

Aug 24-28, 2015

**Earth Science Lesson Plan**  
**Introduction/Lab Safety/Project-based learning**

**50 minute class**

**Agenda:**

Greet students at door; allow open seating for first week.

Review course outline; grading policy; project-based learning; rubrics; lab safety

<b>NGSS Standard</b>	HS ESS-S1 through S4
<b>Objective</b>	Students will be introduced to Earth Science and the accompanying Units. Students will be aware of and understand purpose for formative and summative assessments. Grading scale will be explained. Introduction to Project-Based Learning and rubrics. Video and accompanying worksheet for lab safety lesson.
<b>Fluency Objective</b>	Measured by completion of lab safety accompanying video worksheet
<b>Mastery: Students produce...</b>	Completed and accurate worksheet
<b>Do Now</b>	No 'Do Now's' for first week
<b>DI: Steps for success/Model</b>	I will go over the elements of a safe laboratory and safe handling of equipment associated with earth science lab activities.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	Students will complete worksheet with aid of teacher while viewing video.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom to be sure students are recording facts from each presentation.
<b>How will you assess mastery?</b>	A brief quiz on lab safety next day (Wednesday).

Aug 31- September 4, 2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Planets in Our Solar System**

**50 minute classes**

**Agenda:**

Greet students at door; introduce "Do Now"

<b>NGSS Standard</b>	MS ESS1-2;HS-ESS1-4
<b>Objective</b>	SWBAT identify and determine which planet within the universe they believe to be habitable in the future by humans. This will occur over this week with the aid of guided notes on the Solar System.
<b>Fluency Objective</b>	Guided assignments for each day of this week will help the students to understand what questions need to be asked and researched to best make a determination as to which planet could be occupied and how.
<b>Mastery: Students produce...</b>	At the culmination of this 3-4 week project, students will produce a presentation, model, newsletter, fakebook; or any other form of presenting (ie Minecraft) to illustrate their understanding of the planet of choice along with all other components necessary to convince others of the viability of other planet habitation.
<b>Do Now</b>	The week's Do Now's focus on facts about each planet.
<b>How Does the Do Now Relate to Lesson</b>	The weekly Do Now's match the set of guided notes that will accompany the project. Each day a Do Now presents new information about the terrestrial and Jovian planets that will then be reinforced with the guided notes.
<b>DI: Steps for success/Model</b>	I will review individually the week's assignments that guide the student in selecting and then forming their argument via a presentation for their chosen celestial object.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	I will be aiding the students with internet research.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom and ask probing questions about the facts they are researching.
<b>How will you assess</b>	At end of this week, collect all assignment sheets that have aided

**mastery?**

the student in determining habitability on another planet.

Week of 11/2 – 11/6/2015

**Earth Science Lesson Plan**  
**Unit: Earth's Atmosphere**  
**Sub-unit: Layers of the Atmosphere**

**A & B Day – 90 min Block**

**Monday/Tuesday Agenda:**

- 1) Greet students at door; remind students of today's cumulative/summative assessment on the Solar System.
  
- 2) After completion of test, provide a copy of the "Open Syllabus" that will form their learning for this month with an emphasis on Earth's Atmosphere.
  
- 3) Review/read entire "Open Syllabus" along with discussion of potential activities each can perform online to form their own style/type of assignment based on their interests and how it relates to Earth Science (in general) and more specifically, Earth's Atmosphere.

<b>NGSS Standard</b>	<b>HS-ESS 2-4; 2-D Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate; Weather and Climate</b>
<b>Objective</b>	Summative Assessment: Gain a specific measurement of students understanding of the Solar System (Monday/Tuesday); Introduce students to various websites/online learning platforms (CK-12; Gizmos) to gain an introduction to the diversity and complexities of Earth's Atmosphere. For students who are already on LTIs, allow perusing of websites to determine association of earth science with their area of interest/internship.
<b>Mastery: Students produce...</b>	Daily learning log of each day's research; internet sites; format of project.
<b>Do Now</b>	There are no 'Do Now's' for this PBL/Open Syllabus
<b>Guided practice/Activity Accountability for group/individual choice work</b>	Learning logs
<b>Independent practice: How will you know students are working?</b>	Constant patrolling of students work at their computer stations.

