**Developing Models of Land and Water Bodies**

I.  Formation of Groups: Students will make a human graph where they will stand in a line based on if they think they know a lot about landforms, or if they know a little about landforms. Then the teacher will pair up students from the front of the line with students with the back of the line to make groups of two.

II. Role Assignments: Students will choose between themselves whom they want to be the fist and the crumpler
 Fist:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Crumpler: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

III. Task
**Opening:**

**Motivation and Explanation of objective:**

* **Engagement(Students are engaged by being questioned):** If we floated down a river, where would we end up? Today we are going to develop a model of the earth’s surface and use it to discover an important principle about how rivers work.
* We will demonstrate what we have also learned about maps in Social Studies to describe and explore the environment we create out of paper.
* First, we will watch an opening video to prepare us and get us thinking about some questions for this activity.
* <https://mysteryscience.com/water/mystery-1/mapping-earth-s-surface-landforms/112?r=3454374#slide-id-2212>

**Body of the Lesson:**

**Guided Practice/Modeling:**

* We will be working in partners so choose an elbow partner. Teacher will conduct the human graph to have students form groups
* Second, we will write our names on the bottom of the paper. (both partners)
* **Explore (students begin exploring through the hands on activity):** Next, choose someone to be the fist and someone to be the crumpler. (The fist will make a fist an hold it in front of them while the crumpler crunches the paper over the fist/wrist. Then the paper will be pulled off and the fist can crumple the paper more.)
* Then, the crumpled will un-crumple the paper and line it up on the lan layout paper where there are edges with the black line. The fist will tape it down on the edges.
* This is going to be our landform. Discuss with your partner about what your model looks like.

**Engaging Instruction or Learning Activity:**

* We will now make it rain on our mountain. Talk with you partner on where you think our imaginary rain will go.
* Decide with your partner where the highest places on the model are and mark them with thick lines with your marker. Use a lot of ink for this but be carful to not make a hole in your mountain.
* Put the whole groups models on the center of your table.
* I will come around and spray your models and you will observe them quietly using only whisper voices at this time.

**Check for understanding:**

* **Explain(the teacher will have the students discuss and explain what happened on their lessons):** Lets discuss and understand what happened with our models.
* What happened when it rained on your model?
* Why do you think the model went where it did?
* Did it make anything that looks like a river?
* If we put more detail on our model/map, what do you think you’d find at the start of every river? Where do rivers start?
* **Elaborate(teacher explains exactly what happened):** The etacher will clarify everything that the students learned in the activity by describing how the lesson and activity were conducted, and how they relate to landforms.
* **Evaluate(the teacher will evalaue for understanding):** Students will fill out an exit ticket where they explain complete the sentence frame “Rivers are created as water\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”

IV. Time Limit: 60+ minutes

V. Social Skills and or Habits of Mind to Engage/Assess: Attentive Listening; Disagree with Idea- Not the Person; Flexibility in Thinking; Perseverance; Team Work

VI  Level of Voice:  Classroom Level 1- Whisper

VII. Processing--Questions for team and individual reflection:

        Content  Standards:  NGSS; CCSS; Other?

2-ESS2-2.:Develop a model to represent the shapes and kinds of land and bodies of water in an area.

HSSCS.2.2:  Students demonstrate map skills by describing the absolute and relative locations of people, places, and environments.

VIII. Assessment of Cooperation/Collaboration:
Self-Assessment of Collaborative Activity Performance

 Rate Your Mates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **3 Points** | **2 Points** | **1 Point** | **Score** |
| **Helping** | **I helped my partner the entire time.** | **I helped my partner most of the time.** | **I did not help my partner most of the time.** |  |
| **Listening** | **I listened to my partner and shared ideas the entire time.** | **I listened to my partner and shared ideas most of the time.** | **I did not listen to my partners most of the time. I did not share ideas most of the time.** |  |
| **Participation** | **I participated in the group by doing my job the entire time.** | **I participated in the group by doing my job most of the time.** | **I did not participate in the group most of the time.** |  |
| **Teamwork** | **I encouraged and supported my partner the entire time.** | **I encouraged and supported my partner most of the time.** | **I did not encourage or support my partner most of the time.** |  |
| **Respect** | **I treated my partner with respect the entire time.** | **I treated my partner with respect most of the time.** | **I did not treat my partner with respect most of the time.** |  |

VIII. Encouraging Energizer: Varied: Team selected

**Based on the book: *Blueprints for Achievement in the Cooperative Classroom*. Bellanca and Fogarty, 2001.**