

# (What happened at Fukushima?)

**Lesson Overview:** Middle School students will explore the earthquake, tsunami and meltdown at the Fukushima Daiichi power plant in March of 2011. Students will use the attached resources to complete a graphic organizer, then create a summative piece demonstrating their knowledge.

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**Subject(s):** Social Studies, Language Arts

**Suggested Grade Level(s):** 6-8

**Time Duration:** (3) 40-45 minute class periods

**Common Core State Standards Addressed:**

[CCSS.ELA-Literacy.RH.6-8.2](#) Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.

[CCSS.ELA-Literacy.RH.6-8.7](#) Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

**Objectives:**

- Students will gain a better understanding of the disaster in Fukushima through in depth research and production of a summative piece.

**Materials:**

- Butcher paper
- Markers
- Printer Paper
- Colored pencils and Crayons
- iPad or other video recording equipment (optional)
- KWL chart (1 copy for each student)
- Research Packet (1 for each student)
- Rubric for research packet
- Rubric for summative piece
- Access to internet or hard copies of resources
- Resource List:

- History of Earthquakes and Tsunamis in Japan  
[www.japanfocus.org/-Gregory-Smits/3531#](http://www.japanfocus.org/-Gregory-Smits/3531#)
- Chronology of Earthquake (BBC News)  
<http://www.bbc.co.uk/news/world-asia-pacific-13017282>
- Breaking News  
<http://www.nytimes.com/2011/03/14/world/asia/14japan.html>
- Photos of Before and After (NY Times)  
<http://www.nytimes.com/interactive/2011/03/13/world/asia/satellite-photos-japan-before-and-after-tsunami.html>
- Present Day (NY Times)  
<http://www.nytimes.com/2013/10/22/world/asia/rainwater-problem-hits-japans-closed-nuclear-plant.html>
- Clips of Earthquake and Tsunami (NY Times)  
<http://www.nytimes.com/video/multimedia/100000000718650/clips-of-the-earthquake-and-tsunami.html>

### Activities and Procedures:

1. A KWL Chart is a 3-columned graphic organizer that allows students to demonstrate what they already know about a subject, what they want to know, and to demonstrate what they have learned. Students will create a KWL chart to activate prior knowledge on The Fukushima Daiichi Disaster. After handing out the KWL chart give students time to brainstorm everything that they know about the Fukushima disaster. If they have no prior knowledge, have them brainstorm things that they know about tsunamis, earthquakes, Japan and nuclear power in general. This chart is a living document and students will add to it throughout the lesson.
2. Have students pair and share what they know about Fukushima and the disaster. They can add items to the K section of their chart.
3. Have students share, as a whole group, some of the items that they have brainstormed. This will create a discussion and questions will arise about the events and the results of the disaster. As they share, divide a piece of butcher paper into three sections and write students' ideas down in the K section of a class KWL.
4. Give students time to come up with questions of curiosity about the events surrounding Fukushima. Give them the sentence starter "I wonder...", and give them some examples to get them started. They will document these questions in the W section of the KWL.

I wonder ...where Fukushima Prefect is?

I wonder ...what caused the tsunami?

I wonder ...what happened after the tsunami hit Japan?

5. Have students share their questions as a whole group. Make sure to document the questions on the class KWL chart. If students really like someone else's question,

they can add it to their chart. Make sure to keep the KWL chart handy, so that students can add questions as they arise.

6. Hand out the graphic organizer packets. Guide the students in previewing the graphic organizer, so that as they research, they know what they are looking for and how to document it.

“This graphic organizer is designed to let us collect information on the disaster in Fukushima in the form of a timeline. The major events are outlined on each page, but you need to find information on the specific details, when they occurred, and the effect that it had on Japan. You will begin when the earthquake happened and end in the present day. This will be assessed using a rubric.”

7. Students will use the provided resources to complete the graphic organizer. As students work, the instructor should maintain proximity and ensure that students are on track. Some might want to go into too much detail or not enough detail. The goal is to create a resource packet to use on the summative assessment.
8. Students will complete a summative task from the menu provided. The objective of the summative task is to create a piece that demonstrates student learning without the use of a formal test. Students have already researched the topic thoroughly through the use of a graphic organizer and that tool should provide access for the summative task. If this is to be an in class assignment class time should be allocated accordingly. The piece can be assessed with the attached rubric.
9. Students will complete the KWL chart. After students have researched and demonstrated their knowledge, they should finish the KWL chart. Have students both brainstorm pieces of information that they did not know before the lesson, and make an attempt at answering the I Wonder... questions from earlier. If they cannot answer those questions, the teacher should assist in location resources for the student. Make sure to complete the class KWL and wrap up with students. Some of the material can be thought provoking and emotional. Have students debrief in the form of informal discussions.

### **Assessments:**

- KWL chart can be assessed according to teacher’s discretion. Items to focus on are content, creating rich questions of curiosity, and demonstrating that the questions guided the student’s learning.
- Research packet is assessed according to the attached rubric. Items to focus on are content, time management, organization, use of provided resources and use of outside resources.
- Summative assessment can be assessed according to the included rubric. Items to focus on vary according to the menu selection, but content accuracy, time management, neatness and organization as well as creativity are common to all selections.

Menu for Summative Assessment:

***Create an informational brochure***

- Brochure should raise awareness for the disaster that occurred.
- Have pictures and descriptions of the places that you highlight.
- Take into account your audience which is citizens of your area.
- Why should your audience be concerned?