<b>How will you assess mastery?</b>	Mastery will be monitored throughout the daily project work. I will provide guiding questions for each student to aid in their forming mastery on the topic of choice (ie. How their interest has a tie to earth science).
<b>Exit Slip</b>	Students hand-in their Learning Logs at the end of each class each day.
<b>Closing Activity</b>	No overall closing activity, rather, I go to each student to assess what they did each day and to ensure the information gathered has been recorded.

Week of 11/9 – 11/13/2015

**Earth Science Lesson Plan**  
**Unit: Earth's Atmosphere/Open Syllabus**

**A & B Day – 90 min Block**

**Monday/Tuesday Agenda:**

- 1) Greet students at door; have students obtain their learning logs
  
- 2) Review schedule/timeline for project work and due date (November 30<sup>th</sup>) along with consequences for late submittals.

<b>NGSS Standard</b>	<b>HS-ESS 2-4; 2-D Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate; Weather and Climate</b>
<b>Objective</b>	Continue guiding students to various websites/online learning platforms (CK-12; Gizmos) to gain an introduction to the diversity and complexities of Earth's Atmosphere. For students who are already on LTIs, allow perusing of websites to determine association of earth science with their area of interest/internship.
<b>Mastery: Students produce...</b>	Daily learning log of each day's research; internet sites; format of project.
<b>Do Now</b>	There are no 'Do Now's' for this PBL/Open Syllabus
<b>Guided practice/Activity Accountability for group/individual choice work</b>	Learning logs
<b>Independent practice: How will you know students are working?</b>	Constant patrolling of students work at their computer stations.
<b>How will you assess mastery?</b>	Mastery will be monitored throughout the daily project work. I will provide guiding questions for each student to aid in their forming mastery on the topic of choice (ie. How their interest has a tie to earth science).
<b>Exit Slip</b>	Students hand-in their Learning Logs at the end of each class each

	day.
<b>Closing Activity</b>	No overall closing activity, rather, I go to each student to assess what they did each day and to ensure the information gathered has been recorded.

Monday 10/05/15 - Carol

### Earth Science Lesson Plan

**Unit: Astronomy**

**Sub-unit: Planets**

**50 minute class**

**Agenda:**

Greet students at door; remind them of the daily “Do Now” and to find their name on the white board so they know the order of planet presentations and when they will be presenting

<b>NGSS Standard</b>	HS ESS-S1
<b>Objective</b>	Students will be presenting information pertaining to a planet of their choice in a way that will convince their peers that someday we could occupy that planet (This is the culminating activity from a three-four week project-based learning activity wherein students had guiding assignments of required information for presenting).
<b>Fluency Objective</b>	Students clearly state their argument for planet of choice through a presentation of their choice (PP; fakebook; video; newspaper article; poster). Students provide ALL researched information.
<b>Mastery? Students produce...</b>	...a project presentation about the planet of choice and how humans could survive on that planet utilizing existing knowledge and materials currently available on earth and/or their planet.
<b>Do Now</b>	5 review questions about planets, comets, meteroids
<b>How does Do Now connect to lesson?</b>	Students use the assignment to use today and Tuesday for upcoming quiz on Wednesday.
<b>DI: Steps for success/Model</b>	Students share their assignment results with entire class as a presentation showing the viability of human habitation, or not, on their planet of choice.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	Each student is responsible for an element of the project during the presentation
<b>Independent practice: How will you know students are working?</b>	N/A – students are presenting today



**How will you assess mastery?**

Thoroughness of presentation in alignment with rubric provided to each student end of last week. Mastery will further be assessed on Wednesday with a short quiz.

