



EXPEDITIONARY
LEARNING

Grade 5: Module 4: Unit 1: Lesson 1

Building Background Knowledge and Making Inferences: What is A Natural Disaster?



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Long-Term Targets Addressed (Based on NYSP12 ELA CCLS)

I can make inferences using quotes from the text. (RI.5.1)

I can accurately synthesize information from multiple texts on the same topic. (RI.5.9)

I can effectively engage in discussions with diverse partners about fifth-grade topics and texts. (SL.5.1)

Supporting Learning Targets

- I can make inferences about natural disasters based on information from texts.
- I can draw conclusions about natural disasters following a discussion.

Ongoing Assessment

- Journal (What Do We Know About Natural Disasters, Hurricanes, and Earthquakes anchor charts, glossaries)



| Agenda | Teaching Notes |
|---|--|
| <ol style="list-style-type: none"> 1. Opening <ol style="list-style-type: none"> A. Engaging the Reader: What Do We Already Know about Natural Disasters? (7 minutes) B. Introducing Learning Targets (5 minutes) 2. Work Time <ol style="list-style-type: none"> A. Gallery Walk: Inferring about Natural Disasters (10 minutes) B. World Café: Drawing Conclusions about Natural Disasters (20 minutes) C. Key Vocabulary: What Is a “Natural Disaster?” (5 minutes) 3. Closing and Assessment <ol style="list-style-type: none"> A. Review Learning Targets(3 minutes) B. Introduce Module Routines: Journals, Vocabulary Glossaries, and Independent Reading (10 minutes) 4. Homework <ol style="list-style-type: none"> A. Read your independent reading book. Use the evidence flags to note things as you read that you can add to the What Do We Know about Natural Disasters? anchor chart. Be prepared to share these with a partner. | <ul style="list-style-type: none"> • Do not define the term <i>natural disasters</i> for students yet. They will build a shared understanding of this phrase throughout today’s lesson. • Students will again experience a Gallery Walk protocol to examine images in order to pique curiosity and allow for an informal pre-assessment of their knowledge of earthquakes and hurricanes. This is a familiar protocol for students as they have experienced Gallery Walks in every previous module. They will need only a brief reminder of the process and expectations. • In advance: Prepare the images for the Gallery Walk by either posting them around the room separated enough to give several students room to stand around each one and make observations, or making folders with sets of all images that can be distributed to each table (sets of desks) so every student may examine each one independently. • Students are introduced to a new protocol in this lesson, the World Café. This is a powerful and engaging protocol that allows for quick discussion on a variety of topics as well as the opportunity for movement, discussion with several peers, and practice with a leadership role. In advance, carefully review the process for this protocol so you can visualize it, explain it, and model it for students. There are a lot of transitions, and it is fast-paced. Given that this will likely be students’ first time using this protocol, you may need to allocate more time for this protocol than is indicated in the lesson. • In advance: Prepare the recording charts for the World Café protocol. With a marker, write one of the three World Café prompts (see supporting materials) at the top of a large piece of chart paper. Be sure to prepare as many pieces of chart paper as necessary so that when students are placed in triads each triad has a piece of chart paper with a different question. There will be several pieces of chart paper with the same question (e.g., three or four pieces of chart paper with the same question on it, for a total of about 10 pieces of chart paper). • In advance: Place students in triads and post the triads so that all students can see them; this will save time during the lesson to set up for the World Café. • Review: Gallery Walk, World Café, and Thumb-o-Meter protocols (Appendix 1). • Prepare new anchor charts: What Do We Know about Natural Disasters?, Hurricanes and Earthquakes (see examples in supporting materials). |



| Lesson Vocabulary | Materials |
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| natural, disaster, inference, draw, conclusion | <ul style="list-style-type: none">• Journals (one per student)• What Do You Know about Natural Disasters? anchor chart. (new, co-created with students during Work Time A and throughout the unit, see supporting materials)• Observe-Question-Infer note-catcher (one per student and one to display)• Images for Gallery Walk (one of each to display; see suggested links in supporting materials)• World Café charts (new, teacher-created, one per triad, see teaching notes)• Markers (one per triad)• Hurricanes anchor chart (new, co-created with student during Work Time C and throughout the unit, see supporting materials)• Earthquakes anchor chart (new, co-created with student during Work Time C and throughout the unit, see supporting materials)• Books for independent reading (see Unit 1 Recommended Texts list; enough books for every students to choose one)• Evidence flags (five per student) |



