

Scope and Sequence  
Science - 6th Grade STREAM

Unit : Scientific Method

<b>Vocabulary Terms:</b>	<b><i>Scientific Method, Research, Hypothesis, Data, Analysis, Observation, Conclusion, Inference, Metric System, Graduated Cylinder, Beaker, Mass, Volume, Density, Meter, Liter, Gram, SI Units, Kelvin, Absolute Zero</i></b>				
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
1st Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	Watch "Scientific Method for Kids   Learn all about the Scientific Method Steps" on YouTube (9:26 min) and discuss: what is the purpose of the Scientific Method? What happens if one part of it isn't inline with the other parts? How is "observation" possibly the first step? What is a hypothesis? Why are they important to the rest of the scientific method? - 15 min	Teacher to explain that all students will conduct a Science Fair experiment this year. Students will participate in a Science Fair, it is required, and that we will push to send everyone to the NEOSF in the Winter; review link to the NEOSF website ( <a href="http://www.neosef.org">www.neosef.org</a> ) - 10 min	Watch "Inference and Observation" on YouTube (4:36 min) and discuss: what is the difference between observations and inferences? Teacher to create a mock-experiment about a fake "Crime Science" and students to discuss potential observations and inferences from them; what may be seen that would lead to specific false conclusions? - 20 min	<i>"Scientific Thinking Handbook", Identifying Faulty Reasoning, Pages R7-R9</i> - Read aloud and discuss: how does faulty reasoning ruin a project? Teacher to play "Funniest Commercials Ever - You Can't Stop Laughing" on YouTube (10:26 min); how does your point of view of a product change your opinion of it? How can that effect a project? - 20 min	(Part II of II) Students in pairs, students to be creative and invent a product that they could market; it has to serve a genuine and new purpose but can simply be a change to an existing product; students will think of ideas and use computer paper to illustrate, color, and write a short caption for their product; they will then try to sell their product to their classmates in a speech; students will create inferences and decide facts and opinions about eachothers invented products - 25 min
	<i>"Scientific Thinking Handbook", Making Observations, Page R2</i> - Read aloud and discuss: what is the difference between quantitative observations and qualitative observations? Using Table 1, explain the differences; teacher to create examples and students will analyze which category they fit into - 10 min	<i>"Scientific Thinking Handbook", Predicting and Hypotheizing, Page R3</i> - Read aloud and discuss: what is the difference between a hypothesis and a prediction? Students in pairs, teacher to assign a topic (What liquid makes plants grow best?) and students will create a hypothesis and predictions about that topic; as a class, review responses and why - 20 min		(Part I of II) Students in pairs, students to be creative and invent a product that they could market; it has to serve a genuine and new purpose but can simply be a change to an existing product; students will think of ideas and use computer paper to illustrate, color, and write a short	

	<p>"Scientific Thinking Handbook", <i>Recognizing Bias, Page R6</i> - Read aloud and discuss: what is bias? How may you already know that word? What are ways that people can be bias towards a product, such as food, designers, or store? Why is it important to have a large sample size? - 10 min</p>	<p>Students in pairs, answer and discuss: Using Google Docs, answer and submit to your teacher the following - Review "More About Hypothesis" on page R3; students will respond via Google Docs why each of those three statements must be valid when conducting the experiment that they just discussed previously (liquid for plant growth); after students submit, teacher to discuss responses aloud - 10 min</p>	<p>Teacher-provided worksheet about five potential experiments or situations; students in pairs, reply in Google Docs to the scenarios by making hypothesis, predictions, and inferences about them; submit to your teacher, then review responses as a class - 20 min</p>	<p>Illustrate, color, and write a short caption for their product; they will then try to sell their product to their classmates in a speech; students will create inferences and decide facts and opinions about each others invented products - 20 min</p>	<p>Teacher to show lab equipment and discuss its use; teacher to review how to measure using beakers, scales, balances, and cylinders; students volunteer to assist in gathering data - 10 min</p>
Daily Journal or Bell Work:	Write everything that you know about the Scientific Method	Define a hypothesis in your own terms	What are "observations" during a science experiment? How are they different than a final review?	What is an Inference? How are they helpful and harmful to science experiments?	In a science experiment, what is a data log and why is it important?
Daily Homework:	Written Response: How can the Scientific Method relate to everyday and real-life scenarios? Provide an example and use the steps to outline your thoughts (one paragraph or a list)	Written Response: How is a hypothesis different than a prediction? How much analyzing is done when making a hypothesis? Why is that? (one paragraph)	Written Response: Why are observations an important part of your science experiment? How can they be misleading? (one paragraph)	Written Response: Why is conducting research on your topic best to do before making a hypothesis? What would happen if you were uninformed about a general topic? (one paragraph)	Written Response: How can false information and inferences ruin your opinion about a product? How can that relate to a science fair project? (one paragraph)
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	Watch "Science Project - 7. Create Graphs & Charts, then Analyze the Data" on YouTube (5:41 min) and discuss: why should you keep a journal (data log) when you conduct experiments? Why should you display data on a graph? How does this video recommend that you create your graphs? - 10 min	Teacher to review the previous lab experiment and how things were measured; teacher to introduce the metric system; what are SI Units? Read aloud and review "Scientific Thinking Handbook", <i>The Metric System and SI Units, Pages R20-R21</i> - 20 min	(Part I of III) Teacher to review the Metric System and provide examples of how to convert from one base to another; refer to the bases specifically (Kilo, hector, deka, meter, deci, centi, milli); create sample problems for students to solve; include Kelvin scale - 25 min	(Part II of III) Teacher to review the Metric System and provide examples of how to convert from one base to another; refer to the bases specifically (Kilo, hector, deka, meter, deci, centi, milli); create sample problems for students to solve; include Kelvin scale - 15 min	(Part III of III) Teacher to review the Metric System and provide examples of how to convert from one base to another; refer to the bases specifically (Kilo, hector, deka, meter, deci, centi, milli); create sample problems for students to solve; include Kelvin scale - 15 min

2nd Week	Teacher to create a mini-lab with stations; using "Scientific Thinking Handbook", pages R12-R19 as a guide, students will review the different equipment and gather measurements; they will create a data log in a journal of the measurements of the various beakers, test tubes, weights of items on a scale, weights of items on a balance, etc. Teacher to collect data logs as students will graph this data later in this unit - 25 min	Teacher to provide examples of graphs based upon data in an experiment; teacher to create (make-up) data and plot it on various graphs (bar graph, line graph, pie chart); students to assist to show understanding; use SI Units on your graphs - 15 min	(Part I of II) Students to use Google Sheets to tabulate their data from the lab last week; create either a pie chart or bar graph from this data; save and share with their teacher - 15 min	(Part II of II) Students to use Google Sheets to tabulate their data from the lab last week; create either a pie chart or bar graph from this data; save and share with their teacher - 25 min	Teacher to review tools used in science (rulers, meter sticks, graduated cylinders, balance, gram scale); reflect upon SI Units and how they relate to each item - 25 min
Daily Journal or Bell Work:	In a science experiment, what is a data log and why is it important?	What type of graph is easiest for you to read: pie chart, line graph, or bar graph? Why?	What did you find easy about the lab that we recently conducted? What was difficult? Why?	In your opinion, is the Metric System easier or harder to use than the English standard system? Why?	If you did not finish your graphing of your data, complete it now or finish in study hall! It is due today!
Daily Homework:	Written Response: Why is keeping a data log important during an experiment? Why should experiments be done several times in order to ensure accuracy? How to data logs support accuracy? (one paragraph)	Using SI Units, create on notebook paper an example of a line graph, a bar graph, and a pie graph; create data, there is no need to gather it from somewhere	Teacher-created worksheet of ten problems converting bases in the metric system to other bases, including Kelvin conversion	Teacher-created worksheet of twenty problems converting bases in the metric system to other bases, including Kelvin conversion	Teacher-created worksheet of twenty-five problems converting bases in the metric system to other bases, including Kelvin conversion
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
3rd Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Test on Scientific Method, density, and metric system - 30 min
	Teacher to introduce: what is density? Formula for density ( $D = m/v$ ); demonstrate how to solve for it, provide example of testing items in beakers to calculate density (prep for lab tomorrow) - 20 min	Lab: using graduated cylinders to correctly measure volume; placing small items inside graduated cylinders to	Lab on using spring scales and proper measuring methods to calculate mass; keep a data table, you will graph your data - 25 min	Any students that did not complete their graphs from the previous lesson are to complete them now and submit them to your teacher - 15 min	

	Watch "Density Practice Problems" on YouTube (8:55 min) and discuss; provide additional examples of density and how to solve - 15 min	calculate density; students to record all data in a journal; teacher to collect journals, students will graph data during the next science class - 35 min	Using Google Sheets, graph the data from the recent lab calculating density as well as today's data; create a bar graph displaying the volumes of each graduated cylinder; create a line graph showing the mass of each item weighed on the spring scales; share both graphs with your teacher - 15 min	Review study guide on Scientific Method, converting metric and SI units (including Kelvin) from one base to another, and calculating density - 30 min	Quick Write: Write down anything that you know about this topic that was not on your test - 10 min
Daily Journal or Bell Work:	Consider that a ruler is 30 cm long. Estimate how long your classroom, hallway, and each set of lockers are in meters	Teacher to create three density problems for students to practice, discuss and review for accuracy	Teacher to create three density problems for students to practice, discuss and review for accuracy	Teacher to create three density problems for students to practice, discuss and review for accuracy	None
Daily Homework:	Teacher-created worksheet of ten problems converting density	Teacher-created worksheet of fifteen problems converting density	Teacher-created worksheet of twenty problems converting density	Study for Test tomorrow on Scientific Method, density, and the Metric System!	None

Unit : Newton's Laws of Motion

<b>Vocabulary Terms:</b>	<b><i>Force, Net Force, Centripetal Force, Sir Isaac Newton, Acceleration, Inertia, Velocity, Momentum, Speed, Mass, Conservation of Momentum, Balanced Forces, Unbalanced Forces, Action, Reaction</i></b>				
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete on notebook paper, turn in to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	<i>MS Science, Motion and Forces, Pages 9-14</i> - Use a Description Wheel as you read to record important notes; what is position? How does position effect your perspective? What is motion? - 25 min	<i>MS Science, Motion and Forces, Pages 16-21</i> - Read aloud and discuss; use a Concept Map to record important information and link together; what is speed? How do you calculate it? Teacher to provide additional examples	<i>MS Science, Motion and Forces, Page 24</i> - Students in pairs, read and complete #'s 1-3 and "Challenge"; submit via Google Docs to your teacher, one paper per student - 15 min	Lab: Students to work in pairs, teacher to give six marbles, stopwatches (or TEMPORARY permission for cell phones to time), masking tape, and notebooks to make a data log; students to roll marbles of different sizes/colors one at a time down a textbook	<i>MS Science, Motion and Forces, Page 35</i> - Students in pairs, complete #'s 1-18 together but students must turn in one paper per child; show work for math problems - 25 min

4th Week	<p><i>MS Science, Motion and Forces, Page 10</i> - Review the maps on page 10, compare &amp; contrast the two methods of description; students to write how to walk to the cafeteria from their homeroom in writing but also by drawing a map; compare and contrast both methods - 15 min</p>	<p>provide additional examples; graph your examples as shown on page 21; where is the X-axis? Y-axis? Students to race outside while teacher uses stopwatch (on their cell phone, if needed) to gather data; place data on graph and calculate speed using the formula - 35 min</p>	<p><i>MS Science, Motion and Forces, Pages 25-31</i> - Read aloud and discuss: use a Concept Map to link information together as you read; what is acceleration? How is it different than speed? How is acceleration related to velocity? What is the formula for acceleration? Teacher to review how to calculate for acceleration, velocity, and speed; provide examples - 30 min</p>	<p>ramp; record the speed of each marble as it rolls two meters (masking tape to create a starting and finishing line); create data log; graph data and calculate the speed of each marble; now raise the textbook ramp by two books and assume the new height to represent acceleration; conduct the experiment again, graph data, and solve formulas for acceleration - 40 min</p>	<p>Watch "Newton's 3 (three) Laws of Motion" on YouTube (6:21 min) and discuss: what is Inertia? What is force? Teacher to provide examples of calculating for force; How is force different from mass? - 15 min</p>
	<p>Watch "Force and Motion   Science Video for Kids" on YouTube (6:20 min) and discuss the examples and terms - 10 min</p>	<p><i>MS Science, Motion and Forces, Pages 22-23</i> - Read aloud and discuss: what is velocity? How is it related to speed? - 10 min</p>	<p>Teacher to review how to solve for speed and acceleration; students to complete speed and acceleration calculations - 10 min</p>	<p>Students in pairs, solve teacher-created problems together for speed, acceleration, velocity, and force; check for teacher for accuracy - 15 min</p>	
Daily Journal or Bell Work:	<p>Define "motion" in your own words.</p>	<p><i>MS Science, Motion and Forces, Page 15</i> - Read privately and answer #'s 1-2</p>	<p>Create a Venn Diagram comparing &amp; contrasting speed and velocity</p>	<p>Teacher to create two problems solving for speed</p>	<p>Students to complete graphs or math from lab in previous class</p>
Daily Homework:	<p><i>MS Science, Motion and Forces, 1.1 Review, #'s 1-6, page 14</i> - Complete each question in complete sentences; due tomorrow!</p>	<p><i>MS Science, Motion and Forces, 1.2 Review, #'s 1-6, page 23</i> - Complete each question in complete sentences; due tomorrow!</p>	<p>Teacher-created worksheet (ten problems), including story problems, about solving for speed using the formula</p>	<p><i>MS Science, Motion and Forces, 1.3 Review, #'s 1-6, page 31</i> - Complete each question in complete sentences; due tomorrow!</p>	<p><i>MS Science, Motion and Forces, Page 37</i> - Complete #'s 1-7 as requested; due tomorrow!</p>
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	<p>Journal; complete in Google Docs, send to your teacher - 10 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Bellwork: Prepare for lab - 10 min</p>
	<p><i>MS Science, Motion and Forces, Pages 41-47</i> - Read aloud and discuss: Use a Magnet Word Diagram to help take notes: what are balanced forces? Teacher to demonstrate motion by unbalanced forces; What is net force? How does</p>	<p><i>MS Science, Motion and Forces, Page 46</i> - Students in pairs, complete the experiment on page 46 by creating your own project and recording the data; which ball will have the most inertia? Why do you believe that? - 30 min</p>	<p><i>MS Science, Motion and Forces, Pages 49-55</i> - Read aloud and discuss: using a Magnet Word Diagram, link together important information; review the formula &amp; calculation for force; What is the 2nd law? What is centripetal force?</p>	<p><i>MS Science, Motion and Forces, Page 56</i> - Read aloud and discuss: calculate the problem and verify the answer; complete "Challenge" together as a class; teacher to address questions - 15 min</p>	<p>Teacher to watch "Kids Science Projects Balloon Rocket" on YouTube (2:25 min) prior to today to get set up; students to watch today to understand what they are expected to do for this lab;</p>

5th Week	force; what is net force? How does it relate to motion? What is Inertia? Newton's First Law? Students to create a table showing Newton's First Law at rest (left) and in motion (right); share with class - 30 min	Discussion: Teacher to review balance vs unbalanced forces; provide examples, what makes motion possible? What stops motion? How does "net force" relate to this? - 10 min	Law: what is centripetal force? What natural phenomenon does the model on page 55 resemble (planet orbiting sun)? Review abbreviated formula for acceleration and calculating mass - 30 min	Watch "Newton's Second Law of Motion - Science of NFL Football" on YouTube (3:51 min) and discuss: how does football relate to the 2nd Law? How does it relate to Inertia and the 1st Law? - 10 min	students in pairs, they will create a balloon rocket and race them against other students; teacher to create various requirements for the lab such as using a bicycle pump to inflate the balloon to measure the air inside; students to measure the time it takes for the balloon to travel down the line; Students to measure the force, acceleration, mass, and momentum; student pairs to race at least three balloons and collect data; students should be able to explain how all three laws relate to this project - 45 min
	Watch "What is Inertia? - Newton's Law   Physics lesson for Kids   Kids Education by Mocomi Kids" on YouTube (1:05 min) and discuss: what are other examples of Inertia that you can think of? Students to create a list and share/discuss with class - 10 min	<i>MS Science, Motion and Forces, Page 48</i> - Read aloud and discuss: What hypothesis can you come up? What may be some observations you may have if you were there? Complete "Challenge" privately; using Google Docs, submit your answers to your teacher - 15 min	<i>MS Science, Motion and Forces, Page 54</i> - Students in pairs, complete the the Mini-Lab on page 54; record all data and answer questions; one paper per student, submit to teacher when complete - 15 min	<i>MS Science, Motion and Forces, Pages 57-61</i> - Read aloud and discuss: Using a Concept Map, link important information from this section to other laws and topics; what is action/reaction? How does a jellyfish move? How does the 3rd Law pertain to kangaroo movement? - 25 min	
Daily Journal or Bell Work:	Teacher-created problems (three) about velocity	Teacher-created problems (three) about force	Teacher-created problems (three) about acceleration	Teacher-created problems (three) about mass	Prepare for balloon races; plan for what you need with your partner
Daily Homework:	Teacher-created worksheet (fifteen problems) on problems about velocity, force, and speed	<i>MS Science, Motion and Forces, 2.1 Review, #'s 1-6, page 47</i> - Complete each question in complete sentences; due tomorrow!	<i>MS Science, Motion and Forces, 2.2 Review, #'s 1-6, page 55</i> - Complete each question in complete sentences; due tomorrow!	Make a list of five animals. Using Newton's Laws as a guide, describe how each animal moves; due tomorrow!	Written Response: How did the balloon races display each of Newton's three laws? Please specific
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
6th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	<i>MS Science, Motion and Forces, Pages 64-67</i> - Read aloud and discuss: use the Magnet Word Diagram to describe momentum; teacher to provide examples of momentum and students solve for them; how do amusement park rides resemble this? Describe bumper cars - 30 min	<i>MS Science, Motion and Forces, Pages 68-69</i> - What is Newton's 3rd Law? What are some things that have an equal and opposite reaction? How does sitting in a chair display this Law? How does writing with a pencil display this law? How is a car collision an example of this law? - 20 min	<i>MS Science, Motion and Forces, Page 71</i> - Individually, students will complete #'s 1-20 in Google Docs and submit your answers to your teacher; students should not work with other students, this is to be done privately - 25 min	<i>MS Science, Motion and Forces, Page 73</i> - Students in pairs, review the table together and answer questions # 1-8; submit all answers in Google Docs to your teacher - 20 min	Construct your Rollar Coasters to race in three days! To be made of straws, scotch tape, and other household items; should have at least one big hill

	<p><i>MS Science, Motion and Forces, Page 64</i> - Students in pairs, complete mini-lab on page 64; examine objects colliding; how does mass and momentum effect this? Use a timer to calculate speed; make sure to record the mass of each ball; Students to discuss and share results - 20 min</p>	<p>Watch "Newton's Third Law of Motion" on YouTube (2:28 min) and discuss: Explain how a bird flying displays this law; how does riding a bike display this law? Teacher to provide other examples - 10 min</p>	<p>Discuss roller coaster project; students need to begin planning how they will construct it; marble to race down the track; groups of four students; coaster made from straws (mostly), tape, paper towel rolls, and other household items; students must work together! All coasters must be able to show Newton's Laws and the corresponding math; at least one hill and three turns must be incorporated - 20 min</p>	<p>Students in groups of four, students to draw their plan for their roller coaster; they need to ensure that the marble will stay on the track and that there are areas where momentum can be gained, acceleration can be seen, speed can be measured through the whole coaster, and velocity can be calculated - 30 min</p>	<p>and three turns; Be sure to test that your marble can remain on the track and that velocity, speed, acceleration, and momentum are all measureable on your coaster! - 55 min</p>
Daily Journal or Bell Work:	Explain how we use Newton's Laws each time that we walk	Teacher-created problems (three) about momentum	Teacher-created problems (three) about velocity	Teacher-created problems (three) about acceleration	Teacher-created problems (three) about force
Daily Homework:	<i>MS Science, Motion and Forces, 2.3 Review, #'s 1-6, page 61</i> - Complete each question in complete sentences; due tomorrow!	<i>MS Science, Motion and Forces, 2.4 Review, #'s 1-6, page 69</i> - Complete each question in complete sentences; due tomorrow!	Think about your roller coaster and how you will build it; what turns will you incorporate? What design do you want?	<i>MS Science, Motion and Forces, Page 72</i> - Complete #'s 21-28; due tomorrow!	<i>MS Science, Motion and Forces, Page 72</i> - Complete #'s 29-35; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
7th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Test on all three of Newton's Laws and the math affiliated with them - 30 min
	Construct your Rollar Coasters to race in two days! Be sure to test that your marble can remain on the track and that velocity, speed, acceleration, and momentum are all measureable on your coaster! - 55 min	Construct your Rollar Coasters to race tomorrow! Be sure to test that your marble can remain on the track and that velocity, speed, acceleration, and momentum are all measureable on your coaster! - 55 min	Race Rollar Coasters and calculate the mass of the marble, the speed it travels at, the acceleration in areas, the velocity it has, and the momentum along the track - 55 min	Review study guide on all aspects of this unit including the math affiliated with it - 30 min	
				Using Google Docs, define each of the "Terms to Know" from Week Four and submit to your teacher - 20 min	Play "Gizmos" on Chromebooks about Newton's Laws of Motion or the math affiliated with it

Daily Journal or Bell Work:	Define Newton's First Law; what is Inertia?	Define Newton's Second Law; how does acceleration relate to it?	Define Newton's Third Law; how will your Rollar Coaster display this?	How did your Rollar Coaster display all three of Newton's Laws?	None
Daily Homework:	Teacher-created worksheet (ten problems) on momentum, speed, and force	Teacher-created worksheet (ten problems) on acceleration and velocity	Complete any math formulas that need to be finished from today's races; due tomorrow!	Study for test tomorrow on Newton's Laws and the affiliated math	None

Unit : Simple Machines (Google Docs Research and construction project with this unit)

<b>Project Theme:</b>	<i>Students will create their own simple machine (part I) and write an essay in Google Docs (part II) in this project. The essay must be written in Time New Roman, 12-font, double-spaced, and be a minimum of one-page in length. The essay will discuss the following requirements as listed below and all features must be included in your essay. As part of this assignment, students will use their simple machine that they created to compete against other students' machines in their class to test effectiveness. Students will research a country and compete under an Olympics-style format as a Geography connection.</i>
<b>Project Breakdown:</b>	<i>Students will construct out of materials from home their own simple machine to compete against other machines. Students will only create ONE machine listed below. Students must do the majority of the work although parents/family may assist. Students machines should be decorated to match their country (ex. paint to match flag of their country). Students machines should be constructed to match the event description below. Students will submit their essay to their teacher when complete or by the due date, whichever is sooner. The essay has the following requirements and questions to answer: Provide three examples of your type of simple machine commonly found around a typical home. How does your simple machine make work easier? Where is the fulcrum located in your simple machine? Where is the lever located in your simple machine? How does your simple machine typically operate? How can your simple machine combine with others to make a compound machine? What country are you assigned? What is that country's capital city? What is the current population of the country? Is your country's population higher or lower than the USA? Name three major geographic features (ex. rivers, mountains, plains) in your country. Name three countries that your country borders. What continent is your country located? Include a photo of your country or a map image.</i>
<b>Machine Project Options:</b>	<i>Inclined Plain, Pulley, Lever, Compound Machine</i>
<b>Inclined Plain Event:</b>	<i>Students will design an inclined plain that works better than others at propelling a "Hot Wheels" car down a ramp and across the floor. Winnes will be determined by the length that the car travels from the base of the ramp. Students may not use rubber bands or other object to propel the car. The inclined plain must do the bulk of the work.</i>
<b>Pulley Event:</b>	<i>Students will design a pulley that works better than others at lifting weights or objects off of the ground. Students may use more than one wheel in their pulley system but no more than three. Students may construct their machine out of any school-appropriate and safely-utilized material that they can locate. The pulley must do the bulk of the lifting and winners will be determined by weight lifted successfully to the end of the pulley system or top of the pulley, whichever comes first.</i>
<b>Lever Event:</b>	<i>Students will design a level that works better than others at propelling a small toy by distance across the classroom. Students may place their fulcrum anywhere on their level but they must conduct tests at home and may not change their fulcrum during the event. Students will use their level to conduct propulsion and winners will be determined based upon distance propelled from the base of the machine.</i>

<b>Compound Machine Event:</b>	<b>Students will design a Compound Machine of their own that works better than the others at completing its job. This is an advanced topic and is intended to be a challenge. The winner of this event will be based upon the opinion of the teacher.</b>				
<b>Country Options:</b>	<b>Canada, Mexico, Cuba, Jamaica, The Bahamas, Haiti, Panama, Chad, South Africa, Mali, Nigeria, Liberia, Algeria, South Sudan, Ethiopia, Tanzania, Brazil, Venezuela, Columbia, Chile, Bolivia, Argentina, China, Indonesia, Japan, Iraq, Pakistan, India, Russia, Germany, Poland, Spain, Greece, United Kingdom, Italy, France, Australia, New Zealand, (USA is not an option, learn about somewhere new!)</b>				
<b>Vocabulary Terms:</b>	<b>Simple Machine, Compound Machine, Wedge, Screw, Inclined Plain, Pulley, Wheel-and-Axle, Force, Work, Acceleration, Hybrid, Engine, Lever, Fulcrum</b>				
<b>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</b>					
<b>Timeline:</b>	<b>Day "A"</b>	<b>Day "B"</b>	<b>Day "C"</b>	<b>Day "D"</b>	<b>Day "E"</b>
<b>8th Week</b>	Journal; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	<i>ML Science, Motion and Forces, Pages 115-119</i> - Read aloud and discuss: use a Description Wheel to explore the term "work"; teacher to provide some examples of calculating for "work" by using the formula $W=Fd$ ; teacher to create story problems to help solve for work - 25 min	<i>ML Science, Motion and Forces, Page 120</i> - As a class, read aloud and complete the questions; teacher to review solving for "work" in this review segment - 15 min  <i>ML Science, Motion and Forces, Pages 121-125</i> - Read aloud and discuss: Using a Main Idea Web, define energy; what are examples of Kinetic Energy? What are examples of potential energy? What are some examples that relate to Phys Ed class that you can relate to easily? - 20 min	Watch "What is Kinetic and Potential Energy?" on YouTube (1:23 min) and discuss: how do roller coasters demonstrate potential and kinetic energy? What is it called when potential energy changes to kinetic energy? Provide other examples in addition to roller coasters - 10 min  <i>ML Science, Motion and Forces, Pages 124-125</i> - Review these two pages and the formulas for Kinetic Energy and Mechanical Energy; review several word problems with students as to how to solve for each; students do not need to know to solve for potential energy at this level - 20 min	<i>ML Science, Motion and Forces, Pages 126-128</i> - Read aloud and discuss: use the photo and graphs on page 127 to explain kinetic & potential energy; teacher to provide examples of energy transfers; use Google or YouTube to locate clips or images of energy transferring - 20 min  Watch "Law of Conservation of Energy (Roller Coaster Demo)" on YouTube (2:46 min) and discuss: what is the Law of Conservation of Energy? How did you see it in that video? How did this apply to your roller coaster that you built in the previous unit? Where is potential energy in this video? - 10 min	<i>ML Science, Motion and Forces, Pages 130-135</i> - Read aloud and discuss: use a Main Idea Web to link together "power" and forms of energy; what is power? Teacher to provide examples of how to solve for it; discuss where we see the word "Watt" frequently and how it relates to power - 25 min

	<i>ML Science, Motion and Forces, Page 118</i> - Students in pairs, complete the Mini-lab on page 118 together; answer all questions, one paper per student, submit your answers via Google Docs to your teacher - 20 min	Teacher to introduce project and the requirements of it; review each of the Simple Machines and how the project is formatted; explain that students should be promptly as they will build their own machine - 15 min	<i>ML Science, Motion and Forces, Page 125</i> - Students in pairs, complete the Mini-Lab as indicated on page 125; submit your answers to your teacher in Google Docs - 20 min	In-class time to work on your research essay for your project - 20 min	<i>ML Science, Motion and Forces, Page 133</i> - Students in pairs, complete Mini-Lab on page 133 together; submit answers to your teacher via Google Docs - 20 min
Daily Journal or Bell Work:	Define the term "Work"; what does it mean to you?	Teacher-created problems (two) that solve for work	Define kinetic energy and potential energy	Teacher-created problems (two) that solve for kinetic energy and mechanical energy	Teacher-created problems (four) that solve for kinetic energy and mechanical energy
Daily Homework:	Teacher-created story problems (five) that involve solving for work	<i>MS Science, Motion and Forces, 4.1 Review, #'s 1-6, page 119</i> - Complete each question in complete sentences; due tomorrow!	Teacher-created story problems (six) that involve solving for kinetic energy and mechanical energy	<i>MS Science, Motion and Forces, 4.2 Review, #'s 1-6, page 128</i> - Complete each question in complete sentences; due tomorrow!	<i>MS Science, Motion and Forces, 4.3 Review, #'s 1-6, page 135</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
9th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	<i>ML Science, Motion and Forces, Pages 136-137</i> - Students in groups of 3 or 4, complete the lab to discover how simple machines make work easier; record answers in Google Sheets, submit to your teacher when completed - 30 min	<i>ML Science, Motion and Forces, Page 140</i> - Students in pairs, complete #'s 29-34 together and discuss results as a class - 20 min	<i>ML Science, Motion and Forces, Page 145</i> - Students to circle the room in stations, examine various simple machines and answer the questions on page 145 regarding each; discuss as a class when complete - 20 min	<i>ML Science, Motion and Forces, Page 153</i> - As a class, read aloud and discuss how to solve for the work input verses output; teacher to explain how to calculate the math to solve - 15 min	<i>ML Science, Motion and Forces, Pages 158-162</i> - Read aloud and discuss: what are examples of an Inclined Plain, Wedge, and Screw? How do you solve for Mechanical Advantage? Teacher to provide examples - 25 min
		<i>ML Science, Motion and Forces, Pages 145-152</i> - Read aloud and outline as you go; teacher to help students create an outline of the section using the same method as provided	Watch "Simple Machines for Kids   Learn all about the 6 simple machines!" on YouTube (7:02 min) and discuss: what are the six simple machines? How does each machine assist with moving objects by doing less work? Provide examples of each; review the recent lab and discuss which item is which simple machine - 20 min		Watch "Pulley, Wheel, Lever and More Simple Machines - Science for Kids   Educational Videos by Mocomi" on YouTube (8:27 min) and discuss: how does each

	In-class time to work on your research portion of your project - 20 min	in MS Word (letter & number format); specifically note the terms: machine, mechanical advantage, and efficiency - 25 min	Teacher to provide example math problems to calculate for mechanical advantage and efficiency - 15 min	<i>ML Science, Motion and Forces, Page 157</i> - Students in groups of 3 or 4, complete the mini-lab on page 157 to examine how a pulley makes work easier; submit answers in Google Docs to your teacher - 20 min	machine assist in moving objects? What is a fulcrum? Where are the fulcrums located in each simple machine? - 15 min
Daily Journal or Bell Work:	<i>ML Science, Motion and Forces, Page 129</i> - Read privately and answer questions; discuss as a class	<i>ML Science, Motion and Forces, Page 140</i> - Complete #'s 27-28; share results with the class	Think of how you walk... specifically identify where the input force and output force are in this motion	Teacher-created problems (two) that solve for efficiency	How does a single fixed pulley differ from a single movable pulley?
Daily Homework:	<i>ML Science, Motion and Forces, Page 139</i> - Complete #'s 1-7; due tomorrow!	<i>ML Science, Motion and Forces, Page 139</i> - Complete #'s 8-15; due tomorrow!	<i>ML Science, Motion and Forces, Page 141</i> - Read and answer #'s 1-6; due tomorrow!	<i>MS Science, Motion and Forces, 5.1 Review, #'s 1-6, page 152</i> - Complete each question in complete sentences; due tomorrow!	<i>MS Science, Motion and Forces, 5.2 Review, #'s 1-4 &amp; 6, page 162</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
10th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	(Part I of II) Illustrate, label, and color a real-world example of the six Simple Machines; on each example, indicate where the fulcrum is during typical usage; examples may include a screw going into wood or a knife cutting an apple; complete for each of the six machines; students to use computer paper with one paper per student - 50 min	(Part II of II) Complete your illustration, labeling, and coloring of Simple Machines in action - 20 min	Walk through the campus; locate ten Simple Machines across our campus; list and describe each; return to the classroom and discuss your findings - 25 min	Teacher to Google the following ancient sites: Stonehenge, the Pyramids at Giza, the Moai of Easter Island, Colosseum in Rome, and the Colossus of Rhodes; discuss how Simple Machines helped to engineer these ancient world sites and marvels - 20 min	<i>ML Science, Motion and Forces, Page 173</i> - Students in pairs, complete #'s 1-22 via Google Docs and submit to your teacher - 30 min
		In-class time to work on the essay portion of your Simple Machines project - 25 min	<i>ML Science, Motion and Forces, Pages 164-169</i> - Read aloud and discuss: what are gears? What two machines are gears primarily? What is a compound machine? What examples can you think of? What is Nanotechnology? How is this helpful to our world? Teacher to Google some examples to share - 20 min	Watch "How Nanotechnology Can Change Your Life" on YouTube (9:10 min) and discuss: how do you think that nanotechnology can change the world? What are some beneficial ways that this could help surgery or the medical field? How could this be used in a bad way? - 20 min	In-class time to work on the essay portion of your Simple Machines project - 20 min

Daily Journal or Bell Work:	List the six Simple Machines	<i>ML Science, Motion and Forces, Page 163</i> - Read privately; what parts of the human body function as simple machines do?	Teacher-created problems (two) that solve for Mechanical Advantage	List three simple machines in your bookbag or pencil pouch. How are they each simple machines?	What do you think about Nanotechnology? Is it a good thing or bad thing? Why?
Daily Homework:	Locate five examples of Simple Machines in your home; list them for tomorrow!	Work on your Simple Machine project!	Work on your Simple Machine project!	Create a list of three good and three bad things that Nanotechnology could lead to; share with the class tomorrow!	<i>MS Science, Motion and Forces, 5.3 Review, #'s 1-6, page 169</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
11th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Test on Simple Machines - 40 min
	<i>ML Science, Motion and Forces, Pages 85-89</i> - Read aloud and discuss: Teacher to assist the students in outlining this section according to the MS Word format of letters & numbers; focus upon friction, heat, and air resistance; how does air resistance cause friction? How do fluids create friction? - 30 min	<i>ML Science, Motion and Forces, Page 88</i> - Students in pairs, create your own experiment under the guidelines provided; students should record data as requested and submit all answers to their teacher via Google Docs - 30 min	(Part III of III) Illustrate, color, and label all six simple machines conducting work; label where the friction occurs when coming into contact with a surface or necessary item - 20 min	Review study guide on Simple Machines, including math affiliated with this unit - 30 min	
	(Part I of III) Illustrate, color, and label all six simple machines conducting work; label where the friction occurs when coming into contact with a surface or necessary item - 20 min	(Part II of III) Illustrate, color, and label all six simple machines conducting work; label where the friction occurs when coming into contact with a surface or necessary item - 20 min	In-class time to work on Google Docs portion of the Simple Machines project - 30 min		Quick Write: Write down anything that you know about this topic that was not on your test - 10 min
Daily Journal or Bell Work:	Teacher-created problems (two) that solve for Mechanical Advantage	Teacher-created problems (two) that solve for power	Teacher-created problems (two) that solve for Kinetic Energy	Teacher-created problems (two) that solve for efficiency	None

Daily Homework:	Work on your Simple Machine project!	<i>MS Science, Motion and Forces, 3.2 Review, #'s 1-6, page 89</i> - Complete each question in complete sentences; due tomorrow!	Work on your Simple Machine project!	Study for test tomorrow on Simple Machines and the affiliated math!	Finish your project (essay and machine), they are due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
12th Week	Inclined Plain to compete today! Students that created an incline plain for the Olympics today will compete in today's events! - 50 min	Pulley to compete today! Students that created an incline plain for the Olympics today will compete in today's events! - 50 min	Lever to compete today! Students that created an incline plain for the Olympics today will compete in today's events! - 50 min	Compound Machine to compete today! Students that created an incline plain for the Olympics today will compete in today's events! - 50 min	Journal; complete in Google Docs, send to your teacher - 10 min  Finish any events and award all winners - 40 min
Daily Journal or Bell Work:	None	None	None	None	Written Response: How did the Simple Machines Olympics overall help you to learn about Simple Machines? (one paragraph)
Daily Homework:	Written Response: How does the Inclined Plain makes work easier? Provide specific examples including how it can lessen friction (one paragraph)	Written Response: How does the Pulley makes work easier? Provide specific examples including how it can lessen friction (one paragraph)	Written Response: How does the Wheel and Axle makes work easier? Provide specific examples including how it can lessen friction (one paragraph)	Written Response: How does the Lever makes work easier? Provide specific examples including how it can lessen friction (one paragraph)	None

Unit : Cells

<b>Vocabulary Terms:</b>	<b><i>Cell, Organelle, Nucleus, Cytoplasm, Cell Wall, Chloroplast, Vacuole, Mitochondria, Osmosis, Active Transport, DNA, Double Helix, Biotic, Abiotic</i></b>				
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	

13th Week	<p><i>ML Science, Cells and Heredity, Pages 9-12</i> - Read aloud and discuss: use a Main Idea Web to diagram the basic concepts of a cell: what are the characteristics of life? What are needs of life? Define unicellular and multicellular - 20 min</p>	<p><i>ML Science, Cells and Heredity, Pages 13-15</i> - Read aloud and discuss: what is bacteria? Who is Louis Pasteur? How did his experiment help mankind's overall health? How do bacteria show each of the four characteristics of living things? - 20 min</p>	<p><i>ML Science, Cells and Heredity, Pages 18-21</i> - Use a Main Idea Web to explain the importance of a microscope; What is the difference between a prokaryotic cell vs a eukaryotic cell? What features are found in both? Teacher to use a Venn Diagram on the board to compare and contrast both - 25 min</p>	<p>(Part I of III) Students individually, go to the website "www.purposegames.com/" and create a game about the various organelles, their functions, and Prokaryotic or Eukaryotic cells; create a login in needed; If the site doesn't work, complete the following alternate - using poster board divide the page in half; on the left side create a table that lists three columns, listing the organelles in a Eukaryotic cell in one column, their function in the second column, and if a Prokaryotic cell has that organelle in the third column; on the right side, illustrate, color, and label BOTH a Eukaryotic plant cell and an animal cell; students should list and define all organelles listed on page 22 and explained in this section - 45 min</p>	<p><i>ML Science, Cells and Heredity, Pages 16-17</i> - Using these pages as a guide, students will take a drop of pond water and look under a microscope to see unicellular life; students should illustrate what they see and compare it to those on page 17; answer #'s 1-5 under "Conclude" on page 17; make sure to classify each organism seen by movement, sketch, and what magnification power that you used to see it - 30 min</p>
	<p>Discuss a microscope and the proper method to use one; Watch "Using a microscope The parts and how to focus" on YouTube (5:51 min) and discuss the parts of the microscope and their importance - 15 min</p>	<p><i>ML Science, Cells and Heredity, Pages 13-15</i> - Review "Pasteur's Experiments" on page 15; How did he follow the Scientific Method in each step? Teacher to review the six steps and relate to Pasteur's experiment - 20 min</p>	<p>Teacher to Google images of "Prokaryotic Cells" and "Eukaryotic Cells" to show the students; note the differences in each and how some move on their own; why do you think they are so diverse? - 10 min</p>		
	<p><i>ML Science, Scientific Thinking Handbook, R14</i> - Provide students with a microscope; students to use this page as a reference as to the parts of the microscope and how to properly view items under the lens; if prepared slides are available, students may view them - 15 min</p>	<p>Watch "Biology: Cell Structure I Nucleus Medical Media" on YouTube (7:22 min) and discuss: what is the cell theory? What is unicellular? What is multicellular? What are some things that are found inside a cell? What are some ways that all cells are the same? - 15 min</p>	<p><i>ML Science, Cells and Heredity, Pages 22-24</i> - Teacher to introduce the terms "biotic" and "abiotic"; read aloud and discuss: What are chloroplasts? What are mitochondria? What are the ribosomes, cytoplasm, ER, and nucleus? What is the purpose of each organelle? - 15 min</p>	<p>Teacher to prepare students for the microscope lab tomorrow; provide instructions about what to do and why; explain to not dispose of the pond water down the drain as life should be returned to nature (not the drain) - 5 min</p>	<p>(Part II of III) Continue working on your "Purpose Games" assignment individually or in pairs on your poster board of creating a table of organelles on the left and illustrations of cells on the right - 25 min</p>
Daily Journal or Bell Work:	<p>What do you know about cells? Try to think of five things to list</p>	<p>Name three parts of a microscope and their purpose</p>	<p>What does unicellular mean? What does multicellular mean?</p>	<p>What are organelles? What does the word "organelle" mean? List four that you know without using your book</p>	<p>None</p>
Daily Homework:	<p>Written Response: What four characteristics are common to all living things?</p>	<p><i>ML Science, Cells and Heredity, 1.1 Review, #'s 1-6, page 15</i> - Complete each question in complete sentences; due tomorrow!</p>	<p>Define cell membrane, cytoplasm, eukaryotic cell, nucleus, organelle, and prokaryotic cell for tomorrow!</p>	<p><i>ML Science, Cells and Heredity, 1.2 Review, #'s 1-6, page 24</i> - Complete each question in complete sentences; due tomorrow!</p>	<p>Written Response: Illustrate the difference between a prokaryotic and a eukaryotic cell; use your textbook or the Internet if needed</p>
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

14th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 10 min	Journal; complete in Google Docs, send to your teacher - 10 min
	<i>ML Science, Cells and Heredity, Pages 26-28</i> - Read aloud and discuss: use a Main Idea Web to diagram how organisms can be classified; what are Archaea, Bacteria, and Eukarya? What are paramecium? How do they move? - 20 min	(Part III of III) Finish making your "purpose games" assignment, or your table of organelles and your illustration of the plant cell and animal cell; make sure that each organelle is labeled in your drawing, make sure that each organelle has their function labeled on your chart and if a Prokaryotic cell also has that organelle - 30 min	<i>ML Science, Cells and Heredity, Page 31</i> - Students in pairs, complete the Mini-lab on page 31 by creating a model of a cell; using the poster board as a base, label each organelle clearly with a marker; answer the questions and "Challenge" via Google Docs and submit to your teacher - 35 min	<i>ML Science, Cells and Heredity, Page 35</i> - Students in pairs, using Google Docs complete #'s 6-17 and submit to your teacher; one page per student - 20 min	<i>ML Science, Cells and Heredity, Page 44</i> - Students in pairs, complete Mini-lab on page 44; answer questions via Google Docs and submit to your teacher; how does this lab demonstrate how cells function? - 20 min
	Watch "How a Paramecium Eats!" on YouTube (1:46 min) and discuss: how does a paramecium eat? How does it move? What do the cilia do? Is a paramecium unicellular or multicellular? - 10 min				
	<i>ML Science, Cells and Heredity, Pages 29-32</i> - Read aloud and discuss: how do cells work together for a common purpose? What is tissue? What is an organ? What is the relationship between tissue and organs? - 20 min	Discussion: Teacher to review each organelle and their function; teacher to review tissue, organs, and how they work together; teacher to review Prokaryotic cells vs Eukaryotic cells; what are parameciums? - 15 min	Students in pairs, create a Venn Diagram comparing and contrasting Prokaryotic Cells vs Eukaryotic Cells; have at least three statements in each section (total of nine statements); one diagram per group - 15 min	<i>ML Science, Cells and Heredity, Pages 41-45</i> - Read aloud and discuss: use a Word Triangle diagram for each vocab word; Define carbohydrates, lipids, proteins, and nucleic acids; how much of every cell is made up of water? Why are our bodies made up of 75% water? - 20 min	Students in pairs, using computer paper make a table comparing how carbohydrates, lipids, proteins, and nucleic acids are similar; include a drawing similar to the one used in the Word Triangle Diagram in the previous class on your table; present your table to the class; what features are in all four molecular groups? - 25 min
Daily Journal or Bell Work:	Think of the lab from our previous class, what life was visible under the microscope? What does that tell you about God in our world? Where can you find God's work in our world?	Define tissue and organ; how do they relate to each other?	What is DNA? What does it have contained within it? Where do we find DNA in a cell?	<i>ML Science, Cells and Heredity, Page 33</i> - Read the comparison and draw connections; complete "Make Comparisons"	<i>ML Science, Cells and Heredity, Page 36</i> - Complete #'s 26-27
Daily Homework:	Written Response: Reflect upon the paramecium seen in the video; in what ways does it show the four characteristics of life?	<i>ML Science, Cells and Heredity, 1.3 Review, #'s 1-6, page 32</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Cells and Heredity, Chapter One Review, Page 35</i> - Complete #'s 1-5; due tomorrow!	<i>ML Science, Cells and Heredity, Page 36</i> - Complete #'s 21-25, due tomorrow!	<i>ML Science, Cells and Heredity, 2.1 Review, #'s 1-6, page 45</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

15th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Test on Plant and Animal Cells - 40 min	
	<i>ML Science, Cells and Heredity, Pages 47-52</i> - Read aloud and discuss: Teacher to assist in creating an outline of important information in this section (use the format typically seen in MS Word with numbers and letters); what is photosynthesis? What is glucose? Why do all cells need energy? - 25 min	(Part II of II) Discussion: Teacher to compare the organelles of a cell to the features of a city or parts of a castle (king is the nucleus, city walls are the cell wall, cytoplasm is the courtyard, etc); students to assist in the comparison and illustrate, label and color - 25 min	<i>ML Science, Cells and Heredity, Page 53</i> - Students in pairs, complete the Mini-Lab and answer the questions via Google Docs, submit to your teacher and discuss what occurred within the bottle; teacher to note how the balloon slightly inflated due to cellular respiration in the yeast - 30 min	Students in pairs, create a T-chart comparing and outlining how cellular respiration and photosynthesis are similar; note that glucose (C <sub>6</sub> H <sub>12</sub> O <sub>6</sub> ) and Oxygen (6O <sub>2</sub> ) are used in each; notice that energy are used in each (sun and ATP); students to list differences such as which organelle they occur within; review with the class - 20 min		
	(Part I of II) Discussion: Teacher to compare the organelles of a cell to the features of a city or parts of a castle (king is the nucleus, city walls are the cell wall, cytoplasm is the courtyard, etc); students to assist in the comparison and illustrate, label and color - 25 min	Students to review their castle or city; where does cellular respiration fit into your city? Label where photosynthesis or cellular respiration occurs - 10 min	Students in pairs, using a Venn Diagram compare & contrast cellular respiration and photosynthesis in three ways for each section (nine total ways); discuss with class - 15 min			Teacher to review Study Guide for Test tomorrow on Plant and Animal Cells - 25 min
		Watch "Cellular Respiration and the Mighty Mitochondria" on YouTube (7:48 min) and discuss the similarities to photosynthesis and cellular respiration; review the process and compare & contrast the two processes - 15 min	<i>ML Science, Cells and Heredity, Page 55</i> - Read aloud and discuss together as a class; review the X-axis (horizontal) and Y-axis (vertical) results; answer questions together as a class and review results - 10 min		Quick Write: Write down anything that you know about this topic that was not on your test - 10 min	
Daily Journal or Bell Work:	What are lipids used to create? What do carbohydrates give to cells?	Teacher to list three organelles on the board; students indicate their purpose in the cell	Teacher to list three different organelles on the board from yesterday; students indicate their purpose in the cell	How are cellular respiration and photosynthesis similar? How are they different?	None	
Daily Homework:	Make a list of five things at your home that could be compared to the parts of a cell? Who/what would be the nucleus? Who/what is the mitochondria? Etc	Students to compare the organelles of the cell to our school; who/what is the nucleus? Who/what is the nucleolus? Have at least ten organelles described	<i>ML Science, Cells and Heredity, 2.2 Review, #'s 1-6, page 54</i> - Complete each question in complete sentences; due tomorrow!	Study for Test on Plant and Animal Cells tomorrow! Review your "Terms to Know" from Week Four!	Written Response: Explain how cellular respiration and photosynthesis are similar yet different in three ways (one paragraph)	

