

ARTS IMPACT PROJECT BASED LEARNING UNIT PLAN

Theater and STEM Infused PBL Unit

Natural Disasters: What Causes Them and How Can We Be Prepared?

Authors: A. Poch, L. Rogers, L. Enriquez, R. Wolfe-Jones, J. Weaver, C. Groszhans, K. Tabor, A. Murray, M. Barajas, K. Ayers, M. Maine with D. Quicksall
Grade Level: Second – Third Grade

Project Idea:

Creating a way in which we can educate our community about the natural disasters that can happen in our region and how to be prepared for them. Through understanding the forces that create disasters, we can work toward being ready for them, preventing damage and/or injury. Second grade will focus on the earth forces (earthquakes, volcanoes, tsunamis). Third grade will focus on the weather forces (lightning/fire, rain/flooding/landslides/drought, wind). They share their findings in a video, a performance, a written guide, or a commercial.

Driving Question:

How can we educate our community about disaster preparedness?

Unit Summary (Completed at end of project. Use for sharing out public product.)

Students research natural disasters around the world. They present their findings as a group in a tableau. They become experts in groups to research natural disasters that could happen in the Puget Sound. They present their findings in tableaux, scenes, or videos. They research how plants, animals, and people are affected. They explore how to prepare for a natural disaster. They decide who their audience will be, and share their findings in a video, a performance, a written guide, or a commercial.

Learning Targets and Assessment Criteria

Target: Communicates the actions and attributes of a natural disaster.

Criteria: Uses physical choices, gestures, and facial expressions in an activated tableau to represent a natural disaster.

Target: Makes a specific physical choice to convey character and action.

Criteria: Uses body shape, facial expression, and gesture choices to communicate who he/she is and what he/she is doing.

Target: Collaborates with others.

Criteria: Communicates ideas to others; makes compromises; incorporates input/feedback.

Vocabulary

Arts:

Action
Character
Tableau

Arts Infused:

Attributes
Cause and Effect

STEM:

Climate
Earth Forces
Earth Materials
Earth Systems

continued

Materials

Resources (Websites, experts, texts)

Miscellaneous websites on weather, earth forces, natural disasters, disaster preparedness.
Expert guests: fire fighters, police officers, TV weather forecasters

Museum Artworks or Performance

Seattle, WA

Book-It Theater
Living Voices
Seattle Children's Theatre

Tacoma, WA

Broadway Center for the Performing Arts

continued

<p>System Interactions Weather <u>Social Emotional Learning:</u> Coping Strategies Mood Meter</p> <p><u>21st Century Skills:</u> Collaboration Communication</p>	<p>Materials Computers, iPads, books and articles about disasters, videos and/or pictures of disasters, graphic organizers, Mood meter, Class assessment worksheet</p>
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Standards to Drive the Inquiry

Arts

WA Arts Learning Standards

For the full description of each anchor standard and the grade level performance standards, see:

<http://www.k12.wa.us/Arts/Standards>

Anchor Standard 1: Generate and conceptualize artistic ideas and work.

Performance Standard (TH:Cr1.1.2): b. Collaborate with peers to conceptualize scenery in a guided drama experience (e.g., process drama, story drama, creative drama). c. Identify ways in which voice and sounds may be used to create or retell a story in guided drama experiences (e.g., process drama, story drama, creative drama).

Performance Standard (TH:Cr1.1.3): a. Create roles, imagined worlds, and improvised stories in a drama/theatre work. b. Imagine and articulate ideas for costumes, props and sets for the environment and characters in a drama/theatre work. c. Collaborate to determine how characters might move and speak to support the story and given circumstances in drama/theatre work.

Anchor Standard 2: Organize and develop artistic work.

Performance Standard (TH:Cr2.1.2): a. Collaborate with peers to devise meaningful dialogue in a guided drama experience (e.g., process drama, story drama, creative drama).

Performance Standard (TH:Cr2.1.3): b. Compare ideas with peers and make selections that will enhance and deepen group drama/theatre work.

Anchor Standard 3: Refine and complete artistic work.

Performance Standard (TH:Cr3.1.2): b. Use and adapt sounds and movements in a guided drama experience (e.g., process drama, story drama, creative drama).

Performance Standard (TH:Cr3.1.3): b. Participate and contribute to physical and vocal exploration in an improvised or scripted drama/theatre work.

Anchor Standard 4: Select, analyze, and interpret artistic work for presentation.

Performance Standard (TH:Pr4.1.2): b. Alter voice and body to expand and articulate nuances of a character in a guided drama experience (e.g., process drama, story drama, creative drama).

Performance Standard (TH:Pr4.1.3): b. Investigate how movement and voice are incorporated into drama/theatre work.

Anchor Standard 6: Convey meaning through the presentation of artistic work:

Performance Standard (TH:Pr6.1.2): a. Contribute to group guided drama experiences (e.g., process drama, story drama, creative drama) and informally share with peers.

Performance Standard (TH:Pr6.1.3): a. Practice drama/theatre work and share reflections individually and in small groups.

Anchor Standard 9: Apply criteria to evaluate artistic work.