Monday/Tuesday 10/12-13/2015 - Carol

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Stars and Our Sun**

**A & B Day – 90 min Block**

**Agenda:**

Greet students at door; remind them of the daily “Do Now” and to use this time to briefly review their notes for today’s quiz on planets, comets, meteors, asteroids (to be done during last half of second part of 90 minute block)

2) Continuation of guided notes on “Stars and Our Sun” (up to “Stars and Constellations”) (20 mins)

NOVA video on Solar Energy (with guided worksheet; 3 different sets to prevent cheating)

<http://www.pbslearningmedia.org/resource/nvsl.sci.space.sunenergy/the-suns-energy/> (8-10 mins)

NOVA video on Solar Anatomy (with guided worksheet; 3 different sets to prevent cheating)

<http://www.pbslearningmedia.org/resource/nvsl.sci.space.anatsun/the-anatomy-of-the-sun/> (8-10 mins)

3) Foldable for 4 vocabulary words – Parts of the Sun (chromosphere; photosphere; corona; core). (15-20 mins)

4) Quiz – Solar System (planets, comets, meteors, asteroids) \*Note: for students new to class (i.e. never had earth science yet this year and/or did not start with the solar system), they are to read two current event articles with comprehension Qs at the end of each. This will count as a Quiz grade.

<b>NGSS Standard</b>	<b>4A/h2 cd (Science literacy)</b> Stars condensed by gravity out of clouds of molecules of the lightest elements until nuclear fusion of the light elements into heavier ones began to occur. Fusion released great amounts of energy over millions of years.  <b>NSTA B.3.6 (Grades 5-8)</b> The sun is a major source of energy for changes on the earth's surface. The sun loses energy by emitting light. A tiny fraction of that light reaches the earth, transferring energy from the sun to the earth. The sun's energy arrives as light with a range of wavelengths, consisting of visible light, infrared, and ultraviolet radiation.
<b>Objective</b>	Students will be able to show through a foldable (drawing and definition in their own words) the anatomy of the sun and will be able to show understanding of the transfer of energy from the sun through light and heat.

<p><b>Fluency Objective</b></p>	<p>Students will be able to answer the following Qs for each video clip:</p> <p><b>Solar Energy:</b></p> <ul style="list-style-type: none"> <li>• What process produces the Sun's energy?</li> <li>• Why do you think it takes intense heat and pressure to transform hydrogen into helium?</li> <li>• How is the Sun similar to a hydrogen bomb? Why doesn't the Sun explode?</li> <li>• Do you think the Sun's source of energy is limitless?</li> <li>• How do you think the Sun affects the rest of the solar system?</li> </ul> <p><b>Sun Anatomy:</b></p> <ul style="list-style-type: none"> <li>• What is the chemical composition of the Sun?</li> <li>• Describe how energy produced in the core reaches the surface of the Sun.</li> <li>• What role do you think the Sun plays in the solar system?</li> <li>• How has technology changed what we know about the Sun?</li> </ul>
<p><b>Mastery: Students produce...</b></p>	<p>Answers to their guided questions (worksheet) while watching two NOVA video clips. <b>Exit Slip:</b> Students have to write ONE fact from either video that is NOT on their question sheets</p>
<p><b>Do Now</b></p>	<p>Students review notes about Solar System that were completed last week, in anticipation of quiz to be administered at end of class today.</p>
<p><b>How does Do Now connect to lesson?</b></p>	<p>Review for quiz</p>
<p><b>DI: Steps for success/Model</b></p>	<p>I will model the answering of one of the questions that may be on their worksheet; I will show how the use of key vocabulary words can aid them in answering the Qs in phrases.</p>
<p><b>Guided practice/Activity Accountability for group/individual choice work</b></p>	<p>Each student is responsible for the completion of three questions as indicated on their worksheet. 3 different worksheets are passed out to each table so ensure each student is listening for their particular set of questions and to prevent cheating.</p>
<p><b>Independent practice: How will you know students are working?</b></p>	<p>I will move around the classroom and stop at each table to monitor student's progress on questions. A guided worksheet will be provided to each student (3 different sets) with Qs they are to answer while viewing each video clip.</p>
<p><b>How will you assess mastery?</b></p>	<p>Here is some of what students should produce while answering Qs that are presented before each video:</p>

**Energy:**

- The Sun formed more than 4 billion years ago from a gigantic cloud of gas and dust. As gravity pulled matter together, the young Sun began to take shape. The intense heat and pressure caused hydrogen atoms to break apart into protons and electrons, creating a gaseous mix of charged particles called plasma.
- Gravity continued to intensify the heat and pressure within the young Sun, eventually igniting the process of nuclear fusion as protons fused together to form helium atoms. This nuclear reaction releases huge amounts of energy equivalent to about 10 billion hydrogen bombs each second.
- Nuclear fusion reactions are the source of the Sun's steady output of energy. The outward force of pressure created by this process is balanced by the inward force of the Sun's gravity.

**Sun Anatomy:**

- The Sun is huge and hot. The Sun's diameter is about 100 times that of Earth, and its surface temperature is more than 5000 degrees Celsius. It is too hot to be a solid or liquid, but is instead made of plasma: a gaseous mix of charged particles.
- The Sun is composed of 91.2 percent hydrogen, 8.7 percent helium, 0.078 percent oxygen, 0.043 percent carbon, 0.0088 percent nitrogen, and trace amounts of dozens of other elements. The chemical composition varies in different regions of the Sun.
- The core is the central region of the Sun. Under the force of gravity, hydrogen fuses to form helium and releases large amounts of energy in the process. With a temperature of about 15 million degrees Celsius, the core is the hottest part of the Sun.
- The radiative zone is the layer above the core. Energy produced in the core radiates through this layer, which is so dense that it takes more than 100,000 years (on average) for a photon to escape.
- The convective zone is the layer above the radiative zone. Currents of plasma actively transport energy through this region. It takes about a month (on average) for a photon to move through this region.
- The photosphere is the visible surface of the Sun. It appears relatively smooth except for occasional sunspots; an increase in the number, size, and complexity of these sunspots suggests unrest beneath this layer.
- The Sun's atmosphere is composed of two layers—the chromosphere and the corona—that are both hotter than the photosphere. The corona reaches temperatures of more than 1 million degrees Celsius. These layers were not observed until recently at high-frequency wavelengths of light.

	<p>Studying the Sun's atmosphere may be key to understanding and predicting solar storms.</p>
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The students will correct/check each other's work after the completion of the Qs after each video.

Wednesday/Thursday 10/14-15/2015 - Carol

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Stars and Our Sun**

**A & B Day – 90 min Block**

**Agenda:**

- 1) Greet students at door; remind them of the daily “Do Now” ; and today’s quiz on parts of the sun ☺
  
- 2) Completion of guided notes on “Stars and Our Sun” (10 mins)  
Series of video clips about: solar flares and the impact on communications on earth; what happens if the sun becomes a white dwarf?; time it takes for sunlight to reach earth (10 mins)  
[www.youtube.com](http://www.youtube.com)
  
- 3) QUIZ – before 3 min. break between 45-minute sections
  
- 4) Roll out the Solar Data Observatory (SDO; Univ Colorado-Boulder) activity package  
(\*\*NOTE: this project requires use of computers!) .