Unit : Anatomy & Physiology

<b>Project Theme:</b>	<i>Students will use poster board to illustrate, color, and correctly label one system of the human body. Students must include NO LESS THAN ten organs in this system and provide a "grade level appropriate" written statement of the function of EACH ORGAN. "Grade level appropriate" indicates at least two full sentences per description although more detail will likely be needed. The system is to be fully colored and the drawings must be hand-drawn (no computer images) and should cover as much of the poster board as possible (no small drawings).</i>				
<b>Project Breakdown:</b>	<i>Students will illustrate two of the six systems of the human body as provided below on poster board. Their illustration must be large and encompass most of the poster board; it is not to be a computer image or print out. The illustration must be fully-colored and neatly drawn/colored. The illustration must include no less than twelve organs that appropriately and correctly operate in conjuncture with the selected system. For example, if students select the Circulatory System they should only illustrate organs that are in and work within that system. Students will write a caption (as the requirements indicate above) for each of their ten organs in their system. Research may need to be conducted to learn about additional organs in the system as we may only cover major organs in class.</i>				
<b>Project Options:</b>	<i>Skeletal System, Muscular System, Digestive System, Central Nervous System, Circulatory System, Respiratory System; Students MAY NOT use the Endocrine or Reproductive Systems</i>				
<b>Vocabulary Terms:</b>	<i>Anatomy, Cell, Tissue, Muscle, Organ, System, Tendon, Ligament, Aorta, Circulatory System, Skeletal System, Muscular System, Bi, Tri, Quad, Minor, Major, Homeo, Stasis, Neuron, Cilia, Dermis, Epidermis,</i>				
<b>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</b>					
<b>Timeline:</b>	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
16th Week	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Journal; complete in Google Docs, send to your teacher - 10 min
	Teacher to review photosynthesis and the steps involved; students MUST memorize the formula for photosynthesis (NO EXCUSES!) and be able to mathmatically match up what happens to the molecules on the left side of the formula verses the right side (coverted from water and carbon dioxide to glucose and oxygen) - 20 min	<i>ML Science, Cells and Heredity, Pages 56-59</i> - Read aloud and discuss; use a Word Triangle to help define and picturize diffusion, passive transport, and osmosis; teacher to demonstrate the mini-lab to the students on page 56; discuss how diffusion would work in your body with salt, sugar, or other elements - 25 min	<i>ML Science, Cells and Heredity, Pages 60-63</i> - Read aloud and discuss what active transport, endocytosis, and exocytosis are; use a Word Triangle to illustrate a picture and list facts about them; compare each to the castle/city relation for a continued connection to understanding - 20 min	<i>ML Science, Cells and Heredity, Page 62</i> - (Part I of II) Students to conduct the first part of this lab today and the second part in the next class period; students to work in pairs to examine and record results; submit answers via Google Docs to your teacher - 25 min	<i>ML Science, Cells and Heredity, Page 62</i> - (Part II of II) Students to complete the second part of the previous day's lab in today's class period; students to work in pairs to examine and record results; submit answers via Google Docs to your teacher - 15 min

	<p>Teacher to review cellular respiration and the formula for it; note the similarities to the formula for photosynthesis; students must explain what happens in the process and what happens to the molecules on both sides of the arrow - 15 min</p>	<p>Teacher to review passive transport; discuss what would happen if oxygen movement into cells required energy? Compare cells to the concept of a city or castle; what is passive transport like in that comparison? - 15 min</p>			
	<p>In Google Docs, students to explain what specifically happens to the molecules in photosynthesis in the chloroplasts and to the molecules in the mitochondria in cellular respiration; submit to your teacher - 15 min</p>	<p>Teacher to review and discuss Osmosis; how would it relate to the city/castle description? Watch "Osmosis and Water Potential (Updated)" on YouTube (9:57 min) and discuss how osmosis works and would connect to the city/castle correctly - 15 min</p>	<p>(Part I of III) Students to illustrate, color, and label how materials enter/exit a cell through passive transport, active transport, osmosis, endocytosis, and exocytosis; students must label what specifically is occurring in each process to demonstrate their understanding of the material; artwork and coloring should be clearly done to indicate what each process is specifically doing; especially note which processes REQUIRE ENERGY and which DO NOT - 25 min</p>	<p>(Part II of III) Students to illustrate, color, and label how materials enter/exit a cell through passive transport, active transport, osmosis, endocytosis, and exocytosis; students must label what specifically is occurring in each process to demonstrate their understanding of the material; artwork and coloring should be clearly done to indicate what each process is specifically doing; especially note which processes REQUIRE ENERGY and which DO NOT - 25 min</p>	<p>(Part III of III) Students to illustrate, color, and label how materials enter/exit a cell through passive transport, active transport, osmosis, endocytosis, and exocytosis; students must label what specifically is occurring in each process to demonstrate their understanding of the material; artwork and coloring should be clearly done to indicate what each process is specifically doing; especially note which processes REQUIRE ENERGY and which DO NOT - 25 min</p>
Daily Journal or Bell Work:	<p>What is cellular respiration? How is it different than photosynthesis?</p>	<p>What is osmosis? What do you know about it?</p>	<p>What is passive transport? Describe how it works</p>	<p>What is active transport? Describe how it works</p>	<p>What do you think would happen if osmosis required energy? How would it effect plants?</p>
Daily Homework:	<p>Written Response: How do plants help clean the air for humans and animals to breathe? Explain your answer (one paragraph)</p>	<p>Written Response: What are two ways that you could test osmosis at home to watch it occur?</p>	<p>Use a Venn Diagram to compare and contrast Active Transport and Passive Transport in six ways total</p>	<p><i>ML Science, Cells and Heredity, 2.3 Review, #'s 1-6, page 63</i> - Complete each question in complete sentences; due tomorrow!</p>	<p><i>ML Science, Cells and Heredity, Page 67</i> - Complete #'s 11-17; due tomorrow!</p>
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	<p>Journal; complete in Google Docs, send to your teacher - 10 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Bell Work; complete in Google Docs, send to your teacher - 5 min</p>	<p>Journal; complete in Google Docs, send to your teacher - 10 min</p>
	<p><i>ML Science, Human Biology, Pages 9-12</i> - Read aloud and review previous knowledge about cells, tissues, and organs; how does each work together to create a system? Use a "Main Idea Web" graphic organizer to outline how they connect to each other - 25 min</p>	<p><i>ML Science, Human Biology, Pages 14-16</i> - Read aloud and use a "Four Square Diagram" to connect four statements about bones; refer to the mini-lab discussion on page 14 and complete together as a class; how do bones act as a lever? What other areas are similar to simple machines? - 25 min</p>	<p>Teacher to provide a blank print-out of the human skeleton; review the thirty bones and ten muscles to know in the human body and their correct location - 10 min</p>	<p>Using the previously provided blank skeleton print-out, review the thirty bones and ten muscles to know in the human body and their correct location - 10 min</p>	<p>Using the previously provided blank skeleton print-out, review the thirty bones and ten muscles to know in the human body and their correct location - 10 min</p>

17th Week	<i>ML Science, Human Biology, Page 10</i> - Students in pairs, complete the mini-lab on page 10 together; make a list of seven everyday activities and which systems are used in each; record you answers and be prepared to share them with the class - 25 min	<i>ML Science, Human Biology, Page 17</i> - Refer to the diagram of the various bones listed; students MUST KNOW (NO EXCEPTIONS) thirty bones and their correct location in the body; those bones are: cranium, ribs, vertebrae, scapula, humerus, ulna, radius, clavicle, patella, femur, tibia, fibula, tarsals, metatarsal, phalanges, carpals, metacarpals, mandible, pelvis, sacrum, sternum, coccyx, talus, maxilla, phalanx, teeth, zygomatic, ossicles, nasal, calcaneus; muscles are: pectoral, biceps, triceps, quadriceps, hamstring, abdominal, obliques, deltoids, latissimus dorsi, trapezius	<i>ML Science, Human Biology, Pages 18-20</i> - Read aloud and discuss the three types of joints in the human body and provide an example of each by location - 15 min	<i>ML Science, Human Biology, Pages 22-25</i> - Read aloud and discuss; use a "Main Idea Web" to organize four statements about muscles; complete the mini-lab on page 22 as a class and discuss; what are the three types of muscles? - 20 min	Teacher to Google images of the skeleton and muscular system of animals and humans (bird, dog, whale, chimpanzee); how do they compare and contrast? How similar are animal skeletons and muscular system to ours? Discuss at least three ways for each - 15 min
			<i>ML Science, Human Biology, Page 19</i> - Students in pairs, complete the mini-lab on page 19 via Google Docs and share your responses with your teacher - 20 min	Discussion: Introduce Latin conjugates (bi, tri, quad, minor, major, homeo, stasis) and their meaning; students in pairs, create a chart of various muscles, their locations, and what type they are; don't use proper names right now, just location is fine - 20 min	<i>ML Science, Human Biology, Pages 26-27</i> - Students in pairs, read together and outline how muscles develop; answer: what is the importance of exercise for your body? What are tendons? - 15 min
Daily Journal or Bell Work:	Define: cell, tissue, and organ	What is homeostasis? Provide an example of how your body regulates it.	What are compact bone? What are spongy bone?	Correctly locate the following bones: radius, ulna, tibia, fibula	Correctly locate the following bones: cranium, pelvis, patella, clavicle
Daily Homework:	<i>ML Science, Human Biology 1.1 Review, #'s 1-6, page 12</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Human Biology, "Think Science", Page 13</i> - Read and complete the questions under "Make Inferences" and "Challenge"; due tomorrow!	<i>ML Science, Human Biology 1.2 Review, #'s 1-6, Page 20</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Human Biology, "Math in Science", Page 21</i> - Read and complete the three questions including "Challenge"; due tomorrow!	Written Response: Create a Venn Diagram comparing and contrasting smooth muscles vs skeletal muscles; three statements for each section (nine total statements)
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Quiz: Human skeleton (thirty bones to know) and muscles - 20 min

18th Week	Watch "How to Learn the Human Bones   Tips to Memorize the Skeletal Bones" on YouTube (8:04 min) and discuss how these tips are helpful to remember the various bones of the human body - 15 min	<i>ML Science, Human Biology, Page 39</i> - Students in pairs, complete the lab on page 39 together and record your observations; submit your responses via Google Docs to your teacher - 20 min	Students in pairs, using a "Cause and Effect" Graphic Organizer identify how respiration occurs by identifying each organ and the processes that they use; one organizer per child; share with the class when complete - 20 min	Using the previously provided blank skeleton print-out, review the thirty bones and ten muscles to know in the human body and their correct location - 10 min	Students to go to the following website and play " <a href="http://www.vocabulary.com/signup/">www.vocabulary.com/signup/</a> "; students may need to create an account the first time that they play and can sign in with their Google account; make sure to indicate that you are part of our school and search by zip code (44104); after you sign-in, go to "Play" to begin - 15 min
	<i>ML Science, Human Biology, Pages 37-39</i> - Read aloud and discuss the role of the respiratory system in your body; complete the mini-lab on page 37 together as a class; review & discuss cellular respiration - 20 min		Teacher to introduce project, discuss details as outlined above; reference the respiratory system as an example, but do not provide too much knowledge - 10 min	Students in pairs, using a "Cause and Effect" Graphic Organizer identify how coughing, laughing, and sneezing occur in the respiratory system; correctly align each organ in the sequence (use your text or the Internet to help you); one organizer per child; share with the class when complete - 20 min	
	Teacher to review the formula for photosynthesis and its components; demonstrate that cellular respiration is the opposite of photosynthesis by showing the equation and how the molecules move throughout it; students to MEMORIZE the formula for cellular respiration - 15 min	<i>ML Science, Human Biology, Page 40-43</i> - Students in pairs, outline these pages by using the "letters & numbers format" previously used; note the location of the lungs, diaphragm, and trachea; relate how they all work together for respiration to occur - 20 min	<i>ML Science, Human Biology, Page 44</i> - Students in pairs, read together and discuss how yoga works; as a class, answer "Explore #'s 1-2" and discuss thoughts - 15 min	Watch "10 minute Morning Yoga for Beginners" on YouTube (10:00 min) and focus on the muscles in the respiratory system that are used while conducting this; students DO NOT have to do any motions that they don't want to do but it would be nice if they gave it a try - 15 min	<i>ML Science, Human Biology, Pages 45-47</i> - Read aloud and discuss the basics of the digestive system; what is the difference between mechanical digestion and chemical digestion? - 15 min
Daily Journal or Bell Work:	What do the Latin terms "bi, tri, quad, major, minor, homeo, stasis" mean in English?	<i>ML Science, Human Biology, Page 31</i> - Complete #'s 1-6	<i>ML Science, Human Biology, Page 33</i> - Complete #'s 1-6	What is the formula for cellular respiration? How is it similar to the formula for photosynthesis?	None
Daily Homework:	<i>ML Science, Human Biology 1.3 Review, #'s 1-6, Page 27</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Human Biology, Page 31</i> - Complete #'s 7-18; due tomorrow!	<i>ML Science, Human Biology, Page 32</i> - Complete #'s 22-28; due tomorrow!	Teacher to provide a print-out of a human skeleton; students will identify all thirty bones and ten muscles to know on the diagram	<i>ML Science, Human Biology 2.1 Review, #'s 1-6, Page 43</i> - Complete each question in complete sentences; due tomorrow!
<b>Vocabulary Terms:</b>	<b><i>Digestive System, Central Nervous System, Circulatory System, Endocrine System, Liver, Pancreas, Skin, Intestines, Stomach, Brain, Disease</i></b>				
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

