**Kiser Middle School**

**Lesson Plan Template**

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| **SUBJECT** | **Science** | **GRADE** | **8** |
| **DATE** | **10/1 to 10/2** | **PERIOD** | **All** |
| **Essential Standards** | **8.L.4 Understand the evolution of organisms and landforms based on evidence, theories and processes that impact the Earth over time.**  8.L.4.1 Summarize the use of evidence drawn from geology, fossils, and comparative anatomy to form the basis for biological  classification systems and the theory of evolution.  8.L.4.2 Explain the relationship between genetic variation and an organism’s ability to adapt to its environment. | | |
| **Essential Question** | **How does the Theory of Evolution explain the diversity of life on Earth?**  **What evidence is there for the Theory of Evolution?** | | |
| **I Can Statements** | **…….make predictions about the Earth’s past and future based on Uniformitarianism**  **……..explain who Darwin was and where his ideas came from.**  **…….give examples of evidence that Darwin used for his theory.**  **……explain how natural selection could lead to change in species.** | | |
| **Vocabulary** | Uniformitarianism, James Hutton, Charles Lyell, Charles Darwin, Continental Drift, Alfred Wagner, Plate Tectonics, Seafloor Spreading, Comparative Anatomy, Natural Selection, Analogous Structures, Homologous Structures, Embryological Similarities, Evolution, Theory of Evolution, Mutations | | |
| **H.O.T. Question(s) Higher Order Thinking Questions** | **Why is it appropriate to say that evolution is occurring even while still talking about evolution being a theory?**  **Why is evolution considered a theory when there is a huge amount of evidence supporting it?**  **How might natural selection alter the human species?**  **How are geologic and biologic evolution connected?**  **Why has better understanding of genetics provided evidence for the theory of evolution?** | | |
| **Material/**  **Manipulatives** | **Sand, small rocks, paint trays, water, collection trays, electronic balance, laminated continent pieces, erasable markers, timing device.** | | |
| **Technology Integration** | **Video segments on Uniformitarianism** <https://www.youtube.com/watch?v=KKTXxZSz-9s>  **Continental Drift**  <https://www.youtube.com/watch?v=Np9ADpKnBSY>  **Seafloor Spreading**  <https://www.youtube.com/watch?v=GyMLlLxbfa4>  **Plate Tectonics**  <https://www.youtube.com/watch?v=kwfNGatxUJI><https://www.youtube.com/watch?v=ryrXAGY1dmE>  **Plate Tectonic Rap**  <https://www.youtube.com/watch?v=gYhlMLjRe40> | | |
| **Warm Up** | **Day 1; show students a container with a slow drip of water. Tell them how much water is in the catch container. Ask them to predict how much water will be in the catch container at the end of class. Day 2; have students use map pieces to create different continental formations** | | |
| **Hook/**  **Cultural Connection** | **Ask students if they have ever been to the mountains or beaches and seen something that they wondered why it looked the way it did.** | | |
| **Me: Modeled** | **Day 1: Students watch Uniformitarianism Video, taking a few notes on table top note taker. See Technology Section for link**  **Model how to apply water to the “Mountain”.**  **Day 2: Lecture notes on Continental Drift and Wegener.** | | |
| **We: Shared** | **Day 1: at end of lab, share data with class.**  **Day 2-Students will share their groups prediction of what the continents looked like at each point in time.** | | |
| **Minute By Minute Assessment** | **During the How Long Did It Take Lab, students will have sand, pebbles and water. Need to watch for correct usage. Need to monitor that they are measuring and recording data.** | | |
| **Few: Guided Practice** | **Day 1-Students will be given materials to conduct the “Predicting Erosion of Sugar Mountain” lab.**  **Day 2-Students will pass around the continent cut outs and on direction of teacher, they will put stickers on the continents.** | | |
| **You: Independent Practice** | **Day 1-Students will answer lab questions at end of class or as homework.**  **Day 2-Students will respond in paragraph form to this prompt;** | | |
| **Summary** | **Day 1-Revisit predictions from warm up, use Uniformitiarism video with notes.**  **Day 2-Pose question, why was Continental Drift not accepted as a theory.** | | |
| **Corrective Instruction** | **Both days, need to be mindful of material usage and of making sure students are understanding the length of time needed for these processes to occur.** | | |
| **What is Going On?** | **Day 1 Predicting Erosion of Sugar Mountain**  **Day 2 Continental Mystery Lab**  **Good Reading as background**  <http://www.scienceclarified.com/everyday/Real-Life-Earth-Science-Vol-2/Historical-Geology-Real-life-applications.html> | | |

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| **SUBJECT** | **Science** | **GRADE** | **8** |
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| **H.O.T. Question(s) Higher Order Thinking Questions** | **Why is it appropriate to say that evolution is occurring even while still talking about evolution being a theory?**  **Why is evolution considered a theory when there is a huge amount of evidence supporting it?**  **How might natural selection alter the human species?**  **How are geologic and biologic evolution connected?**  **Why has better understanding of genetics provided evidence for the theory of evolution?** | | |
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| **Technology Integration** | **Video segments on Uniformitarianism** <https://www.youtube.com/watch?v=KKTXxZSz-9s>  **Continental Drift**  <https://www.youtube.com/watch?v=Np9ADpKnBSY>  **Seafloor Spreading**  <https://www.youtube.com/watch?v=GyMLlLxbfa4>  **Plate Tectonics**  <https://www.youtube.com/watch?v=kwfNGatxUJI><https://www.youtube.com/watch?v=ryrXAGY1dmE>  **Plate Tectonic Rap**  <https://www.youtube.com/watch?v=gYhlMLjRe40> | | |
| **Warm Up** | **Day 1; Show a picture of an underwater volcano. Ask for quick write on what would happen to lava, then discuss. Day 2; Show students a container of bowling water. Have them quick write about what this might have to do with the Earth and what we have been studying.** | | |
| **Hook/**  **Cultural Connection** | **Pose the questions, has North Carolina always been in the same spot on Earth?** | | |
| **Me: Modeled** | **Day 1: Brief lecture on seafloor spreading.**  **Day 2: Reminder lecture about interior of the Earth.** | | |
| **We: Shared** | **Day 1: at end of lab, pattern they found with age of seafloor rock.**  **Day 2-Students will share their groups prediction of what the continents looked like at each point in time.** | | |
| **Minute By Minute Assessment** | **Both days, watch for students who are not engaged. Make sure each partner is working. On second day, students cannot use laptops until end of class.** | | |
| **Few: Guided Practice** | **Day 1-Students work in pairs on the Seafloor Spreading activity.**  **Day 2-Students will look at maps predicting what the Earth will look like in 50 million years. They will then pick a location in the future. They will find out what kind of plants and animals live on both sides of the location then make predictions about how the new location will change what lives there.** | | |
| **You: Independent Practice** | **Day 1-Students will answer lab questions at end of class or as homework.** | | |
| **Summary** | **Both days, will ask the same question: How does the seafloor spreading/plate tectonics support the idea of continental drift?** | | |
| **Corrective Instruction** | **Both days, need to be mindful of material usage and of making sure students are understanding the length of time needed for these processes to occur.** | | |
| **What is Going On?** | **Day 1 Seafloor Spreading Activity**  **Day 2 Predicating the Future Activity** | | |