning ahead. In every classroom there needs to be some flexibility because things happen which are unexpected, but I like to be as prepared as possible. I used two different types of lesson plans; weekly and daily. Appendix B is an example of a daily lesson plans. I like the set-up of these lesson plans because the purpose of the lesson is clear. It has the lesson broken into five different parts: objectives, information, verification, activity, and summary. When writing my lesson plan, this structure allows me to determine if my lesson has all the necessary components. The lesson needs to follow the state's learning standards; these standards outline what will be tested in the MCAS test. The learning objectives concretely state what students will learn and be able to do at the end of the lesson while verification questions are outlined to ensure that students have a full understanding of the content addressed in the lesson. The homework also needs to be planned out ahead of time to ensure that is assesses student understanding of the objectives and in case printing is involved. The section entitled "prior knowledge" this is essential because it allows me to build off of other topics. It is also good to make sure that I am teaching the students something that is at the correct level of complexity. The bell ringer question is normally formed from the "prior knowledge section."

Using prior knowledge is important for learning from a psychological stand-point. When a student learns something new they either connect to old knowledge or, if it is completely new, it will be stored alone. However, when an old subject is used again it is pulled from long-term to short term memory then processed back into long-term knowledge. The more times an objective moves between long and short-term memory, the stronger the ability to remember and apply the objective. Some teachers make tests cumulative because it requires the student to retrieve old material from long term and therefore strengthening the knowledge for future use.

The other type of lesson plan I use is a weekly calendar. This is really helpful for me because I can look at how my week will be set up. Appendix C is an example of just one of weeks I taught but I made one for each week I was there. I planned out the book chapters in advance to make sure the class would not be falling behind the other science classes. I would

be able to plan for where vocabulary days, lab days, and test days would fall on the week. This was also helpful for when a student was absent or was going to be gone and wanted work a day in advance. I could easily access the sheet which included essential questions, objectives, learning frameworks, and homework. Since it is an excel spreadsheet I was able to easily moves things around if a whole day got interrupted by an assembly; as it did at some points.

After I planned a lesson I would make a Power Point slideshow for the students. I used slideshows because I wanted to make sure that each student could read the board and I knew that the students had trouble reading Mr. Kahira's hand writing. In addition, I was able to send the PowerPoint to all the students through Engrade. This allowed them to write down the notes if they had been absent, missed a part of the class, or wanted to review before the test. Appendix D is an example of one of the multiple slideshows that I used for the class. The PowerPoint begins with the week's objectives, which were also written on the board. I read them aloud to the class and to make the students aware of them and to understand what they were were expected to know by the end of the week. Vocabulary was always set up with the word, definition and example. I would ask for a volunteer to read the definition from the book. When they were done reading, the definition would appear on the screen followed by an example. Since I did not have to write anything up on the board I was able to wander around the classroom. This gave me the opportunity to make sure all my students were taking notes and that I was not moving too fast. When I first started teaching, my two biggest mistakes were talking too fast and not dividing up the vocabulary enough. By dividing up the vocabulary into two or three words at a time alternating by asking questions, having mini activities, or showing a quick film clip, I was able to hold the attention of the students for longer period of time.

When I would introduce a lab or project I would start by explain the entire lab or project. I would have students read aloud the procedure, making sure the procedure broke down the project bit by bit. I would give an example of the lab or project and clearly stated what my expectations were for the final product. By talking to the students first I would have less questions about the project midstream and students knew what the outcome should be. It helped the students with 504s to have the procedure written out step by step and to have a grading sheet attached. Students appreciated the grading sheets because it showed them

clearly what was expected of them and what parts of the project were graded heavier than others. An example of the grading sheet is the Rock Cycle Lab, Appendix E, the procedure was listed clearly and with the conclusion questions on the back.

I think it is important for teachers to discuss their curriculum with each other at the monthly staff meetings to ensure that each student is learning the same objectives. Even though every teacher has a different idea of what is important, every student will have to take the knowledge they have learned to apply to future learning and to take the same MCAS at the end of the year. The teacher must also prepare the students for the student's classes in high school. There was another 8th grade science teacher next door to Mr. Kahira's classroom. I would visit her classroom and see what she was teaching her students. We would collaborate on lessons and labs including our reflection of what went well and what could have gone better.

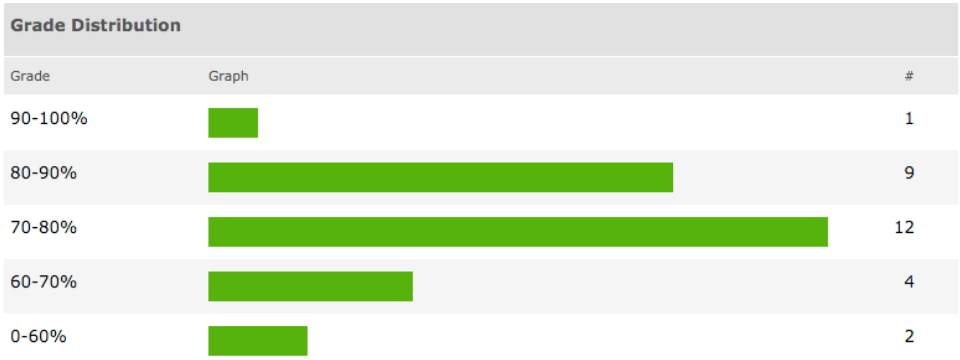
Chapter 4- Adjustment to Practice

I adjusted my teaching as I learned more about the students and teaching. I would change how I would approach a new topic from one class to the next to see if I could help the students understand the material better. I was eager for feedback and would constantly ask for Mr. Kahira opinion. I would ask the students for immediate feedback during class, after a test, or in a survey.

During class, I would ask the class how they felt about the subject with a simple thumb up or down. With a quick glance I could gauge the student's knowledge and feelings about that topic. I would also ask the students questions such as "How could the carbon cycle effect other Earth cycles?" with a "Think, Pair, Share" system. By giving the students a time to collect their thoughts about the answer before they turned to the person next to them and discuss the answer, it allowed the students who needed more time to think about their answer so as to not have trouble expressing their thoughts out loud. This system gave me time to connect with pairs of students and check in with how they were feeling on this topic. I would be able to help move their discussion into the right direction if they were off topic. When it was time for the students to share their answers with the class, quieter or more introverted students were more likely to raise their hand. I would also call on students who never raised their hands if I had

stopped by their tables and heard their answer. When the students felt more confident about their answer because I discussed with them personally, they felt more comfortable opening up to the entire class. An example of a "Think, Pair, Share" activity is displayed in the PowerPoint, Appendix D.

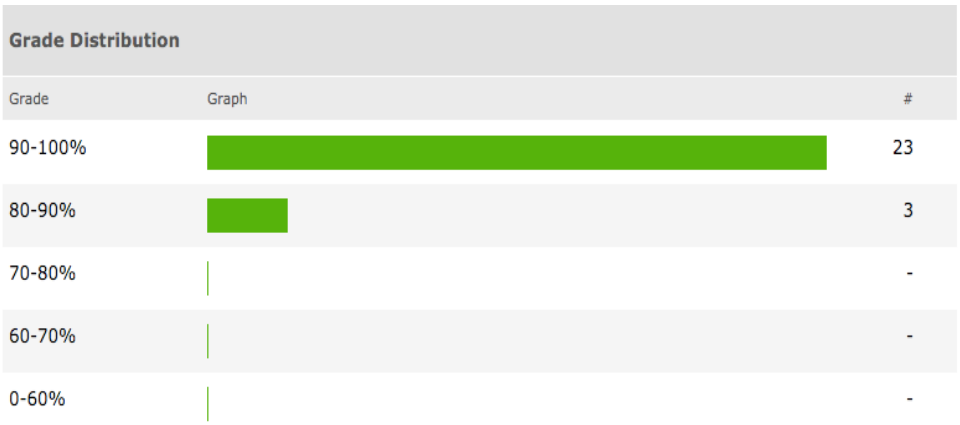
When I took charge of the class, the biggest adjustment I made was to intentionally address how the students prepared for the tests. I felt like the students did not feel prepared going into the test and overwhelmed during the test. When grading the first quarter tests I was surprised by how many students received low grades. Their test grades did not match up with their homework, lab, and participation grade. When looking at the questions the students got wrong I was taken aback because they performed poorly on topics I knew the students understood. Below is a graph that shows the first quarter test grades for Green Class.



Many of the students received between 70-80% on the quizzes but I knew that the students could do better. The tests were set up in the following manner: the students were notified a week in advance about the test along with what chapters that would be found on the test. Some of the test questions came directly from the book and the test would be entirely multiple choice. Appendix F is an example of a test given during the 1st Quarter.

I decided to help prepare the students for the test and rearrange how the test was set up to see if that would increase their test scores by giving the students a variety of opportunities to show what they had learned in class. I gave the students a week's notice about the test. I decided to include a study guide as a homework assignment. I made the study guide after the test was written which meant that everything on the test and more was included in the study guide. I allowed the students to use one sheet of paper on the test and gave them

extra credit on the test if they used the sheet. The test was set up into four different sections; matching vocabulary, true and false, multiple choice, and short answer. By having different sections, students who were better at one type of question could still demonstrate their understanding of the learning objectives. Appendix G is an example of a test given during the 2nd quarter along with the study guide and an example of a student's one page of test notes. All the tests given in the second quarter were set up in this manner. Below you can see the student's improvement of their test scores.

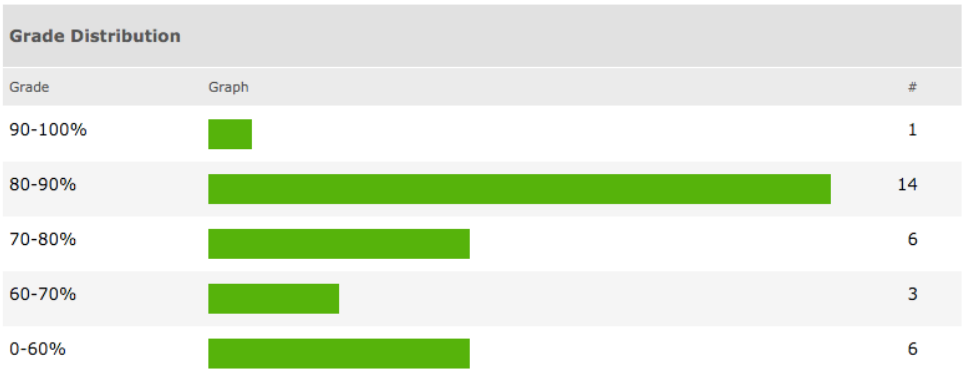


Grade Distribution

Grade	Graph	#
90-100%		23
80-90%		3
70-80%		-
60-70%		-
0-60%		-

Above is Green Classes Grade distribution for test in the 2nd Quarter. I was so excited to see that the students had done that much better on the tests and it wasn't just Green Class that had improved from first quarter to second quarter. Here are the other three classes.

Blue Class – 1st Quarter



Grade Distribution

Grade	Graph	#
90-100%		1
80-90%		14
70-80%		6
60-70%		3
0-60%		6

Blue Class – 2st Quarter

Grade Distribution

Grade	Graph	#
90-100%		14
80-90%		6
70-80%		3
60-70%		1
0-60%		1

Yellow Class – 1st Quarter

Grade Distribution

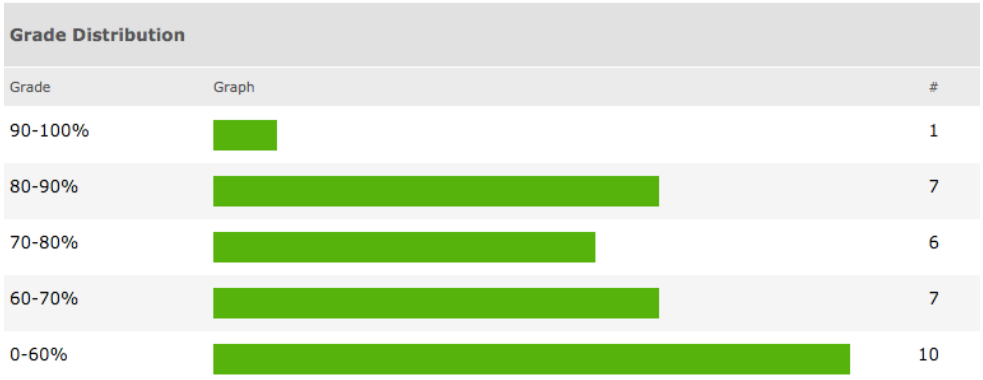
Grade	Graph	#
90-100%		2
80-90%		7
70-80%		11
60-70%		1
0-60%		9

Yellow Class – 2st Quarter

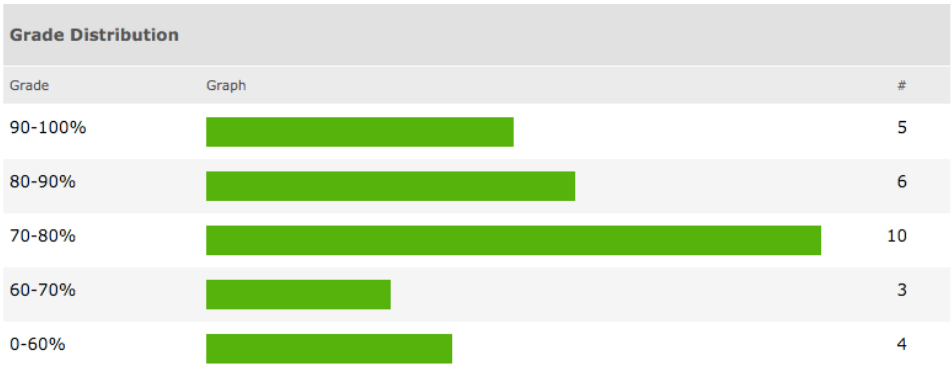
Grade Distribution

Grade	Graph	#
90-100%		25
80-90%		3
70-80%		2
60-70%		-
0-60%		3

Red Class – 1st Quarter



Red Class – 1st Quarter



Another way I adjusted my practice was after getting anonymous feedback through a survey given to my students. In mid-October I handed out half sheets with eight questions on one side and blank writing space on the back to all of my students. The questions were: "How well does Miss. Valdez use time effectively and efficiently? How well prepared do you feel for the tests? Do you like the vocab presented on a PowerPoint? The test accurately gages how much I learn? Miss. Valdez treats all the students fairly? Do you enjoy having Miss. Valdez as the teacher? Miss. Valdez clearly explains what is happening in class. Miss. Valdez is approachable and willing to help me." On the back of the sheet there was space for student to write any feedback that they wanted. When I read the survey by each class and received the constructive feedback that every class wanted an improvement on preparing for the test and a majority of the students liked having the PowerPoint for notes. The Yellow Class, primarily ELL students, told me to slow down when using the slide show and when speaking. Green Class, an AVID class, told me they were bored when taking notes. Both of these classes had different

learning styles and speeds, so I made sure to modify my PowerPoints for each class as much as I could.