| Opening | Meeting Students' Needs |
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| <p>A. Engaging the Reader (5 minutes)</p> <p><i>Note: Do not define the term natural disasters for students yet. They will build a shared understanding of this phrase throughout this lesson.</i></p> <ul style="list-style-type: none">• Tell students that in this module they will be learning about an interesting topic: <i>natural disasters</i>. They will be reading informational texts just as they did in Modules 2 (biodiversity of the rainforest) and 3 (Jackie Robinson), and they will read another novel, as in Module 1 (<i>Esperanza Rising</i>).• Say to students: “You have learned a lot about science and social studies this year through the reading of both literature and informational texts. This module asks you to think about science, literature, and social studies all together for the first time!”• Ask students to take out their journals or distribute new ones for this module. Have them turn to a new page and write this question at the top:<ul style="list-style-type: none">* “What do you know about natural disasters?”• Invite them to take 3 to 4 minutes to think and write independently.• Then ask students to share with a partner what they know. Circulate and listen to partner discussions to assess existing background knowledge or misconceptions they may have. Note which students seem to have extensive or limited knowledge about natural disasters in order to inform decisions about which concepts will need more or less time allotted to them in science and social studies lessons.• Display the What Do You Know about Natural Disasters? anchor chart. Invite several students to share out what they wrote or discussed about natural disasters. Record their ideas on the chart under the title.• Ask students to copy the anchor chart onto a new page in their journals. They will be adding to this chart regularly. | <ul style="list-style-type: none">• Consider allowing students who struggle with writing independently to dictate their thoughts about natural disasters to a partner or the teacher.• Allow students who struggle with transcribing from the board more time to copy the anchor chart into their journal. |



| Opening (continued) | Meeting Students' Needs |
|--|---|
| <p>B. Introduce Learning Targets (5 minutes)</p> <ul style="list-style-type: none">• Ask a student to read aloud the first learning target:<ul style="list-style-type: none">* “I can make inferences about natural disasters based on information from texts.”• Circle the word <i>inferences</i> and have students turn to a partner and share what they have learned about this word. Invite a few students to share aloud their discussion. Listen for: “Inferences are best guesses based on what we read in a text.” Remind students that they have worked on making inferences in the past three modules and that this is an important skill that is important in order to help them become proficient and independent readers.• Read aloud the second learning target.<ul style="list-style-type: none">* “I can draw conclusions about natural disasters following a discussion.”• Ask class members to think-share with a partner what the target means in their own words. Invite the students to focus on the word <i>draw</i> and think about what it means in this learning target. Invite a few students to share aloud. Listen for: “take out,” “pull out,” or “to infer.” Be sure students understand that <i>draw</i> in this learning target does NOT mean to “sketch a picture” or “create art.”• Now focus the students on the word <i>conclusion</i> (thought or synthesis) and what it means in the phrase <i>draw conclusions</i>. Ask them to discuss with their partners:<ul style="list-style-type: none">* “How might you draw a conclusion when reading?”• Invite a few students to share their thoughts aloud. Listen for: “You have to think about all of the information about a topic and then make an overall statement about it,” and “Making an overall statement about what you know based on what you have heard and learned about a subject.”• Tell students that today they will be inferring information about natural disasters based on what they see and read and then they will discuss those inferences with their classmates and draw a conclusion about what they have heard and learned today. | <ul style="list-style-type: none">• Provide a visual representation of <i>inferences</i> (a person with a question mark in a thought bubble over his or her head) for students. |



| Work Time | Meeting Students' Needs |
|--|--|
| <p>A. Gallery Walk: Inferring about Natural Disasters (10 minutes)</p> <ul style="list-style-type: none"> Review the Gallery Walk protocol with students by asking them to recall the process from previous modules. Call on a few students to share aloud. Listen for: “We walk around and notice and wonder about pictures, quotes, images, or short texts, sometimes taking notes or filling out a note-catcher.” Tell them that for this Gallery Walk, they will be silent as they make observations while they walk around the room and look at the displayed images and texts. Display and distribute the Observe-Question-Infer note-catcher. Ask students to look closely at the note-catcher and talk with a partner about what they think they will be writing in each column. Invite a few partners to share their thinking. Listen for: “record what we see in the Observe column,” “record questions that directly relate to what we see in the Questions column,” and “inferences (guesses about the answers to the questions) we can make in the last column.” Model how to use the organizer: Display one of the Images for the Gallery Walk, think aloud, and write the observations made, questions that come to mind, and the inferences about those questions in the appropriate columns of the note-catcher. For example, display the “Gallery Walk 23” image and say to students: “I see that there are clouds bunched together in the shape of a circle, and the arrows indicate that the clouds are moving around the dark spot in the middle. I wonder why they move in a circle. I bet it has something to do with wind.” <ul style="list-style-type: none"> In the column “What Do You Observe,” write: “Clouds moving in a circle around a dark spot.” In the column “What Questions Do You Have?” write: “Why do the clouds appear to move in a circle?” In the column “What Inferences Can You Make?” write: “The wind has something to do with the clouds moving in a circle.” Address any clarifying questions. Tell students they will have approximately 6 or 7 minutes to examine the images (they will not have time to view all of them) and fill out their note-catcher. Ask students to begin and record their thinking; circulate to observe and redirect as needed. Be sure that students are recording what they see only in the first column of their graphic organizers, that the questions they are writing are directly related to the pieces in the Gallery Walk, and that their inferences have to do with natural disasters. Do not worry if some inferences include misconceptions. | <ul style="list-style-type: none"> Post the instructions for the Gallery Walk where students can refer to them as they experience the protocol. Consider giving some students a partially filled-in Observe-Question-Infer note-catcher that will help them focus on specific pre-selected images. |



| Work Time (continued) | Meeting Students' Needs |
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| <p>B. World Café: Drawing Conclusions about Natural Disasters (20 minutes)</p> <ul style="list-style-type: none">• Arrange students into triads. Ask group members to sit together with their completed Observe-Question-Infer note-catcher and materials for the World Café (prepared World Café charts and a marker).• Briefly review the World Café protocol directions (Appendix 1) with students. Reassure the class that the protocol will feel fast-paced at first because it is meant to give every student a chance to think a little about each question. Caution students that you will interrupt their conversations, but they'll have a chance to keep working with their ideas at the end of the protocol. <p>Round 1:</p> <ol style="list-style-type: none">1. Ask each group to choose a student to be the Recorder for the first round to write down ideas in short statements from the group's conversation below the question on the chart paper at the table.2. Remind students to use their notes in the Observe-Question-Infer graphic organizer to support their discussion.3. Ask students to read the question on their chart aloud and then discuss the question. <ul style="list-style-type: none">• Allow triads to discuss and write for four or five minutes.• Explain the transition:<ol style="list-style-type: none">1. The Recorders will stay seated with the chart paper.2. The other pair of students in each group will stand and rotate together to a different chart paper with one of the other two prompts and a different Recorder.• Signal students to transition quickly and quietly. Assist those who may be confused or need redirection.• Give positive praise to students for transitioning smoothly. | <ul style="list-style-type: none">• Post World Café protocol instructions for students to refer to as they experience the protocol.• Assign each student a letter or number (A, B, or C; 1, 2, or 3) and list the role of each number or letter for each round where students can refer to it and remind themselves what they are to be doing in each round. |



| Work Time (continued) | Meeting Students' Needs |
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| <p>Round II</p> <ul style="list-style-type: none">• Tell the class the following three steps, then prompt them to begin.<ol style="list-style-type: none">1. The Round I Recorder will summarize the conversation that happened at the table during Round I, reading from the statements written on the chart paper.2. Choose a new Round II Recorder from the two new students in the triad.3. The new group will read the question on their chart and then begin a discussion about that question, taking notes on the chart paper. (Students can add new ideas plus comments that connect with Round I statements.)• Remind students to use their notes in the Observe-Question-Infer graphic organizer to support their discussion.• After 4 or 5 minutes, get students' attention and remind them of the transition:<ol style="list-style-type: none">1. Round II Recorders will stay seated at the table where they have been working.2. The other two students in each triad will stand and rotate together to another chart paper and Recorder with a different chart (the one they have not yet discussed).• Invite class members to transition one more time to Round III.• Repeat the process from Round II. | |



| Work Time (continued) | Meeting Students' Needs |
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| <p>Round III:</p> <ul style="list-style-type: none">• Review the three steps, then prompt students to begin:<ol style="list-style-type: none">1. The Round II Recorder summarizes the conversation that happened at the table during Rounds I and II, reading from the statements on the chart.2. Choose a new Round III Recorder from the new students in the triad.3. The new triad will read the question on their chart paper and then begin a discussion about that question, taking notes below the statements already listed. Encourage students to add new ideas and comments as well as ones that connect with statements from Rounds I and II.• Remind students to use their notes in the Observe-Question-Infer graphic organizer to support their discussion. Prompt the new Recorder to take notes on the chart paper below the statements already listed.• After 4 or 5 minutes, ask all Round III Recorders to bring their recording charts to the front of the room and post them so that they are visible to everyone.• Invite students to read the statements from each triad for each question written on the chart papers. Ask students to discuss with a partner:<ul style="list-style-type: none">* “What similarities do you notice about the statements?”* “What conclusions can you draw about natural disasters?”• Call on a few partners to share their discussions with the whole class. | <ul style="list-style-type: none">• Consider posting all questions posed to students and writing their answers for students to have a visual reference throughout the lessons. |



