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SCED 550

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### **Scavenger Hunt: Adding Elements of Music to a Geologic History Research Paper**

The following pages describe an assignment where students are tasked to research and write a 2-3 paper about a particular period of geologic time. While writing assignments are not always the most fun, it is incredibly important to me that my students have practice writing research papers to prepare them for similar assignments in higher level courses or college. However, I think incorporating some elements of music could jazz up this assignment a little. I am thinking that in lieu or in conjunction with the paper students could write and perform or record a song or poem about their researched geologic period.

### Millham NGSS UBD 5-Es Unit's Lesson Planning Template

| Pre-Lesson Preparation   |   |   |
|--|---|---|
| <b>Grade/ Grade Band:</b> 10th grade - Earth Science   | <b>Topic:</b> Geologic Time Scale   | <b>Lesson # 1 in a series of 1 Lessons</b>                    |
| <b>Science &amp; Engineering Practices:</b><br>Obtaining, Evaluating, and Communicating Information  | <b>Disciplinary Core Ideas (DCI(s)):</b><br>ESS1.C: The History of Planet Earth   | <b>Crosscutting Concepts:</b><br>Patterns<br>Cause and Effect |
| <b>NYS Curriculum Topic:</b> <i>NYSSLS - HS-ESS2-7 and Physical Setting/ Physical Setting/Earth Science Earth Science Core Curriculum - 1.2j</i>   |   |   |
| <b>What overarching understanding(s) based on the DCI(s):</b><br>Our Earth has undergone a number of dynamic changes since its formation and is continuing to change overtime.   | <b>What is/are the overarching essential question(s) and supporting question(s)?</b> <ul style="list-style-type: none"> <li>● How has our Earth changed overtime?</li> <li>● What methods or events caused changes in Earth history?</li> </ul> |   |
| <b>Brief Lesson Description:</b> In this lesson, students will be researching and then writing a paper about a geologic time period of their choice. The students will receive time in class to research a period of geologic time and then write a paper 2-3 pages about their selection. Students will have a list of required elements for their paper on a guiding worksheet to help them complete their research. There will be pre-set check-ins for the student to complete with the teacher before moving on to each part of the assignment. Students will have the opportunity to engage in peer-review before submitting their papers. |   |   |
| <b>Student Learning Outcomes (SLOs) – These are Specific Learning Outcomes:</b>  |   |   |
| Students will be able to   |   |   |
| <b>Performance Expectation(s) (Assessments): How will students be able to demonstrate that they understand and can apply the content (or skill) as a result of this lesson?</b> <ol style="list-style-type: none"> <li>A. <b>Formative Assessments</b> - Bellringer activity, questions on activity and the debrief questions.</li> <li>B. <b>Summative Assessments</b> - Check-ins, peer-review, research paper</li> </ol>  |   |   |
| <b>Narrative / Background Information:</b><br>I want students to understand and be able to explain a key part of Earth's biologic and geologic history   |   |   |
| <b>Vocabulary:</b> The vocabulary of the lesson includes the following, but may encompass additional terms. <ul style="list-style-type: none"> <li>● fossils</li> <li>● sedimentary rock</li> <li>● paleontologist</li> <li>● extinct</li> <li>● relative age</li> <li>● absolute age</li> <li>● Period vs. Era</li> </ul>   |   |   |

- mass extinction

**Prior Student Knowledge:**

- Prior to this lesson students will have gained familiarity with content specific vocabulary such as eras and periods, relative and absolute and fossil record.
- A discussion led by the teacher before the start of the activity will also act as a brainstorming session to facilitate student thinking about which geologic time periods might be interesting to research.

**Possible Preconceptions/Misconceptions:**

- Numerous erroneous ideas about the formation and past history of our Earth and its inhabitants

**The Lesson in Practice**  
**The LESSON PLAN – Modified 5-E Model**

**ENGAGE:**

Bell ringer Activity, Video on Earth's past geo-history, highlighting some key points in time  
Students discuss what they know about the Earth's past and the evolution and extinction of various organisms. (Can tie into cultural knowledge)

**EXPLORE:**

The students will perform research on their selected period of geologic time

**EXPLAIN:**

Students will construct a research paper that highlights a period of geologic time incorporating key criteria that has been required by the assignment

**EVALUATE:**

**Formative Monitoring:**

- **Students** – Will complete a peer review of one of their classmates' research papers
- **Teacher(s)** – Will perform check-ins with students

**Summative Assessment:**

- The research paper submitted by the student will serve as a summative assessment

**Wrap-Up:** Driven through questioning, or some other student led or engaged discussion, synthesize learning and recap concepts developed. How are you going to recap the lesson? They need closure and/or connection to the next day's lesson.

Students apply their knowledge from the activity and discuss the activity questions with a partner. Students decide what the most important part of the lesson is.

**ELABORATE/EXTEND:**

This lesson/assignment will build into our next topic of Earth's current biologic and geologic activities. Students will be able to make comparisons between what Earth was like during their researched period and Earth today.

**Reflection:**

A key focus of reflection will be on what went well and why, in addition to problems that were experienced and why they occurred. It is also important to note who was doing more work, the student or the teacher. Reflection on preparation, organization and pacing of the lesson will also occur. After reviewing both the formative and summative assessments, it will be determined if these were effective methods of assessment and what the results indicated about student learning. Lastly, it will be reflected on what should be done differently next time.

**Adaptations:**

- Preferential seating arrangements will have been made for select students as is required by their individual IEP or 504 plans.
- Students will make use of a graphic organizer to arrange their thoughts and ideas before writing
- Directions will be repeated with clarity, consistency, and frequency to help students who have trouble focusing stay on task. Directions will be rephrased for
- students who are having difficulty following directions or procedure guidelines.
- Select students whose IEP or 504 plan requires the student to explain directions to the teacher will do so.
- Academic language required for the lesson will be pre-taught and students will have access to those definitions while working.
- Students whose IEP or 504 plan requires refocusing and redirection will be prompted by the teacher to complete their required tasks as necessary.

**Homework:**

