Smith Farm Elementary Lesson Plan

Teacher Name: Edwards	**Grade Level:** 4th Grade	**Subject:** Science
Date: December 5-9	**Standards:** **4.E.2.1** Compare fossils (including molds, casts, and preserved parts of plants and animals) to one another and to living organisms. **4.E.2.2** Infer ideas about Earth's early environments from fossils of plants and animals that lived long ago. **4.E.2.3** Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering, rapid processes such as landslides, volcanic eruptions, and earthquakes.	

	Monday, December 5	
Standards-aligned Materials and Resources	• "What Are Fossils?" reading (Discovery Ed) • Chromebooks • Fossil Questions	
Clear Learning Goals (I Can statements)	I can describe what the different types of fossils are, as well as give examples of each. I can explain how scientists know the age of a fossil and what fossils can teach us about Earth's past.	
Vocabulary	fossils, sedimentary rocks, sediment, relative dating, climate, extinct	
Build Background	**Turn and Talk:** With your table group, share one thing you learned about fossils from our lesson last week.	
Direct Instruction (Teacher led)	*Pick up where you left off in the reading last week. Model for students how to log back on to their Discovery Education account and find the Fossils reading from last week. With students, read the section titled "How Do Scientists Know the Age of a Fossil?" Make sure students understand that the oldest rock layers are on the bottom and the youngest are on top. This means the oldest fossils can be found in the bottom rock layers (relative dating). In order to help students understand the concept of relative dating, draw a model in your science notebooks showing the age of organisms in various rock layers (example diagram is below the plans).	**Time: 10 min.**
Student Practice	In small groups, students will read the last section titled "What Can Fossils Tell Us About Earth's Past?" As they are reading with their groups,	**Time: 10 min.**

	they should focus on what seashell fossils can tell us, as well as what caused the mass extinction of many dinosaurs.	
Check for Understanding	Students will complete the remaining text questions on their own. They should make sure to go back in the text to help them find the answers.	**Time: 5 min.**

	Tuesday, December 6	
Standards-aligned Materials and Resources	• Plaster of Paris • Clay • Plastic dinosaurs/animals • Paper cups • Chromebooks	
Clear Learning Goals (I Can statements):	I can explain the process that organisms go through during fossilization.	
Vocabulary	evidence, remains, carnivore, herbivore, omnivore, mold, cast	
Build Background	**Class Discussion:** Have students share what they remember about how fossils form. Will every animal that dies become a fossil?	
Direct Instruction (Teacher led)	Explain to students that today we will be doing an activity in which they will be able to make their own "fossils." In order to do this in an orderly way, students will log on to their Chromebooks and complete a reading on fossils on Epic while the teacher calls small groups to make their fossils. This will make monitoring and clean-up easier. Assign a fossils reading to students on Epic that they can work on while they are waiting to make their fossils. The following link is one possible choice. https://www.getepic.com/app/read/70426	**Time: 10 min.**
Student Practice	**Small Groups: Fossil Making** Give each student a plastic/paper cup, a ball of modeling clay, and plaster of paris (to mix with water). Show students how they should spread the modeling clay into the bottom of the cup, and then use a plastic animal/plant to make an impression in the clay. They should only make an impression in the clay and then take the plastic animal/plant out, not leave it in the cup! Give each student their own separate cup with plaster of paris and water and have them mix it up. Make sure you don't add too much water or it will be too runny. Once they have mixed the plaster of paris, they can pour it on top of their mold in the clay and let it sit so that it hardens.	**Time: 10 min.**

	Students should read the fossil book on Epic while they are waiting for their turn to make a fossil.	
Check for Understanding	Ask students to identify which of the fossils they made today were cast fossils and which were mold fossils. (*The clay represents a mold fossil, and the plaster represents a cast fossil.)	**Time: 5 min.**

	Wednesday, December 7	
Standards-aligned Materials and Resources	• Agents of Weathering interactive notebook page • Science notebook • YouTube	
Clear Learning Goals (I Can statements):	I can explain the process of weathering and how it can change the surface of the Earth.	
Vocabulary	weathering, sediment, friction, frost-wedging, glaciers	
Build Background	**Turn and Talk:** Do you think the surface of the earth stays the same or changes? What do you think can happen to change the surface of the earth?	
Direct Instruction (Teacher led)	Over the past week we learned about fossils and what they can tell us about Earth in the past. Over the next week we are going to focus on the slow and rapid processes that can change the surface of the Earth. Today and tomorrow, our focus will be on weathering and erosion, which are slow processes that can change the Earth's surface. To introduce students to weathering and erosion, show the short video below and tell students to focus on the difference between these two processes. Weathering and Erosion: Crash Course Kids #10.2 After watching the video and discussing with students, tell them that we will be learning about weathering today, as well as the different factors that cause it. Explain that **weathering** is the process of rock being broken down into sediment naturally. Then, model for students how to cut out and glue the Agents of Weathering interactive notebook page in their science notebooks.	**Time: 10 min.**
Student Practice	As a class, use the interactive notebook page to go through the different agents of weathering. Explain that factors such as wind, water and waves, ice, and plants and animals can contribute to rock being weathered. Then	**Time: 10 min.**

