

Natural Disasters

Lesson Overview

In this lesson, students use Making Thinking Visible (MTV) to make their thoughts about specific natural disasters visible. This lesson is designed as a culminating activity for a unit on Natural Disasters. Students will draw a picture to illustrate their selected natural disaster and how it effects the environment before, during and after. Students will also present their assigned natural disaster MTV to their classmates. Students will use a variety of reflective writing strategies to summarize their learning from the group presentations.

Standards Addressed

- SC 2005 7-4.3 Explain the interaction among changes in the environment due to natural hazards (including landslides, wildfires, and floods), changes in populations, and limiting factors (including climate and the availability of food and water, space, and shelter).
- SC 2014 7.EC.5B.1 Develop and use models to explain how organisms interact in a competitive or mutually beneficial relationship for food, shelter, or space (including competition, mutualism, commensalism, parasitism, and predator-prey relationships).
- NGSS MS-LS 2-1 Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

Disciplinary Literacy Best Practices

Making Thinking Visible (MTV)
Collaborative Comments
Key Words to Summarize
3, 2, 1

Triangle, Circle
Here's What, So What, Now What
Frayer Model
Exit Ticket

Lesson Plan

Time Required – One 60 minute class period

Disciplinary Vocabulary: landslide, flash flood, wildfire, mudslide, flood

Materials Needed:

- One poster board or poster board size paper for each group of three to four people.
- Crayons/markers/ or colored pencils
- Resources for research (if needed) of disasters
- Science notebook or other material for reflection writing (1 per student)
- Note cards or post-its (1 per student)

Assessment: MTV, Student Dialogue, Group Presentations, Reflections, & Exit Ticket

Engage

- Introduce the task of the day to students: Collaborative groups will create a poster to make their thinking visible about an assigned natural disaster. The goal is to create an illustration that represents their thinking about the natural disaster and should depict before, during, and after. Each group will present their thinking to the class and explain their thinking.
- During their group work, students will focus on using Collaborative Comments (C²) in their groups. The statements and points to remember should be displayed in the room as a reminder for students.

Collaborative Comments (C²)

Statements

- I agree because...
- I disagree because...
- I'm not sure about because
- What do you think about ...

- Tell me more about ...
- I'm thinking we should try ... what do you guys think?
- I really like your idea because...

Other Points to Remember

- Listen to each other.
 - Think about your own ideas.
 - ALL ideas are important.
 - Think about what others have said before you respond.
 - Respect others' ideas and responses.
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- Model the use of Collaborative Comments as an example and answer student questions.
 - Students select a slip of paper from a basket to determine their group for the day's task. The paper drawn has a specific title of a natural disaster: mudslides, flash floods, floods, wildfire, and landslides.

Explore

- Students discuss with their group the effects of the natural disaster and how the landscape has changed as a result of the disaster.
- Students make their thinking visible with an illustration. The audience should be able to tell what is happening with limited captions and explanations. (Groups are limited to 1 sentence as a caption.)
- While students are exploring their disaster and collaborating on how to create their MTV, they may explore notes or do research on mobile devices if necessary in order to understand all information needed to complete the MTV and present their work.
- Teacher acts as facilitator and monitors group interaction, questioning student groups while they work.

Explain

- Student groups present their final illustration to the class. Each group will explain the effects of the natural disaster on the landscape and environment focuses on the differences before and after the disaster.
- While groups were presenting, students who were seated completed reflective writing according to presented information and recorded the reflection in their student science notebook. A different reflective writing strategy was used for each different natural disaster presentation.

Wildfire Reflection (Key Words) – Write 10 key words during the presentation. Use these words to write a summarizing statement about wildfires.

Mudslide Reflection (3, 2, 1) – Write 3 things you learned from the presentation, 2 things you want to know more about, and 1 question you might use from the presentation on a test.

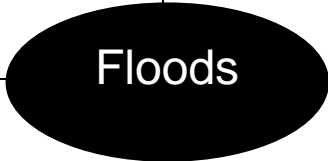
Landslide Reflection (Triangle, Circle) – Write 3 Points to Remember



Write a question going around in your mind

Flash Flood Reflection (Here's What, So What, Now What) – *Here's what* they said...
So what does that mean? *Now what* will I do with that information?

Flood Reflection (Frayer Model) –

Definition			Characteristics
Examples			NonExamples

- Each presentation group completed a reflection of their own MTV using the 3, 2, 1 strategy.

3, 2, 1 – Write 3 visuals you used for your natural hazard and why, 2 things you noticed about your own thinking, and 1 thing you might do differently next time

- Students complete an exit ticket comparing mudslides and landslides, providing examples from classroom presentations and MTVs. (The exit ticket can be completed on a notecard, post-it note, scratch sheet of paper, or written in their science notebook.)

Teacher Reflections and Biographical Information

Listening to the student dialogue before they began their drawing allowed us to ask probing questions to the groups to insure their understanding of the effects of the disaster. Observing the drawings and listening to their presentations was rewarding because this activity confirmed the student's understanding of the concept taught.

Lesson Author:

DeDee Quinn, 6th and 7th Grade Science Teacher, Middle School of Pacolet, Spartanburg County School District 3, Spartanburg, SC.

Susie Teague, Education Specialist, S²TEM Centers SC