



Maryland State Department of Education

Service-Learning Unit

Natural Disasters

Primary Subject: Earth/Space Science (Plate Tectonics, Weather) **Grade Level:** 8th

Additional Subject Area Connections: Health, Social Studies

Unit Title: Natural Disasters

Type(s) of Service: Direct, Indirect &/or Advocacy

Unit Description: While students are studying the causes of natural disasters including earthquakes, volcanic eruptions, hurricanes, floods, & tornadoes, they will explore the needs of their school/community to be prepared for such disasters, as well as how they can help others who have experienced one of these disasters.

Potential Service-Learning Action Experiences:

- If these drills are not already in place in the community, develop and practice a tornado drill for a senior center or homeless shelter. (*Direct*)
- Implement a drive to [donate supplies to the Red Cross](#) to help in the relief effort after a hurricane, tornado, or earthquake (<https://www.redcross.org/donate/donation.html/>). (*Indirect*)
- Host a [blood drive for the Red Cross](#) relief efforts (<https://www.redcrossblood.org/hosting-a-blood-drive/learn-about-hosting/how-hosting-a-blood-drive-works/apply-to-host-a-blood-drive.html>). (*Indirect*)
- Establish a correspondence (ex. pen pal program) with a school in a disaster struck area and work to assist that schools recovery. (*Indirect*)
- Create and implement a community-wide campaign on emergency preparedness. (*Advocacy*)

Maryland Standards Met

Science:

Practice 2: Developing and Using Models

Modeling can begin in the earliest grades, with students' models progressing from concrete "pictures" and/or physical scale models (e.g., a toy car) to more abstract representations of relevant relationships in later grades, such as a diagram representing forces on a particular object in a system. (NRC Framework, 2012, p.58)

Practice 3: Planning and Carrying Out Investigations

Students should have opportunities to plan and carry out several different kinds of investigations during their K-12 years. At all levels, they should engage in investigations that range from those structured by the teacher – in order to expose an issue or questions that they would be unlikely to explore on their own (e.g., measuring specific properties of materials) – to those that emerge from students' own questions. (NRC Framework, 2012, p.61)

Health Education:

5.0 Safety and Injury Prevention

Students will demonstrate the ability to apply prevention and intervention knowledge, skills, and processes to promote safe living in the home, school, and community.

A. Safety and Injury Prevention

1. Demonstrate the ability to respond appropriately to situations requiring emergency services.

a. Construct and perform scenarios applying effective utilization of emergency services.

Additional course MS follow.



Additional Maryland Curriculum Indicators Met

Social Studies:

D4.7.6-8 Assess their individual and collective capacities to take action to address local, regional, and global problems, taking into account a range of possible levers of power, strategies, and potential outcomes.

D4.8.6-8 Apply a range of deliberative and democratic procedures to make decisions about and act on civic problems in their classrooms and schools, and in out-of-school civic contexts.



Alignment with Maryland's Best Practices of Service-Learning: *Natural Disasters*

1. Meet a recognized community need

Prepare the school or community for safety in the event of a natural disaster and/or support a community anywhere in the world impacted by a natural disaster.

2. Achieve curricular objectives through service-learning

See Maryland Standards listed.

3. Reflect throughout the service-learning experience

Create collages of natural disasters and their impact. Discuss the potential impact on the individual, family and community when a disaster strikes.

4. Develop student responsibility (Students have opportunities to make decisions about the service-learning project.)

Students will be responsible for researching, planning, implementing, and revising a safety drill procedure if needed for their school or community. If conducting a drill, students who developed the procedure will be responsible, in conjunction with local emergency agencies, for conducting the drill, assessing the effectiveness of the drill and making changes if necessary.

Alternately, students can identify an area impacted by a natural disaster and implement a plan to help that community.



5. Establish community partnerships

Contact the local emergency management agencies (ex. fire and police departments or Maryland Emergency Management Agency) for assistance with the project. Arrange for a guest speaker who can discuss emergency preparedness and the impact of natural disasters (e.g. Red Cross, etc.).