Performance Standard (TH:Re9.1.2): a. Collaborate on a scene in a guided drama experience (e.g., process drama, story drama, creative drama).

Anchor Standard 10: Synthesize/relate knowledge and personal experience to make art:

Performance Standard (TH:Cn10.1.2): a. Relate character experiences to personal experiences in a guided drama experience (e.g., process drama, story drama, creative drama).

Performance Standard (TH:Cn10.1.3): a. Use personal experiences and knowledge to make connections to community and culture in a drama/theatre work.

English Language Arts

Common Core State Standards in ELA

For a full description of CCSS Standards by grade level see: <http://www.k12.wa.us/CoreStandards/ELAstandards/>

[W.2.2](#): Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.

[W.2.7](#): Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).

Science, Technology, Engineering

Next Generation Science Standards

<http://www.nextgenscience.org/search-standards>

Performance Expectations

- 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
- 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
- 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
- 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

Disciplinary Core Ideas

2nd Grade

[ESS1.C: The History of Planet Earth](#)

[ESS2.A: Earth Materials and Systems](#)

[ESS2.B: Plate Tectonics and Large-Scale System Interactions](#)

3rd Grade

[ESS2.D: Weather and Climate](#)

[ESS3.B: Natural Hazards](#)

Scientific and Engineering Practices

Analyzing and Interpreting Data

Engaging in Argument from Evidence

Obtaining, Evaluating, and Communicating Information

21st Century Skills

<http://www.p21.org/our-work/resources/for-educators>

- Communication: *Actively listens; expresses ideas – visually/physically/verbally; responds to others*
- Collaboration: *Communicates ideas to others; makes compromises; and incorporates input/feedback*

Teacher Project Planning

(Questions for teachers.)

1. *What will the entry event be to launch this unit?*

2nd Grade: Students arrive in the morning to a “wrecked” classroom. Desks over-turned, books on the floor, chairs everywhere, etc. Students have no idea what happened. Teacher is in utter shock, asks, “What do you think happened here?” Students offer ideas/theories as to what occurred to create the mess. Teacher guides the discussion to arrive at the idea of a natural disaster. Sample probing questions that are presented to the students:

Could an earthquake actually happen in one classroom?

Are we prepared for a natural disaster? What do we do if there is no water?

No electricity? No phone service?

How could we have been more prepared?

What do we need to know/research to be more informed?

3rd Grade: Students arrive in the morning to a storm “raging” inside the classroom (the effect is similar to entering a haunted house): A video of a violent thunderstorm/tornado/hurricane is showing.

Lights are out (or flickering).

Multiple fans are blowing in all directions.

The teacher is spraying water at the students.

A discussion about natural disasters caused by weather follows, possibly referring to weather-related events that have happened recently (e.g. Hurricane Harvey)

What weather-related disasters could happen in our area?

Are we prepared for a natural disaster? What do we do if there is no water?

No electricity? No phone service?

How could we have been more prepared?

What do we need to know/research to be more informed?

2. *What resources might we need?*

(Experts, fieldtrips, texts, websites, data, equipment, materials)

MEDIA: websites, books & magazine articles that relate to disasters; videos and/or pictures of disasters, newscasts of disaster reporting

GUESTS: police, firefighters, local TV weather reporter

EQUIPMENT: computers, ipads

3. *What is the duration of this unit?*

Two to five weeks.

4. *What will be group work?*

Class will divide into “expert” groups to investigate different disasters.

What will each individual student do?

Each student will collaborate within the group to work/present as a team.

5. *What will the formative assessments/moments for reflection be?*

(Journal entries, plans, outlines, rough drafts, sketches, turn and talk, physical brainstorm, idea mapping, diagramming)

Graphic organizers of research, presentations, tableaux, videos

6. *What will the summative assessment/public product be?*

(Performance, exhibition, publication, public presentation, website, instillation)

Performances, videos, public presentations, published guide on how to be prepared.

Facilitating Student Understanding of the Problem

(Questions to guide student inquiry.)

1. *What do we know about this problem before we begin?*
2. *What do we need to learn in order to solve it?*
3. *Where will we look for resources?*
4. *Who is our audience? Who will be helped by our solution?*
5. *How will we share our solution?*
6. *How will we assess our own learning?*

PBL Unit Outline of Inquiry

(Begin each step with a question. Follow that with a brief description of what students do to address the question.)

1. **What natural disasters caused by forces in the earth (2nd grade)/ adverse weather (3rd grade) happen around the world?**

- Teacher leads brainstorm of worldwide disasters then narrows field to those that are specific to the Puget Sound area. *Prompt: Which disasters can happen here and which ones can't? Why?*
- Teacher models (by class brainstorm) identifying the attributes specific to a disaster that most likely wouldn't happen in this area (i.e. a tornado or hurricane). Teacher uses following graphic organizer to record the identifying attributes (evidence):

Earth process	How does it happen?	What is the history?	How can we be prepared?
Tornado/Hurricane			

- Students (with guidance of teacher) brainstorm and provide examples of natural disasters from around the world caused by earth forces (2nd grade) or weather (3rd grade).