These surveys helped me because I felt like I received honest feedback from my students. I was able to slow down my speaking rate during Yellow class and checked in more with the students during class to see if I was moving too fast for them. With Green Class, I broke the vocabulary up more, asking them "Think, Pair, Share" questions which gave them time for constructive talking time. I then gave the students the same survey sheets and same questions in mid-December before I finished the practicum. This not only gave me feedback on how I could continue improving as a teacher but how I improved since first survey. Appendix H shows what a positive and negative survey from mid-October and mid-December.

Chapter 5 - Meeting Diverse Needs

When I started teaching, I was least experienced in teaching diverse students. Being at FGMS was an amazing opportunity to learn how to approach classrooms with diverse needs. I was lucky that Mr. Kahira had a classes with many learning disabilities and ELL students because those students were the ones I was most lacking in experience teaching. Taking the Sheltered English Immersion (SEI) course and talking with Mr. Kahira, I was able to ask for help and grow in this area. I now feel confident walking into a classroom with a range of diverse students and being able to accommodate a lesson for them.

The first way I met diverse needs was by giving my lectures in PowerPoint presentations. This was helpful for students because no matter where the students sat in the room they were able to read what was up on the board. There was never a problem with messy hand writing which can be hard for students who are learning English to try and decipher. In the PowerPoints, I tried to include many visual examples including pictures, animations, or videos. Every vocabulary word had at least one picture example to help the students connect the word with something they knew outside the classroom. When I was lecturing I would often find short YouTube, Planet Earth, or Bill Nye clips that would connect what we were discussing in class with real life examples. For example, I found a short animation of the different types of waves which Earthquakes produce. This helped students visually see the waves and not only have the

2-D book example to rely on. Another example, is when teaching the students about how Earthquakes are measured by seismic waves which are similar to radar waves. I found a short clip from Planet Earth about how Dolphins use sonar to hunt for fish in the ocean. This helped student connect seismic to sonar waves and describe how they are similar. This lead us into a discussion about how human use ideas found in nature to create inventions like radar was invented from the idea of sonar and seismic waves.

The second way I met diverse needs was by modifying how I lectured, presented assignments, and asked questions. Wait time is an excellent way to give students the opportunity to think about the answer. This method allowed students who needed a longer processing time to raise their hand which in turn gave me more hands to call on. As I said before, I made sure to slow down my speaking speed. Going from a New England and WPI pace of talking, to a pace for students with poor English skills could understand was really important. I would also have students read the assignment or vocabulary terms out loud. The benefit of this is to have students follow along with whoever is reading so that they hear, see, and then hopefully write the words. This gives the students the additional benefit of reading out loud and practicing new academic words.

A third way I met diverse needs was by modifying the test. Certain students were able to take modified test because of their 504s. I was given the chance to help modify one of the tests I wrote for the students in the second quarter. Appendix I shows an example of the modified test. The modifications included more spacing between the problems, three choices for multiple choice questions instead of four, and changing wording, like having questions that say "Which of the following are true **except**" to say "Which of the following is false." These modifications are meant to help the students not struggle and feel overwhelmed with the test structure and to allow them to show their understanding of the material. The small difference of changing words, choices, and spacing allows the students to participate with the rest of the class and be held to the same learning standards. In addition to modifying tests for selected students, I wrote the questions for all the tests in a format similar to those students had seen either for homework, on assignments, or for bell work. I wanted to make sure that the students did not feel misled by questions and had seen questions like it before. It is hard for students to

show their understanding of a concept if they are having to learn something new in a time sensitive situation with no outside help. I would rather use bell ringers and homework as a time to challenge the students with new concepts.

A fourth way I met diverse needs was by giving all the students a chance to have one page of notes for the test. I noticed that the students who used the page of notes did a lot better than the students who did not use the note sheet. Below is a table that breaks down the numbers by class.

Class	Percent of students who used a note sheet (%)	Class Average on the test (%)	Difference in score between note sheet students and non-note sheet students.
Green	79%	100%	Using a note sheet did not effect student's scores
Yellow	93%	98%	Lowest grades in class did not use a note sheet
Red	71%	79%	Out of 7 students only 1 got above 75%
Blue	79%	96%	5 students did not use a note sheet and 3 of those go below 75%

The note sheets increased the students test scores because it was a way for students to study. At the 8th grade level the students have not learned how to study for tests. By having the students look over their notes and the study guide, and write down the most important information, they were able to review the test material. The act of rewriting important information strengthened their knowledge of the material. In addition, I believe that the ELL students did a lot better when they used the sheet of paper because they had time to translate and process the information which they placed on their sheet. This in turn saved them the time and effort of translating and processing the information when taking the test and allowed those students to read and answer the question more thoroughly.

The last way I met diverse needs was by allowing student to show their understanding of the subject matter through projects. For example, I gave students an Ecosystem Project Poster. Appendix J is the poster procedure, the project score breakdown, and example of student work. Students who were not able to sit quietly and take notes or ELL students, did well on this project. Each student worked in a group of three or four. The procedure broke the project down into a series of action steps for the students who feel overwhelmed when by large

projects. Once a group finished a certain step in the procedure and were checked off by the teacher, they were able to move onto the next step. This allowed me to make sure they were completing the project correctly and working as a team. The procedures asked for the students to plan out the details of the roles and responsibilities of each group member. Each student has a certain set of skills they could utilize in that project and I tried to help the groups realize this as I walked around the classroom. The students who were particularly talkative were allowed to talk only if they kept on track, which allowed them to not always having to be told to quiet down. I had the grading rubric attached to the procedures which this allowed the groups to double check that they had everything on their poster to receive full points before turning it in.

Chapter 6 - Safe Learning Environment

The importance of having a safe learning environment is to emphasize the importance of having an accepting community which will encourage healthy learning inside and outside the classroom. Routines are an important component to cultivating and maintaining a safe learning environment. Having students feel comfortable in a classroom and understand the routines allows them to not be nervous about that specific aspect of the class so they can focus on the business of learning. I believe that when students feel more comfortable in the class they are more willing to take educational risks, such as answering questions without the fear of potentially being wrong. These routines must start on the first day of school and followed through each day of class. Mr. Kahira implemented the routine that students had to be in their seats when the bell rang. This was important for Mr. Kahira to be able to start the class on time and get the most out of the class period. By keeping this routine, students understood that they would be in trouble if they disrupted the start of class by being out of their seat at that time.

Another way to cultivate a safe learning environment is by making sure the class and myself use inclusive language; language that avoids the use of certain expressions or words that might be considered to exclude particular groups of people. Inclusive language is very important to use in front of 8th graders because they don't realize the power language has on others and are very impressionable at this age level. I made sure to follow this rule myself and not let my words prevent someone from reaching their full potential. I also would discipline

students who used language like gay, stupid, dumb, retarded, and racial terms or any negative comments towards themselves and others. Although, it is challenging for students to realize the impact of their words and change their behavior accordingly, it is not impossible particularly when expectations are clear and enforced. I strongly encouraged students to think about how their negative comments can affect others. This improves the classroom atmosphere because students are less likely to feel nervous and attacked from their peers if the language is different. By holding myself and my students accountable for the language we use, I hoped to develop an inclusive and tolerant culture, and maybe change some of the students' perspective on the power of words to hurt and to heal.

I also believe that safe learning environments are fostered when students feel like they can approach the teacher. Approachability is something that is gained through mutual trust between the students and their teacher. I strive to be approachable for the students so they would feel like they could ask for help when they needed it and they could open up about those aspects of their life that were affecting their ability to be successful. When I gave the students the survey, Appendix H which I discussed above, I read that some students didn't feel like I was approachable. After reading some of those comments I tried to be more open by personally connecting with the students during in-class activities and asking them how the work and their day was doing. By going to them I hoped to open communication between myself and the students. I also approached students if they were missing assignments and tests, showing I cared about their academics. The second thing I did was to intentionally be present in the classroom during lunch, allowing students to meet with me at that time to catch up on missing work and get help on homework. This time allowed me to spend more one-on-one time with struggling students. I hoped that by giving students who came the extra help it would improve their academics and encourage them to ask other teachers for help if they were struggling.

Peer pressure is a significant aspect of an adolescent's social experience and can either contribute to or destroy a safe learning environment. Students are very self-conscious always trying to fit in with their peers and fit with the status quo. Some students care more about what others think than they do with actual academics. I had one female student whose grades were dropping. I observed in class that she did not care what I was lecturing on or about taking notes

but more about what the guy in the back of the class was doing. Her parents came to talk with the cluster teachers about her grades and asked why they were dropping. Her parents were very surprised to find out that she was distracted by a boy. The teachers and parents thought it was best to move her to a smaller class. Once moved, she started doing better on her homework and in class participation. She began raising her hand more and taking bigger academic risks. She came in during lunch and afterschool on some days to do extra work to raise her grades. It was great to see her become more driven to succeed for herself rather than her need to gain attention from a boy. It is fortunate that she was able to learn this lesson while she can still have the ability to make up her work during lunch. My hope for my students was that they were able to learn from their mistakes in a safe classroom environment rather than the harsh reality which is outside the classroom.

Chapter 7 - High Expectations

High expectations for all your students to succeed is important as a teacher. I promised myself to never give up on any student, even if they had already given up on themselves. Some of the students I taught had been through more stress and hardship them I could image for their age. I knew for some students that their teachers were the only people who were looking out for them and helping them succeed. However, some teachers do unfortunately give up on their students and that was hard for me to witness. There was one particular student that I had in my Yellow ELL class who was not doing well in class. It was not because he wasn't smart but due to lack of motivation and confidence. He had been held back two years in a row and the school counselor informed the teachers that he was living at his Uncles' house. However, I knew from him that he was excited to move back in with his mother's house. He was also absent a lot which means he missed critical school days. I overheard the other cluster teachers talking about him the first few days of school and how they did not believe he would make it to the next grade. From that moment on I made him one of my priorities in the classroom, in hopes to help him graduate to the 9th grade even though if I was there only for a semester. I told him that I knew he could do better and expected nothing less from him. Everyday during bellwork I would stop by the desk and open up his notebook or while lecturing I would tap his

desk to signal him to write down the notes. I was constantly reminding him that the hard work was worth it and it did show when he got 94% on a test. I drew a large smiley face to show that I had recognized his hard work; I knew he has a long road in front of him but I know I did what I could in my classroom.

As I said above I had high expectations for all of my students. One of the ways I achieve that was building their self-confidence. At the end of one of the tests I gave I asked the student what score they thought they got on the test. More females then males, gave themselves a lower letter grade then they actually received. I was very surprised and I made sure to write on their papers that they were smarter than they thought. I wanted them to know that it is alright to be proud of what they did and how well they had done.

When handing out a new project or lab I would give example of what I expected from them. I would tell them what was good about the example and what could be better. By doing this they had an idea of what my expectations from them were and how they could exceed those expectations. The students did not always do wonderfully but I wanted them to give their best effort. As the semester progressed I witnessed some of the shyer student partake in group work and have a more confident voice.

Chapter 8 – Reflective Practice

I believe that the difference between a mediocre teacher and a good teacher, is a good teacher reflects on their practice. I believe I have a good reflective practice because I kept a composition notebook of daily class notes. I would write down what happened in the class, what went well or did not go well, and where I stopped in a lecture. This was a great place for me to put my thoughts down on paper or write down a note for later. If I was to teach the class again I would be able to go through my notebook and see what I could have done better. It was helpful to see how far each class got in the notes. Some classes like Red and Yellow took longer to write notes or to accomplish a lab. I wanted to make sure I kept each class kept at the same relative pace which meant that Blue and Green class got more time to perfect their lab or to do run a lab twice. Although, it would be ideal to have as much time as possible, the MCATs made sure that we move at a certain pace. Having a notebook was nice to look back on what I could

have done better when presenting a new project compared to the last time I had done it. By keeping these notes, I was able to continually improve my teaching skills.

I also asked for feedback from my mentor, Mr. Kahira. He would give me tips and hints on how I could improve a lesson or how to present a lesson in a different manner. His feedback about my lessons were very helpful because he has years of experience. He gave valuable insight on my ideas like trying new lessons and activities and gave me insight on how to modify them for the classes needs and ability. I also went to other teachers in the cluster to ask how certain students were doing in their class and where they placed certain students. I had trouble with a student and thought that putting him in the front of the classroom would help him pay attention. However, the other teachers mentioned that by putting him in the back of the class he was able to stand up while doing work and distract less students and get more of his own work done. I was also able to receive ideas for my classroom from the science teacher next door. While Mr. Kahira used composition notebooks for bellwork, she used binders. It was great to look at the difference between how I presented something to the class and how she presented the same subject to the class. For example, I was having a hard time with a lab about adaptations. She said she had had the same problem but made several changes to the lab's procedure and conclusion questions to help clarify for the students. I was able to reflect on what I would change and what she changed to consider better versions for the lab.