19th Week	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min
	Teacher to review how digestion works and two types; what would mechanical digestion specifically take place? Where would chemical digestion specifically take place? - 10 min	<i>ML Science, Human Biology, Page 45</i> - Students in groups of 3 or 4, complete the mini-lab on page 45 together; make a table in Google Sheets to record your data and answer the questions; share that table with your teacher; one table per group - 25 min	<i>ML Science, Human Biology, Page 51</i> - Read aloud and discuss as a class; students to answer #'s 1-3 and "Challenge" via Google Docs and submit to your teacher - 20 min	Watch "How do your kidneys work? - Emma Bryce" on YouTube (3:55 min) and discuss the importance of your kidneys to your body; what are some of the duties of your kidneys? - 10 min	Students in pairs, using computer paper create a table with four columns; students will list a minimum of ten organs (one per row) in the first column, what system they are in (2nd column), what they do (3rd column), and a small picture of it (4th column); one table per pair - 30 min
	<i>ML Science, Human Biology, Pages 48-50</i> - Read aloud about the digestive system and the organs; what job does each do? - 20 min		Teacher to visit the following website: " <a href="http://www.sciencefocus.com/the-human-body/top-10-what-are-the-heaviest-organs-in-the-human-body/">www.sciencefocus.com/the-human-body/top-10-what-are-the-heaviest-organs-in-the-human-body/</a> " and discuss the heaviest organs in the body; be VERY CAREFUL with and do NOT discuss #10 since not all students in the class have this organ; students will need to calculate grams to pounds to understand some sizes - 25 min	<i>ML Science, Human Biology, Pages 52-55</i> - Using an outline to gather main ideas and a statement about them, read about the urinary system and its organs; what is the role of each organ? How do they assist the process? - 25 min	
	Students in pairs, using a T-chart compare how the respiratory system and digestive system overlap; how are they different? Share your thoughts with the class - 15 min	Students in pairs, answer and discuss: Think about the organs and steps required when you vomit; what actually is happening in your body? What happens when you choke on food? How does your respiratory system become involved? Discuss your responses - 20 min		<i>ML Science, Human Biology, Page 52</i> - Students in pairs, complete the mini-lab on page 52 and answer the questions via Google Docs, submit to your teacher - 10 min	<i>ML Science, Human Biology, Page 59</i> - Students individually complete #'s 5-14; write the question and answer out in complete sentences via Google Docs, submit to your teacher when complete - 20 min
Daily Journal or Bell Work:	What is peristalsis? Describe how it works	What are villi? How do they assist the digestion process?	What is the purpose of the pancreas? Could you live without this organ?	What is the heaviest organ in the body? What is its function?	What is the purpose of your kidneys?
Daily Homework:	Written Response: Explain how your mouth and esophagus break down food mechanically and chemically	<i>ML Science, Human Biology 2.2 Review, #'s 1-6, Page 50</i> - Complete each question in complete sentences; due tomorrow!	Illustrate what you think the digestive system of a dog or cat may look like compared to a human's digestive system; label the organs as to where you think they may be located	Written Response: What may be happening in your body if you had blood in your urine? Do you think this would be normal?	<i>ML Science, Human Biology 2.3 Review, #'s 1-5, Page 55</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min

20th Week	Teacher to go to the following website: "www.mb-guide.org/learn-basic-medical-terminology.html" and discuss how medical words represent organs or jobs with the human body; students to examine the list and try to create words by pairing beginnings and endings together; share combinations with other students to allow them to decipher them - 20 min	<i>ML Science, Human Biology, Pages 65-69 (stop at "Blood Vessels")</i> - Using a Frame Game Diagram, read aloud and take notes on the heart, blood, and processes of the circulatory system - 25 min	Teacher to present a model of the heart (or use the actual pig heart if you choose) to show the arteries, aorta, chambers, and its presumed functionality - 10 min	<i>ML Science, Human Biology, Pages 72-73</i> - Students in pairs, one graph and paper per student; complete using Google Docs to write your answers and Google Sheets to record your answers; create a a bar or line graph to present your data; share with your teacher when completed - 45 min	<i>ML Science, Human Biology, Pages 74-76</i> - Read aloud about the Immune System; teacher to compare this system to defense in a city or castle; what are cilia? Why do we sneeze? - 20 min
		<i>ML Science, Human Biology, Page 65</i> - Using Google Sheets and the necessary tools, complete the mini-lab on page 65 and record your data in the table; students will ask for the heartrate of at least ten other students in the class and create a graph (line, bar, or pie) demonstrating the rates of the ten different students; compare and contrast them together - 20 min	Watch "The Heart and Circulatory System - How They Work" on YouTube (3:01 min) and discuss how the heart works; what is systolic and diastolic pressure? What is a good blood pressure to have as an adult? - 10 min		Students in pairs, using a "Cause and Effect" Diagram explain how the respiratory, digestive, circulatory, and integumentary (skin) systems each protect the body from foreign elements; one diagram for each system; one set per pair of students - 20 min
	<i>ML Science, Human Biology, Page 60</i> - Students in pairs, students will select ANY THREE questions between #'s 19-26 to answer in complete sentences; however, they MUST ANSWER # 28 as well; one paper per child - 25 min		<i>ML Science, Human Biology, Pages 69-71</i> - Using a Concept Map, read aloud and take notes on the types of blood vessels and the four types of blood; what blood type is the "universal donor"? Which blood type is the "universal recipient"? Why are they called these names? - 25 min		Quick Write: Students individually to write their opinion to this question - which body system that we have studied so far is the most important to your body? Why do you believe that? (one paragraph minimum) - 10 min
Daily Journal or Bell Work:	Write the Latin roots "bi, tri, quad, major, minor, homeo, and stasis" and their meanings	<i>ML Science, Human Biology, Page 60</i> - Complete #'s 20-21 in complete sentences	<i>ML Science, Human Biology, Page 60</i> - Complete #'s 23-24 in complete sentences	<i>ML Science, Human Biology, Page 60</i> - Complete #'s 25-26 in complete sentences	What do you think would happen if you had a blood vessel swell up and blood couldn't go through? Why do you think this?
Daily Homework:	<i>ML Science, Human Biology, Page 61</i> - Read and complete #'s 1-5; due tomorrow!	Explain how a scab forms when you injury yourself	Written Response: Explain how blood moves through the heart, lungs, then back to the heart, and out to the body (one paragraph)	<i>ML Science, Human Biology 3.1 Review, #'s 1-6, Page 71</i> - Complete each question in complete sentences; due tomorrow!	Written Response: Think about the last time that you were ill (sick); how did your body try to rid itself of the foreign materials? Explain your answer using organs, systems, and processes (one paragraph)
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min

21st Week	<i>ML Science, Human Biology, Pages 77-79</i> - Read aloud and discuss antigens, specific and nonspecific responses, and phagocytes - 15 min	Teacher to provide permission slip for "Super Size Me" movie; some adult content including a private medical exam, some swearing (F-bomb included), and others - 5 min	<i>ML Science, Human Biology, Page 82</i> - As a class, analyze this data and create a graph as requested; answer #'s 1-3 and "Challenge" - 20 min	<i>ML Science, Human Biology, Page 85</i> - Students in pairs, complete the mini-lab on page 85 and answer questions including "Challenge" portion - 15 min	(Part II of II) Illustrate, color, and label the layers of skin and the parts of it; include epidermis, dermis, fatty tissue, sweat gland, pores, blood vessels, oil gland, and nerves; assume that the skin was damaged by injury or sun burn; explain in a few sentences which layers would be effected and how - 15 min
	Discussion: Teacher to compare the immune system to police or the military; how does each section that we've discussed relate? Discuss antigen, phagocytes, specific responses, nonspecific responses, T-cells, antibodies, B-cells, and pathogens - 20 min	Students in pairs, answer these two questions by incorporating specific organs, pathogens, and illness prevention: 1. Why should you cover your mouth when you cough? 2. Why is hand sanitizer both good and bad for you? Discuss responses as a class when complete - 25 min	<i>ML Science, Human Biology, Pages 83-86</i> - Read aloud and discuss the layers of skin and its purpose; how do sweat and oil glands help your body? Use a Main Idea Chart to organize the information presented on these pages- 20 min	<i>ML Science, Human Biology, Pages 87-88</i> - Students in pairs, read together and discuss how injuries are healed by the skin and how your skin can be damaged by the weather; discuss as a class - 20 min	Lab: Students to use cotton swabs to extract cheek cells; they will prep a slide with the swab, place one drop of dye on it, place the cover slip atop the dye, and place the slide under the microscope; use the microscope at various magnifying degrees to locate cheek cells; illustrate the cells in your drawing including the nucleus and any parts that you may see; color it for clarity - 30 min
	<i>ML Science, Human Biology, Page 79</i> - Simulate the mini-lab by using containers and lids (or another paired object) as a class; teacher to lead the mini-lab and discussion - 15 min	<i>ML Science, Human Biology, Pages 80-81</i> - Read aloud and discuss how medical science is working to protect against illnesses; what are vaccines? How do they work in your body? - 20 min		(Part I of II) Illustrate, color, and label the layers of skin and the parts of it; include epidermis, dermis, fatty tissue, sweat gland, pores, blood vessels, oil gland, and nerves; assume that the skin was damaged by injury or sun burn; explain in a few sentences which layers would be effected and how - 15 min	
Daily Journal or Bell Work:	What is AIDS? Specifically, mention how it effects your Immune System; use your Chromebook if needed	Why is it important for your body to store B-cells?	Comparing your Immune System to the military or police, what would vaccines, antibiotics, and immunities each relate closest to?	What are the functions of oil glands?	Define: epidermis, dermis, and Integumentary System
Daily Homework:	Research AIDS, Strep Throat, Athlete's Foot, and Malaria; what causes each of these? Remember that the Human Body project is due in nine days!	<i>ML Science, Human Biology 3.2 Review, #'s 1-6, Page 81</i> - Complete each question in complete sentences; due tomorrow!	Work on your Human Body Systems project! It is due in seven days!	Written Response: Think about what you learned today about skin; what do you think a pimple is? What area do you think the pimple exists within?	Work on your Human Body Systems project! It is due in five days!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min

22nd Week	<i>ML Science, Human Biology, Page 92</i> - Students in groups of 3 or 4, complete ANY THREE of the questions between #'s 20-27 in groups; one page per student; discuss results with the class - 25 min	<i>ML Science, Human Biology, Pages 101-103</i> - Using a Main Idea Web, read aloud and discuss the how the nervous system works; how do the eye and ear function? - 25 min	Teacher to review the human ear and eye and parts in them; how do they each work together? How does an image actually appear on the retina of your eye? What are the three small bones in your ear called? - 15 min	Teacher to review the parts of the eye and ear; how do they gather sensations? How is this method similar to your skin? - 10 min	Students in pairs, use a T-chart to list each body system that we have discussed so far (left side) and if it is controlled by the voluntary or autonomic nervous system (right side); discuss results when complete with the class - 15 min
	<i>ML Science, Human Biology, Page 92</i> - Divide the class in half with one student acting as the teacher for each half; complete #'s 28-33 together BUT ALSO ADD one disease for each system; students may use their Chromebooks for help if necessary; present your results to the class - 25 min	<i>ML Science, Human Biology, Page 102</i> - Illustrate, color, and label the different parts of the human eye as depicted on page 102; teacher to provide students with the models of the eye if available - 25 min	<i>ML Science, Human Biology, Page 103</i> - Illustrate, color, and label the different parts of the human ear as depicted on page 103; teacher to provide students with the models of the ear if available - 30 min	<i>ML Science, Human Biology, Pages 104-107</i> - Using a description wheel, read aloud and discuss the CNS, neurons, and parts of the brain; explain how your body receives impulses and messages across your body - 25 min	Watch "Nervous System   Animation explained" on YouTube (2:15 min) and explain the difference between the two areas - 10 min
Daily Journal or Bell Work:	<i>ML Science, Human Biology, Page 91</i> - Complete #'s 8-10	<i>ML Science, Human Biology, Page 91</i> - Complete #'s 11-13	<i>ML Science, Human Biology, Page 91</i> - Complete #'s 14-16		
Daily Homework:	<i>ML Science, Human Biology, Page 93</i> - Read and complete #'s 1-5; due tomorrow!	Work on your Human Body Systems project! It is due in four days!	Work on your Human Body project; it is due in three days!	Work on your Human Body project; it is due in two days!	Complete your Human Body Project, it is due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Journal; complete in Google Docs, send to your teacher - 10 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Bell Work; complete in Google Docs, send to your teacher - 5 min	Test on Human Body and its functions- 40 min
	(Part I of III) Debate & Movie: Over the next three days, students will watch the movie "Super Size Me" on YouTube (1:38:41 min); The man in the film, Morgan Spurlock, eats	(Part II of III) Debate & Movie: Over the next three days, students will watch the movie "Super Size Me" on YouTube (1:38:41 min); The man in the film, Morgan Spurlock, eats McDonalds for	(Part III of III) Debate & Movie: Over the next three days, students will watch the movie "Super Size Me" on YouTube (1:38:41 min); The man in the film, Morgan Spurlock, eats	Review study guide on human body - 30 min	

23rd Week	McDonalds for every meal for 30 days straight; he goes from healthy to very ill quickly to prove that fast food is harmful to your health; MALE NUDITY at 7:35 seconds and F-bomb at 26:44 min, please EDIT! Students will debate whether it is our right as humans to eat whatever we want, or should we take better care of ourselves and our families? Watch movie the first two days (98 total minutes for the movie), then debate the third day with the time remaining - 50 min	every meal for 30 days straight; he goes from healthy to very ill quickly to prove that fast food is harmful to your health; MALE NUDITY at 7:35 seconds and F-bomb at 26:44 min, please EDIT! Students will debate whether it is our right as humans to eat whatever we want, or should we take better care of ourselves and our families? Watch movie the first two days (98 total minutes for the movie), then debate the third day with the time remaining - 50 min	McDonalds for every meal for 30 days straight; he goes from healthy to very ill quickly to prove that fast food is harmful to your health; MALE NUDITY at 7:35 seconds and F-bomb at 26:44 min, please EDIT! Students will debate whether it is our right as humans to eat whatever we want, or should we take better care of ourselves and our families? Watch movie the first two days (98 total minutes for the movie), then debate the third day with the time remaining - 50 min	Quick Write: Write your thoughts in Google Docs about whether it is our right to eat how we want or if we should take better care of our bodies? Were you embarrassed or ashamed by watching this documentary? Do we, as Americans, eat too unhealthy? What can we do about this? Or do we have the right to eat and live how we want to? - 20 min	
Daily Journal or Bell Work:	What is the difference between the voluntary and autonomic nervous systems?	Name three systems controlled by the autonomic nervous systems.	Explain how your nervous system is responding to this question as it is being provided to you currently. How are you perceiving and responding to the question?	What area of your brain would fear come from? Why do you think that?	None
Daily Homework:	<i>ML Science, Human Biology 4.1 Review, #'s 1-6, Page 107</i> - Complete each question in complete sentences; due tomorrow!	Written Response: What part of your brain is responsible for you crying? Would it depend on the reason for you crying? Why or why not?	Written Response: Why do you think that you dream? Connect your response to parts of the brain.	Study for Test tomorrow on the Human Body and its functions!	None

Unit : Periodic Table, Atoms, and Molecules

<b>Vocabulary Terms:</b>	<b><i>Proton, Neutron, Nucleus, Electron, Atomic Number, Atomic Mass, Isotope, Ion, Periodic Table, Group, Period, Iron Triad, Coinage Metals, Reactive, Metal, Nonmetal, Metalloid, Radioactivity, Half-Life,</i></b>				
<b><i>Teacher to ensure that the Explore Learning Gizmos Account is activated prior to this week as students will use Gizmos daily for several weeks.</i></b>					
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min