| Work Time (continued) | Meeting Students' Needs |
|--|--|
| <p>C. Key Vocabulary: What Is a “Natural Disaster”? (5 minutes)</p> <ul style="list-style-type: none"> • Focus the class back on the anchor chart created earlier: What Do We Know about Natural Disasters? Invite students to discuss with a partner: <ul style="list-style-type: none"> * What does the word natural mean in the phrase natural disaster? * What does the word disaster mean in the phrase natural disaster? • Ask a few partners to share aloud their discussions. Listen for: “Natural means it happens all on its own, like weather,” and “Disaster means it causes a lot of damage to the environment, property, and/or people.” • Tell students that they will keep coming back to this phrase throughout the module. • Explain to students that they may have noticed that all of the images during the Gallery Walk were about hurricanes and earthquakes. This is because those are the two types of natural disasters they will be focusing on during the rest of this unit. • Post and introduce the students to the Hurricanes anchor chart and the Earthquakes anchor chart. Ask students to review their Observe-Question-Infer note-catcher and think about one thing they could add to each column of the anchor charts: <ul style="list-style-type: none"> * “What did you learn about earthquakes or hurricanes?” * “What is a question you still have?” • Invite students to share with their partner. • Ask several students to share aloud what they learned and questions they still have about both hurricanes and earthquakes. Write their comments and questions in the appropriate columns. | <ul style="list-style-type: none"> • Students who struggle with organization may need their journals to be set up for them. |



| Closing and Assessment | Meeting Students' Needs |
|--|-------------------------|
| <p>A. Review Learning Targets (3 minutes)</p> <ul style="list-style-type: none">• Ask students to think about the learning targets, “I can make inferences about natural disasters based on information from texts,” and “I can draw conclusions about natural disasters following a discussion.”• Using the Thumb-o-Meter protocol, gauge students’ understanding of the learning targets by telling them to show a thumbs-up if they have complete understanding, a thumbs-sideways if they have some understanding, or a thumbs-down if they do not understand the learning target at all. Notice which students show a thumbs-sideways or thumbs-down and plan to meet with them either as a group or individually to review the learning targets. | |



| Closing and Assessment (continued) | Meeting Students' Needs |
|---|---|
| <p>B. Introduce Module Routines: Journals, Vocabulary Glossaries, and Independent Reading (10 minutes)</p> <ul style="list-style-type: none"> • Tell students that they will have the opportunity to continue practicing routines that they have done in previous modules as well as learn a few new ones now that they have become good readers and writers. • Remind students that they've already started their journals for this module. Ask them to turn to the back portion of their journals, about 10 pages from the back cover, and begin a section (Glossary) that will be used to keep track of new vocabulary learned, just as in Module 2. Instruct students to write "Scientific Vocabulary" at the top of the page on the left-hand side and "Academic Vocabulary" at the top of the page on the right-hand side. Tell students to turn the page and do the same on the next two pages, and so on, until they get to the back cover. (There should now be about five pages allotted for Scientific Vocabulary and five pages for Academic Vocabulary.) Let students know they will begin to add words to these sections in the next few lessons. • Remind students that in order to become really good readers and writers they need to read a lot of different texts. The more they read, the more they learn about the world, and the more words they learn! In order to continue learning more about natural disasters, they will have many other books to choose from to read independently during this module. Let students know they will be expected to read this book at other times during the school day and for homework. They will be given evidence flags to use when reading so they can keep track of their thinking and share with peers regularly, as they have done in previous modules. • Introduce the books available to students to choose from for their independent reading time. Remind students about how to choose a "just right" book and invite them to browse the selections in the classroom. • Give students about 5 minutes to make a decision about their independent reading book. Circulate to ensure students are choosing appropriate books for their reading level and help those who may have difficulty making a decision. Some students may need additional time during the school day to make their selection. Remind students that they will need to have this book with them at school and take it home each night to read as part of homework. • Distribute five evidence flags to students for homework. | <ul style="list-style-type: none"> • Let students who struggle with language know when they will be called upon to share aloud. This allows them to mentally prepare for what they will say and seek help if necessary. • Consider narrowing the choices to three books for students that may struggle with making a decision on an independent reading book. |
| Homework | Meeting Students' Needs |
| <ul style="list-style-type: none"> • Read your independent reading book. Use the evidence flags to note things as you read that you can add to the What Do We Know about Natural Disasters? anchor chart. Be prepared to share these with a partner. | <ul style="list-style-type: none"> • Provide an audio recording of independent reading books for students who struggle with reading independently. |