During the time I was teaching I had a weekly seminar class where we had reflective writings due each week. The writings would address highlights, challenges, goals, and a self-reflection questions based on assigned aspects of teaching. It was constructive to look at what had not gone well but look forward to the next week with new hope. It also made me think about if I had to do the same week over again what would I would have done differently. This opportunity to teach over one hundred 8th graders taught me an immense amount about teaching and myself as a person. Having these reflections really helped me go from a regular teacher to a good teacher and hopefully one day continue on to become a great teacher.

Chapter 9 – WPI Education

My education at Worcester Polytechnic Institute (WPI) has and will impact me as teacher. WPI has given me an education which is uniquely different than most teachers. I believe that majoring in Environmental Engineering gave me solid content background that prepares me to better teach and integrate course content with science practices. Many of my students had more respect for me as a teacher when I told them that I was majoring in an engineering field. I was also able to give the students examples of when they would use certain skills again and had many outside examples as well. For example, I was teaching them the importance of units and some of the examples in class were easy, however, the skill of unit cancellation would come in handy for future classes like Chemistry and Physics.

I believe that WPI showed me the importance of having females in Science Technology Engineering and Math (STEM). Many studies show that female interest in STEM drops at the middle school level. I hope that by being a female in STEM I was a role model to the females in my class showing that there is a place for the female perspective in STEM and that they can succeed in the STEM fields along with males. Hopefully I made a difference in the short time that I was in Mr. Kahira's classroom and motivated some students to continue in the STEM fields.

My time at WPI has also influenced how I want to teach. I really enjoy project based learning and think it is a great way to learn as a student. Students need to learn skills like creativity, communication, collaboration, and critical thinking, to be well rounded and prepared to succeed out of the academic learning environment. I believe that students at younger levels would really appreciate and learn a lot with project based learning. Having students learn how to work in teams and solve a problem in groups is a unique set of skills that a majority of students will need to use in later education and occupations. Giving students a chance to work on these skills will benefit their education. I noticed in my classes that some students had a difficult time with working in a group setting. Those students had a challenging time with letting other students be in charge of the project or lab. Having to deal with these types of problems are hard as a teacher because resolving conflicts peacefully between students can be difficult. However, I do believe that the outcome is worthwhile for the student in the end.

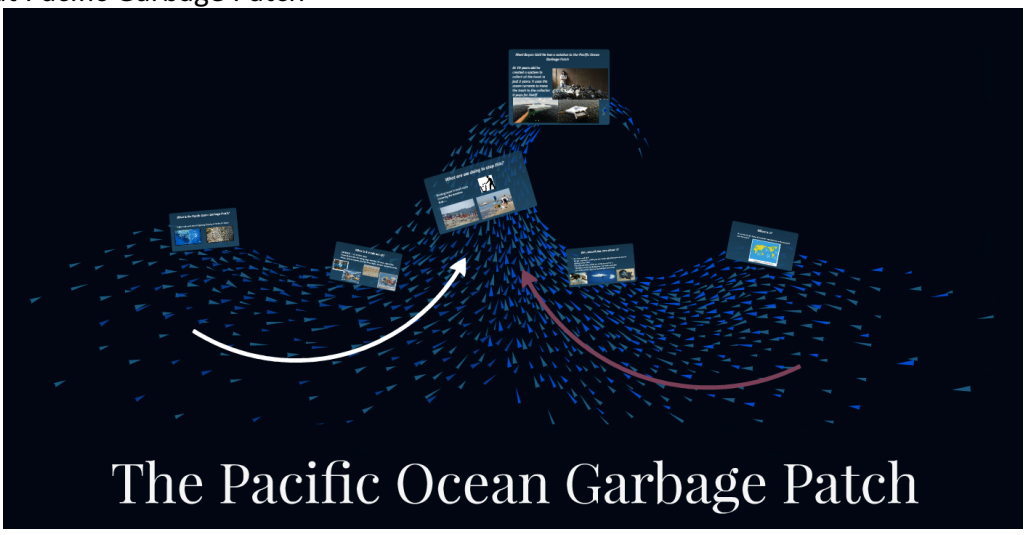
Conclusion

Mr. Kahira's 8th grade class at Forest Grove Middle School is an experience I will never forget because it shaped me as a teacher and made me a more confident person. This experience left me with the knowledge that I could leave WPI and walk into any classroom as an effective educator. I believe I now have the skills to teach a diverse range of students learning objectives in a clear, comprehensible, and engaging manner. I know that I will continue to evolve as a teacher gaining both experience and knowledge as I continually strive to become the best teacher for my students. This experience taught me how difficult it is to be a teacher but that the reward is worth the challenge. I hope to be the teacher that will never give up on her students but instead helping all of them realize their full potential, not just in the classroom but in life.

Appendix

Appendix A – Prezi Presentations

The Great Pacific Garbage Patch



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Super moon
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Cotton Candy Grapes

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Chilean Earthquake
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Appendix B – Daily Lesson Plan

Daily Lesson Plan

Date	Unit/Course	Topic	Instructor
9/23/15	Mr. Kahira's 8th Grade Science	Earth Science	Miss. Valdez

Overview & Purpose	Prior Knowledge Needed	Educational Standards Addressed
Taking the student's knowledge of heat transfer and covection currents and relate it to Earth's interior convection currents.	The weeks definitions, the layers of the earth, heat transfer.	Differentiate amoung radiation, conductionn, and convection, the three mechanisms by which heat is transferred through the earth's system. Explain the relationship among the energy provided by the sun, the global patterns of atmosphic movement, and the temperature differences among water, land, and atmosphere.

Teacher Guide

Objectives (Skills/information that will be learned)	SWBAT - Explain how heat is transferred. Identify what causes convection currents. Describe convection currents in Earth's mantle.	**Teaching Aids\Materials Needed** Work sheet print outs
Information (Demonstration or lesson details)	Key Terms: Radiation, Conduction, Convection, Density, Convection Currents. Go over how Heat Transfers and the three types. Write vocabulary words (word, definitions, and picture example). Relating the knowledge of Heat transfer and convection currents to the Earth. How the these movements effect the Earth.	
Verification (Student understanding steps or checklist)	Think Pair Share- coming up with examples, answering questions. Questions like : How would do these currents effect the sea floor spreading.	**Other Resources (Web, Books, etc.)** Have visuals ready for real life examples. Also a possible powerpoint. Have video that shows the movement of the Earth's Interior.
Activity (Independent activity to reinforce lesson)	Worksheet - Students work in pairs to complete activity. Teacher will walk around. If one question really stumps them I will go over it with them in class.	
Summary	Students use their knowledge of the the basics of heat transfer to relate beck to the convection process happening in and round the Earth.	**Homework** Study Guide Due Friday

Appendix C – Weekly Lesson Plan

8th Grade Science Lesson Plan

For Week Starting: 11/2/15

Prepared By: Miss. Valdez

Class		Monday 11/2/ 2015	Tuesday 11/3/ 2015	Wednesday 11/4/ 2015
	Subject	**Populations&Communities**	**Interactions Amoung Living Things**	**Interactions Amoung Living Things**
	Materials	Levels of Organization Activity Group Work	Introduction of interaction amoung living things	Contitiue notes about interaction amoung living things
	Homework	Worksheet	Worksheet	Worksheet
		Thursday 11/5/ 2015	**Friday 11/6/ 2015**	
	Subject	**Interactions Amoung Living Things**	**Interactions Amoung Living Things**	
	Materials	Introduce symbiosis and activity	Adaptation Lab	
	Homework	Worksheet	Worksheet	

Student Objectives

After this lesson, Students will be able to

- Explain how an organism's adaptations help it survive.
- Describe the major kinds of interaction amoung organisms in an ecosystem.
- Identify the three types of symbiotic relationships.

ESSENTIAL QUESTIONS:

How do an organism's adaptations help it to survive? What are the major ways in which organisms in an ecosystem interact? What are the three types of symbiotic relationship?

MA CURRICULUM FRAMEWORKS:

Life Science (Biology), Grade 6-8. # 13 Give examples of ways in which organisms interact and have different functions within an ecosystem that enable the ecosystem to survive.#14 Explain the roles and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

MA LITERACY FRAMEWORKS:

RST 6-8.10 by the end of grade 8, read and comprehend science /technical text in the grades 6-8 text complexity band independently and proficiency

RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on same topic

SUMMATIVE ASSESSMENT:

Homework, quizzes, Test, Labs, Projects

READING/WRITING/DISCOURSE:

Vocabulary definition, Reading content text, cornel notes , lab journal

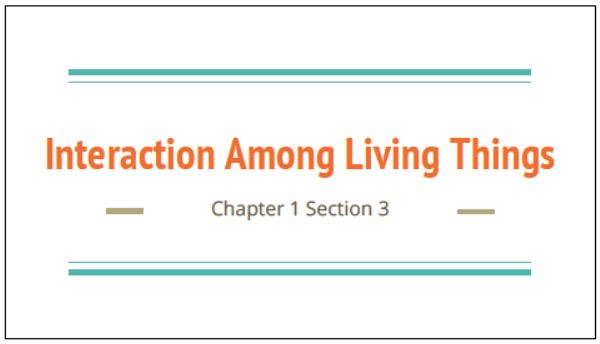
EVIDENCE BASED BEST PRACTICES:

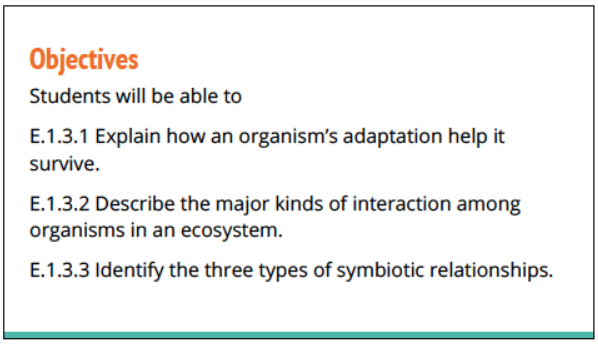
EBBP	Definition	Examples
Gradual Release of Responsibility	I Do, We Do, You Do Together, You Do Alone	Modeling-Scaffolding-Group Work, Partners-Assessment
Academic Vocabulary	Cross Content Vocab and Transition Words	Explain , support, Define, list
Writing	Write to Learn; Public Writing	Cornell notes, Content vocabulary definition, and Lab report
Formative Assessments	Assessment used to inform instruction	Bell work; Exit Slips; Dip-Sticking; Cold Calling; Discussion; Classwork, etc.

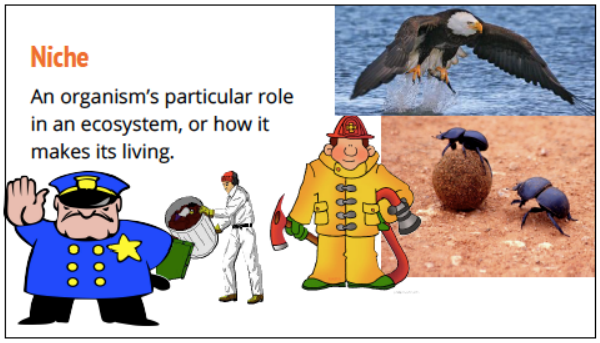
Appendix D – Power Point Notes

Power Point Slide Show Example

Slides go from Left to Right, then Done







Adaptations

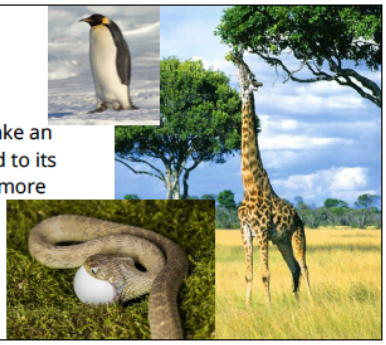
A behavior or physical characteristic that allows an organism to live successfully in its environment

Camouflage

The concealing of personnel or equipment from an enemy by making them appear to be part of the natural surroundings.

Natural Selection

A process by which characteristics that make an individual better suited to its environment become more common in a species.



Cactus

What is the cactus' niche?

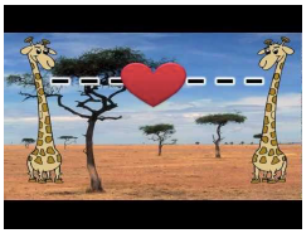
How has it adapted for its environment?

Think

Pair

Share

What are some examples of a natural selection?



Think

Pair

Share

What are some examples of a Human adaptations?

Competition

The struggle between organisms to survive as they attempt to use the same limited resources.

There are three major types of interactions among.

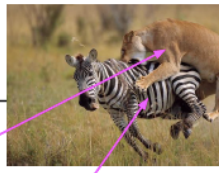
Competition

Competing for limited resources

Rock Paper Scissors

1. Turn to your partner
2. Winner turns and plays the winner nearby
3. If you win both rounds raise your hand and wait

Predation	An interaction in which one organism kills another for food.
Predator	The organism that does the killing in a predation interaction.
Prey	An organism that is killed and eaten by another organism.



Preditor?

Prey?

Preditor?

Prey?

Preditor?

Preditor?

Think

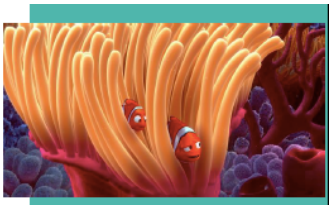
Pair

Share

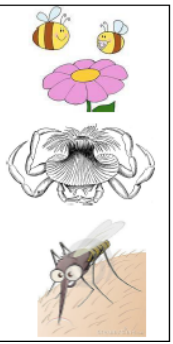
Why do we need the predator prey relationship?