24th Week	<p><i>ML Science, Chemical Interactions, Pages 2-5</i> - Read aloud and discuss how plants can be used to cure many deadly illnesses; students to create an outline (Letters &amp; Numbers Format) to organize information and view how it relates together; what are some plants that the text mentions help with medical issues? Do you know any plants with medical relief (aloe vera, ginseng, garlic) - 30 min</p>	<p><i>ML Science, Chemical Interactions, Pages 9-12 (stop at "Atomic Numbers")</i> - Read aloud using a "Frame Game" graphic organizer for "atom", "nucleus", and "symbols used"; teacher to discuss each section with the students to ensure content and quality; what are protons? Neutrons &amp; electrons? How do they relate to each other? - 25 min</p>	<p><i>ML Science, Chemical Interactions, Pages 12-15</i> - Read aloud and discuss protons, neutrons, electrons, and isotopes; Use a "Main Idea Web" graphic organizer to answer the following: What are isotopes and ions? How do they form? What creates a positive ion? A negative ion? What is the only particle in an atom that can easily leave the atom? Why is that? - 25 min</p>	<p>Students to go to the following website on their Chromebooks: "<a href="https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html">https://phet.colorado.edu/sims/html/build-an-atom/latest/build-an-atom_en.html</a>"; begin with "Atom" then move on to "Symbol" and "Game"; complete each section step-by-step to learn the material and reinforce what it is that you're reviewing - 20 min</p>	<p><i>ML Science, Chemical Interactions, Pages 17-21</i> - Read aloud and discuss how elements are organized; use a "Main Idea Web" to organize information on the Periodic Table; who was Dmitri Mendeleev? How did he organize the table originally? How do you read the table to understand it? - 25 min</p>
	<p>Students to use their Chromebooks to go to the following website: "<a href="http://www.healthline.com/health/most-powerful-medicinal-plants">www.healthline.com/health/most-powerful-medicinal-plants</a>" and review how plants can help cure many illnesses; teacher to lead discussion on the site; students to select one plant from this list and write a paragraph about it in their own words via Google Docs; submit to your teacher when complete - 15 min</p>	<p><i>ML Science, Chemical Interactions, Page 10</i> - Review the pie charts on this page; what elements are found in both humans and the Earth's crust? Why do you think that this is so? What elements do humans have in us frequently that ensure our survival? Use Google to help answer those questions if needed - 10 min</p>	<p><i>ML Science, Chemical Interactions, Page 13</i> - Students in groups of 3 or 4, complete the mini-lab on this page as indicated; complete the "What Do You Think?" questions as requested via Google Docs and share with your teacher - 20 min</p>	<p>Teacher to review "Atomic Number" and "Mass Number"; what makes up each of these? What would a change in one of these totals alter within the atom? What are isotopes &amp; ions? How do they form? - 10 min</p>	<p>Teacher to provide students with three different colors of Play-Doh!; students will use one color to symbolize protons, another color to symbolize neutrons, and a third color to symbolize electrons; teacher to inform students what element they are to create by reviewing the Periodic Table and making connections; teacher will inform students to add/remove particles to create ions or isotopes as applies - 15 min</p>
Daily Journal or Bell Work:	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for five minutes</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>

Daily Homework:	What are your thoughts about the plants that you just reviewed today? What could be special about them that permits these abilities?	Create a list of as many elements as you can think of; try to have at least fifteen; due tomorrow! It's okay to guess!	<i>ML Science, Chemical Interactions 1.1 Review, #'s 1-6, Page 15</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Chemical Interactions, "Connecting Sciences", Page 16</i> - Complete both questions under "Explore"; due tomorrow!	<i>ML Science, Chemical Interactions, Pages 20-21</i> - Students to write the number of protons, neutrons, and electrons in each of the following elements: Hydrogen, Lithium, Oxygen, Carbon, Copper, Arsenic, and Xenon
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
25th Week	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	<i>ML Science, Chemical Interactions, Pages 29-30</i> - Read aloud and continue creating the table from the previous lesson; what are metalloids? What are Halogens and Noble Gases? Teacher to inform students that Halogens will tend to gain one electron, Alkali Metals will lose one electron, and Noble Gases are already stable - 20 min	<i>ML Science, Chemical Interactions, Pages 31-32</i> - Read aloud and review half-lives; teacher to discuss how half-lives are calculated and provide several examples - 15 min
	<i>ML Science, Chemical Interactions, Pages 22-23</i> - Read aloud and discuss how there are similarities found throughout the Periodic Table; where are the metals, nonmetals, and metalloids found? What do elements that touch each other generally share? - 20 min		Teacher to review protons, neutrons, nucleus, electrons, and other terms; how does the Periodic Table reflect the number of each of these? Students to discuss concerns at this time - 10 min		
	Students to Google the phrases "Coinage Metals" and "Iron Triad"; what metals make up these groups? What do they all have in common? Discuss their usages as a class - 10 min	<i>ML Science, Chemical Interactions, Pages 24-25</i> - Students in groups of 3 or 4, complete the lab step-by-step as directed; use the scale, labeled containers, and the Scientific Method to process each step of the lab; answer all written sections in Google Docs and make your table in Google Sheets;	<i>ML Science, Chemical Interactions, Pages 26-28</i> - Read aloud and make a table indicating which elements and their characteristics are found in specific groups; what are Alkali Metals and Alkali Earth Metals? What is specific about them? - 20 min	<i>ML Science, Chemical</i>	Teacher to go to the following website and play the video: " <a href="http://www.glencoe.com/sites/common_assets/science/virtual_labs/E18/E18.html">www.glencoe.com/sites/common_assets/science/virtual_labs/E18/E18.html</a> "; discuss the information and address questions about how atoms breakdown - 10 min

	Watch "The Periodic Table Song (2018 UPDATE!)" on YouTube (3:05 min) and discuss how each element has a use; reshoot the video if needed to breakdown the uses of some elements listed; which do you recognize? - 10 min	submit to your teacher when complete, one copy of work per student - 45 min	Watch "Alkali metals in water, accurate!" on YouTube (2:22 min) and discuss how quickly the elements react with air and water; what is in the air and water that is quickly causing the reaction? Notice on the Periodic Table how many protons/electrons there are? Could there be a connection in the reactivity? - 10 min	<i>Interactions, Page 31</i> - Students in groups of 3 or 4, complete the lab on this page following each step in order; answer all questions via Google Docs and submit to your teacher - 30 min	Students to go to the following website on their Chromebooks: " <a href="http://www.glencoe.com/sites/common_assets/science/virtual_labs/E18/E18.html">www.glencoe.com/sites/common_assets/science/virtual_labs/E18/E18.html</a> " to complete a simulation about half-lives; open the "Journal", "Table", and "Calculator" to help with the process; you cannot print your data but you can "screenshot" and email it to your teacher - 20 min
Daily Journal or Bell Work:	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	None	None
Daily Homework:	Using the Periodic Table, write the number of protons, neutrons, and electrons in a typical atom of Iron, Cobalt, Nickel, Copper, Silver, and Gold	<i>ML Science, Chemical Interactions 1.2 Review, #'s 1-6, Page 23</i> - Complete each question in complete sentences; due tomorrow!	Based upon your knowledge so far, how reactive do you think Iron Triad and Coinage Metals are? Why do you believe that?	Think of three places that you see Noble Gases frequently. It's not as hard as it may seem...	<i>ML Science, Chemical Interactions, Page 35</i> - Complete #'s 1-7; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min
	(Part I of III) Students in pairs, using poster board students will illustrate, color, and label the Periodic Table of Elements...	<i>ML Science, Chemical Interactions, "Interpreting Tables", Page 37</i> - Review the table provided as a class and discuss connections in the groups & elements; as a class, solve privately #'s 1-6, then review responses for accuracy - 20 min	(Part III of III) Complete your poster board illustration, coloring, and labeling of the Periodic Table of Elements with an example atom - 20 min	<i>ML Science, Chemical Interactions, Pages 41-44 (stop at "Same Elements, Different Compounds")</i> - Read aloud and discuss how elements bond; use a "Word Wheel" graphic organizer to outline chemical formulas; what part of the atom actually creates the bond? - 20 min	<i>ML Science, Chemical Interactions, Page 44</i> - Review the table of chemical formulas illustrating HCl, Water, and others; teacher to illustrate how the bonds connect together by showing the atoms' outermost electron orbits connecting to share electrons - 20 min

26th Week	Elements; students will color each group a different color and label it, students MUST fill in the symbol, atomic number, and atomic mass of each element; students will write a statement about each group that discusses their characteristics, students will label the "Iron Triad" and "Coinage Metals" and color them a distinct color; students will illustrate, color, and label an atom on their poster board correctly labeling the parts of the atom including the nucleus and electron cloud - 45 min	(Part II of III) Work on your illustration, coloring, and labeling of the Periodic Table of Elements with all required work completed - 25 min	Students in groups of 3 or 4, correctly create positive and negative ions, as well as isotopes for the following elements: Carbon, Chlorine, Potassium, Phosphorus, and Silicon; you may color the different parts of the atom if you choose or use +, N, and - signs to indicate charges - 25 min	Teacher to discuss how electrons travel the electron cloud in orbitals; the formula for calculating the maximum number of electrons in each orbital is $2(n)^2$ , or "two times N-squared" in that "N" represents the orbital number; teacher to demonstrate how the formula works and illustrate elements to show which electrons end up in which orbital - 15 min  Students to use Google Paint or a similar medium to illustrate how hydrogen & oxygen combine to make water, carbon & oxygen to make carbon dioxide, and sodium and chlorine make table salt - 10 min	<i>ML Science, Chemical Interactions, Pages 44-45</i> - Read aloud and discuss how the same elements can combine in different ways to make different things; explain that ice, water, and water vapor are NOT examples of this because those are changed in states of matter; teacher to show hydrogen & oxygen combining to make water, hydrogen peroxide, and ozone; teacher to model how to properly write the formula for various compounds - 25 min
Daily Journal or Bell Work:	Students to go to "Gizmos" for ten minutes and complete the practice in Half-Lives	Define any six terms from the "Terms to Know for Week Twenty-Four" in your own words	Define any six terms from the "Terms to Know for Week Twenty-Four" in your own words; must be different than the previous lesson	Illustrate a positive ion of Nitrogen and Aluminum; label all parts of the atom	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes
Daily Homework:	<i>ML Science, Chemical Interactions, Page 35</i> - Complete #'s 8-22; due tomorrow!	<i>ML Science, Chemical Interactions, "Interpreting Tables", Page 37</i> - Answer #'s 7-8, due tomorrow!	<i>ML Science, Chemical Interactions, Page 36</i> - Complete #'s 23-32; due tomorrow!	Students will attempt to show how nitrogen & hydrogen bond together to make ammonia, and carbon & four hydrogen atoms bond to make methane gas	<i>ML Science, Chemical Interactions 2.1 Review, #'s 1-6, Page 45</i> - Complete each question in complete sentences; due tomorrow!
<b>Vocabulary Terms:</b>	<b><i>Chemical Formula, Subscript, Compound, Ionic Bond, Covalent Bond, Molecule, Polar Covalent Bonds</i></b>				
<b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min

27th Week	<p><i>ML Science, Chemical Interactions, Pages 47-51 (stop at "Polar Covalent Bonds")</i> - Read aloud and use a "Main Idea &amp; Details" graphic organizer to outline chemical bonds as ionic bonds and covalent bonds; teacher to explain the difference between transferring and share electrons; draw models to illustrate - 25 min</p>	<p>Teacher to review previous content to ensure understanding and competency including the formula for electrons in various orbitals - 10 min</p>	<p>Teacher to review previous content to ensure understanding and competency including illustrating covalent, ionic, and polar covalent bonds - 10 min</p>	<p><i>ML Science, Chemical Interactions, Page 56</i> - Students in pairs, complete the lab on this page by testing which items are best conductors; answer all questions via Google Docs and share with your teacher - 25 min</p>	<p><i>ML Science, Chemical Interactions, Pages 58-59</i> - Read aloud and discuss how element take different appearances in different substances; use Carbon as an example - 15 min</p>
	<p>Teacher to provide students with a dolob of shaving cream; spread the shaving cream across the desk; illustrate in the shaving cream two atoms to bond together; try using Halogens bonding with Alkaline metals or Oxygen's Group with Alkaline Earth Metals; teacher to check bonds before "okaying" student work - 20 min</p>	<p><i>ML Science, Chemical Interactions, Pages 51-54</i> - Read aloud and reintroduce polar covalent bonds; teacher to model how to illustrate covalent and ionic bonds as well as polar covalent bonds - 20 min</p>	<p><i>ML Science, Chemical Interactions, Pages 56-58 (stop at "Bonds can make the...")</i> - Read aloud and use a "Word Wheel" graphic organizer to outline the term "metallic bonds"; what three properties do all metals have? - 20 min</p>	<p>Teacher to introcude "Electron Dot Diagrams" and how to illustrate them; teacher to show how Electron Dot Diagrams illustrate the number of electrons in the outermost orbital and are to be used when appropriately illustrating bonding (polar, covalent, ionic); teacher to model how to complete this - 20 min</p>	<p>Students in pairs, use styrofoam balls and toothpicks to create models of molecules; students to color the styrofoam balls different colors with magic markers to represent different atoms; the toothpicks will represent the bonding; glue your molecules to construction paper, write a caption on a notecard and glue to the construction paper neatly; students to write the Electron Dot Diagram for their molecules on a notecard and adhere it to the construction paper as well - 30 min</p>
Daily Journal or Bell Work:	<p>Use the formula for orbitals to calculate the maximum number of electrons in the first five orbitals of an atom</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>	<p>Illustrate a polar covalent bond for Carbon Dioxide</p>	<p>Define any four terms from the "Terms to Know for Week Twenty-Seven"</p>	<p>Students to go to "<a href="http://www.uen.org/core/science/studentactivities/chemistry.shtml">www.uen.org/core/science/studentactivities/chemistry.shtml</a>" and complete any Chapter Three simulation</p>
Daily Homework:	<p><i>ML Science, Chemical Interactions, "Math in Science", Page 46</i> - Read and complete #'s 1-3 and "Challenge"; due tomorrow!</p>	<p>Student to illustrate polar covalent bonds for Methane gas, Chlorine gas, and Ozone (three Oxygen atoms fused together)</p>	<p><i>ML Science, Chemical Interactions 2.2 Review, #'s 1-6, Page 54</i> - Complete each question in complete sentences; due tomorrow!</p>	<p><i>ML Science, Chemical Interactions, Page 63</i> - Complete #'s 7-13; due tomorrow!</p>	<p><i>ML Science, Chemical Interactions 2.3 Review, #'s 1-6, Page 59</i> - Complete each question in complete sentences; due tomorrow!</p>
<b>Vocabulary Terms:</b>	<p><b><i>Law of Conservation of Mass, Coefficient, Formula, Balanced Equations, Bond Energy, Exothermic Reaction, Endothermic Reaction, Photosynthesis, Products, Reactants, Yields</i></b></p>				
<p><b><i>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</i></b></p>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

28th Week	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Teacher to review balancing equations with coefficients; review the terms affiliated with formulas and balancing equations - 10 min
	Teacher to review Electron Dot Diagrams, how to draw them as bonds, and provide several examples - 10 min	<i>ML Science, Chemical Interactions, "Interpreting Tables", Page 65</i> - Review the table as a class and discuss the types of bonds, melting points, and properties of each; complete #'s 1-2 as a class, then in pairs complete #'s 3-6 and review your responses for accuracy - 20 min	Teacher to review how to balance equations and how to correctly count what is located on each side (reactants & products); what is the Law of Conservation of Mass? What does it state about changing materials? - 10 min	<i>ML Science, Chemical Interactions, Pages 82-84</i> - Read aloud and discuss; use a "Main Ideas & Supporting Ideas" graphic organizer to outline balancing equations, coefficients, and how to ensure the Law of Conservation of Mass; Teacher to lead discuss and review of content - 20 min	<i>ML Science, Chemical Interactions, Page 86-89 (stop at "Endothermic Reactions...")</i> - Read aloud and discuss how some reactions absorb or release energy; teacher to provide examples of those that give off energy; teacher to demonstrate these reactions or show them online (Magnesium ribbon burning, Sodium in water); burn Magnesium OUTSIDE, it is very bright! - 25 min
	Students to create a wordsearch, crossword, or other puzzle using all of the "Terms to Know from Week Fifteen AND Week Seventeen"; students may use graph paper, computer paper, or the following website to create their puzzle: "www.puzzle-maker.com/CW"; when complete, provide your puzzle to your teacher to pass out to another student to solve; teacher to make photocopies of student work before passing out - 35 min	<i>ML Science, Chemical Interactions, Pages 78-81</i> - Read aloud and use a "Concept Map" graphic organizer to outline how to balance equations, what are reactants, products, and yields; teacher to provide examples of balancing equations - 25 min	<i>ML Science, Chemical Interactions, Page 79</i> - Students in groups of 3 or 4, complete the lab as directed; record answers in Google Docs and share with your teacher; Teacher to assist as needed and provide direction to groups - 35 min	Teacher to review several formulas and modeled how to balance them - 10 min	Watch "How to Balance a Chemical Equation EASY" on YouTube (8:54 min) and discuss how to balance both sides; what are the reactants & products? What are coefficients? - 10 min
Daily Journal or Bell Work:	<i>ML Science, Chemical Interactions, Page 63</i> - Complete #'s 16-17	<i>ML Science, Chemical Interactions, Page 64</i> - Complete #'s 26-28	<i>ML Science, Chemical Interactions, "Interpreting Tables", Page 65</i> - Complete #'s 7-8	Illustrate the Electron Dot Diagrams for the following atoms: Lithium, Magnesium, Boron, Carbon, Oxygen, and Neon	None
Daily Homework:	<i>ML Science, Chemical Interactions, Page 64</i> - Complete #'s 18-21; due tomorrow!	<i>ML Science, Chemical Interactions, Page 64</i> - Complete #'s 22-25; due tomorrow!	Teacher to create five formulas of equations; students to balance each formula correctly; due tomorrow!	<i>ML Science, Chemical Interactions 3.2 Review, #'s 1-6, Page 84</i> - Complete each question in complete sentences; due tomorrow!	Teacher to create five equations with exothermic energy; students to balance each formula correctly; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	

