Lesson Plan Template
Date: February 25, 2020

Grade: Middle School

Subject: Life Science

Materials: iPads, TV or Projector, kahoot

Technology Needed: same as materials

Instructional Strategies:

- € Direct instruction
- € Guided practice
- € Socratic Seminar
- € Learning Centers
- € Lecture
- € Technology integration
- € Other (list)
- € Peer teaching/collaboration/perative learning
- € Visuals/Graphic organizers
- € PBL
- € Discussion/Debate
- € Modeling

Guided Practices and Concrete Application:

- € Large group activity
- € Independent activity
- € Pairing/collaboration
- € Simulations/Scenarios
- € Other (list)
- € Hands-on
- € Technology integration
- € Imitation/Repeat/Mimic

Explain:
The large group activity will be with the Kahoot. The individual activities will be with the reading.

Standard(s)

MS-LS1-1: Conduct an investigation to provide evidence that living things are unicellular or multicellular and may have different cell types.

MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction result in offspring with genetic variation.

Objective(s)

Students will be able to **recognize** some vocabulary words that will be used throughout the unit.
Students will be able to **generalize** basic concepts of the unit which will help them **question** concepts and ideas on the unit.

Bloom's Taxonomy Cognitive Level:
Remember, Apply, and Analyze

Differentiation

Below Proficiency: I will allow the students to take their time with reading and annotating. If they are having trouble with this before this unit, I could make an outline for them that outlines the important aspects of the chapters and sections. I will still have them read and annotate, but I will have them annotate according to the outline and what they feel needs to be annotated.

Above Proficiency: If the students are done and are finding the work easy for them, I will encourage them to write discovery questions and when they are done with their work to search for the answer to their questions. This will start to get them in the mindset of research and to gain a general curiosity.

Approaching/Emerging Proficiency: I think that the lesson will have enough work to work on to keep them busy but engaged. I think playing the game kahoot will also help get the students into class and their work.

Modalities/Learning Preferences: There are different ways to have them obtain this information if a students needs an outline to encourage their annotations and to encourage these students to maybe annotate in a different way. They can make their own outline of notes or annotate in a way that works better for them.

Classroom Management- (grouping(s), movement/transitions, etc.)

The students will be in their normal spots that they normally sit every day. All of the tasks that they will be doing is going to be doable from their original spots. I will have to be clear with directions when I am

Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)

If certain students are having a harder time with reading and annotating then they can go to the resource room, if needed. Also if I start to notice that students are disengaging from the reading or getting done with the readings earlier then I can start the discussion earlier.

Minutes	Procedures
	Set-up/Prep: Before this activity in class, I will make a Kahoot! to help the students learn their vocab words in a fun integrative of their technology but to help the students first learn the vocab for this unit. I will have the Kahoot! already pulled up on the projector/tv so all the students will have to do is to go to kahoot.it and type in the game pin and set up their name, that way we can jump right into the lesson.

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	Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.) I will start off class with briefly explaining Kahoot! and have the students get their iPads and go to kahoot.it. They play the kahoot that I had previously made. Some of these vocab words students may have seen in previous units but this is mainly to first introduce the content to the students. https://create.kahoot.it/share/vocab-viruses-and-bacteria/5d58e65e-5045-49b1-90dd-0d50a2fb0940
	Explain: (concepts, procedures, vocabulary, etc.) After we are done with the kahoot this will be the time where I will assign the students to read and annotate from their books so they can gather more information on the subject that they are learning. I will also hand out the guided notes to help them as they read in their books. The book source that I am going to have them use is online which will be perfect on their iPads. They will be able to annotate the text with the iPad by underlining, highlighting, etc. the same as they would on paper. (I would probably have them use paper textbooks in real life, but I had no access to a paper textbook so I found one online. Which actually has very awesome content and videos to explain certain concepts that might be hard for students to understand.) The students will first need to read and annotate 5.2 - 5.6, which mainly discusses bacteria and their characteristics. I want the students to be able to understand bacteria and distinguish that they are living organisms first before discussing viruses. After the students have had time to read and annotate some of the readings I am going to briefly go over the readings and the guided notes with them as a class and open up that time for questions. That way the students will have time on their own and as a class to discuss the reading and its main points. Which will be our introduction to our Bacteria and Virus Unit. The book that the students will need to read from: https://flexbooks.ck12.org/cbook/ck-12-middle-school-life-science-2.0
	Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) The exploring part will occur when I am briefly going over the readings and the highlights from the readings. This will be a time where I might ask the students an exploring question to get them formulating ideas. In return, this can be a time where they can ask questions on areas that might interest them more.
	Review (wrap up and transition to next activity): Before the bell rings, I will quickly explain what is going to be happening the next day and tell the students that they will be doing a lab tomorrow.