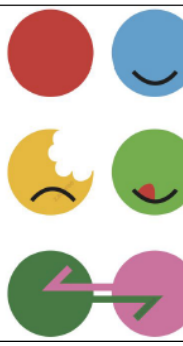
Symbiosis

A close relationship between two species that benefits at least one of the species.



Mutualism	A relationship between two species in which both species benefit.
Commensalism	A relationship between two species in which one species benefits and the other is neither helped nor harmed
Parasitism	A relationship in which one organism lives on or in a host and harms it.





What type of symbiotic relationship is this?

mutualism, commensalism, parasitism

What type of symbiotic relationship is this?

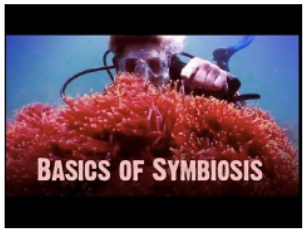
mutualism, commensalism, parasitism

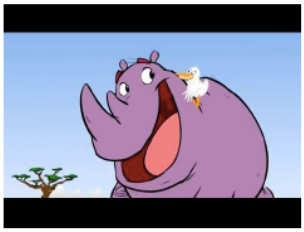
What type of symbiotic relationship is this?

mutualism, commensalism, parasitism

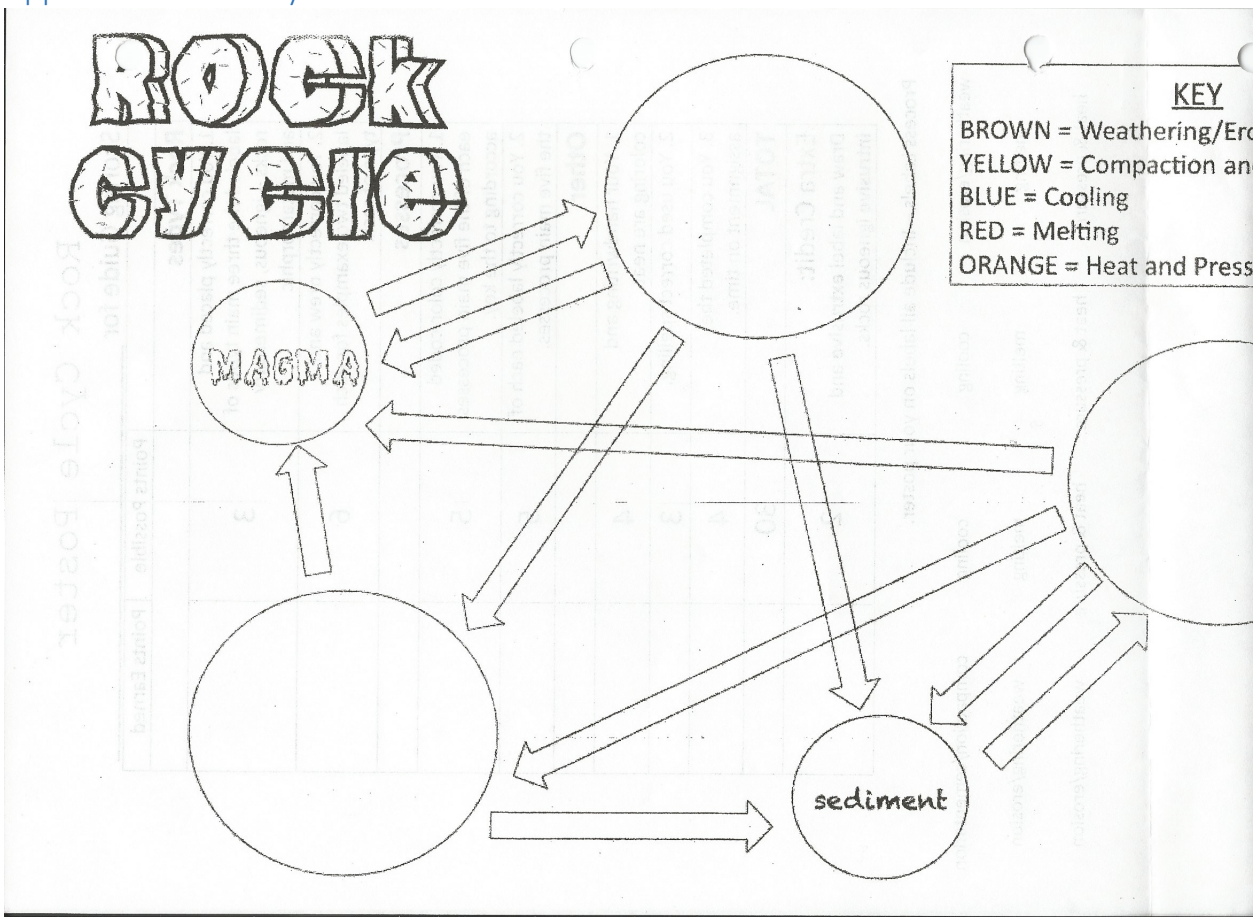
What type of symbiotic relationship is this?

mutualism, commensalism, parasitism





Appendix E – Rock Cycle Lab



Rock Cycle Poster

Scoring Guide for _____

	Points Possible	Points Earned
Rock Types		
1. You correctly placed and labeled the three main types of rocks – igneous, sedimentary and metamorphic	3	
2. You correctly drew and labeled two examples for each type of rock.	6	
Processes		
1. You correctly color-coded each of the five main processes according to the key.	5	
2. You correctly labeled each of the five main processes.	5	
Other		
1. Your handwriting and coloring are neat.	4	
2. You used correct spelling.	3	
3. You completed the assignment on time.	4	
TOTAL	30	
Extra Credit: Draw and label **extrusive** and **intrusive** igneous rocks.	2	

Process Labels – Include all labels on your poster.

weathering/erosion	cooling	cooling	compaction/cementation
melting	melting	melting	weathering/erosion
heat & pressure	heat & pressure	heat & pressure	weathering/erosion

Appendix F – Study Guide and Test from Quarter 1

Study Guide

Class:_____ **Study Guide** Name:_____

1. The relatively soft layer of the upper mantle is the_____.

2. The Continental crust is made of rock such as _____.

3. The single landmass that broke apart ____ _____years ago was Pangaea.

4. The layers of the earth go from least pressure to most pressure:

5. Pressure is the:

6. What are the two types of crust?

7. What kind of scientist studies the Earth?

8. When an earthquake occurs it creates _____.

9. Is Sea-Floor spreading occurring today?

10. The newest rock on is found _____to the mid-ocean ridge.

11. What type of evidence did Alfred Wegener use to support his theory of continental drift?

12.Did everyone believed Alfred Wagner's Theory of Continental Drift.

13. Did everyone believed Alfred Wagner's Theory of Continental Drift.

14. The inner core is made up of _____ and _____.

15. The inner core is solid or liquid?

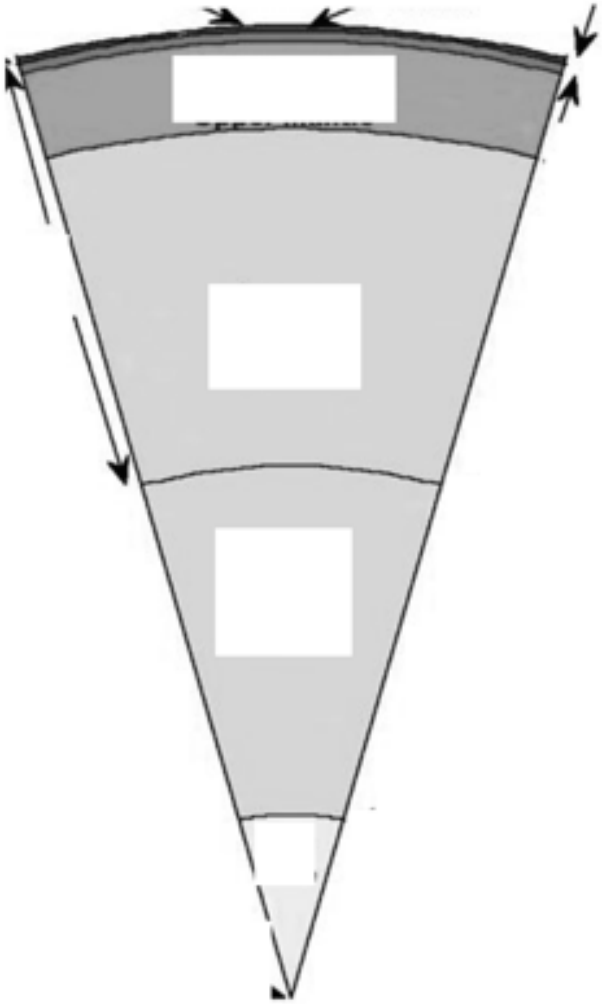
16. What is the difference of lithosphere and asthenosphere?

Class:_____ **Study Guide** Name:_____

29. What are the names of all the continents?

30. What is some evidence that Wegener gave about continental drift?

31. Label the layer of the earth. Use the Vocab list for help.

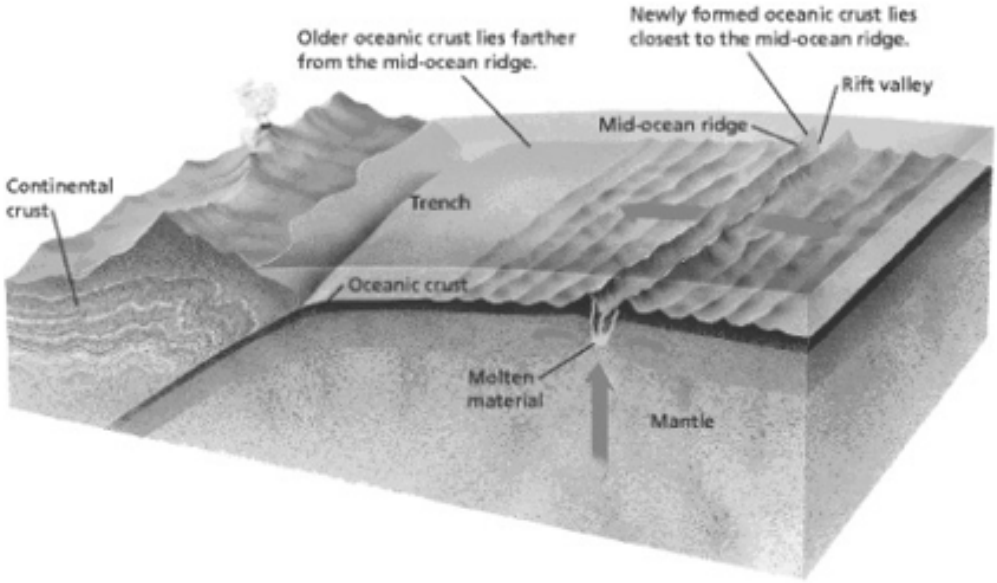


Class:_____ **Study Guide** Name:_____

17. Which is the hottest layer of the earth?

Class:_____ **Study Guide** Name:_____

32. Describe in a paragraph what is happening in this picture.



Class:_____ **Study Guide** Name:_____

Key Terms:

Crust

Mantle

Asthenosphere

Lithosphere

Inner Core

Outer Core

Continental Crust

Oceanic Crust

Granite

Basalt

Pressure

Density

Geologist

Seismic Waves

Iron

Nickel

Pangaea

Radiation

Conduction

Convection

Density

Convection Currents

Fossil

Mid- Ocean Ridge

Sonar

Sea-floor Spreading

Deep-Ocean Trench

Subduction

Unit Test

Unit Quiz (Plate Tectonic)

Name **Class** **Date**

1. The relatively soft layer of the upper mantle is the
   A) asthenosphere.
   B) Lithosphere.
   C) Inner core.
   D) Continental crust.

2. The Continental crust is made of rocks such as
   A) Granite
   B) Basalt
   C) Limestone
   D) Gypsum

3. The single landmass that broke apart _____ years ago was Pangaea
   A) 4.5
   B) 1.25 trillion
   C) 250 million
   D) 700 thousand

4. Select the layers that go from least pressure to most pressure...
   A) Crust, Mantle, Outer Core, Inner Core
   B) Upper Mantle, Inner Core, Crust
   C) Core, Mantle, Crust
   D) Lithosphere, Crust, Mantle, Asthenosphere

5. Pressure is the
   A) Force pressing in on an area
   B) Increase of heat
   C) The creation of rock
   D) One of the layers of Earth

6. What are the two types of crust?
   A) Mountain and Sea
   B) Continental and Oceanic
   C) Hard and Soft
   D) Lithosphere and Asthenosphere

7. What kind of scientist studies the Earth?
   A) Geologist
   B) Biologist
   C) Engineers
   D) Meteorologist

8. When an earthquake occurs it creates...
   A) Higher Temperatures
   B) Seismic Waves
   C) Increase of Pressure
   D) Volcanoes

9. Is Sea-Floor spreading occurring today?
   A) Yes
   B) No
   C) Maybe

10. The newest rock on oceanic crust is found _____ to the mid-ocean ridge.
   A) Close B) far
   C) high D) low

11. What type of evidence did Alfred Wegener use to support his hypothesis of Continental Drift?
   A) Similar Land Features found on different continents
   B) Similar Fossils found on different continents
   C) Evidence of change of climate
   D) All of the above

12. Everyone believed Alfred Wagner's theory of Continental Drift
   A) True B) False

13. Which of the following best describes the process in the diagram

A. Converging plates form a transform boundary.

B. Converging plates form volcanoes.

C. Diverging plates form a mid-ocean ridge.

D. Diverging plates form a rift valley.

14. The inner core is made up of...
   A) Nickel
   B) Iron
   C) Steel
   D) Both A and B

15. The inner core is solid.
   A) True B) False

16. What is the difference between lithosphere and asthenosphere?
A) The lithosphere is rigid and the asthenosphere is weaker
B) The lithosphere is liquid and the asthenosphere is weaker
C) The lithosphere is bumpy and the asthenosphere is rocky
D) None of the above