- Students (with guidance of teacher) focus on a single disaster that most likely wouldn't happen in the Puget Sound region. Fill out the graphic organizer through class brainstorm session.
- The students (with guidance of teacher) divide into groups and create "activated" tableaux that reflect the attributes of the specific disaster. Lead group reflections after presentations.

☑ Student reflection and assessment: Uses physical choices, gestures, and facial expressions in an activated tableau to represent a natural disaster. Communicates ideas to others; makes compromises; incorporates input/feedback.

2. What natural disasters caused by forces in the earth (2nd grade)/ adverse weather (3rd grade) could happen in our area?

- Teacher will guide students in compiling a list of natural disasters that could occur in the Puget Sound region.
- The students will form "expert groups" and chose one of the disasters that is specific to the Puget Sound region to work on. Using resources (internet, books, articles, videos of disasters, pictures) they will research the disaster, fill out the graphic organizer, and organize their research for a presentation to the class.
- Each expert group (with guidance by the teacher) will prepare a presentation for the class. *Prompt: What can your expert group teach our classroom community about the disaster you have chosen?*
- The students present their group's findings through the dramatic form of their choice: tableaux, acted scenes, a video (i.e in the form of a PSA, newscast, dramatic scenes, etc.). The teacher guides the reflections.

☑ Student reflection and assessment: Uses physical choices, gestures, and facial expressions in an activated tableau. Uses body shape, facial expression, and gesture choices to communicate who he/she is and what he/she is doing. Communicates ideas to others; makes compromises; incorporates input/feedback.

3. How are plants and animals effected by your disaster?

- The expert groups research the effects of their disaster on the plant and animal life of this region (possibly using a map of Washington). Share findings by presenting a short scene that demonstrates the effect the disaster has on the wildlife.

How are people effected?

- The expert groups find evidence of the effects on people during the disaster. They consult books, videos, family interviews of people recalling their experience during an actual disaster.
- Students share their findings through means of their choice (video, performance, tableaux, written paper, etc.)

☑ Student reflection and assessment: Uses physical choices, gestures, and facial expressions in an activated tableau. Uses body shape, facial expression, and gesture choices to communicate who he/she is and what he/she is doing. Communicates ideas to others; makes compromises; incorporates input/feedback.

4. How do we prepare ourselves emotionally for a disaster?

- The students survey their community (family and friends) about natural disasters they may have experienced and what they did to prepare and to cope with the effects? If the students have experienced a disaster themselves, have them reflect upon their own experience.
- The students create a compilation of strategies of how to deal/cope with a natural disaster. *Prompts:*
How do people feel when disasters happens?
How do people get through a disaster?
What does it take to make yourself feel the way you felt before the disaster?
Using the Mood Meter, what would need to happen to keep you calm?

☑ Student reflection and assessment: Communicates ideas to others; makes compromises; incorporates input/feedback.

Public Product/Sharing

Who is our audience?

To be determined by the students (e.g. family, classes, whole school, etc.)

Begin with a question, followed by the description of the culminating event that shares the learning from the PBL unit.

How do we share what we have learned with our community?

- The students decide what community they wish to communicate with (e.g. family, classes, whole school, etc.)
- The students decide on the best means to share their findings. The sharing can take the form of:
 - Instructional video on how to be prepared
 - A performance
 - A commercial for what needs to be in an earthquake kit
 - Present findings at an assembly for school and/or families
 - Go to other classes to present
 - Create a song/chant/poem with actions
 - Newscast/PSA
 - Make a book/pamphlet

ARTS IMPACT LESSON PLAN Theater and STEM Infused PBL Unit

Second – Third Grade: *Natural Disasters: What Causes Them and How Can We Be Prepared?*

CLASS ASSESSMENT WORKSHEET

The following assessment checklist can be used along with other assessment tools developed by teachers and students.

Disciplines	STEM/THEATER	THEATER	STEM/THEATER	Total 3
Concept	Tableau	Action/Character	Collaboration	
Criteria	Uses physical choices, gestures, and facial expressions in an activated tableau.	Uses body shape, facial expression, and gesture choices to communicate who he/she is and what he/she is doing.	Communicates ideas to others; makes compromises; incorporates input/feedback.	
Student Name				
1.				
2.				
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23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				
Total				
Percentage				

What was effective in the unit? Why?

What do I want to consider for the next time I teach this unit?

What were the strongest connections between arts discipline and STEM?

Teacher: _____

Date: _____

ARTS AND STEM INFUSED PBL UNIT: *Natural Disasters: What Causes Them and How Can We Be Prepared?*

Dear Family:

We are engaged a theater-infused project based learning unit in which we are trying to solve this challenge:

Driving Question:

How can we educate our community about disaster preparedness?

- We asked: How can we educate our community about disaster preparedness?
- We discovered what natural disasters occur around the world, as well as the ones that occur in our region.
- We scientifically researched specific disasters and reported our findings to the class.
- We created tableaux, performances, and videos in order to inform our community about what they should do to be prepared and stay safe if a natural disaster should happen.

At home, you could extend the learning by making sure you have all you need in the house in case of emergencies.