Formative Assessment: (linked to objectives, during learning)	**Summative Assessment (linked back to objectives, END of learning)**
● **Progress monitoring throughout the lesson (how can you document your student's learning?)** I will be able to see what they may know with the answer polls in kahoot before we begin the lesson. Then their annotations within their books or notes that they take are how I will see their progress for this particular lesson. The next day when they have their exit slips is how I will know what they have learned from the two days of this unit.	

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

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Grade: Middle School	**Subject: Life Science**
Materials: swabs, petri dishes, tape, microscopes, slides of different bacteria, disinfectant wipes, and markers	**Technology Needed: iPads and tv/projector**

Instructional Strategies:

- € Direct instruction
- € Guided practice
- € Socratic Seminar
- € Learning Centers
- € Lecture
- € Technology integration
- € Other (list)
- € Peer teaching/collaboration/ perative learning
- € Visuals/Graphic organizers
- € PBL
- € Discussion/Debate
- € Modeling

Guided Practices and Concrete Application:

- € Large group activity
- € Independent activity
- € Pairing/collaboration
- € Simulations/Scenarios
- € Other (list)
- € Hands-on
- € Technology integration
- € Imitation/Repeat/Mimic

Explain:
The students will be working with their lab partners for the lab. They will be using the microscopes in the lab which will be a new tool they will be using.

Standard(s)

MS-LS1-1: Conduct an investigation to provide evidence that living things are unicellular or multicellular and may have different cell types.

MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

Objective(s)

Students will be able to **describe** the characteristics of bacteria.
Students will be able to **articulate** their findings in the lab on their worksheets.
Students will be able to **illustrate** what they are observing in the lab.
Students will be able to **predict** the growth of the bacteria over time and to **analyze** the results.
Students will be able to **identify** the different bacteria shapes and locomotion.

Bloom's Taxonomy Cognitive Level:

Remember, Understand, Apply, Analyze, Evaluate, and Create

Differentiation

Below Proficiency:

Students might not have to complete the whole worksheet. Or if a student is over stimulated they can look at pictures on their iPad instead of through the microscope.

Above Proficiency:

To challenge students to explore and identify the different structures on the different slides of the microscopes.

Approaching/Emerging Proficiency:

Have the students try to complete the worksheet to the best of their ability but offer aid if need be.

Modalities/Learning Preferences:

If students prefer to learn in a different way they can also look at pictures instead of through the microscope or watch videos if needed.

Classroom Management- (grouping(s), movement/transitions, etc.)

I will have the students numbered off randomly for their lab stations. If there is a problem with the groupings I will switch students to make sure that it will work.

Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)

Give clear instructions to the students so they are not confused as to what they are supposed to do which allows less time for trouble. I'll be sure to make sure that the students are paired well according to how well they work with one another.

Minutes	**Procedures**
	Set-up/Prep: I will need to make the lab worksheet before class and have enough papers copied, or have the worksheet on their iPads and they can fill out the worksheet on the iPads. I will also set up the lab with the swabs and Petri dishes for the students to collect their bacteria samples. For the next part of the lab, I will get the microscopes and slides ready for the students to look at and to continue filling out their worksheets.