17. Which layer of the earth is the hottest?
A) Inner Core
B) Lithosphere
C) Upper Mantle
D) Outer Core

18. Sonar is a device that helped map the bottom of the ocean
A) True B) False

19. Subduction of the ocean floor happens in the middle of the plate.
A) True B) False

20. As you get deeper into the earth, the temperature and pressure increase.
A) True B) False

21. How thick is the crust?
A) 1000-2000 km B) 2-10 km
C) 5-70 km D) No one knows

22. What is evidence of sea-floor spreading?
A) Magnetic stripes in the sea floor
B) Age of the sea floor from drilling samples
C) Volcanic process on the sea floor
D) All of the above

23. Do scientist use direct or indirect to learn about the earth's interior?
A) Direct
B) Indirect
C) Both
D) None

24. Which part of the Earth is the thickest?
A) Crust
B) Mantle
C) Outer Core
D) Inner Core

25. Pangaea is...
A) A type of salt
B) A super continent that broke apart about 250million years ago into our continents
C) A layer of earth
D) When two plates move past each other

26. Humans have been to the Mantle but not the Inner Core
A) True
B) False

27. What kinds of indirect evidence do geologists use to study the structure of Earth?

A) Seismic waves B) Volcanic rocks c) Drill sample

28. Continental Drift is a theory that the continents have moved across the Earth's surface

A) True B) False

29. The name of all the seven continents are...
A) Asia, Africa, North America, South America, Antarctica, Europe, and Australia
B) Asia, USA, America, and Australia
C) USA, Europe, Asia, Africa, Pangaea, and China
D) Asia, Europe, Africa, America, Antarctica, and Australia

30. Which of the following is not Wegener's evidence of continental drift?
A) Continents fit like puzzles
B) Fossil of species found in climate they cannot survive
C) Body of water surrounding the continents
D) Similar land features in different continent

31. What is the theory of plate tectonics?
A) The theory is that plates are in slow, constant motion, driven by convection currents in the mantle
B) The theory that the oceanic crust spreads apart creating new crust.
C) The theory that there was once a super continent
D) none of the above

32. Transform Boundaries are
A) Where two plates slip past each other, moving in opposite directions
B) Where two plates move apart in opposite directions
C) Where two plates come together
D) None of the above

33. A divergent boundary can be found at _____ location(s).
A) Mid-Ocean Ridge
B) Mountain Range
C) Trench
D) Rift Valley
E) Both A and D

34. A boundary where two plate collide to form Mountain Ranges, like the Himalayan Mountains in India, is called
A) Convergent Boundary
B) Transform Boundary
C) Divergent boundary
D) Trench

35. A theory is a well-tested concept that explains a wide range of observations.
A) True
B) False

36. An example of heat transfer through Radiation is
A) Boiling Water
B) The heat from Sun
C) The magma inside the earth
D) All of the above

37. Convection Currents in the interior of Earth take place which layer(s).
A) Crust
B) Mantle
C) Outer Core
D) Both B and C

38. What powers convection currents?
A) Different temperatures in the Earth
B) Different elements in Earth's layers
C) Volcanic eruptions
D) Earthquakes

39. Convections Currents can be found...
A) In the sky
B) In the oceans
C) In the Mantle
D) All of the above

40. What are the three types of Heat Transfer?
A) Radiation, Conduction, and Convection
B) Radiation, Convection Currents, and Density
C) Convection, Lithosphere, and Gravity
D) Conduction, Convection, and Caldera

Appendix G- Study Guide and Test from 2nd Quarter

Study Guide

Chapter 1 Study Guide

Name Class

Vocabulary Words

Write the definitions next to the word then fold the paper and quiz yourself

1. organism
2. habitat
3. biotic factor
4. abiotic factor
5. photosynthesis
6. species
7. population
8. community
9. ecosystem
10. ecology
11. natural selection
12. adaptations
13. niche
14. competition
15. predation
16. predator
17. prey
18. symbiosis
19. mutualism
20. commensalism
21. parasitism
22. parasite
23. host

Chapter 1 Study Guide

Name Class

Circle the correct letter

Key Concepts

- An organism obtains _____,_____,_____, and other things it needs to live, grow, and reproduce from its _____.
- An organism _____ with both the living and nonliving parts of its habitat.
- The smallest unit of organization is a single _____, which belongs to a population that includes other members of its species. The population belongs to a _____ of different species. The community and _____ factors together form an ecosystem.
- Every organism has a variety of _____, that are suited to its specific living conditions.
- There are three major types of interactions among organisms: _____, _____, and _____.
- The three types of symbiotic relationships are _____, _____, and _____.

1. What are the five abiotic factors that the books list on page 9 and why are they abiotic?
    1.
    2.
    3.
    4.
    5.

2. A prairie dog, a hawk, and a badger all are members of the same _____in an ecosystem.

3. Name two examples of parasitism?
    1.
    2.

4. What are four examples of a population?

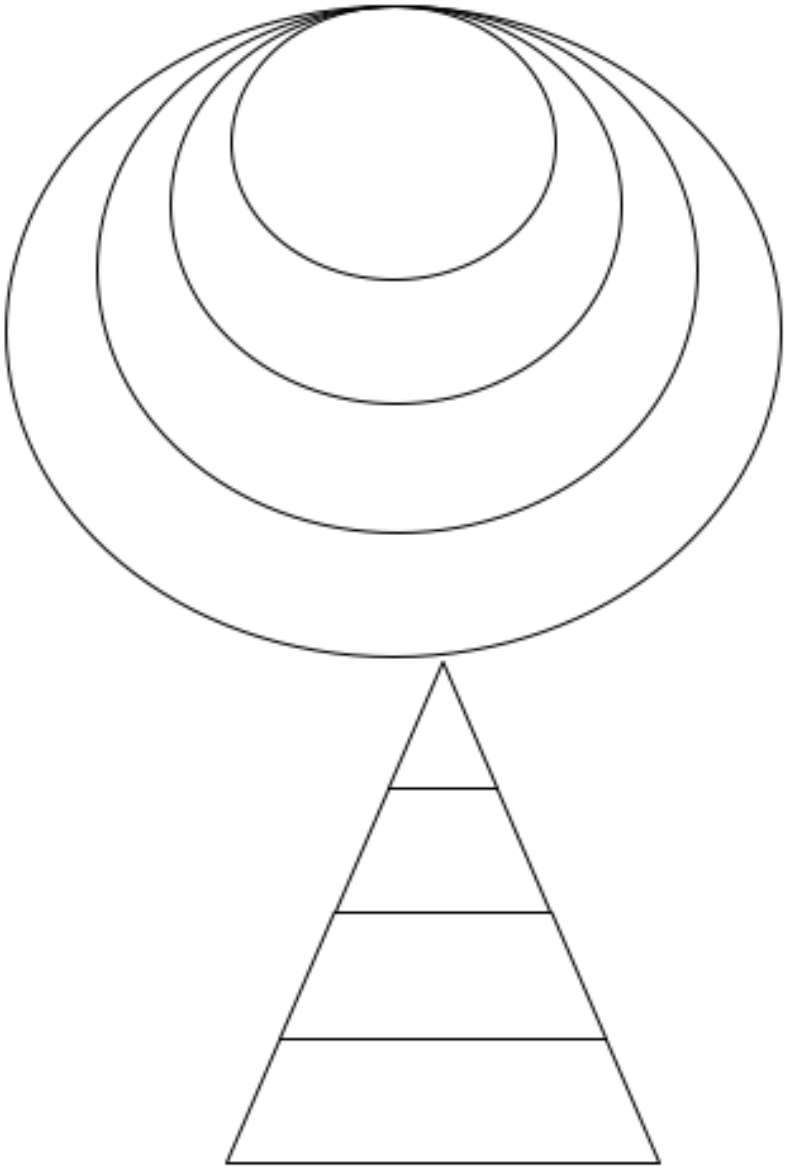
5. A(n) _____ obtains food, water, shelter, and other things it needs to live, grow, and reproduce from its environment.

6. List examples of four abiotic and four biotic factors found in a forest ecosystem.

Chapter 1 Study Guide

Name Class

7. Draw and label an example for two different organisms.



8. List examples of four abiotic and four biotic factors found in a desert ecosystem.

Chapter 1 Study Guide

Name Class

9. What are some differences and similarities between biotic and abiotic factors?

10. All the living and nonliving things that interact in a particular area make up a(n) _____.

11. The place where an organism lives and that provides the things the organism needs is called its _____.

12. A(n) _____ is a group of organisms that are physically similar and can mate with each other and produce offspring that can also mate and reproduce.

13. A(n) _____ includes all the members of one species in a particular area.

14. All the different populations that live together in an area make up a(n) _____.

15. Fill out the chart.

Types of Symbiotic Relationships		
Type of Relationship	**How Species Are Affected**	**Examples**
Mutualism		
	One species benefits; the other species is unharmed	
		A flea living on a cat's blood

Chapter 1 Test

Name **Class**

Directions: Please read each question and answer to the best of your ability. Good Luck!

Part 1: Matching

Match the word with its definition

	Word	Definition
1. _____	Habitat	**A.** A relationship in which one organism lives on or in a host and harms it.
2. _____	Commensalism	**B.** The role of an organism in its habitat, or how it makes its living.
3. _____	Adaptation	**C.** A behavior or physical characteristic that allows an organism to live successfully in its environment.
4. _____	Organism	**D.** A living part of an organism's habitat.
5. _____	Competition	**E.** A nonliving part of an organism's habitat.
6. _____	Abiotic	**F.** The community of organisms that live in a particular area, along with their nonliving surroundings.
7. _____	Niche	**G.** All the different living populations that live together in an area.
8. _____	Ecosystem	**H.** An interaction in which one organism kills another for food.
9. _____	Biotic	**I.** A relationship between two species in which one species benefits and the other is neither helped nor harmed.
10. _____	Predation	**J.** The struggle between organisms to survive as they attempt to use the same limited resources.
11. _____	Community	**K.** A living thing.
12. _____	Parasitism	**L.** An environment that provides the things an organism needs to live, grow, and reproduce.

Chapter 1 Test

Name Class

Part 2: True or False

Answer if the statement is true or false.

13. One area may contain many habitats.
    True False

14. Water is a biotic factor.
    True False

15. An organism is an abiotic factor.
    True False

16. Organization goes from organism to population to community to ecosystem.
    True False

17. Soil is a Biotic Factor
    True False

18. Every organism has a variety of adaptations that are suited to its specific living conditions.
    True False

19. An organism can be a predator and prey
    True False

20. Predation makes sure overpopulation will happen
    True False

21. The reason for competition is the struggle over limited resources
    True False

22. Commensalism is when both organisms benefit.
    True False

23. There are three types of symbiotic relationships.
    True False

24. A human would be a host and a mosquito would be parasite
    True False

Chapter 1 Test

Name Class

Part 3. Multiple Choice

Circle the correct letter

25. Example(s) of biotic factors in a rain forest are
    a. The trees, plants
    b. Bacteria, worms, bugs
    c. Frogs, Fish, Monkeys
    d. All of the above

26. All of the following are examples of limiting factors for population *except*
    a. space
    b. food
    c. time
    d. weather

27. In which type of interaction do both species benefit?
    a. Predation
    b. Mutualism
    c. Commensalism
    d. Parasitism

28. A prairie dog, a hawk, and a badger all are members of the same
    a. niche
    b. community
    c. species
    d. population

29. Which of these are examples of of parasitism?
    a. A bird building a nest on a tree
    b. A bat pollinating a saguaro cactus
    c. A flea living on a cat's blood
    d. Ants protecting a tree that produces the ant's only food

30. Which are not examples of a population
    a. A hive of bees
    b. A pack of dogs
    c. A lump of rocks
    d. A flock of geese

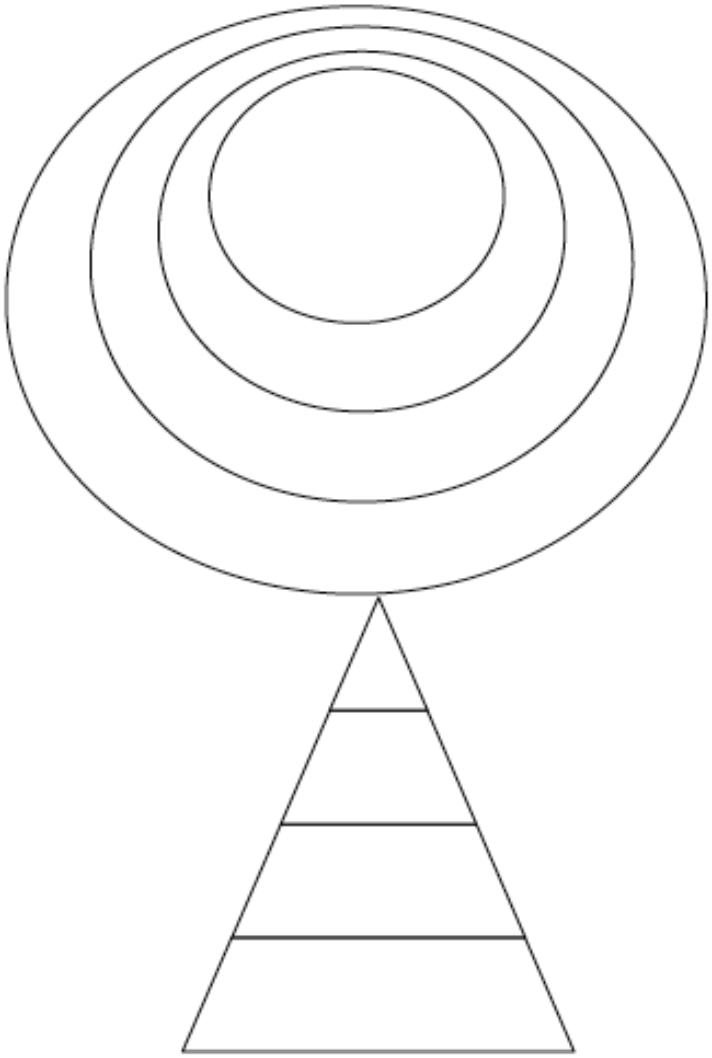
Chapter 1 Test

Name Class

31. A(n) _____ obtains food, water, shelter, and other things it needs to live, grow, and reproduce from its environment.
    a. Habitat
    b. Organism
    c. Photosynthesis
    d. Ecosystem