***Write a newspaper Article***

- Create a front page article describing the Fukushima disaster.
- Article needs to have accurate and succinct information
- Take into account your audience which is the citizens of your area
- Be sure to include a intriguing headline
- Is your article succinct and factual?

***Television News Story***

- Record yourself as a television news anchor, reporting on events in Fukushima.
  - Type a script for your newscast.
  - Make sure to have people to interview (role play).
  - Take into account your audience which is the citizens of your area.
  - Is your news story factual and impartial?
- This lesson is open to formal assessments that can be designed by an instructor. A True/False quiz would be applicable as well as a mapping and geography assessment. Informal assessments are also important to gauge student's understanding.

**Adaptations:**

This lesson was originally designed for 3 class periods with some work being completed outside of class. This is up to the teacher's discretion.

This lesson can be scaffolded according to students needs by being done in cooperative teams, using separate resources that are at a reading level more accessible to student population, or it can be a guided lesson, with the instructor exploring resources with students.

**Extra Credit/Additional Resources:**

Common Core Standards  
[www.corestandards.org](http://www.corestandards.org)

New York Times Learning Guide: [“20 Ways to Teach About the Disaster in Japan Across the Curriculum”](#)

Name: \_\_\_\_\_

Graphic Organizer for Fukushima Disaster

Date: \_\_\_\_\_

Event: Earthquake and Tsunami

| <b>What Happened?</b> | <b>Why did it happen?</b> | <b>Effect on the People of Japan</b> | <b>How are we feeling the effects today?</b> |
|-----------------------|---------------------------|--------------------------------------|--|
|                       |                           |                                      |  |

Name: \_\_\_\_\_

Graphic Organizer for Fukushima Disaster

Date: \_\_\_\_\_

Event: Fukushima Daiichi

| <b>What Happened?</b> | <b>Why did it happen?</b> | <b>Effect on the People of Japan</b> | <b>How are we feeling the effects today?</b> |
|-----------------------|---------------------------|--------------------------------------|--|
|                       |                           |                                      |  |

Name: \_\_\_\_\_

Graphic Organizer for Fukushima Disaster

Date: \_\_\_\_\_

Event: Response to Fukushima Daiichi

| <b>What Happened?</b> | <b>Why did it happen?</b> | <b>Effect on the People of Japan</b> | <b>How are we feeling the effects today?</b> |
|-----------------------|---------------------------|--------------------------------------|--|
|                       |                           |                                      |  |

Name: \_\_\_\_\_

Graphic Organizer for Fukushima Disaster

Date: \_\_\_\_\_

Event: Present Day

| <b>What Happened?</b> | <b>Why did it happen?</b> | <b>Effect on the People of Japan</b> | <b>How are we feeling the effects today?</b> |
|-----------------------|---------------------------|--------------------------------------|--|
|                       |                           |                                      |  |



Name: \_\_\_\_\_ Date: \_\_\_\_\_

Rubric: Fukushima Resource Packet

|                           | Novice (1)  | Apprentice (2)   | Senior (3)   | Master (4)  |
|---------------------------|---|--|--|---|
| Organization and Neatness | Assignment was difficult or impossible to read and gain understanding from. | Organization was a challenge. It made the assignment difficult to read, but some information was available.        | Assignment was organized. Some neatness or organization issues. Overall presentation was acceptable.                       | Assignment was perfectly organized and neat. No difficulty in reading or following. |
| Content Accuracy          | Content was lacking or not accurate   | Some content was lacking or not accurate   | Content was accurate, but lacking.   | Content was perfectly accurate and appropriate content was recorded.                |
| Use as a tool             | Assignment not capable of being used as a tool for later assignments.       | Assignment can be used for a tool for later assignments, but lacks key features that would allow it be more useful | Assignment is good for use as a tool for later assignments, but lacks some features that would allow it to be more useful. | Assignment is perfect for use as tool for later assignments.                        |
| Time Management           | Assignment was 3 or more days late  | Assignment was 2 days late   | Assignment was 1 day late  | Assignment was on time or early.  |

Total \_\_\_\_\_ / 12

Comments:

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Rubric: Exploring Fukushima Summative Task

|  | Novice (1)  |    |    | Apprentice (2)  |    |    | Senior (3)   |    |    | Master (4)  |    |    |
|--|---|----|----|---|----|----|--|----|----|---|----|----|
|  | N1  | N2 | N3 | A1  | A2 | A3 | S1   | S2 | S3 | M1  | M2 | M3 |
| Organization, Neatness and Visual Appeal | Assignment was difficult or impossible to read and gain understanding from. |    |    | Organization was a challenge. It made the assignment difficult to read, but some information was available. |    |    | Assignment was organized. Some neatness or organization issues. Overall presentation was acceptable. |    |    | Assignment was perfectly organized and neat. No difficulty in reading or following. |    |    |
| Content Accuracy                         | Content was lacking or not accurate   |    |    | Some content was lacking or not accurate  |    |    | Content was accurate, but lacking.   |    |    | Content was perfectly accurate and appropriate content was recorded.                |    |    |
| Measurement of Understanding             | Displayed little understanding of topic.                                    |    |    | Student learned some things about the topic.  |    |    | Student displayed adequate amount of understanding.  |    |    | Student is an expert on this topic. High level understanding is very apparent.      |    |    |
| Time Management                          | Assignment was 3 or more days late  |    |    | Assignment was 2 days late  |    |    | Assignment was 1 day late  |    |    | Assignment was on time or early.  |    |    |

Total \_\_\_\_\_ / 48

Comments: