

### Montessori Lesson Plan

School: N/A	Teacher: Kathlyn Videkovich
Subject/Topic(s): Formation of Earth and Montessori Peace Education	
Grade Level: 9	Theme: Our Universe, Our place
<u>Curriculum Components Included:</u> <input type="checkbox"/> Project <input checked="" type="checkbox"/> Mini-Whole Grp <input type="checkbox"/> Lesson-Small Grp <input type="checkbox"/> Student engagement during lesson <input type="checkbox"/> Shelfwork <input type="checkbox"/> Rubric <input type="checkbox"/> Self-Assessment <input type="checkbox"/> Seminar/Qs <input type="checkbox"/> Interdisciplinary <input type="checkbox"/> Outside Opportunity	
<u>Seven Gateways for Adolescence addressed in this lesson:</u> <input type="checkbox"/> Deep Connection <input type="checkbox"/> Silence & Solitude <input type="checkbox"/> Meaning & Purpose <input type="checkbox"/> Joy & Delight <input type="checkbox"/> Creative <input type="checkbox"/> Transcendence <input type="checkbox"/> Initiation	

<u>Standards/Objectives</u> <b>Standards: From Wisconsin Science Standard [1]</b> Standard SCI.ESS1: Students use science and engineering practices, crosscutting concepts, and an understanding of Earth's place in the universe to make sense of phenomena and solve problems. SCI.ESS1.B.h - Kepler's laws describe common features of the motions of orbiting objects. Observations from astronomy and space probes provide evidence for explanations of solar system formation. Cyclical changes in Earth's tilt and orbit, occurring over tens to hundreds of thousands of years, cause cycles of ice ages and other		
<b>Objectives:</b> Understand the Earth's Formation within the solar system Understand the geological timeline of Earth Cross connect with the concept of scales Cross connect with Montessori Peace Education		
<u>Materials: Teacher</u> <ul style="list-style-type: none"> <li>Teacher notes</li> <li>Copy of the Pale Blue Earth Essay by Carl Sagan (one for each student)</li> <li>Picture with the Pale Blue Dot (Hard or digital copy)</li> <li>Clock of Eras</li> <li>Timeline of Life</li> <li>Nova video "Origins: Earth is Born" from Time stamp 9:00 minutes to 21:30 minutes</li> </ul>	<u>Materials: Student</u> <ul style="list-style-type: none"> <li>Listening ears</li> <li>Note taking materials</li> </ul>	<u>Time/Dates</u> <ul style="list-style-type: none"> <li>10/21</li> </ul>
<u>Facts/Skills (Prior Knowledge)</u> <ul style="list-style-type: none"> <li>Prior presentation of the Story of the Formation of the Universe.</li> </ul>	<u>Concepts/Big Ideas</u> <ul style="list-style-type: none"> <li>The Universe was created at the big bang</li> </ul>	
<u>Lesson Relates to Theme (Note: Every content lesson will not directly relate to the theme)</u> This lesson relates to Montessori's Peace Education		
<u>Connection to Elementary Material or Lesson</u> Geological Timeline		

**Step-by-Step Procedures**

1<sup>st</sup> Period Lesson – 20 minutes (Include steps and materials)

- Gather students for lesson where video screen is present.
- Show Nova video clip.
- Layout the elementary Clock of Eras.
- Discuss the major geological periods in Earth’s History (DO NOT FOR GET THE MOON).
- Show Timeline of life.
- Draw attention to the color coding of the Clock of Eras and Timeline of life and the period on Earth that life occupies.
- Give summary background on when the Pale Blue Dot Speech was given.
- Show Pale Blue Dot Picture.
- Read Pale Blue Dot.
- Allow for a moment of silence.
- Discuss Shelf work, Recall Practice, and 3<sup>rd</sup> period.

2<sup>nd</sup> Period – Recognition (Shelfwork)

- Eras Clock – A blank clock layout that shows the scale portions of Earth’s geological history. Has images, labels, and description of major events in the period and years for each major period.
  - Fill in the pie pieces in order with Eras, images, labels, major events, and years.

2<sup>nd</sup> Period – Recall Practice

- Choose one after completing shelf work:
  - Linear timeline of Earth’s Geological History – Paper is provided but students need to figure out what scale to use for constructing the timeline in proportion. The Shelf work can be used to identify what periods need to be on the timeline.
  - Spiral geological time worksheet – Label and color each major period in earths geological history.
  - Write a journal reflection about how Earth is the only place we have and how it relates to Montessori Peace education and our place in the universe.
  - Optional: Watch the complete Nova Video

3<sup>rd</sup> Period – Student Application

- Hand in completed timeline.
- Hand in journal entry.
- Answer Spot Check questions about the various periods to check for understanding.

**Plan for Differentiation**

<u>Teaching</u>	<u>Work</u>	<u>Assessment</u>
General lesson will be provided to all students in the same session.	Students can choose their follow-up work. Shelf work will have three levels to be completed.	Based on teacher understanding of student’s level, ask different difficulty of spot check questions to allow the student to be successful but have to dig in their brains a bit.

Outside Support: Who, What, How

**Formal Assessments**

Formative Assessments  
Review the journal entry to check if students are reflecting on their place in the universe and is it evolving since their first reflection on the topic at the beginning of the cycle. Are they connecting? OR Are things falling flat?

Summative Assessment  
Timeline to review if students understand the geological history of earth. When they hand it in do a spot verbal check about order of the geological periods (not the whole order but which occurred first or what major even happened in X period?)