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Supporting Materials



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Gallery Walk 1



Carey, Beth, "Flooding on the FDR Drive, following Hurricane Sandy." 30 October 2012. Online Image.
http://commons.wikimedia.org/wiki/File:Flooding_on_FDR_Drive,_following_Hurricane_Sandy.jpg



Gallery Walk 2



Olsen, Master Sgt. Mark C., "Aerial views of the damage caused by Hurricane Sandy to the New Jersey coast taken during a search and rescue mission by 1-150 Assault Helicopter Battalion", New Jersey Army National Guard, 30 October 2012. Online image.
http://commons.wikimedia.org/wiki/File:Hurricane_Sandy_damage_Long_Beach_Island.jpg



Gallery Walk 3



Booher, Andrea. "Photograph by Andrea Booher taken on 01-04-1997 in California." 4 January 1997. FEMA Photo Library.
http://commons.wikimedia.org/wiki/File:FEMA_-_1160_-_Photograph_by_Andrea_Booher_taken_on_01-04-1997_in_California.jpg



Gallery Walk 4



"Flying Through Hurricane's Eye." Photograph courtesy NOAA. http://environment.nationalgeographic.com/environment/photos/hurricanes/#/hurricane04-noaa-plane-caroline_21807_600x450.jpg



Koplitz, Bill. "Photograph by Bill Koplitz taken 10-12-2004 in Florida" 12 October 2004. FEMA Photo Library. http://commons.wikimedia.org/wiki/File:FEMA_-_11650_-_Photograph_by_Bill_Koplitz_taken_on_10-12-2004_in_Florida.jpg

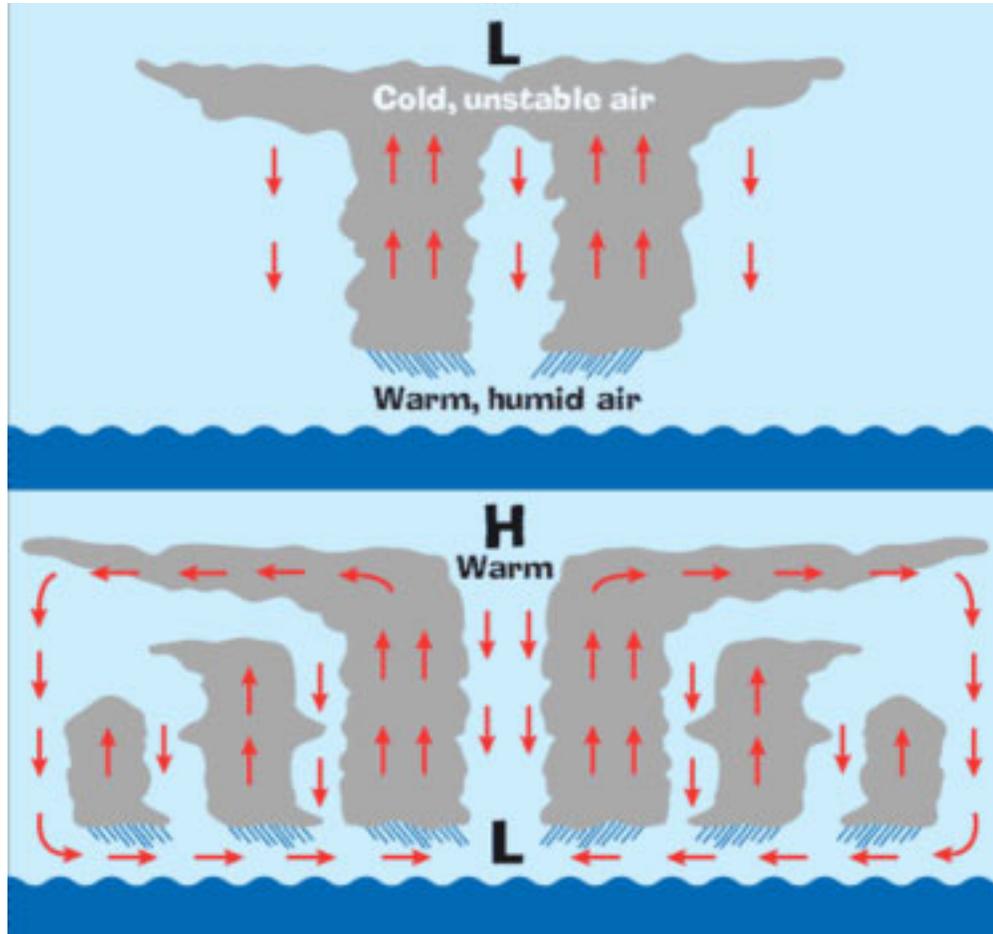
Basic Disaster Supply Kit List

A basic emergency supply kit could include the following recommended items:

- Water, one gallon of water per person per day for at least three days, for drinking and sanitation
- Food, at least a three-day supply of non-perishable food
- Battery-powered or hand crank radio and a NOAA Weather Radio with tone alert and extra batteries for both
- Flashlight and extra batteries
- First aid kit
- Whistle to signal for help
- Dust mask to help filter contaminated air and plastic sheeting and duct tape to shelter-in-place
- Moist towelettes, garbage bags and plastic ties for personal sanitation
- Wrench or pliers to turn off utilities
- Manual can opener for food
- Local maps
- Cell phone with chargers, inverter or solar charger

"Basic Disaster Supplies Kit." Ready. FEMA, 9 Sept 2013. Web. <http://www.ready.gov/basic-disaster-supplies-kit>

Gallery Walk 7



How does a hurricane form? SciJinks. NASA.gov. Web. <http://scijinks.nasa.gov/hurricane>

Tropical Cyclone Names

Atlantic Names

| 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-----------|-----------|-----------|----------|----------|----------|
| Andrea | Arthur | Ana | Alex | Arlene | Alberto |
| Barry | Bertha | Bill | Bonnie | Bret | Beryl |
| Chantal | Cristobal | Claudette | Colin | Cindy | Chris |
| Dorian | Dolly | Danny | Danielle | Don | Debby |
| Erin | Edouard | Erika | Earl | Emily | Ernesto |
| Fernand | Fay | Fred | Fiona | Franklin | Florence |
| Gabrielle | Gonzalo | Grace | Gaston | Gert | Gordon |
| Humberto | Hanna | Henri | Hermine | Harvey | Helene |
| Ingrid | Isaias | Ida | Ian | Irma | Isaac |
| Jerry | Josephine | Joaquin | Julia | Jose | Joyce |
| Karen | Kyle | Kate | Karl | Katia | Kirk |
| Lorenzo | Laura | Larry | Lisa | Lee | Leslie |
| Melissa | Marco | Mindy | Matthew | Maria | Michael |
| Nestor | Nana | Nicholas | Nicole | Nate | Nadine |
| Olga | Omar | Odette | Otto | Ophelia | Oscar |
| Pablo | Paulette | Peter | Paula | Philippe | Patty |
| Rebekah | Rene | Rose | Richard | Rina | Rafael |
| Sebastien | Sally | Sam | Shary | Sean | Sara |
| Tanya | Teddy | Teresa | Tobias | Tammy | Tony |
| Van | Vicky | Victor | Virginie | Vince | Valerie |
| Wendy | Wilfred | Wanda | Walter | Whitney | William |

"Tropical Cyclone Names." National Hurricane Center. NOAA/National Weather Service, 11 April 2013. Web. <http://www.nhc.noaa.gov/aboutnames.shtml>

Before a Hurricane

To prepare for a hurricane, you should take the following measures:

- To begin preparing, you should build an emergency kit and make a family communications plan.
- Know your surroundings.
- Learn the elevation level of your property and whether the land is flood-prone. This will help you know how your property will be affected when storm surge or tidal flooding are forecasted.
- Identify levees and dams in your area and determine whether they pose a hazard to you.
- Learn community hurricane evacuation routes and how to find higher ground. Determine where you would go and how you would get there if you needed to evacuate.
- Make plans to secure your property:
- Cover all of your home's windows. Permanent storm shutters offer the best protection for windows. A second option is to board up windows with 5/8" marine plywood, cut to fit and ready to install. Tape does not prevent windows from breaking.
- Install straps or additional clips to securely fasten your roof to the frame structure. This will reduce roof damage.
- Be sure trees and shrubs around your home are well trimmed so they are more wind resistant.
- Clear loose and clogged rain gutters and downspouts.
- Reinforce your garage doors; if wind enters a garage it can cause dangerous and expensive structural damage.
- Plan to bring in all outdoor furniture, decorations, garbage cans and anything else that is not tied down.
- Determine how and where to secure your boat.
- Install a generator for emergencies.
- If in a high-rise building, be prepared to take shelter on or below the 10th floor.
- Consider building a safe room.