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	Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.) I am going to start off class by asking the students, "Where is the grossest place in the room/school? And what do you think is there in the grossest place?" This will get them thinking and using the information that they learned the day before to think of ideas. It also is a way for them to think of a place to swab for the lab. I will have the students quickly share in their pods and then I will have a few volunteers share their ideas.
	Explain: (concepts, procedures, vocabulary, etc.) Once we are done with the engaging question to get the students thinking, I will go over the rules of the lab and what are important things to remember. I will have the worksheet pulled up on the tv/projector so the students will know which worksheet they will need to be working on. I will explain to the students that they are going to find a spot in the room or out in the hall, that they think there are lots of bacteria and swab it and put it on one side of the petri dish. (they will draw a line down the petri dish and label the sides) Then they are going to wipe it with a disinfectant wipe and then swap for the other side. Once they have the swabs they will put a piece of tape on the top with their names and then put the petri dishes in the incubator to grow the bacteria. Then I will enforce the caution and care that the students need to use when they are using the microscopes in the lab. I will tell them that there is going to be a microscope at each lab station and there are going to be four different slides that the students are going to look at. Their worksheet is going to have questions and areas where the students are going to record and draw what they are seeing through the microscope. Once I am done explaining I will ask if there are questions and then I will number off the students according to the number of lab tables that I have. Once the students have their number they will go to the lab and wait for their lab partners to get started.
	Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) Once I am in the lab I will give them a couple of minutes to figure out a place as a group then I will give them about 8 more minutes to get their swabs and to label their petri dishes correctly. Then the rest of the lab is observing and answering questions on their worksheet. This will be a time for the students to get to 'play' with the microscopes and learn how to use them properly but also to use their observing skills to obtain the information for the lab.
	Review (wrap up and transition to next activity): When it is about time to leave I will have them quickly pick up their stations and head back to the classroom or their desks. I will explain to them if they did not get enough time to complete the backside of the worksheet then they will have the first part of Lab 2 to complete the worksheet. I will also let the students know tomorrow we will be picking up on viruses and learning more about how they operate.

Formative Assessment: (linked to objectives, during learning) ● **Progress monitoring throughout the lesson (how can you document your student's learning?)** If there is enough time after the lab the students will have an exit slip question to answer before they leave class.	**Summative Assessment (linked back to objectives, END of learning)**

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

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Grade: Middle School	**Subject: Life Science**
Materials: clear plastic cups, pipets, NaOH, C20H14O4, water, iPads, worksheets, gloves, posters, markers/coloring pencils	**Technology Needed:** iPads, projector/tv
Instructional Strategies: € Direct instruction € Guided practice € Socratic Seminar € Learning Centers € Lecture € Technology integration € Other (list) € Peer teaching/collaboration/ perative learning € Visuals/Graphic organizers € PBL € Discussion/Debate € Modeling	**Guided Practices and Concrete Application:** € Large group activity € Independent activity € Pairing/collaboration € Simulations/Scenarios € Other (list) € Hands-on € Technology integration € Imitation/Repeat/Mimic Explain: Students will be working together and individually depending on the tasks given to them.
Standard(s) **MS-LS4-6:** Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time. **MS-LS4-4:** Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. **MS-LS4-5:** Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms. **MS-LS4-2:** Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. **MS-LS4-1:** Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.	**Differentiation** **Below Proficiency:** If students are having a hard time completing the guided notes and reading then they can get a sheet that might be partially filled out. If the student is having a hard time with the epidemic lab then they will be able to do an online simulation lab, to take their time and understand the purpose of the lab. **Above Proficiency:** Students can be challenged by finding discovery questions and researching the answers. The students could also be paired with students that they might have to teach to better ingrain the information. **Approaching/Emerging Proficiency:** students may have some of their notes filled out to encourage them to keep reading and understanding the material. **Modalities/Learning Preferences:** Students will have a lot of opportunities to learn this content in many different ways. There is visual, audio, and hands-on learning within this lesson to better understand this unit.
Objective(s) Students will be able to **describe** what viruses are composed of. Students will be able to **distinguish** what is considered living and what is considered non-living. Students will be able to **compare** their bacteria growth. Students will be able to **solve** who was the person who spread the viral infection. Students will be able to **understand** the dynamics of the transmission of diseases by taking part in a “hands-on” stimulation. Students will be able to **design** a poster of the life cycle of bacteria. Students will be able to **conclude** whether viruses are alive or not. **Bloom’s Taxonomy Cognitive Level:** Remember, analyze, understand, apply, evaluate, and create	
Classroom Management- (grouping(s), movement/transitions, etc.) **Day 3:**	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)** Students will be expected to follow directions and lab safety.

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Students will work as pods for discussing their engaging questions. Then students will work by themselves as they read and fill out their virus note guide. Students will then work in their pods or desk mates when they make their posters. **Day 4:** Students will start off working with their desk mates for completing their posters. Then the students will be working in their lab groups from Lab I of this unit for the first part of their lab activity. Students will be working as a class for the virus epidemic lab.	

