2nd Grade Science Lesson Plan
Grace Streeter

Grade: 2

Subject: Science – Erosion of Rivers

Materials:
- Plastic Bins (3)
- Soil (or Sand)
- Water
- Cup (or something else to pour the water in a steady stream with)
- Small house and tree figures
- *Erosion and Weathering* by Willa Dee (pages 10-11)

Technology Needed: N/A

Instructional Strategies:

- ☐ Direct instruction
- ☐ Guided practice
- ☐ Socratic Seminar
- ☐ Learning Centers
- ☐ Lecture
- ☐ Other (list)
- ☐ Peer teaching/collaboration/ cooperative learning
- ☐ Visuals/Graphic organizers
- ☐ PBL
- ☐ Discussion/Debate
- ☐ Modeling

Guided Practices and Concrete Application:

- ☐ Large group activity
- ☐ Independent activity
- ☐ Pairing/collaboration
- ☐ Simulations/Scenarios
- ☐ Other (list)
- ☐ Hands-on
- ☐ Technology integration
- ☐ Imitation/Repeat/Mimic

Explain:

Standard

2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

Objective

- By the end of this lesson, student will be able to define erosion and analyze the effects it has in the environment referring to rivers

Bloom's Taxonomy Cognitive Level: Remembering, Understanding, Applying

Universal Design for Learning

Below Proficiency: Students below proficiency will receive an increase level of assistance from the educator to ensure that they understand the concepts. The teacher may ask extra guiding questions to help these students think more deeply about the content but at their own pace.

Above Proficiency: For students above proficiency, the teacher may provide extra guiding questions to challenge the students in their thinking. "How does the flow of the river effect the land around it? Where does all the sediment go when the river carries it away?" These are just some examples of questions to help challenge the students further in their thinking.

Modalities/Learning Preferences:

- **Visual:** Students will be able to visually see the process of erosion due to rivers through the hands-on experiment.
- **Auditory:** Students will be able to learn the information auditorily through the reading of the book at the beginning of the lesson as well as through discussion with peers and end of class discussion
- **Kinesthetic:** Kinesthetic learners will be able to participate in the hands-on experiment in pouring water to replicate a river in carrying sediment down the river.
- **Tactile:** Students may be provided the opportunity to write down predictions or their conclusions to the experiment.

Classroom Management- (grouping(s), movement/transitions, etc.)

- Students will stay in their seats throughout the lesson unless instructed to do otherwise.
- Students will walk in the classroom at all times.
- Students will raise their hands to respond to questions.
- Students will have their eyes on the teacher throughout the lesson and will follow directions throughout the lesson
- Students will be grouped based on what row their desk is in.

Behavior Expectations- (procedures/expectations specific to the lesson, rules and expectations, etc.)

- Students will treat the materials with respect and will follow directions for how to use them
- Students will all participate in the experiment by pouring the water, discussing, and predicting results
- Students will walk in the classroom
- Voice levels will be at 0 when the teacher or another student is talking

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	• Voice levels will be at a 1 or 2 when exploring with the experiment.