Part 4. Answers

32. Draw and label a two examples for each chart.



Chapter 1 Test

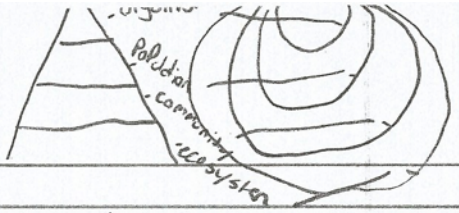
Name Class

33. List examples of four abiotic and four biotic factors found in a forest ecosystem.

34. Compare and contrast biotic and abiotic factors.

35. Explain why water is nonliving even though it moves.

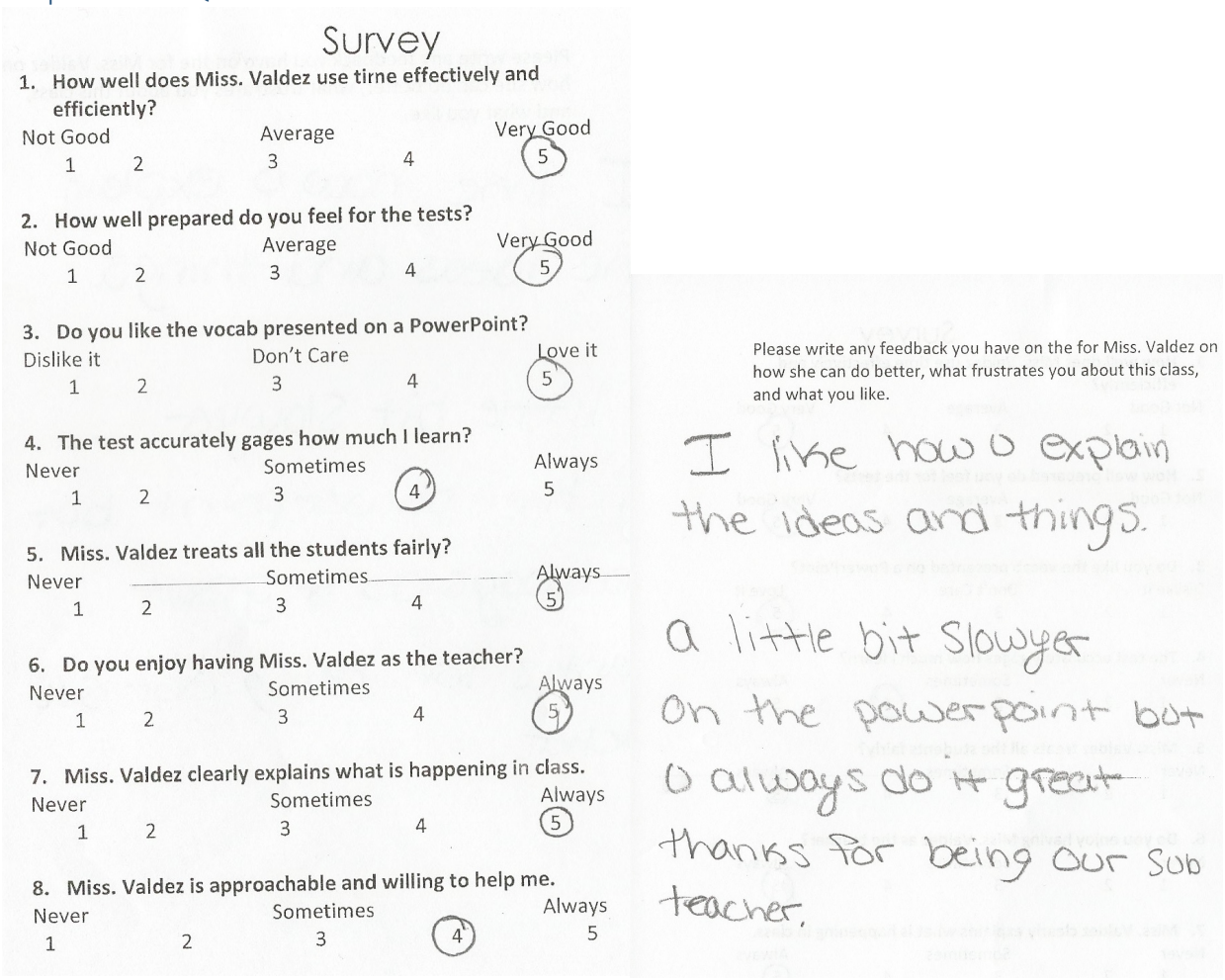
Example of a page of notes



Organism - living thing
habitat - a natural home or inviorment for an organism
biotic factor - anything living abiotic factor - nonliving things
photosynthesis - The process in which an organisms use water along with sunlight & carbon dioxide to make their own food
Species - a group of organisms that are physically similar & can mate with other & reproduce offsprings that can also mate & reproduce
population - all the members in one species in a particular area
community - all the diff. populations that live together in a area
ecosystem - The community of organisms that live in an particular area, along with these nonliving surroundings
ecology - The study of how living things interact with eachother & their enviorment
natural selections - a process by which characteristics that make an individual better suited to its enviorment become more common in species
adaptation - a behavior or phisical characteristic that allows an organism to live successfully in its enviorment
niche - a role of an organism in its habitat, or how it makes a living
competition - The struggle between organisms to survive as they attempt to use the same limited resources
predation - an interaction in witch one organism kills another for food
predator - The organism that does the killing in a predation interaction
prey - The organism that is killed & eaten by another organism
symbiosis - a close relationship between 2 species that benefit of least of the species
mutualism - both species benefit
commensalism - one benefits the other is neither helped or harmed
Parasitism - an organism that benefits by living on or in a host & harms it
ex: tick on dog, mosquito on Human
parasite - organism that is benefited by living in or on a host
Host - Organism that the parasite lives in

Appendix H – Survey Responses

Response - 1st Quarter Yellow Class



Survey

1. **How well does Miss. Valdez use time effectively and efficiently?**

Not Good 1 2 Average 3 4 Very Good (5)

2. **How well prepared do you feel for the tests?**

Not Good 1 2 Average 3 4 Very Good (5)

3. **Do you like the vocab presented on a PowerPoint?**

Dislike it 1 2 Don't Care 3 4 Love it (5)

4. **The test accurately gages how much I learn?**

Never 1 2 Sometimes (4) Always 5

5. **Miss. Valdez treats all the students fairly?**

Never 1 2 Sometimes 3 4 Always (5)

6. **Do you enjoy having Miss. Valdez as the teacher?**

Never 1 2 Sometimes 3 4 Always (5)

7. **Miss. Valdez clearly explains what is happening in class.**

Never 1 2 Sometimes 3 4 Always (5)

8. **Miss. Valdez is approachable and willing to help me.**

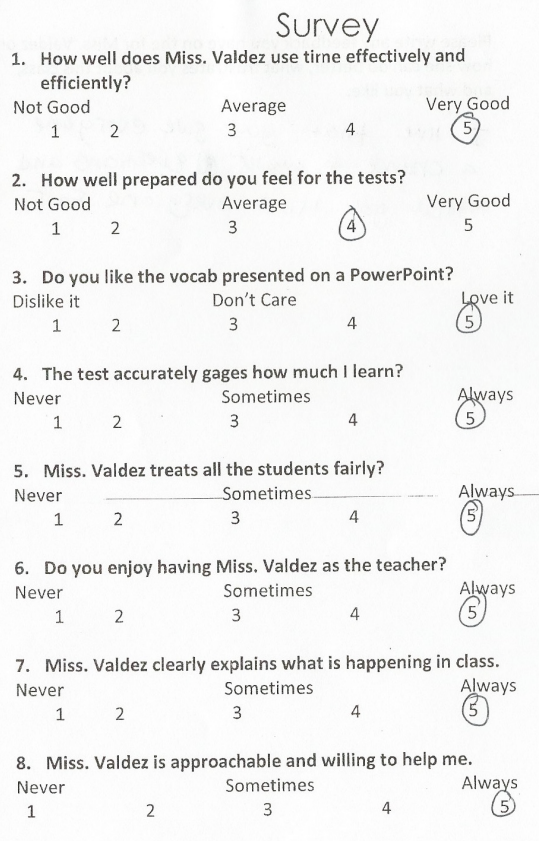
Never 1 2 Sometimes (4) Always 5

Please write any feedback you have on the for Miss. Valdez on how she can do better, what frustrates you about this class, and what you like.

I like how u explain the ideas and things.

a little bit Slowyer On the powerpoint but u always do it great thanks for being our Sub teacher.

Response – 1st Quarter Green Class



Survey

1. **How well does Miss. Valdez use tirne effectively and efficiently?**

Not Good 1 2 Average 3 4 Very Good (5)

2. **How well prepared do you feel for the tests?**

Not Good 1 2 Average 3 (4) Very Good 5

3. **Do you like the vocab presented on a PowerPoint?**

Dislike it 1 2 Don't Care 3 4 Love it (5)

4. **The test accurately gages how much I learn?**

Never 1 2 Sometimes 3 4 Always (5)

5. **Miss. Valdez treats all the students fairly?**

Never 1 2 Sometimes 3 4 Always (5)

6. **Do you enjoy having Miss. Valdez as the teacher?**

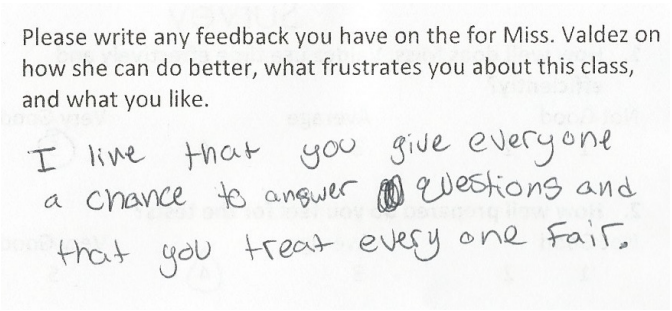
Never 1 2 Sometimes 3 4 Always (5)

7. **Miss. Valdez clearly explains what is happening in class.**

Never 1 2 Sometimes 3 4 Always (5)

8. **Miss. Valdez is approachable and willing to help me.**

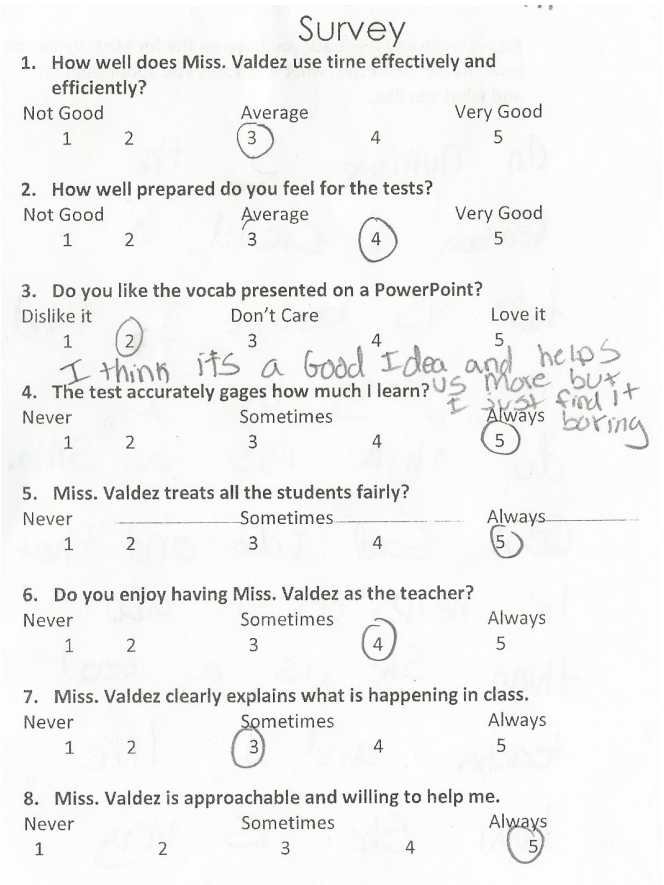
Never 1 2 Sometimes 3 4 Always (5)



Please write any feedback you have on the for Miss. Valdez on how she can do better, what frustrates you about this class, and what you like.

I like that you give everyone a chance to answer questions and that you treat every one fair.