Minutes	Procedures
	Set-up/Prep: **Day 3:** I will have to get the notes and video set up for the lesson. I will also have to have some markers/coloring pencils for their posters of the virus life cycles. **Day 4:** I will have set up the cups and liquids at each station. I will only have one cup that is randomly the start of the disease. This cup will have the NaOH tablet in it to have a colorless liquid. Then the rest of the liquids are going to be filled with water. (I will be sure to know which student has the cup with the NaOH tablet.) I will also have a dropper bottle with phenolphthalein in (which is a pH indicator). I will be sure to have it all set up before the students get into the classroom. I will also make sure that their bacteria Petri dishes are accessible.
	Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.) **Day 3:** I will again open up class with a question for them to think over and discuss within their groups. “Are viruses living?” This is a good question to have the students think about before their readings and the discussion because during class time we are going to answer this question. **Day 4:** Depending on how far the students are with their posters I will allow them time at the beginning of class to finish up their posters. Once the students get done with their posters and making them look good, they will have a little free time until we transition to the next thing. They will have about 7 minutes.
	Explain: (concepts, procedures, vocabulary, etc.) **Day 3:** After our engaging question, I will have the students read the section on bacteria and fill out their note worksheets. Which will only take a few minutes for them to read and follow along with their note worksheets. Once they are done with their readings and notes I will go over it with them and highlight again the important parts of the reading and have a discussion about the questions I asked earlier in class. Then I am going to show the students a video on viruses. https://www.youtube.com/watch?v=8FqlTslU22s After the video I again am going to lead the discussion with the students, and what they retained and got from the video. Then I am going to lecture a bit about the life cycle of the virus. I will use the board to draw out the lytic life cycle and lysogenic cycle which will make it easier for students to understand. (if they are a visual learner) Then I am going to give the students in each of their pods a poster paper and each group is going to be responsible for making either a lytic or lysogenic cycle of the viruses. I will explain to them what I expect to be on their posters. **Day 4:** After the students are done with their posters I am going to explain that they are going to get in their lab groups that they were in last time. Then they will calmly send up one person from their group to get their petri dish with bacteria. They will observe their bacteria and fill out their worksheet. Once they are done with this part of the lab then they will do the virus lab.

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	I will then explain that they will have a virus lab activity to complete as well and that it is going to be a virus epidemic lab. I will first make sure that the students are going to be very careful with the liquids that they are going to be using. I will explain that the liquid could can irritation to skin and eyes. And I will emphasize that the students are not to drink any of the liquids. I will also have the students wear gloves to make sure that they are going to be safe. I am not going to reveal too much about to lab because I want the students to be able to think critically and having them get the full experience of the lab. I will explain what they are going to be doing further in the lab after their bacteria that way they can have the directions clear and again before they conduct the lab. This is the procedure for the lab: Write down the names of all the students in the class who are present. Have students copy this list of names onto the handout of names. The cups with liquid represent bodily fluids, and students will mix their bodily fluids to simulate the spread of a disease. Exchanges will occur in two separate rounds, which we will call "Day 1" and "Day 2". Students will each select a person with whom to exchange fluids. When everyone is done, Day 1 is over and Day 2 begins with the second round of fluid exchange. Therefore, each student will be a "giver" exactly twice, but the number of times each student is a "receiver" will vary. When completed, ask each student (the giver) who their two receivers were, so all students can get the data copied onto their sheets.
	Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) **Day 3:** They will be constructing the virus life cycle on a poster. They can use what they have learned and the internet to make these posters. They will have to write the step with a little description and to draw out the cycle. They will work on their posters until the bell rings. **Day 4:** The students will get into their lab groups and fill out the rest of their worksheets and look at how their bacteria have grown. They will also contrast how their bacteria on one side has grown compared to the side after they wiped it with a disinfective wipe. They then will perform the epidemic lab. After they are done with giving their liquid twice to someone, (and they have written the names of people that they gave their solution to on the big class paper) I will have them all go back to their lab tables and wait for me to come around and to put a drop of indicator solution in each person's cup. If they are infected their liquid will turn pink and if they are healthy then their liquid will be clear. I will tell them that at the beginning there was only one person who was infected and they have to figure out who it was. But to emphasize to have them explain the path of infection by starting with the students who are healthy and going from there.
	Review (wrap up and transition to next activity): **Day 3:** As it gets closer to the bell I will have the students start to clean up and put their posters in a pile at the front of the room. I will briefly explain to them the plan for the next day and let them know that they are going to have another lab. So they will be able to see their bacteria and how much they have grown. I will remind them to bring their Lab I worksheets with them to the lab. **Day 4:** After we are figuring out together as a class the path of infection and who the person was that started the infection I will have them clean up their stations and get ready to leave the class. I will explain that for the next day they will be doing a vocab game before their quiz. If we run out of time before we get to discuss I will tell them that we will go over the path of infection the next day. I will also have them hand in their Lab I worksheets.