6. Plan ahead for service-learning

If conducting drills, students will need to determine which natural disaster(s) they will address and must consider the advice of reliable internet sources and local emergency agencies to determine the procedure to be followed. Alternatively, students should select an area impacted by a natural disaster and make their plan to assist.

7. Equip students with knowledge and skills needed for service

Students will use research and listening skills to gain the knowledge needed. Students will use communication and organization skills to plan and execute the safety drill in their school/community or the relief project for a community affected by a natural disaster. Students will also explore the concepts of active citizenship and service-learning.

Procedures with Resources:

Natural Disasters

These procedures represent an example of a service-learning lesson on this specific topic, but can be changed to meet individual classroom interests or varying community needs. You are encouraged to adapt this unit to fit your unique classroom and community and to solicit student input in planning and decision making.

1. Introduce the service-learning project by discussing service-learning and citizenship with students and engaging in activities to explore those themes. A resource to support this topic can be found at [Bringing Learning To Life](https://www.youtube.com/watch?v=o2-eeEi6FCo) (<https://www.youtube.com/watch?v=o2-eeEi6FCo>).
2. As students are learning about the causes and effects of earthquakes and/or tornados, they will complete research online and conduct interviews with local emergency management agencies, fire departments, etc. Students will learn the types of damage, as well as the proper safety precautions to be taken, during one of these events.
 - [Tornado Project](http://www.tornadoproject.com/) (<http://www.tornadoproject.com/>)
 - [FEMA Tornadoes](https://www.ready.gov/tornadoes) (<https://www.ready.gov/tornadoes>)
 - [Tornado Safety](https://www.weather.gov/safety/tornado) (<https://www.weather.gov/safety/tornado>)
 - [Earthquakes](https://www.ready.gov/earthquakes) (<https://www.ready.gov/earthquakes>)
3. Math Option - Students examine the probability of an earthquake vs. tornado occurring in their area in an effort to determine the type of disaster for which to prepare.
 - [U.S. Geological Survey](https://www.usgs.gov/) (<https://www.usgs.gov/>)
 - [The National Severe Storms Laboratory](https://www.nssl.noaa.gov/) (<https://www.nssl.noaa.gov/>)
4. Students are then challenged to create the procedure that would be followed in the event that a tornado or other event would occur during school hours or develop a plan to support a community impacted by a natural disaster.
5. Students carry out their project. For example, after identifying the impacted area they want to assist, students develop and implement strategies to be of assistance. Or, students might decide to implement a community-wide campaign on disaster preparedness and create supporting materials and public service announcements that are broadcast on television. Or if the school does not already have a procedure in place that they practice, students might coordinate with their school administration to create a natural disaster drill and plan the implementation of it and help carry it out (e.g.: memo to teachers, assembly, PA system announcement, or student presentations to individual classes, etc.).

Additional Interdisciplinary Connections



Math – Students examine the probability of an earthquake vs. tornado occurring in their area in an effort to determine which type of drill to create or disaster for which to prepare.

6. Upon completion, analyze the plan to evaluate the successful completion of the objective and overall success of the project. Also, reflect on the project using various reflection activities and evaluate the effectiveness of the project by completing the [Rubric for Assessing the Use of the Maryland's Seven Best Practices of Service-Learning](#) (http://marylandpublicschools.org/programs/Documents/Service-Learning/rubric_best.pdf).

Updated: October 2019, December 2014; Created: July 2007

Division of Student Support, Academic Enrichment, and Educational Policy
Youth Development Branch
200 West Baltimore Street
Baltimore, Maryland 21201
410-767-0357

[Maryland Public Schools Service-Learning Website](http://www.mdservice-learning.org) (www.mdservice-learning.org)
[Maryland Public Schools](http://www.marylandpublicschools.org) (www.marylandpublicschools.org)



**This material is based upon a template for service-learning experiences created by the Maryland State Department of Education. Opinions or points of view expressed in this document are those of the authors and do not necessarily reflect the official position of the Maryland State Department of Education or constitute an endorsement.*