Response – 1st Quarter Green Class



Survey

1. **How well does Miss. Valdez use time effectively and efficiently?**

Not Good 1 2 (3) 4 Very Good 5

2. **How well prepared do you feel for the tests?**

Not Good 1 2 3 (4) Very Good 5

3. **Do you like the vocab presented on a PowerPoint?**

Dislike it 1 (2) Don't Care 3 4 Love it 5

I think its a Good Idea and helps us more but I just find it boring

4. **The test accurately gages how much I learn?**

Never 1 2 3 4 Always (5)

5. **Miss. Valdez treats all the students fairly?**

Never 1 2 Sometimes 3 4 Always (5)

6. **Do you enjoy having Miss. Valdez as the teacher?**

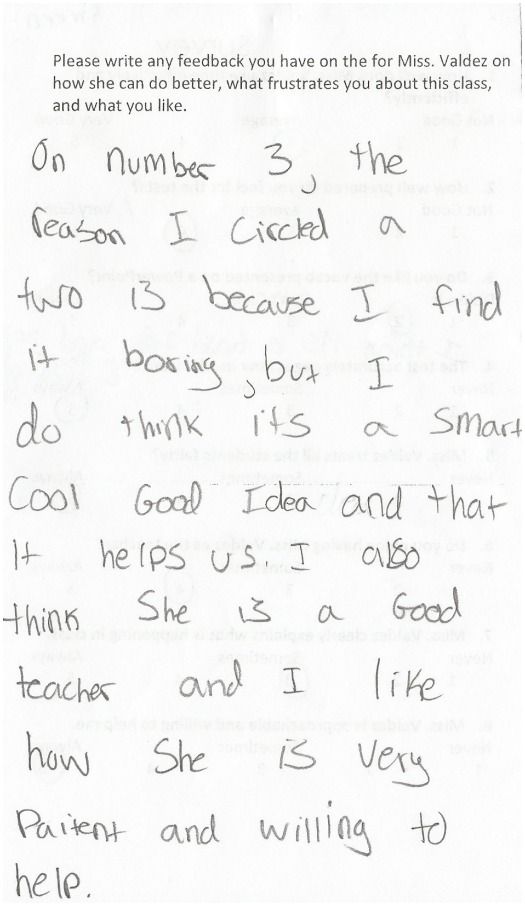
Never 1 2 Sometimes 3 (4) Always 5

7. **Miss. Valdez clearly explains what is happening in class.**

Never 1 2 Sometimes (3) 4 Always 5

8. **Miss. Valdez is approachable and willing to help me.**

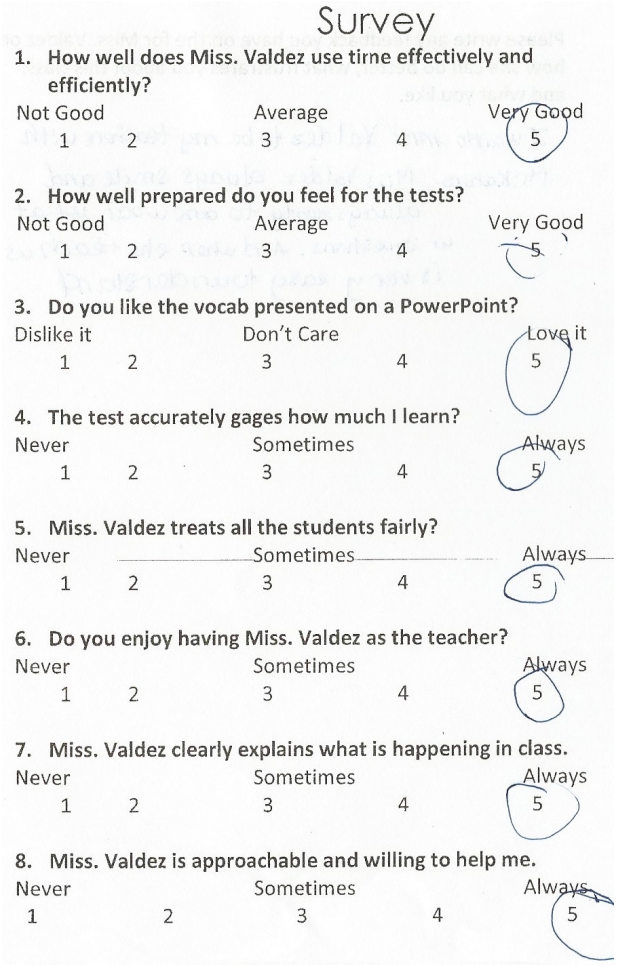
Never 1 2 Sometimes 3 4 Always (5)



Please write any feedback you have on the for Miss. Valdez on how she can do better, what frustrates you about this class, and what you like.

On number 3, the reason I circled a two is because I find it boring, but I do think its a Smart Cool Good Idea and that it helps us. I also think She is a Good teacher and I like how She is very Paitent and willing to help.

Response – 2st Quarter Green Class



Survey

1. **How well does Miss. Valdez use time effectively and efficiently?**

Not Good 1 2 Average 3 4 Very Good 5

2. **How well prepared do you feel for the tests?**

Not Good 1 2 Average 3 4 Very Good 5

3. **Do you like the vocab presented on a PowerPoint?**

Dislike it 1 2 Don't Care 3 4 Love it 5

4. **The test accurately gages how much I learn?**

Never 1 2 Sometimes 3 4 Always 5

5. **Miss. Valdez treats all the students fairly?**

Never 1 2 Sometimes 3 4 Always 5

6. **Do you enjoy having Miss. Valdez as the teacher?**

Never 1 2 Sometimes 3 4 Always 5

7. **Miss. Valdez clearly explains what is happening in class.**

Never 1 2 Sometimes 3 4 Always 5

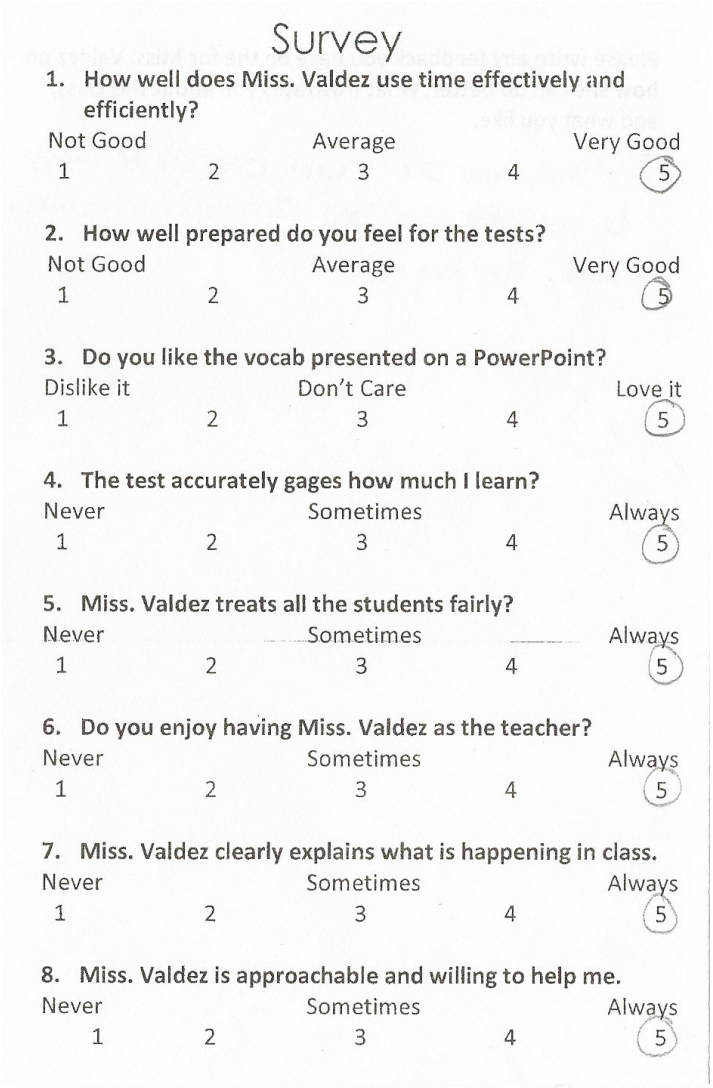
8. **Miss. Valdez is approachable and willing to help me.**

Never 1 2 Sometimes 3 4 Always 5

Please write any feedback you have on the for Miss. Valdez on how she can do better, what frustrates you about this class, and what you like.

I wantto miss Valdez to be my teachers with Mr.Kahira. Miss Valdez always smile and always ready to answear what ur questions. And when she teach us is very easy tounderstand

Response – 2st Quarter Green Class



Survey

1. **How well does Miss. Valdez use time effectively and efficiently?**

Not Good		Average		Very Good
1	2	3	4	5

2. **How well prepared do you feel for the tests?**

Not Good		Average		Very Good
1	2	3	4	5

3. **Do you like the vocab presented on a PowerPoint?**

Dislike it		Don't Care		Love it
1	2	3	4	5

4. **The test accurately gages how much I learn?**

Never		Sometimes		Always
1	2	3	4	5

5. **Miss. Valdez treats all the students fairly?**

Never		Sometimes		Always
1	2	3	4	5

6. **Do you enjoy having Miss. Valdez as the teacher?**

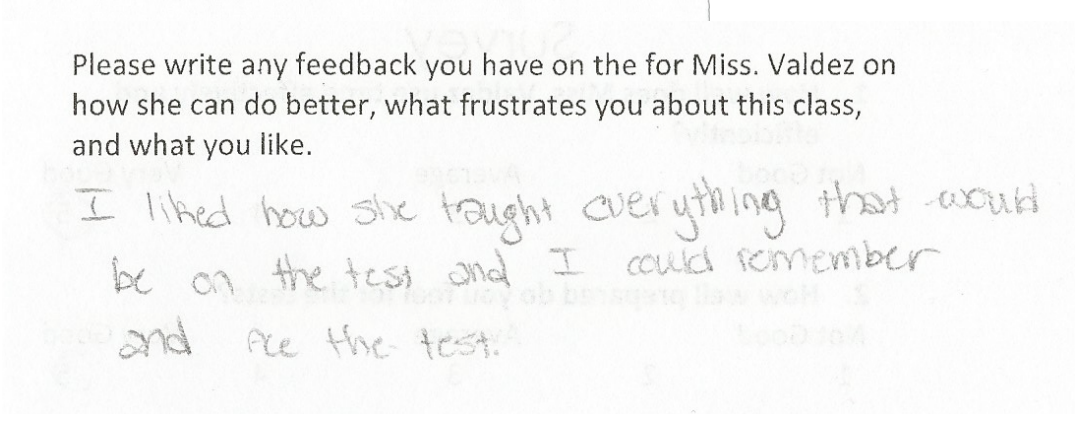
Never		Sometimes		Always
1	2	3	4	5

7. **Miss. Valdez clearly explains what is happening in class.**

Never		Sometimes		Always
1	2	3	4	5

8. **Miss. Valdez is approachable and willing to help me.**

Never		Sometimes		Always
1	2	3	4	5



Please write any feedback you have on the for Miss. Valdez on how she can do better, what frustrates you about this class, and what you like.

I liked how she taught everything that would be on the test and I could remember and ace the test.

Appendix I – Modified Test

Chapter 2 Section 1 Test

Name: **Class:**

Directions: Please read each question and answer to the best of your ability. Good Luck!

Part 1: Matching

Match the word with its definition

	Word	Definition
1. _____	Producer	**A.** A diagram that shows the amount of energy that moves from one feeding level to another in a food web.
2. _____	Consumer	**B.** The pattern of overlapping food chains in an ecosystem.
3. _____	Herbivore	**C.** A series of events in which one organism eats another and. obtains energy.
4. _____	Carnivore	**D.** An organism that breaks down wastes and dead organisms.
5. _____	Omnivore	**E.** A consumer that eats both plants and animals.
6. _____	Scavenger	**F.** A carnivore that feeds on the bodies of dead organisms.
7. _____	Decomposer	**G.** A consumer that eats only animals.
8. _____	Food Chain	**H.** An organism that can make its own food.
9. _____	Food Web	**I.** A consumer that eats only plant.
10. _____	Energy Pyramid	**J.** An organism that obtains energy by feeding on other organisms.
11. _____	Water Cycle	**K.** The continuous process by which water moves from Earth's surface to the atmosphere and back.

Part 2. Multiple Choice

Circle the correct letter

12. Each organism in an ecosystem fills the energy role of …
    a. Scavenger, carnivore, omnivore, herbivore
    b. Producer, consumer, decomposer
    c. Primary consumer, secondary consumer, tertiary consumer

13. The movement of _____ through an ecosystem can be shown in diagrams called food chains and food webs.
    a. energy
    b. water
    c. waste

14. How much energy is moves from one trophic level to the next?
    a. 90%
    b. 50%
    c. 10%

15. Which of the following organisms are typically decomposers?
    a. Algae and grass
    b. Fungi and bacteria
    c. Mice and deer

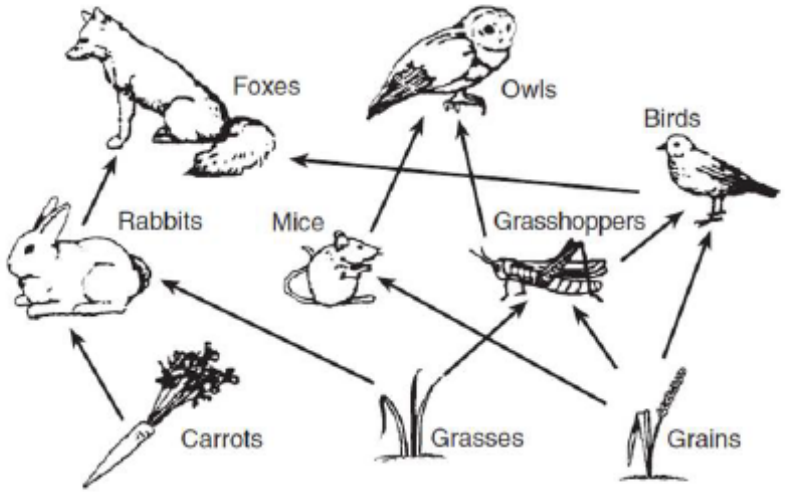
16. The organism at the top of the food chain is
    a. Producer
    b. Consumer
    c. Decomposer

17. The process when H_2O gas changes to liquid H_2O is called
    a. Evaporation
    b. Condensation
    c. Precipitation

Part 4. Short Answers

18. An owl needs three snakes a day to survive. A snake five needs mice a day to survive. A mouse need ten seeds a day to survive. How many seeds are needed to support an owl for a day? (Show All Your Work for full credit)

19. Use the image below to help you answer the questions



(Not drawn to scale)

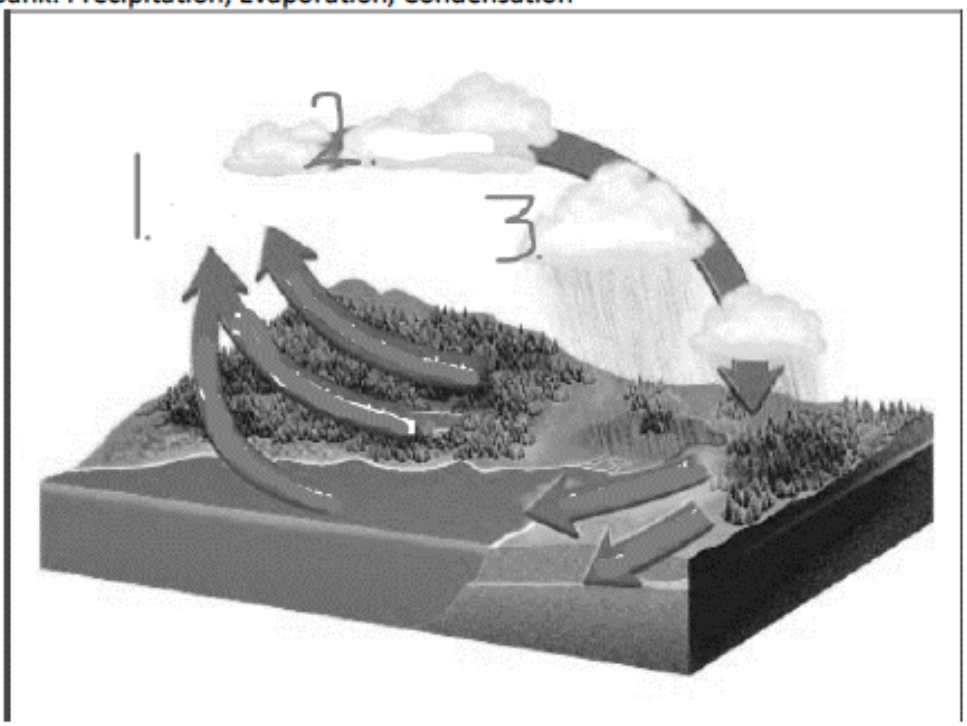
a. What are the producers in this food web?

b. What are the primary consumers?