Formative Assessment: (linked to objectives, during learning)	**Summative Assessment (linked back to objectives, END of learning)**
● **Progress monitoring throughout the lesson (how can you document your student's learning?)** I will be able to see what they are learning based on their guided notes and their Lab worksheets.	

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Reflection (What went well? What did the students learn? How do you know? What changes would you make?):	

Lesson Plan Template
Date: March 24, 2020

Grade: Middle School	**Subject: Life Science**
Materials: computers/iPads, maybe some book sources for students to also use	**Technology Needed:** computers/iPads
Instructional Strategies: € Direct instruction € Guided practice € Socratic Seminar € Learning Centers € Lecture € Technology integration € Other (list) € Peer teaching/collaboration/ perative learning € Visuals/Graphic organizers € PBL € Discussion/Debate € Modeling	**Guided Practices and Concrete Application:** € Large group activity € Independent activity € Pairing/collaboration € Simulations/Scenarios € Other (list) € Hands-on € Technology integration € Imitation/Repeat/Mimic Explain:
Standard(s) **MS-LS2-1:** Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.	**Differentiation** **Below Proficiency:** Students will be able to understand the basic concepts about viruses. If still some confusion about viruses they will be able to learn how to work better within a group. **Above Proficiency:** Students with above proficiency will be able to better their skills with research and their group work. They will be able to deepen their understanding of viruses and be able to start making some connections with the information they have learned with reality. **Approaching/Emerging Proficiency:** Students will be able to gain basic understandings of research and minimal information about viruses. **Modalities/Learning Preferences:** There is many ways for students to be able to approach this assignment which allows students to be creative within their work.
Objective(s) Students will be able to **analyze** and **interpret** data. Students will be able to **record** the data that they have researched. Students will be able to **understand** viruses' characteristics and their life cycle. Students will be able to **create** and **design** their information into a completed project. **Bloom's Taxonomy Cognitive Level:** understanding, analyzing, creating	
Classroom Management- (grouping(s), movement/transitions, etc.) Students will be working in their groups and will have the same procedure when working in collaborative learning. They will be able to work anywhere in the classroom as long as they are getting their work done and working well with one another.	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)** The students are expected to work in their groups respectively and to maintain their expected behavior in the classroom.

Minutes	**Procedures**
	Set-up/Prep: **Day 5:** I will have to set up the project guidelines and print off the different sheets of a description of how to cite information they find online and some credible sources. **Day 6:** I will have to get set up for the trashketball review game.
	Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.) **Day 5:** I will have the students do this project/lesson after they have already completed the Epidemic lab. That way they have a better understanding of how viruses are spread and since the textbooks do not go in as depth of viruses as bacteria then this project will be a great way for students to learn more about viruses. **Day 6:** Students will be playing the review game trashketball. (Poster will have directions on how to play. I will use information from the kahoot I have made, their lab worksheets, and their guided notes for questions to answer.

