LESSON 3 Being Reactive	Teacher's Guide

PROBLEM

How might a community be reactive to flooding in their neighborhood?

Think back to lesson 2 and the concepts of how different people (and communities) are not able to prepare for floods in the same way (based on a variety of factors such as income, age, education level etc.). Now think about how different people would be impacted differently by a flood and not be able to respond in the same way to a flood event.

The key concept you should encourage students to think about are disaster/emergency response.

A few definitions are as follows:

Emergency response is an effort to reduce the impact of a negative incident on the public and the environment. (Source:http://www.dem.ri.gov/topics/erp/1_2.pdf)

Disaster response prioritizes rescue and evacuation, temporary shelter materials, safe water and basic sanitation, food supplies, the short term provision of basic health services, and the replacement of medical supplies in health facilities. (Source: https://cutt.ly/eoMyuT)

FACTS & QUESTIONS (Synthesize content; generate ideas and explanations)

What opportunities exist for communities to be reactive to flooding?

Think back to lesson 2 and the community wide strategies in preparing for a flood. Also think about opportunities to react/respond to flooding either during or immediately following the flood event.

Some opportunities to consider:

The creation of an emergency response strategy
The development of an emergency notification system

Federal assistance (both individual and public)
https://www.dhs.gov/disaster-response-and-recovery
State and county assistance

Also consider answering the following questions:

What should you do during a flood?

Refer to the following source to help you answer
https://www.weather.gov/safety/flood-during

What should you do after a flood?

Refer to the following source to help you answer
https://www.weather.gov/safety/flood-after

Point out to students how answers to the first question have to do with community-level response strategies while answers to the second and third questions have to do with individual level-response

How might aspects of someone's identity (such as their income level, age, physical and mental ability, educational level, etc.) affect their ability to undertake any of the aforementioned response strategies?

This question presents an opportunity for you to jog your memory about what you learned about differentiated vulnerability to flooding in lesson 2

Refer to the following source to help you answer, if you are still stuck
http://artsandsciences.sc.edu/geog/hvri/faq

Refer to notes for this question in lesson 2

LEARNING ISSUES (listing information needed to solve the problem)

Flood response and recovery strategies can be divided into short-term response and longer term recovery strategies

How would you distinguish disaster recovery and disaster response?

Refer to the following link for help answering this question https://cutt.ly/Do1kJv

Response would include actions such as search and rescue, and the provision of emergency relief (shelter, food, clothing, medical supplies etc.)

Recovery can also be in two stages: shorter-term recovery and longer-term recovery.

Shorter-term recovery would involve activities such as stable and continuous relief provision (such as a food bank or temporary or transitional housing), and the resumption of normal community functions (such as the reopening of schools, grocery stores, and gas stations).

Longer-term recovery would involve the construction of permanent structures (such as houses, roadways etc.) and the resumption of day-to-day community functioning. The local economy would also stabilize or return to normal during the longer-term recovery phase.

Source for all the above: https://cutt.ly/Do1kJv

FEMA distinguishes between disaster response and recovery as follows:

Response—Conducting emergency operations to save lives and property by taking action to reduce the hazard to acceptable levels (or eliminate it entirely); evacuating potential victims; providing food, water, shelter, and medical care to those in need; and restoring critical public services.

Recovery—Rebuilding communities so that individuals, businesses, and governments can function on their own, return to normal life, and protect against future hazards.

Source: https://cutt.ly/ho1RJs

PURSUIT (Researching to acquire new information about the problem)

What do you think are some actions you can take to keep yourself safe during a flood event (i.e. response)?

Refer to the following site for help answering the question: https://cutt.ly/VoBmbR

Flood Safety

- *Do not walk through flowing water: Six inches of moving water can knock you off your feet. If you walk in standing water, use a pole or stick to locate the ground below.*
- *Do not drive through flooded areas: During a flood, more people drown in their cars than anywhere else. Do not drive around barricades, as there may not be a road or a bridge where one used to be.*
- *Stay away from power lines and electrical wires: The second highest cause of death during a flood after drowning is electrocution. Report any downed power lines. Electrical currents can travel through water.*
- *Have your electricity turned off by the power company. If an appliance or motor has gotten wet, make sure it has been properly cleaned and dried before resuming use. (Source: https://cutt.ly/VoBmbR)*

What do you think are some of the strategies you can take to recover from a flood?

Refer to the following site for help to answer the question:
http://hosted.lib.uiowa.edu/flood/nine_steps.html

1. *Take care of yourself (and family) first*
2. *Attend to your home/give your home first aid*
3. *Get organized (insurance claims etc.)*
4. *Dry out your home*
5. *Restore the Utilities*
6. *Clean up*
7. *Check on financial assistance*
8. *Rebuild and flood proof*
9. *Prepare for the next flood (i.e. flood preparedness)*

Source: http://hosted.lib.uiowa.edu/flood/nine_steps.html

Point out to students that these strategies are steps that individuals can take personal responsibility for/have some control over.

How do you think a community can respond to a flood?

Refer to the following site for help to answer the question: https://cutt.ly/9o1U2k

- *Emergency response provision (such as search and rescue and evacuation)*
- *Emergency relief provision (food, clothing, shelter, medical supplies)*
- *Blockage of flooded roads*
- *Etc.*

Point out to students that many (if not all) of the strategies for responding to a disaster in general would also work for responding to a flood in particular

How do you think a community can recover from a flood?

Refer to the following links to help you answer the question:

https://cutt.ly/eo1V7y

https://www.fema.gov/community-recovery-management-toolkit

https://cutt.ly/Po1Nju

Points to emphasize coordination, collaboration, and communication. Different stakeholders within the community need to work together in order for any recovery efforts to be effective.

Do you think that the different ways in which communities or people might be vulnerable to flooding are considered in any of the aforementioned flood response and recovery strategies?

Refer to the lesson 2 notes for this question

INTEGRATION & SHARING (Applying and sharing learned information with classmates)

Share with your classmates what you have learned about flood response and recovery and how the vulnerability of different people to flooding can influence their ability to both respond and/or recover to a flood event

(*if you divided students into teams, have the teams report back their findings to the entire class for comparison*).

OPTIONAL ACTIVITY (supplemental activity to further elaborate on content)

1) Weather-Ready Nation simulator (Modified from Groundwork Hudson Valley 2018. Distance Learning Module for "Global, Local, Coastal: Preparing the Next Generation for a Changing Climate" pp 88)

Weather-Ready Nation simulator:
https://www.meted.ucar.edu/emgmt/wxreadynation/launch.htm (One has to sign in or create an account)

This interactive teaching module was developed by Raytheon in partnership with NOAA's Weather Ready Nation program.

Getting into the interactive module will require:

- Setting up an account and logging in.
- Then, you can select a grade-level and state to get the "required" and "elective" lessons. Each lesson takes about 8-10 minutes to play through.

Alternatively, the videos in the lessons can be downloaded and saved to play in the future without a login required.

Each scenario will explain what to do BEFORE, DURING, and AFTER the severe weather event (in this case the severe weather event students will select will be flooding), and then test the student's retention of the information. This interactive module is an engaging way to communicate live-saving information.