During a Hurricane

If a hurricane is likely in your area, you should:

- Listen to the radio or TV for information.
- Secure your home, close storm shutters and secure outdoor objects or bring them indoors.
- Turn off utilities if instructed to do so. Otherwise, turn the refrigerator thermostat to its coldest setting and keep its doors closed.
- Turn off propane tanks
- Gallery Walk 9,
- Continued
-
- Avoid using the phone, except for serious emergencies.
- Moor your boat if time permits.
- Ensure a supply of water for sanitary purpose such as cleaning and flushing toilets. Fill the bathtub and other larger containers with water.
- Find out how to keep food safe during and after and emergency.

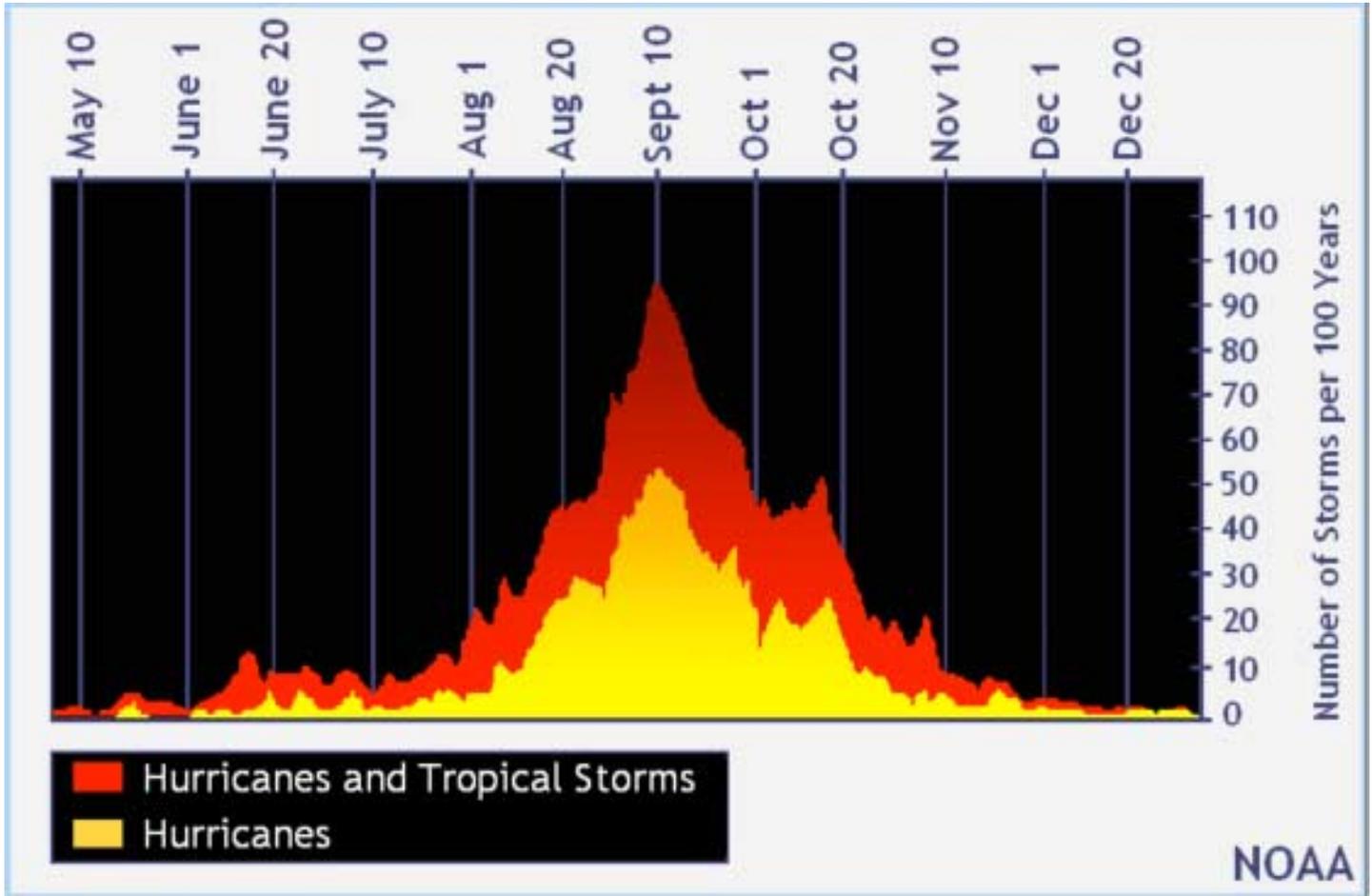
After a Hurricane

- Continue listening to a NOAA Weather Radio or the local news for the latest updates.
- Stay alert for extended rainfall and subsequent flooding even after the hurricane or tropical storm has ended.
- If you have become separated from your family, use your family communications plan or contact the American Red Cross at 1-800-RED-CROSS/1-800-733-2767 or visit the American Red Cross Safe and Well site:www.safeandwell.org