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	Explain: (concepts, procedures, vocabulary, etc.) **Day 5:** I will briefly go over with my students what they are going to be working on in the next few days with their projects. They will be working in groups researching a virus and answer some questions to help guide them in their research. I will verbally explain to the students how to cite in an APA format and I will also explain to them what plagiarism is and that they can get several points taken off for plagiarizing. **Day 6:** I will re-explain the rules of trashketball, and then explain to the students that after the review game they will use the time to finish their papers or other homework they have for this unit. I will also tell them at the end of class they will be expected to share two facts about their virus with the class.
	Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) **Day 5:** The students will be conducting a research project on different viruses and there will be a series of questions that they either have to answer within their paper/project. Students will also be encouraged to develop their own questions and include them in the project. The students will split up into groups of 2-3 depending on the class size and will discuss different types of viruses and have to research a certain virus that may have had a big impact on the world. (Coincidence for what is going on today.). They will have to write a science report in APA format. I will provide some important aspects of what makes a paper qualify as an APA paper. They will also create some sort of presentation to present to the class. It can be a short insight into what the students learned and some interesting facts about their virus that they chose. **Day 6:** Students will use this time to finish up their homework for this unit, and will be further exploring their viruses.
	Review (wrap up and transition to next activity): **Day 5:** The reviewing will be coming together as a class and discussing some important information that they have gathered as a whole about viruses. And discussing how learning about a specific virus helped their understanding of how viruses operate. **Day 6:** The review will be a brief discussion at the end of class and the review game that they had at the beginning of class.

Formative Assessment: (linked to objectives, during learning) ● **Progress monitoring throughout the lesson (how can you document your student's learning?)** Their papers will show how much they learned at this time. The review game will also show me how much of the information that the students took in throughout the unit.	**Summative Assessment (linked back to objectives, END of learning)**

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

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Date: February 25, 2020

Grade: Middle School

Subject: Life Science

Materials: whiteboards, dry-erase markers

Technology Needed: iPads, tv/projector

Instructional Strategies:

- € Direct instruction
- € Guided practice
- € Socratic Seminar
- € Learning Centers
- € Lecture
- € Technology integration
- € Other (list)
- € Peer teaching/collaboration/ perative learning
- € Visuals/Graphic organizers
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- € Discussion/Debate
- € Modeling

Guided Practices and Concrete Application:

- € Large group activity
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- € Other (list)
- € Hands-on
- € Technology integration
- € Imitation/Repeat/Mimic

Explain:

Standard(s)

MS-LS1-1: Conduct an investigation to provide evidence that living things are unicellular or multicellular and may have different cell types.

MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction result in offspring with genetic variation.

MS-LS4-6: Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

MS-LS4-4: Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

MS-LS4-5: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

MS-LS4-2: Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

MS-LS4-1: Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

Objective(s)

Students will be able to **know** and **understand** the vocab words of the unit.
Students will be able to **describe** certain aspects of this unit.
Students will be able to **apply** the knowledge that they have learned within this unit to take the test.

Bloom's Taxonomy Cognitive Level:
remember, apply, create, understand

Differentiation

Below Proficiency:

Above Proficiency:

Approaching/Emerging Proficiency:

Modalities/Learning Preferences:

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Classroom Management- (grouping(s), movement/transitions, etc.)	**Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules, and expectations, etc.)**
Students will be in groups of 3 or 4 for the vocab game but will take the quiz individually.	Students will follow the rules for the vocab game and will follow the common test procedures.

Minutes	**Procedures**
	Set-up/Prep: I will have to set up the vocab game before the class and will have to print off their tests before the class.
	Engage: (opening activity/ anticipatory Set – access prior learning/stimulate interest /generate questions, etc.) I will give a few more minutes for the students to finish up their notes, lab worksheets, or poster. (If needed) If the student is done with all of their work then they can have a few minutes of free time.
	Explain: (concepts, procedures, vocabulary, etc.) After the opening activity, I will do a vocab game with the students before their test on the unit. This game is going to be a Pictionary vocab game. The students will be able to make groups of three or four and are going to have a little whiteboard at each table. They will not be able to say the word or what the word starts with, but the can have a free range of what they can draw or write. Also, the kicker is that the person who can see the words and draw and describe cannot talk. So the only members of the group that can talk are the ones who are guessing the vocab words. After the vocab game, the students will then take their quiz and have the rest of the time as free time.
	Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions) The game is a way for them to explore and practice what they have learned throughout the unit.
	Review (wrap up and transition to next activity): After the students are done with their test they have free time but will have to stay quiet in order to respect others who are taking the test.

Formative Assessment: (linked to objectives, during learning)	**Summative Assessment (linked back to objectives, END of learning)**
● **Progress monitoring throughout the lesson (how can you document your student's learning?)** I will be able to see the students' involvement with the game and how well they have obtained information about this unit.	The quiz at the end of class.

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):