<b>NGSS Standard</b>	<b>4A/h2 cd (Science literacy)</b> Stars condensed by gravity out of clouds of molecules of the lightest elements until nuclear fusion of the light elements into heavier ones began to occur. Fusion released great amounts of energy over millions of years.  <b>NSTA B.3.6 (Grades 5-8)</b> The sun is a major source of energy for changes on the earth's surface. The sun loses energy by emitting light. A tiny fraction of that light reaches the earth, transferring energy from the sun to the earth. The sun's energy arrives as light with a range of wavelengths, consisting of visible light, infrared, and ultraviolet radiation.
<b>Objective</b>	Students will be able to further their newly gained knowledge about the sun through an interactive, web-based series of activities that uses real-time solar data.
<b>Fluency Objective</b>	Students will select from 1 of 3 activities within Module 1 according to their desire/attraction to degree of difficulty. Each Module activity 1) builds knowledge; 2) Applies learning; and 3) requires student to demonstrate ability through the making of a 3-D model
<b>Mastery? Students produce...</b>	A K-W-L chart; answer Qs about the sun (size/distance/temperature) through a video; compare size of Sun with familiar objects; and complete the ‘Sun Primer’. Finally at end of Module 1, make a 3-D model of the Sun (origami).

<b>Do Now</b>	Students review notes about the parts of the Sun in anticipation of quiz to be administered at half-way point of class today.
<b>How does Do Now connect to lesson?</b>	Review for quiz; prep's them for Module 1 of SDO project-based activity.
<b>DI: Steps for success/Model</b>	I will take them through the first step of the Module 1 – each level (1,2,& 3) to show how to 1) access the website; 2) find the correct link to aid in their activity; 3) Work out any potential glitches in their computers.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	Students can ONLY work in groups of TWO (no more). Each student will be responsible for physically writing answers to portions of each task (#1-3) of Module 1.
<b>Independent practice: How will you know students are working?</b>	I will move around the classroom and stop at each table to monitor student's progress on questions and to aid in their finding their way around the SDO website.
<b>How will you assess mastery?</b>	Monitor their input on worksheets that guide them through the various videos; interactive activities; etc.

Week of 10/19 – 23/2015

**Earth Science Lesson Plan**  
**Sub-unit: Earth-Moon-Sun Relationship**

**A & B Day – 90 min Block**

**Monday Agenda:**

1) Greet students at door; remind them of daily “Do Now” (from this point forward, the “Do Now” will be recorded on a printed and organized sheet they are to glue into their science notebooks).

2) Today will be divided into 2 distinct blocks:

a. **Making a solar oven;** placing s’mores inside; preparing a lab report predicting when/if the ingredients inside the ‘oven’ will melt in relation to its location situated at different parts of the building outside. Wrap-up video clips on the solar system

b. Start of discussion on the relationship between **Earth-Sun-Moon:** opening video (BrainPop – <https://www.brainpop.com/science/space/eclipse/>)

Lunar cycle simulation:

<http://astro.unl.edu/classaction/animations/lunarcycles/moonphases.html>

Earth and the other planets –

[https://www.youtube.com/watch?v=Fj\\_PjkQqrDo](https://www.youtube.com/watch?v=Fj_PjkQqrDo)

planet-sun-stars comparison

[https://www.youtube.com/watch?v=Fj\\_PjkQqrDo](https://www.youtube.com/watch?v=Fj_PjkQqrDo)

**Guided Notes:** earth-moon-sun relationship

If time permits: Start guided reading packet\* - Chapter 22 – Earth-Moon-Sun Relationship

<b>NGSS Standard</b>	
<b>Objective</b>	To culminate solar system unit with fun activity – solar ovens – and record each class scientific guess on length of time for s’mores to melt. Students will be able to see the process of solar radiation in the form of heat in action.
<b>Mastery: Students produce...</b>	A brief lab report identifying their group hypothesis and determining the independent, dependent, and control variables.
<b>Do Now</b>	Students will be introduced to the glue-in formatted “Do Now” sheet along with one Q for Monday pertaining to the E-M-S relationship
<b>Guided practice/Activity Accountability for</b>	As a class we will read the first sub-section of Chapter 22 along with completing as a group the first set of guided reading worksheet.



<b>group/individual choice work</b>	Students will write their own sets of notes for the E-M-S relationship guided notes packet. Students will read and complete their own guided reading worksheet packet.
<b>Independent practice: How will you know students are working?</b>	I will move around the classroom and stop at each table to monitor student's progress on questions and to aid in their finding their way through the guided reading packet.
<b>How will you assess mastery?</b>	Monitor their input on worksheets and assist with their reading of the copied textbook.