	fill in **how** these different factors can cause weathering. Make sure students follow along in their science notebooks.	
Check for Understanding	**Quick Write:** On a sticky note, students should choose one agent of weathering (wind, water and waves, ice, or plants and animals) and explain how it causes rock to be weathered.	**Time: 5 min.**

	Thursday, December 8	
Standards-aligned Materials and Resources	• Agents of Erosion interactive notebook sheet • Science notebook • YouTube	
Clear Learning Goals (I Can statements):	I can explain the process of erosion and how it can change the surface of the Earth.	
Vocabulary	erosion, sediment, glaciers, wind	
Build Background	**Class Discussion:** Ask students to share what they remember about weathering and how it can change the surface of the earth. Is it a slow process or a fast process?	
Direct Instruction (Teacher led)	Remind students that yesterday we began learning about weathering, which is the slow process of rock being broken down into sediment naturally. Today we are going to learn about erosion, which is another slow process that can change the surface of the Earth. To begin, watch the video below to introduce students to erosion and how it can change the Earth's surface. The Power of Water for Kids: How Erosion by Water Shapes Landfor... After showing the video and discussing how water, waves, and ice can cause erosion, model for students how to cut out the Agents of Erosion interactive notebook sheet and glue it into their science notebooks.	**Time: 10 min.**
Student Practice	As a class, use the interactive notebook page to go through the different agents of erosion. Explain that factors such as wind, water, waves, and ice can contribute to rock being eroded. Then fill in **how** these different factors can cause erosion. Make sure students follow along in their science notebooks.	**Time: 10 min.**

Check for Understanding	**Turn and talk:** Each person in the table groups will choose one agent of erosion (wind, water, waves, or ice) and take turns explaining it to the people in their table group.	**Time: 5 min.**

	Friday, December 9	
Standards-aligned Materials and Resources	• YouTube video • "Landslides" reading and questions	
Clear Learning Goals (I Can statements):	I can explain what landslides are and why they occur, as well as how they change the surface of the Earth.	
Vocabulary	landslide, gravity, slopes, wildfires, debris	
Build Background	**Class Discussion:** Ask students to share what they already know about landslides. How can they change the surface of the earth?	
Direct Instruction (Teacher led)	Remind students that over the past two days they learned about slow processes that can change the surface of earth. Today we are going to begin learning about fast processes that can change earth's surface by taking a closer look at landslides. To begin, show students the video below so that they have an idea of what landslides look like. Landslides | National Geographic Give each student a copy of the Landslides reading. Read the first page with students, which includes the "Earth's Systems: Landslides" and "Location of Landslides" sections. As you are reading, model for students how to pick out important information in the text and annotate. Point out why landslides always move downward and where most landslides occur.	**Time: 10 min.**
Student Practice	In small groups, students will read the remainder of the Landslides passage, which includes Causes of a Landslide and Effects of Landslides. As they are reading with their groups, students should make sure they are highlighting or underlining the key ideas and details from the passage. Once students have had a chance to read with their table groups, go through the text with them and discuss the causes and effects of	**Time: 10 min.**

	landslides. If time allows, create a cause and effect chart about landslides in your science notebooks.	
Check for Understanding	Students will answer the Landslides: Cause and Effect questions on their own. Remind them that they should go back in the text to find the answers to the questions.	**Time: 5 min.**

Direct Instruction (Teacher led): ***Examples - Modeling, providing new vocabulary, questioning, anchor charts, scaffolding, chunking content, etc.***

Student Practice: ***Examples - Small group w/ teacher, pairs, individual; graphic organizers, writing prompts, think-pair-share, student-led discussions, student summaries, pictorial notes, mini-projects, etc.***

Check for Understanding: ***Examples - ticket out the door, kahoot, white boards, four corners, turn and talk, thumbs up/down, parking lot/Windshield, summative assessment, project, performance, Pear Deck slides, Flipgrid, Padlet, etc.***

Age of Fossils Diagram