29th Week	<i>ML Science, Chemical Interactions, Page 89-91</i> - Read and review the box on Endothermic Reactions; what are processes require energy to make a reaction occur? Name a few types of energy to help think of examples - 20 min	Teacher to review Electron Dot Diagrams and provide examples of them; students to use the to illustrate bonds and outline formulas with endothermic & exothermic reactions - 25 min	Teacher to review Electron Dot Diagrams, illustrating bonds, and outline formulas with endothermic & exothermic reactions; create a T-chart of examples of both types of reactions - 20 min	Review Study Guide on Periodic Table, Atoms, and Types of Bonds - 25 min	Test on Periodic Table, Atoms, and Types of Bonds - 35 min
	Teacher to provide several examples of formulas that require balancing on both sides; identify reactants and products; teacher to assist in helping to balance equations; what is a coefficient? Students may work in pairs to assist eachother after practicing individually several times; practice illustrating Electron Dot Diagrams with the formulas to show ionic & covalent bonds - 25 min	<i>ML Science, Chemical Interactions, Pages 94-97</i> - Read aloud and discuss how respiration and photosynthesis are opposites by formula; how do we rely on chemical reactions? Teacher to make a T-chart outlining reasons as students read aloud and launch discussions - 20 min	<i>ML Science, Chemical Interactions, Pages 97-99</i> - Review page 97 and how catalytic converters work in cars; how do they filter out toxins from the environment? In your opinion, should all cars have these? Teacher to discuss "Ohio E-check Law" about vehicle testing for road safety; review and Google what products are found in materials that you have at home or in your classroom - 25 min	Play a "Kahoot!" on Ionic and Covalent Bonds, Atoms, and the Periodic Table; the following are recommended for this unit "Ionic bonding & covalent bonding, 16 questions, 20 seconds", "Ionic and Covalent Bonding, 13 questions, 20 seconds", and "Chemistry: Periodic Table, 15 questions, 30 seconds" - 20 min	
Daily Journal or Bell Work:	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Write the Electron Dot Diagram with bonds for the formula for photosynthesis	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	None
Daily Homework:	Teacher to create ten equations with exothermic or endothermic energy; students to balance each formula correctly; due tomorrow!	<i>ML Science, Chemical Interactions 3.3 Review, #'s 1-6, Page 91</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Chemical Interactions 3.4 Review, #'s 1-6, Page 99</i> - Complete each question in complete sentences; due tomorrow!	Study for your test tomorrow on the Periodic Table, Atoms, and Types of Bonds	None

Unit : Electricity and Circuits

<b>Terms to Know:</b>	<i>Atom, Electron, Proton, Joule, Electric Charge, Electric Field, Static Charge, Induction, Volt (Voltage), Conductor, Insulator, Resistance, Ohm, Grounding, Battery, Electric Current, Path of Least Resistance, Ampere (Amps), Ohm's Law, Electric Cell, Circuit, Resistor, Short Circuit, Electronic, Binary Code, Digital, Analog, Computer</i>				
<b>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 5 min	Bellwork - 5 min

30th Week	<p><i>ML Science, Electricity and Magnetism, Pages 9-12 (stop at "How Materials Affect Static Charging")</i> - Read aloud using a "Four Square" graphic organizer to outline electric charge and static charge; Teacher to review protons, electrons, and charges; how do charges of atoms relate directly to electricity? - 25 min</p>	<p><i>ML Science, Electricity and Magnetism, Page 9</i> - Teacher to provide materials to students; students in groups of 3 or 4 complete the mini-lab together; answer questions via Google Docs and submit to your teacher - 15 min</p>	<p><i>ML Science, Electricity and Magnetism, Page 14</i> - Students in groups of 3 or 4, complete the mini-lab together and answer all questions via Google Docs; Teacher to review results and reasoning for what occurred - 20 min</p>	<p>Teacher to review how lightning occurs and how electronic particles move throughout the sky; students to illustrate, color, and label a nature scene depicting lightning in the sky striking and surrounding a city, forest, or scene in general; quality work is expected; students MUST label the transfer of positive and negatively charged particles to display knowledge - 30 min</p>	<p>Teacher to review and illustrate examples the terms conductor, insulator, resistance, Ohms, and grounding; Use examples in nature and in machines; review homework and discuss where these features are found in the classroom and school - 10 min</p>
	<p>Watch "The science of static electricity - Anuradha Bhagwat" on YouTube (3:40 min) and discuss how static electricity occurs at home, in school, and all around us - 10 min</p>	<p><i>ML Science, Electricity and Magnetism, Pages 12-16</i> - Read aloud and discuss induction and polarization; create a T-chart of machines/technology on the left and how you think they use induction or polarization on the right - 20 min</p>	<p><i>ML Science, Electricity and Magnetism, Pages 18-21</i> - Read aloud and discuss how electricity is moving atoms and atomic particles; what is potential energy? What are volts (voltage)? Describe how lightning occurs - 15 min</p>		<p>Teacher to take students to the basement of the church to show them the electric panels, boiler, circuit boards, and piping; review and discuss how these all connect together and work to provide heat, electricity, and water to the campus - 15 min</p>
	<p>Teacher to review from previous lessons how the electrons travel from object to object (or atom to atom), thus creating bonds and valence electrons; illustrate on the board and students help outline together - 10 min</p>	<p><i>ML Science, Electricity and Magnetism, Page 17</i> - Read aloud about electric eels and discuss how they use electricity to catch food; discuss if you feel that they're dangerous; what don't they shock themselves? Answer "Explore #'s 1-2" together and discuss - 10 min</p>	<p>Teacher to Google Images of voltage to show how volts carry through a circuit; Teacher to Google Images of an electric car; students to discuss how they believe it operates - 10 min</p>	<p><i>ML Science, Electricity and Magnetism, Pages 22-25</i> - Read aloud and discuss how conductors and insulators are necessary for electricity to be safely contained; what is resistance? What are Ohms? How does grounding prevent shock? - 15 min</p>	<p><i>ML Science, Electricity and Magnetism, Page 22</i> - Students in groups of 3 or 4, complete the lab on this page together; test and retest items to see which works best and why; create theories; submit answer via Google Docs to your teacher - 25 min</p>
Daily Journal or Bell Work:	<p>What are the parts of an atom? What parts bond together? How do you think that this may create electricity?</p>	<p>Teacher to provide students balloons; each student inflate a balloon; demonstrate static electricity and illustrate &amp; label what is occurring</p>	<p>Students to go to "Gizmos" in the Explore Learning website and work for ten minutes</p>	<p>How is lightning similar to a shock that you receive from a doorknob? How is it different?</p>	<p>Define conductor, insulator, resistance, and grounding</p>
Daily Homework:	<p>Create a list of five pairs of items that static electricity will between; specify which is an insulator and which is a conductor based upon today's video</p>	<p><i>ML Science, Electricity and Magnetism 1.1 Review, #'s 1-6, Page 16</i> - Complete each question in complete sentences; due tomorrow!</p>	<p>Written Response: How do you think an electric car functions? There is no right or wrong answer, just think about it; draw a picture if needed</p>	<p>Locate and write a list of five items at your home that use electricity; where is the insulator on each of these items? How are these items grounded?</p>	<p><i>ML Science, Electricity and Magnetism 1.2 Review, #'s 1-7, Page 25</i> - Complete each question in complete sentences; due tomorrow!</p>
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min
31st Week	<i>ML Science, Electricity and Magnetism, Pages 28-30</i> - Read aloud and use a "Word Wheel" to outline electric current; provide examples and features of current; what are amps? What is the "path of least resistance" and how does it relate to water and electricity? - 20 min	Prior to class, Teacher to Google "Ohm's Law worksheets" and print one that is applicable to the level of the class; together, individually, and in groups complete various problems on this worksheet to reinforce knowledge of this concept - 15 min	Illustrate, color, and label the parts of a primary cell vs a storage cell; teacher to provide an example of a primary cell and storage (if possible) for students to see first hand; students to illustrate and color to their best ability; make sure to label the electrons, terminals, and types of insulators for each - 25 min	<i>ML Science, Electricity and Magnetism, Pages 46-49</i> - Read aloud and discuss how circuits work; relate to the prior class's lab; what is a fuse? What in our school do circuits exist? Students to quietly work through the campus outlining where circuits are and try to find the fuse boxes? What is a GFCI outlet? - 25 min	<i>ML Science, Electricity and Magnetism, Page 48</i> - Students in groups of 3 or 4, complete the mini-lab together and answer the questions via Google Docs, submit to your teacher; make a Venn Diagram to answer the "Challenge" question about home vs school outlets - 20 min
	Teacher to review Ohm's Law and the math formula for it ( $I = V/R$ ); Teacher to discuss examples of current in relation to voltage and resistance; use the examples provided in the text and create additional examples - 15 min	<i>ML Science, Electricity and Magnetism, Pages 31-34</i> - Read aloud and discuss what cells are and how they are constructed; review what makes a primary cell (typical battery) vs a storage cell (car battery); what facets do you see in each? - 20 min	<i>ML Science, Electricity and Magnetism, Pages 43-45</i> - Read aloud and use a "Frame Game" graphic organizer to outline the terms "circuit" and "resistor"; provide examples of each; what are the parts of a circuit? Teacher to illustrate the difference between an open and closed circuit - 20 min	<i>ML Science, Electricity and Magnetism, Page 50</i> - Students in pairs, illustrate and label the location in the hallway that their classroom is in of the circuits, open/closed switches, the source of power (fuse box), and any areas of resistance; what are some areas that are good conductors or insulators in the school? What may the walls have to help insulate? What may grounding exist? Refer to to "Explore #'s 1-2" to help guide the way; Share illustrations with the class to help further knowledge - 20 min	Watch "How batteries work - Adam Jacobson" on YouTube (4:20 min) and discuss how batteries first started, where they got their name, and why batteries function in the manner that they do - 10 min
	<i>ML Science, Electricity and Magnetism, Page 31</i> - Prior to this lab, secure a multimeter from Mr. Smith; Teacher to demonstrate (students may assist) the mini-lab on this page; students to answer questions via Google Docs and submit to their teacher - 15 min	Students in pairs, use a Venn Diagram to compare and contrast a primary cell vs a storage cell; have three statements for each section (nine total statements); review as a class - 10 min			Teacher to review Ohm's Law and discuss how it relates to the content discussed; provide examples and formulas to further knowledge - 10 min
Daily Journal or Bell Work:	List five good conductors and three good insulators	Teacher created examples (five) of solving for Ohm's Law	<i>ML Science, Electricity and Magnetism, Page 35</i> - Read privately and complete #'s 1-3; review as a class	<i>ML Science, Electricity and Magnetism, Page 39</i> - Read privately and complete #'s 1-6 via Google Docs; submit to your teacher	<i>ML Science, Electricity and Magnetism, Page 39</i> - Read privately and complete #'s 7-8 via Google Docs; submit to your teacher
Daily Homework:	Locate five electrical devices at home with volts and amps listed on them (usually on the packaging label); write these numbers down as well as the item and bring in tomorrow	Teacher-created problems of solving for Ohm's Law; minimum ten problems to solve; due tomorrow!	<i>ML Science, Electricity and Magnetism 1.3 Review, #'s 1-6, Page 34</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Electricity and Magnetism, Page 37</i> - Complete "Reviewing Vocabulary #'s 1-11"; due tomorrow!	<i>ML Science, Electricity and Magnetism, Page 37</i> - Complete "Reviewing Key Concepts #'s 12-21"; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"

32nd Week	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	<p>Test on Electricity and Circuits: There are two parts to this exam, one that is written and one that is done in student pairs; the written part requires students to individually and privately define each term in their own words without using notes, the textbook, or Chromebooks (only their MINDS!) found in the "Terms to Know for Week Thirty"; this is to be handwritten on notebook paper; the second part is to be completed in pairs; students must use a kit of wires, power sources, and other electrical items to successfully create an example of BOTH a functioning series and parallel circuit, student pairs will receive equal credit for this portion - 55 min</p>
	<i>ML Science, Electricity and Magnetism, Pages 51-53</i> - Read aloud and discuss the two types of circuits; refer to the example of a kitchen parallel circuit for multiple wiring; Create a T-chart outlining the advantages and disadvantages of each type - 20 min	<i>ML Science, Electricity and Magnetism, Pages 54-55</i> - Read aloud and discuss how circuits can convert energy; they do NOT create it! Review how household items may potentially work - 15 min	<i>ML Science, Electricity and Magnetism, Pages 57-60</i> - Read aloud and discuss what coding is; how does electricity relate to coding? What is binary code? Create a T-chart of what are electronic devices (left side) and what are NOT (right side) - 20 min	<i>ML Science, Electricity and Magnetism, Pages 61-65</i> - Read aloud and discuss computers and how they specifically operate; locate in your Chromebook where the input devices are, what are they called/labeled? How does your Chromebook store data? Where is the processor? What item is commonly found with it? How does your Chromebook have an output device? What does "www" stand for? How did the Internet originally form by the United States? - 20 min	
	Prior to class, Teacher to seek permission to complete this activity; take students to the kitchen of the school cafeteria; observe the different types of circuits in the kitchen; students to try to locate fuse boxes/panels, circuits, and indicators of how the parallel circuit is organized - 15 min	Watch "The Power of Circuits #sciencegoals" on YouTube (4:42 min) and discuss how the circuit works; how are the models that were discussed in class relative to this? Teacher to review conductor, switch, and insulator in relation to a circuit - 10 min	<i>ML Science, Electricity and Magnetism, Page 57</i> - Use student to individually complete the mini-lab using a notebook and pen; write your answers to "What do you think?" on the notebook paper and submit to your Teacher; share results with the class and discuss - 15 min	Review your Study Guide on Electricity and Circuits - 25 min	
	Students to illustrate the possible outlay of the parallel circuit in the school's cafeteria kitchen; where does each machine (oven, warmer, freezer, etc.) fit into the circuit? Where is the electric panel? Where is the safety switch? - 15 min	<i>ML Science, Electricity and Magnetism, Page 54</i> - Students in groups of 3 or 4, complete the mini-lab together and submit answers via Google Docs to your teacher - 20 min	Watch "Analog vs. Digital As Fast As Possible" on YouTube (5:31 min) and discuss the difference; is one better than the other? Create a T-chart of items that run on analog power (left side) and those that run on digital (right side); what is the difference? - 15 min		
Daily Journal or Bell Work:	List the steps required in a circuit to properly turn a light on in your home	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	<i>ML Science, Electricity and Magnetism, Page 56</i> - Read privately and solve #'s 1-2 and "Challenge"; review as a class	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	None
Daily Homework:	<i>ML Science, Electricity and Magnetism 2.1 Review, #'s 1-5, Page 49</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Electricity and Magnetism 2.2 Review, #'s 1-6, Page 55</i> - Complete each question in complete sentences; due tomorrow!	<i>ML Science, Electricity and Magnetism, Page 69</i> - Complete #'s 1,2, 6-10; due tomorrow!	Study for your test tomorrow on Electricity and circuits!	<i>ML Science, Electricity and Magnetism 2.3 Review, #'s 1-6, Page 65</i> - Complete each question in complete sentences; due tomorrow!