Week of 10/26 – 10/30/2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Moon Phases**

**A & B Day – 90 min Block**

**Monday/Tuesday Agenda:**

1) Greet students at door; remind them of daily “Do Now” (“Do Now” is part of their dedicated Science Notebooks as a paste-in tracking sheet).

2) Open lesson with a discussion of last Friday’s video’s and student’s assessment of the Earth-Moon-Sun relationship based on their Exit Slips. Also, discuss any current events related to the moon and sun (i.e. current phase of moon; solar flares; etc).

**Guided Notes:** Chapter 23 – Moon’s Phases

<b>NGSS Standard</b>	<b>HS-ESS1-4. Predicting orbital motions of objects in the solar system</b>
<b>Objective</b>	SWBAT identify through a demonstration the different phases of the moon. With guided reading and note-taking, SWBAT further understand why the phases of the moon occur and the names given to each phase.
<b>Mastery: Students produce...</b>	Guided reading note-packets will be collected at end of class for cursory review by teacher. A portion of the next class time will be spent reviewing the note-packets together as a class.
<b>Do Now</b>	For each day: A specific written description of a phase of the moon and/or drawing of the phase of the moon will be provided for students to then identify in words and/or drawing.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	As a class, the first subsection of Chapter 23 will be read together and accompanying guided reading note-packet will be prepared together
<b>Independent practice: How will you know students are working?</b>	I will move around the classroom and stop at each table to monitor student’s progress on reading and to aid in their finding their way through the guided reading packet.

<b>How will you assess mastery?</b>	Monitor their input on worksheets and assist with their reading of the copied textbook.
<b>Exit Slip</b>	Students will state one new fact learned about the moon phases; reasons for; and at end of week, introduction of eclipses.
<b>Closing Activity</b>	Review as class subsections 23.2/23.3

Sept 7- September 11, 2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Planets in Our Solar System**

**50 minute classes**

**Agenda:**

Greet students at door; remind them of "Do Now" and to collect daily assignment.

<b>NGSS Standard</b>	MS ESS1-2;HS-ESS1-4
<b>Objective</b>	SWBAT further their research on the ability to colonize another planet by completing assignments requiring the answering of an Essential Question presented each day.
<b>Fluency Objective</b>	Guided assignments for each day of this week will help the students to understand what questions need to be asked and researched to craft a believable presentation for colonization of another planet.
<b>Mastery: Students produce...</b>	At the culmination of this 3-4 week project, students will produce a presentation, model, newsletter, fakebook; or any other form of presenting (ie Minecraft) to illustrate their understanding of the planet of choice along with all other components necessary to convince others of the viability of other planet habitation.
<b>Do Now</b>	The week's Do Now's focus on facts about each planet.
<b>How Does the Do Now Relate to Lesson</b>	The weekly Do Now's match the set of guided notes that will accompany the project. Each day a Do Now presents new information about the terrestrial and Jovian planets that will then be reinforced with the guided notes.
<b>DI: Steps for success/Model</b>	I will review individually the week's assignments that guide the student in selecting and then forming their argument via a presentation for their chosen celestial object.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	I will be aiding the students with internet research.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom and ask probing questions about the facts they are researching.
<b>How will you assess mastery?</b>	At end of this week, collect all assignment sheets that have aided the student in determining habitability on another planet.