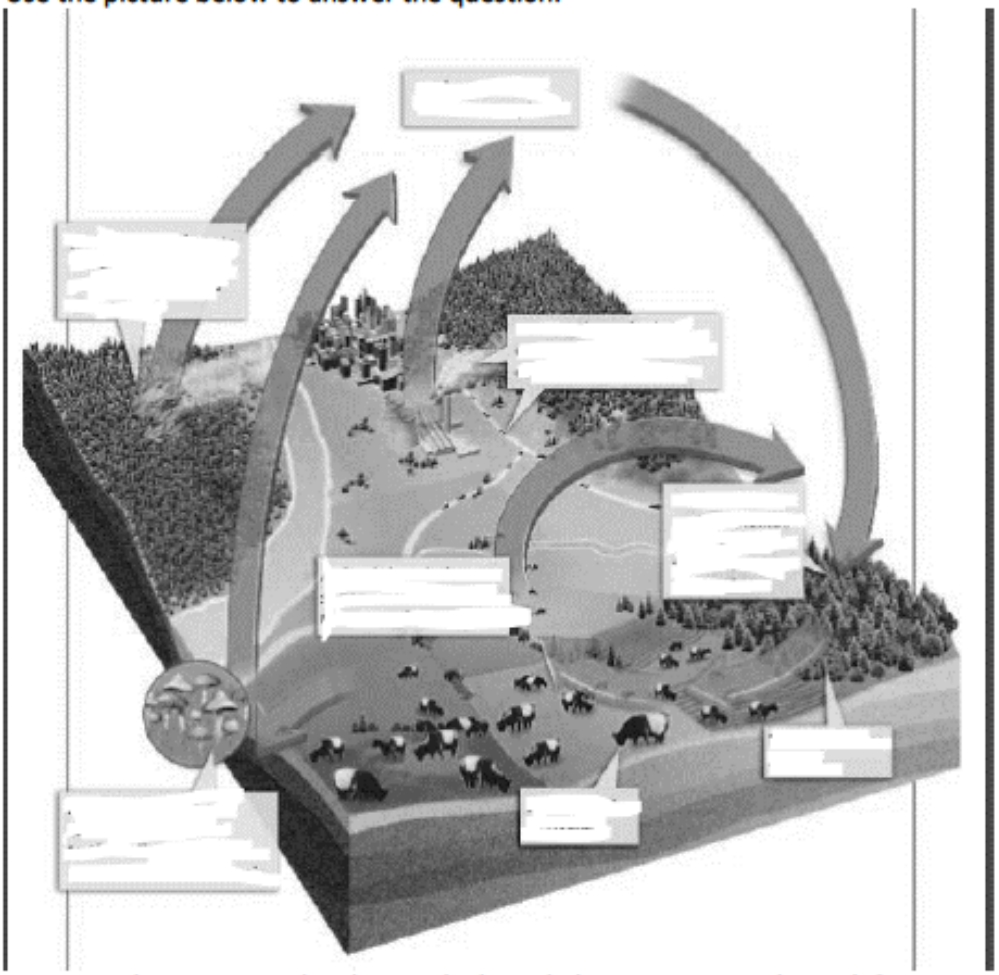
c. If the grasshoppers disappears from the ecosystem what is going to one of the other organisms?

20. What is the difference between a food chain and a food web? Which is better and why?

21. Use the word bank to help you label the water cycle below.
Word Bank: Precipitation, Evaporation, Condensation



22. Use the picture below to answer the question.



a. In the oxygen and carbon cycle, how do humans impact the cycle?

23. What grade do you think you got on this test?

A B C D F

24. How confident did you feel about material that was on this test?

1	2	3	4	5
Low				High

Appendix J - Ecosystem Poster Project

Name:_____ Class: Blue

Analyzing your Ecosystem

100%

Due Date:

Objective:

To understand needs that must be met by an organism's surrounding. Students will be able to identify the biotic and abiotic factors in an organism's habitat and understand the levels of organization within an ecosystem.

Materials:

- Paper
- Pen
- Colored Pencils

Procedure:

1. Pick an ecosystem with your groups from the list that the teacher will provides.
2. Write a list of three different populations that live in your chosen ecosystem.
3. Write a list of 10 abiotic factors found in your chosen ecosystem.
4. On the sheet of paper write all the group member's names and the title.
5. As a group draw your ecosystem with all of your biotic and abiotic factors.
6. Label all the biotic and abiotic factors with neat handwriting.
7. Work as a group to answer the five questions in complete sentences.

Vocabulary Terms

- Biotic
- Abiotic
- Organism
- Habitat
- Population
- Community
- Ecosystem

Type of Ecosystems: Forest, Desert, Ocean, Savannah, Rainforest

Name:_____ Class:_____

Ecosystem: _____

PARTS OF ECOSYSTEMS- Use complete sentences throughout your responses.

1. **Describe the biotic parts of your ecosystem.**
   The biotic parts of my ecosystem is the fishes, crabs, octopus, shark, dolphin, jellyfish, starfish, corals, turtle, eel, and seahorse.
   +2.

2. **Describe the abiotic parts of your ecosystem.**
   The abiotic are the ship, bubbles, water, sunlight, sand, rocks, shells, bones, treasure box, fallen seaweed.
   +2

3. **Name one population in your ecosystem and describe or infer what they are doing.**
   The jellyfish and they are swimming are the water and some are eating fish that are around them.
   +2

4. **Name all populations that create the community in your ecosystem.**
   They are the fishes, crabs, jellyfish, seahorse, dolphin, sharks, corals, and eel.
   +2

5. ***Infer*: How do the biotic (living) and abiotic (nonliving) things interact in your ecosystem.**
   They are interacting by the animals living in water, and how they need water.
   +2

Name:_____ Class:_____

Rubric:

Description:	Possible Points	Points Received
Ecosystem includes 3 populations of minimum of 5 organisms each.	15	15
The ecosystem includes 10 abiotic factors.	10	10
Neatly drawn	10	10
All abiotic and biotic factors labeled with neat handwriting.	10	10
Title of the ecosystem and names of group members on paper	5	5
Answer each question with complete sentences	10	10
Total Points	**60**	60

100%

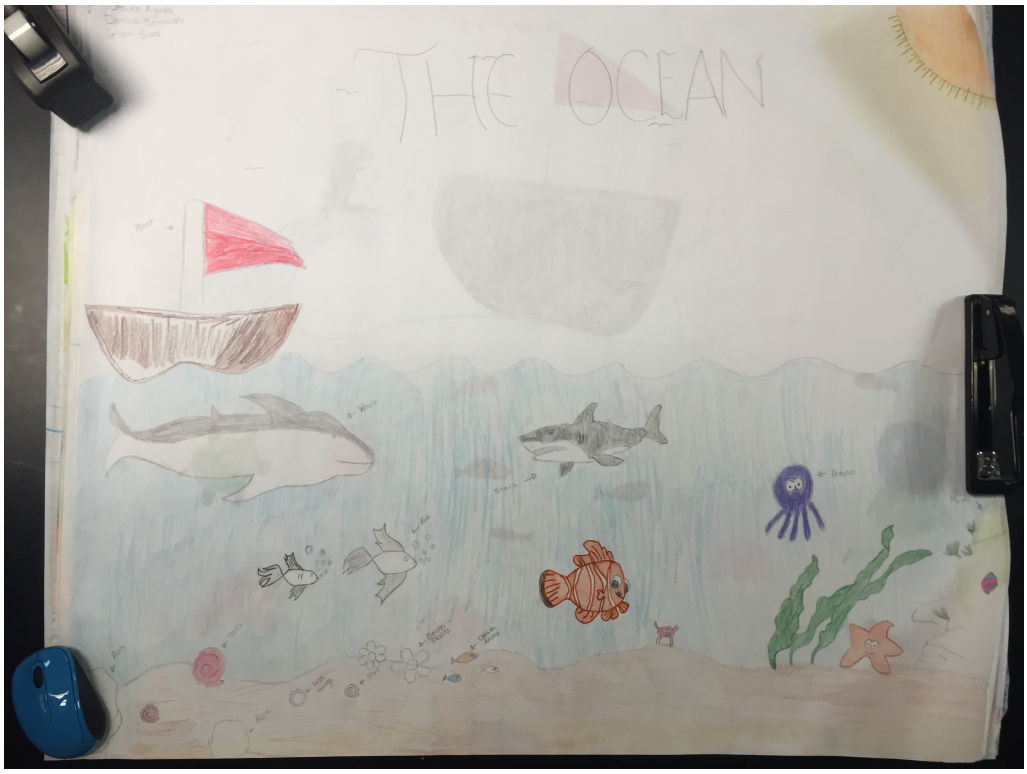
The Ocean

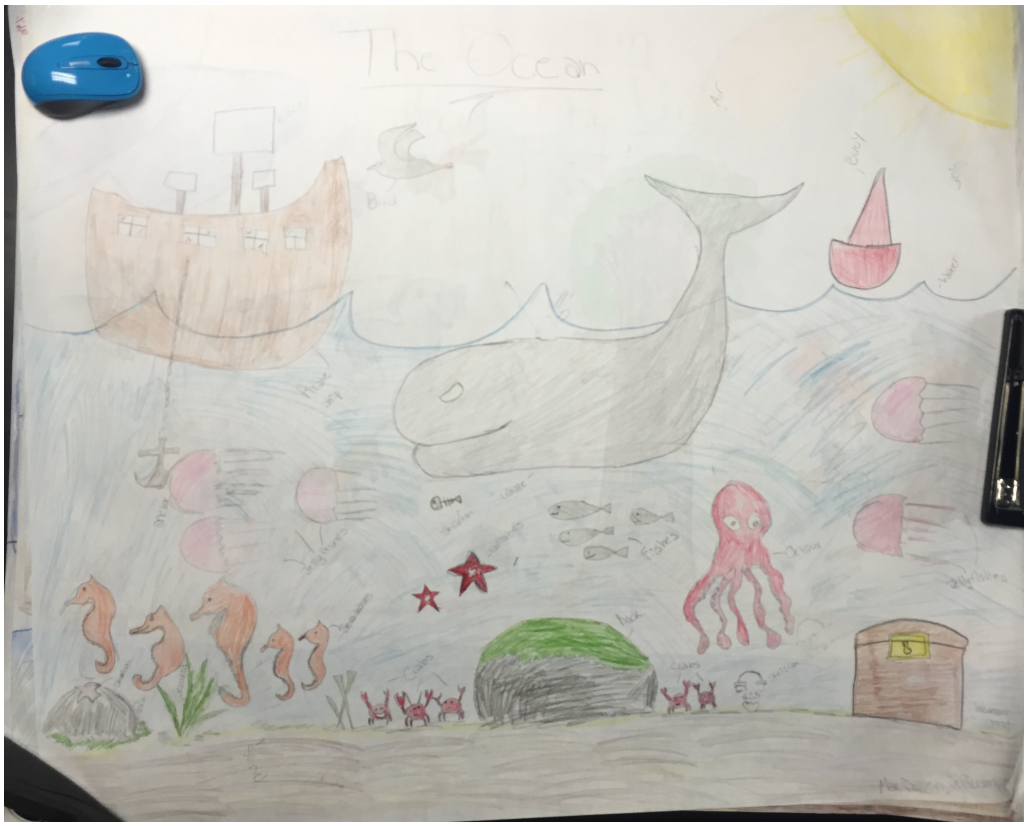
Animals

- Jelly fish ✓
- Fish ✓
- Crab ✓
- Octopus ✓
- Corals ✓
- Turtles ✓
- ~~Dolphins~~
- Sharks ✓
- Starfish ✓
- Seahorse ✓

Abiotic

- Fallen Seaweed ✓
- Sunken Ships ✓
- Treasure Box ✓
- Rocks ✓
- Sand ✓
- Sunlight ✓
- Bones
- Water ✓
- Air ✓
- Dead Plants ✓
- Shells ✓


THE OCEAN


The Ocean

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