Unit : Magnetism and Waves

<b>Terms to Know:</b>	<b>Magnet, Magnetism, Pole, Magnetic Field, Magnetic Domain, Electromagnet, Electromagnetism, Motor, Generator, Direct Current, Alternating Current, Transformer, Power, Watt, Kilowatt, Kilowatt-Hour, Turbine, Current, Edison, Tesla, Wave, Wavelength, Crest, Trough, Wave Height, Frequency,</b>				
<b>STUDENTS MUST KNOW HOW TO CORRECTLY SPELL AS WELL AS THE DEFINITION OF EACH OF THE "Terms to Know" EVERY WEEK!</b>					
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
33rd Week	Bellwork - 10 min	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min
	<i>ML Science, Electricity and Magnetism, Pages 79-82</i> - Read aloud and use a "Word Wheel" to outline the terms magnet and magnetic domain; how do items become magnetized? What are magnetic poles? How is the Earth a magnet? - 25 min	<i>ML Science, Electricity and Magnetism, Pages 84-86</i> - Read aloud and discuss how the Earth is a magnet; what evidence is there of this? How did sailors use this fact years ago to find their home? What are the Northern Lights? - 15 min	<i>ML Science, Electricity and Magnetism, Pages 88-90</i> - Read aloud and create a "Concept Map" to outline how magnets and electricity relate to each other; how can current create magnets? What particles do this process? - 20 min	<i>ML Science, Electricity and Magnetism, Page 88</i> - Students in groups of 3 or 4, complete the mini-lab together and answer questions on notebook paper; illustrate what you think is happening to the atoms / ions in the wire and compass - 15 min	Watch "How DC Motors Work" on YouTube (5:31 min) and discuss how the current generated by the electromagnet makes the motor operate; what does DC stand for? Where are the poles in this motor? - 10 min
	<i>ML Science, Electricity and Magnetism, Page 83</i> - Study the items on this page and make predictions about what items are magnetic and which are not; what part of the atom is aligning to create magnetism? What type of ion could this create? What happens when a magnet and iron come together? - 10 min	<i>ML Science, Electricity and Magnetism, Page 85</i> - Students in pairs, complete the mini-lab together and record your results in Google Sheets; how does a compass work? How did sailors use this knowledge years ago to explore and trade goods with other kingdoms? - 20 min	<i>ML Science, Electricity and Magnetism, Page 90</i> - Students in pairs, use the items provided to create an electromagnet and answer the questions; be careful not to touch your electromagnet to any computer devices! Answer your questions on notebook paper and submit to your teacher; discuss ways to make your magnet stronger - 20 min	<i>ML Science, Electricity and Magnetism, Pages 91-94</i> - Read aloud and discuss how electromagnets work; As a class, quietly walk the campus and try to locate motors and electromagnets (try the church basement, Room 104, Café Utility Room, and Room 411); locate the shaft in the motors if possible - 30 min	Illustrate, color, and label the parts of a motor and how it operates; use your textbook to guide you as needed; include a brief description of how the motor works in your illustration including the electromagnet - 30 min
	Watch "MAGNETS: How Do They Work?" on YouTube (6:26 min) and discuss how magnets work; what particles create magnetism? What are domains? How must they align for magnetism to occur? - 10 min	<i>ML Science, Electricity and Magnetism, Page 87</i> - Read in pairs, evaluate the claims of magnets healing pain; as a class, discuss "Evaluating Conclusions" and how this could be tested - 15 min			
Daily Journal or Bell Work:	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	How do the poles attract to each other with magnets? How do they repel?	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Make a "Word Wheel" of the term electromagnetism; have at least four statements	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes

Daily Homework:	Find a magnet in your home (check your refrigerator); test metals in your home for magnetism; DO NOT TOUCH ELECTRIC OBJECTS! Write a list of the objects that your magnet stuck to for tomorrow	<i>ML Science, Electricity and Magnetism 3.1 Review, #'s 1-6, Page 89</i> - Complete each question in complete sentences; due tomorrow!	Illustrate how to create an electromagnet and label the parts of your illustration	Locate five motors in your home (try kitchen appliances) and write a brief description of how each of them works in your home	<i>ML Science, Electricity and Magnetism 3.2 Review, #'s 1-6, Page 94</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
34th Week	Bellwork - 5 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min
	<i>ML Science, Electricity and Magnetism, Pages 95-98</i> - Read aloud and use a "Main Idea Web" to outline the terms generator and current; what are the two types of current? Is one better than the other or just different? How does a generator work? - 25 min	<i>ML Science, Electricity and Magnetism, Page 99</i> - Read aloud and discuss transformers; walk outside the campus and locate the transformers closest to each building, where do they connect to the school? What do you think is located in the school buildings at these locations? - 20 min	Quick Write: One of Tesla's inventions was "free energy for all"; how would this change the world? Think of all the poor people with light now, but also the huge businesses (like GE, First Energy, and Dominion) that wouldn't need to supply power; how would life be different? Submit via Google Docs - 15 min	<i>ML Science, Electricity and Magnetism, Pages 102-104</i> - Read aloud and discuss electric power and how it is transported to our homes; How do we calculate power? Teacher to provide several generic examples of how to solve for the formula - 20 min	<i>ML Science, Electricity and Magnetism, Page 105</i> - Students in pairs, complete the lab including creating the graph in Google Sheets; include all answers in Sheets; share with Teacher when complete; one spreadsheet per student - 30 min
	<i>ML Science, Electricity and Magnetism, Page 98</i> - Students in groups of 3 or 4, complete the lab together and discover how current can be determined and monitored; write your answers on notebook paper and submit to your Teacher - 20 min	Teacher to show a model of a generator and demonstrate how it works; go to Google Images to show images of power plants and how the forces connect to our campus and homes; why do we now bury electric cables? - 10 min  Watch "Nikola Tesla vs Thomas Edison: How The Course Of History Was Changed" on YouTube (8:57 min) and discuss who Tesla was; why didn't Tesla's inventions gain attention at the time? - 15 min	Students to research Thomas Edison and his DC power vs Nikola Tesla and his AC power; write a list of five items for the benefits of each; write an opinion-based short essay on which inventor actually helped the world more; why do you feel that way? - 30 min	Teacher to provide several examples of how to calculate for power by going to the following website " <a href="http://www.wholesalesolar.com/solar-information/power-table">www.wholesalesolar.com/solar-information/power-table</a> " and creating examples of usage - 10 min  <i>ML Science, Electricity and Magnetism, Pages 105-106</i> - Read aloud and discuss how to solve for energy use; what is a kilowatt-hour? Teacher to model how to solve examples including "Practice the Math, #'s 1-2" together - 15 min	<i>ML Science, Electricity and Magnetism, "Math in Science", Page 107</i> - As a class, read aloud and discuss how to solve each question; complete as a class #'s 1-3 and "Challenge"; review each as you solve - 15 min
Daily Journal or Bell Work:	Write a brief description of how a motor works	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Research who was Nikola Tesla; what did he invent? How was his intelligence overlooked in his time? What happened to him eventually?	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Teacher-created problems of solving for Watts, kilowatts, and kilowatt-hours

Daily Homework:	Written Response: What function does a generator in a car serve? How do you think a hybrid battery work with cars? (one paragraph)	<i>ML Science, Electricity and Magnetism 3.3 Review, #'s 1-6, Page 99</i> - Complete each question in complete sentences; due tomorrow!	Complete opinion-based essay on Edison vs Tesla and which helped the world more; due tomorrow!	Teacher-created examples (minimum ten) of solving for Watts, kilowatts, and kilowatt-hours; due tomorrow!	<i>ML Science, Electricity and Magnetism 3.4 Review, #'s 1-6, Page 106</i> - Complete each question in complete sentences; due tomorrow!
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
35th Week	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Test on Magnetism and Waves (Part I); Written test including the components and definitions of the "Terms to Know from Week Thirty-Three"; students should be able to illustrate magnetic domains, generators, and electromagnets; include all formulas for Watts, kilowatts, and volts - 30 min
	<i>ML Science, Electricity and Magnetism, "Thinking Critically", Page 110</i> - Students in pairs, complete #'s 22-24 via Google Docs and submit to your teacher; Teacher to review content as a class when complete - 15 min	<i>ML Science, Electricity and Magnetism, "Thinking Critically", Page 110</i> - Students in pairs, complete #'s 25-28 via Google Docs and submit to your teacher; Teacher to review content as a class when complete - 15 min	<i>ML Science, Electricity and Magnetism, "Using Math in Science", Page 110</i> - Students in pairs, complete #'s 29-32 via Google Docs and submit to your teacher; Teacher to review content as a class when complete - 15 min	Review Study Guide on Magnetism and Waves - 25 min	
	Discussion: Teacher to introduce waves and parts of waves; incorporate "Terms to Know from Week Thirty-Three" that are relative - 10 min	Discussion: What is the color spectrum? How does color (and the color spectrum) relate to waves? Which types of waves occur at which color in the color spectrum? What is electromagnetic radiation? What is the color spectrum in order (ROYGBIV)? - 10 min	<i>ML Science, Waves, Sound, and Light, Page 13</i> - Students in groups of 3 or 4, using a slinky, yarn, large spring, or other curled item complete the mini-lab together and discuss how waves are created; how can they be similar? Answer the questions via Google Docs and submit to your Teacher - 15 min	Teacher to lead students in "Kahoot!" to review for the test tomorrow; recommended games to play are "Magnetism, 10 questions, 20 sec.", "Magnetism, 25 questions, 20 sec.", or "Electricity & Magnetism, 11 questions, 20 seconds"; play as many as time permits - 20 min	
	<i>ML Science, Waves, Sound, and Light, Pages 9-12 (stop at "Waves can be classified...")</i> - Read aloud and discuss waves and how force applies to them; use a "Form Square Diagram" graphic organizer to outline the terms "wave" and "medium"; discuss as a class - 20 min	<i>ML Science, Waves, Sound, and Light, Pages 12-14</i> - Students to read in pairs, write down five notes that you think are important to know; share notes with the class, Teacher to mediate and review content for overall knowledge and need - 20 min	<i>ML Science, Waves, Sound, and Light, "Math in Science", Page 15</i> - Read about wave heights and tracking them; review the mean, median, and mode of the data; follow the "Examples"; as a class complete #'s 1-2 and "Challenge" together - 15 min		

Daily Journal or Bell Work:	<i>ML Science, Electricity and Magnetism, "Analyzing Tables", Page 111</i> - Review the table and answer #'s 1-4; discuss as a class when complete	<i>ML Science, Electricity and Magnetism, "Extended Response", Page 111</i> - Review the textbox and answer #'s 5-6; share with the class when complete	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	Students to go to "Gizmos" in the Explore Learning website and work for ten minutes	None
Daily Homework:	<i>ML Science, Electricity and Magnetism, "Reviewing Vocabulary", Page 109</i> - Complete #'s 1-12; due tomorrow!	<i>ML Science, Electricity and Magnetism, "Reviewing Key Concepts", Page 109</i> - Complete #'s 13-21; due tomorrow!	<i>ML Science, Waves, Sound, and Light, 1.1 Review, Page 14</i> - Complete #'s 1-6 in complete sentences or as requested; due tomorrow!	Study for Test tomorrow on Magnetism and Waves!	None
Timeline:	Day "A"	Day "B"	Day "C"	Day "D"	Day "E"
36th Week	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min	Bellwork - 10 min
	<i>ML Science, Waves, Sounds, and Light, Pages 16-21</i> - Read aloud and discuss waves and the parts of the wave; review how wave speed can be measured; what are the parts of a wave? Teacher to discuss different types of waves and how they relate - 25 min	<i>ML Science, Waves, Sound, and Light, Page 20</i> - Students in groups of 3 or 4, complete the Lab together and answer the questions via Google Docs, submit to your Teacher when complete - 30 min	<i>ML Science, Waves, Sound, and Light, Pages 24-28</i> - Read aloud and discuss; use a "Word Wheel" graphic organizer to outline the terms reflection, refraction, and diffraction; Teacher to use Google images to show "convex and concave lens" to display these different features - 25 min	Discussion: Teacher to review concave and convex lenses; gather several from the science lab cabinet and provide to students to test viewing through, test refracting, and how to otherwise alter waves; Teacher to shine a flashlight through a clear glass of water and a prism to demonstrate light refraction and diffraction - 15 min	<i>ML Science, Waves, Sound, and Light, Page 33</i> - Read and review the diagram together as a class; students in pairs, complete #'s 1-4 together and discuss #'s 5-6 as a class; discuss how waves can be changed; relate to convex and concave lenses - 20 min
	Watch "Bill Nye Waves: Parts of a Wave" on YouTube (3:07 min) and discuss the parts of the wave; review the different concepts emphasized in the video - 10 min	<i>ML Science, Waves, Sounds, and Light, Page 21</i> - Teacher to review additional math problems affiliated with calculating wave speed and the symbols; Teacher to create several examples and practice each - 15 min	<i>ML Science, Waves, Sound, and Light, Page 26</i> - Students in groups of 3 or 4, complete the mini-lab together and demonstrate how to make waves or alter waves; answer the questions individually via Google Docs and submit to your Teacher - 20 min	<i>ML Science, Waves, Sound, and Light, "Connecting Science", Page 29</i> - Read about tsunamis and how they display waves from an earthquake; as a class solve the math involved in calculating for the various tsunamis; complete "Explore #'s 1-2" and discuss together as a class - 15 min	<i>ML Science, Waves, Sounds, and Light, Page 32</i> - Students in groups of 3 or 4, complete "Thinking Critically #'s 20-32" together and submit to Teacher when complete; review as a class and discuss how waves can be altered, calculated for speed, and interfered with - 25 min
	<i>ML Science, Waves, Sounds, and Light, Page 21</i> - Teacher to review the math affiliated with calculating wave speed and the symbols; Teacher to create several examples and practice each - 10 min			Watch "Bill Nye Lenses" on YouTube (4:02) about concave and convex lenses; explain & illustrate how each shows light differently and makes it bend differently; teacher to provide examples of use of each in the world (eye glasses, magnifying glasses, eye balls) and discuss - 15 min	

Daily Journal or Bell Work:	Define wave, mechanical wave, transverse wave, and medium	Define crest, trough, frequency, amplitude, and wavelength	Teacher-created problems (three) related to solving for wave speed	Define diffraction, reflection, and refraction; illustrate concave and convex lenses	<i>ML Science, Waves, Sound, and Light, Page 31</i> - Complete two of the five "Reviewing Vocabulary #'s 1-5" and share with the class
Daily Homework:	Illustrate a wave including the wavelength, amplitude, frequency, wave height, crest, and trough; due tomorrow!	<i>ML Science, Waves, Sound, and Light, 1.2 Review, Page 21</i> - Complete #'s 1-5 in complete sentences or as requested; due tomorrow!	Teacher-created worksheet of problems (ten) that solve for wave speed; due tomorrow!	<i>ML Science, Waves, Sound, and Light, 1.3 Review, Page 28</i> - Complete #'s 1-6 in complete sentences or as requested; due tomorrow!	None