Sept 21 - 25, 2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Planets in Our Solar System**

**50 minute classes**

**Agenda:**

Greet students at door; remind them of “Do Now” and to continue on preparation of planet project. Introduce “Into the Wormhole – NOVA” video to assist in their understanding of the formation of the solar system and possibilities for parallel universes

<b>NGSS Standard</b>	MS ESS1-2;HS-ESS1-4
<b>Objective</b>	SWBAT complete their planet project. SWBAT list 10 facts from two separate chapters of the afore-mentioned video.
<b>Fluency Objective</b>	10 facts about formation of solar system and parallel universes will be submitted; students will review each other’s facts; self-assess.
<b>Mastery: Students produce...</b>	10 facts from video; planet project
<b>Do Now</b>	The week’s Do Now’s focus on facts about each planet.
<b>How Does the Do Now Relate to Lesson</b>	The weekly Do Now’s match the set of guided notes that will accompany the project. Each day a Do Now presents new information about the terrestrial and Jovian planets that will then be reinforced with the guided notes.
<b>DI: Steps for success/Model</b>	I will review individually the week’s assignments that guide the student in selecting and then forming their argument via a presentation for their chosen celestial object.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	I will be assisting the students with preparation of their chosen format of project.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom and ask probing questions about the facts they are researching. Review their information to-date along with format of presentation.
<b>How will you assess mastery?</b>	At end of this week, collect all assignment sheets that have aided the student in determining habitability on another planet.

Sept 21 - 25, 2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Planets in Our Solar System**

**50 minute classes**

**Agenda:**

Greet students at door; remind them of “Do Now” and to continue on preparation of planet project. Introduce “Into the Wormhole – NOVA” video to assist in their understanding of the formation of the solar system and possibilities for parallel universes

<b>NGSS Standard</b>	MS ESS1-2;HS-ESS1-4
<b>Objective</b>	SWBAT complete their planet project. SWBAT list 10 facts from two separate chapters of the afore-mentioned video.
<b>Fluency Objective</b>	10 facts about formation of solar system and parallel universes will be submitted; students will review each other’s facts; self-assess.
<b>Mastery: Students produce...</b>	10 facts from video; planet project
<b>Do Now</b>	The week’s Do Now’s focus on facts about each planet.
<b>How Does the Do Now Relate to Lesson</b>	The weekly Do Now’s match the set of guided notes that will accompany the project. Each day a Do Now presents new information about the terrestrial and Jovian planets that will then be reinforced with the guided notes.
<b>DI: Steps for success/Model</b>	I will review individually the week’s assignments that guide the student in selecting and then forming their argument via a presentation for their chosen celestial object.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	I will be assisting the students with preparation of their chosen format of project.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom and ask probing questions about the facts they are researching. Review their information to-date along with format of presentation.
<b>How will you assess mastery?</b>	At end of this week, collect all assignment sheets that have aided the student in determining habitability on another planet.

Sept 28 – Oct 2, 2015

**Earth Science Lesson Plan**  
**Unit: Astronomy**  
**Sub-unit: Planets in Our Solar System**

**50 minute classes**

**Agenda:**

Greet students at door; remind them of “Do Now” and to continue on preparation of planet project. Introduce “Bill Nye – Solar System” video to assist in their understanding of the solar system and to provide the students with further facts for their planet project.

<b>NGSS Standard</b>	MS ESS1-2;HS-ESS1-4
<b>Objective</b>	SWBAT demonstrate via completion of video worksheet their comprehensive understanding of the solar system
<b>Fluency Objective</b>	Comprehension of solar system components
<b>Mastery: Students produce...</b>	Completed and accurately answered video worksheet
<b>Do Now</b>	The week’s Do Now’s focus on facts about formation of solar system
<b>How Does the Do Now Relate to Lesson</b>	The weekly Do Now’s match the set of guided notes that will accompany the project. Each day a Do Now presents new information about the terrestrial and Jovian planets that will then be reinforced with the guided notes.
<b>DI: Steps for success/Model</b>	I will review individually the week’s assignments that guide the student in selecting and then forming their argument via a presentation for their chosen celestial object.
<b>Guided practice/Activity Accountability for group/individual choice work</b>	I will be assisting the students with preparation of their chosen format of project.
<b>Independent practice: How will you know students are working?</b>	Canvas classroom and ask probing questions about the facts they are researching. Review their information to-date along with format of presentation.
<b>How will you assess mastery?</b>	At end of this week, collect all assignment sheets that have aided the student in determining habitability on another planet.