Minutes	Procedures
2-5 min	**Set-up/Prep before lesson:** ❖ Set out the *Erosion and Weathering* book with pages 10 and 11 marked and ready to read ❖ Have the bins filled with soil and cups out for water to pour for experiment – these will be placed on the floor in different stations so that all the students can see ❖ Set out the small house and tree figurines (or put them around the riverbed in the soil ❖ Choose groups by drawing names and select who will pour the water for the experiment (about 6 per group)
1 – 2 min	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)** ❖ "Hello class! Have you ever watched a river run? Have you ever wondered how the traveling water effects the land around the river? What happens when so much water travels in the same direction over time? Tell me what you think!" - Allow 2-3 students to respond to this prompt.
5-6 min	**Explain: (teacher-led)** ❖ "This happens through a process called erosion. Do any of you know what erosion is? - Allow the class to respond to this. Relate their responses to how rivers flow and effect the environment around them. ❖ "Well class, today, we are going to find out about how erosion affects the environment around us! More specifically, we are going to think about a part of the environment that is very close to us...the Missouri River!" ❖ "To help us understand more about how rivers erode the land around them, I am going to read you a couple pages out of this book called *Erosion and Weathering* by Willa Dee" - Remind the students of your expectations for them when listening to the book ❖ Read the book ❖ Discuss the processes/definitions described in the book: - Particles - Grind
10 – 15 min	**Elaborate: (concreate practice/application with relevant learning task -connections from content to real-life experiences)** ❖ "Alright class! We are going to do a little experiment so that we can see for ourselves how the flow of water affects the land around a river like the Missouri! Now, stay at your seats and listen carefully to these directions so that you can understand how to do this activity!" ❖ "For this experiment, we are going to pour water into a riverbed made of dirt to see what happens to the land around a river. I have three stations set up around the classroom with dirt in bins, cups for pouring water, and little houses and trees next to the riverbed in the dirt." - "For this activity, I have already divided you all into three teams so that you all do not need to crowd around one station. I will tell you the teams after I finish giving instructions." ❖ Walk the students through the process of the activity (verbally before dismissing them): - Teams will be dismissed one at a time so that all teams are not trampling each other. Direct the students to the stations they should be at and remind them to <u>walk to their station</u>. - Once they get to their station, they should not do anything with it until the teacher says "go." - One student has already been selected by the teacher to fill the water cup and pour it into the riverbed - Once the students have their cup of water and are ready to go, they will pour the water at one end of the riverbed slowly and steadily. - Remind the students that they are not to play with the dirt or the figurines. They will just pour the water and observe the results - The students will observe what happens when the water flows through the riverbed. Then they will discuss among themselves what they observe. ❖ Have the students repeat the direction and behavior expectation back to you so that you know they understood them ❖ Dismiss the students so that they can complete their assignment ❖ Have the students discuss what they observed. ❖ Give the students enough time to discuss this. Once a minute or two has passed have the students come back from the activity and return to their desks.
2-5 minutes	**Closure (wrap up and transition to next activity):** ❖ Wow everyone! That was so fun! I could tell from your discussion that you were enjoying the activity and that you were learning something about erosion!" ❖ Lead the students in a short discussion about what they observed. - "What happened when you poured the water into the riverbed?" - "Where did it go/flow?" - "What happened to the dirt around the riverbed?"

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	- "Did anything happen to the houses and trees around the riverbed?" ❖ As you wrap up ask if the students have any questions about the experiment. How can they apply what they learned to their own lives/experiences? Do they have any questions about erosion?"

Formative Assessment: (linked to objective, during learning)	**Summative Assessment (linked back to standard, END of learning)**
• **Progress monitoring throughout lesson (document of student learning, data collection)** Formative assessment will be done throughout the lesson and experiment. The teacher will listen to student conversation and discussion about erosion's effect on the land around it throughout their experiment.	Summative assessment will be completed during the discussion at the end of the lesson. Students will all collaborate in their responses to the questions in the closure part of this lesson plan.

Teacher Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

I believe that this lesson (in addition to the math lesson) was my favorite lesson that I taught this week! I taught his lesson on Friday, the last day of my practicum week. The teacher was still out sick, and I was working with the substitute teacher. My cooperating teacher had originally planned for a Mystery Science lesson to be taught during this period, and I offered to create a lesson on the same subject (water erosion) that would be a hands-on experience and a fun way to end their week.

I had expected the lesson to go well, but I was astounded with the results! At the beginning of the lesson, I already felt more confident in my teaching abilities as well as my classroom management. I had been working with these students all week individually and as a large group, and I felt much more confident that I could manage this classroom well and teach the content I had prepared in an engaging and fun way. I did a much better job this time in communicating my expectations and *repeating* them for the students so that they always knew what they were supposed to be doing.

Once I released the students to explore with the materials, I walked around the room and observed them experimenting with the materials that I had provided for them. I listened to their discussion and their collaboration, and I could tell that they were not only having a good time, but they were also asking questions, experimenting, discovering, and coming up with their own answers! When I brought the students back to have a group discussion about what they observed, I was ecstatic with their enthusiasm and curiosity! This lesson was for sure a success, and I would definitely do this again! I came away from teaching this lesson confident in my abilities and excited to come and teach this class during the next practicum week!