- The American Red Cross also maintains a database to help you find family. Contact the local American Red Cross chapter where you are staying for information. Do not contact the chapter in the disaster area.
- If you evacuated, return home only when officials say it is safe.

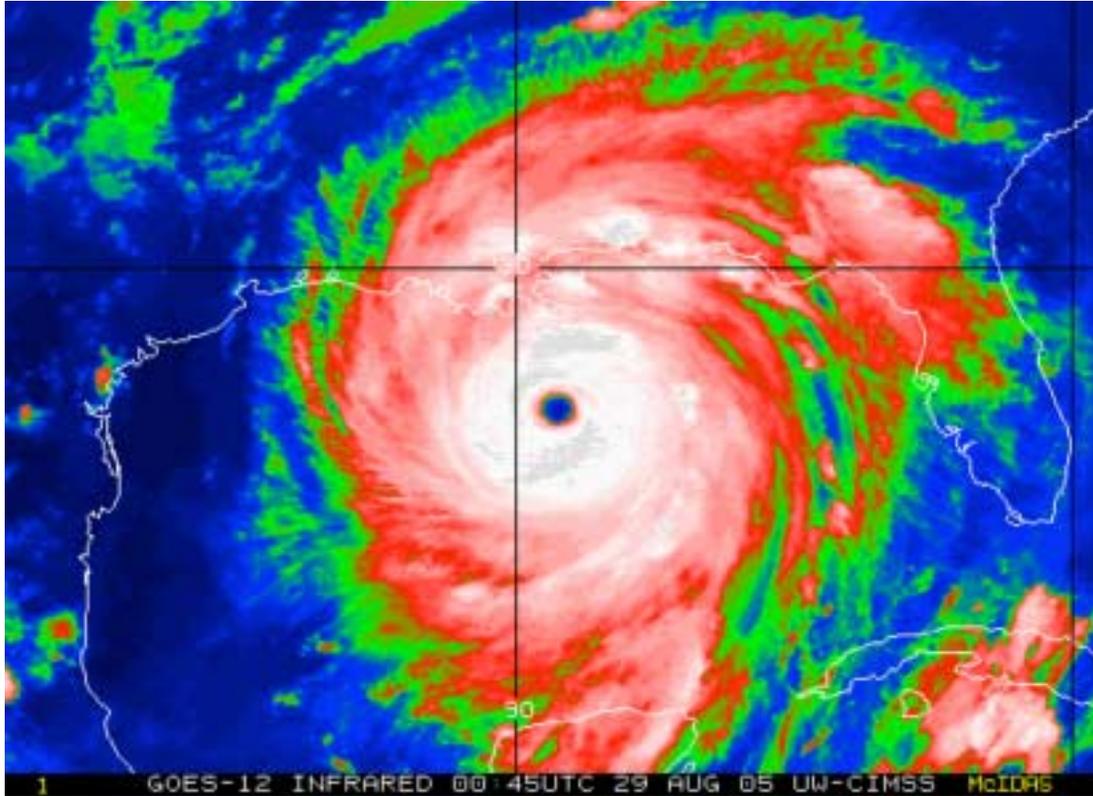
Gallery Walk 9
Continued

- If you cannot return home and have immediate housing needs. Text SHELTER + your ZIP code to 43362 (4FEMA) to find the nearest shelter in your area (example: shelter 12345).
- For those who have longer-term housing needs, FEMA offers several types of assistance, including services and grants to help people repair their homes and find replacement housing. Apply for assistance or search for information about housing rental resources
- Drive only if necessary and avoid flooded roads and washed-out bridges. Stay off the streets. If you must go out watch for fallen objects; downed electrical wires; and weakened walls, bridges, roads, and sidewalks.
- Keep away from loose or dangling power lines and report them immediately to the power company.
- Walk carefully around the outside your home and check for loose power lines, gas leaks and structural damage before entering.
- Stay out of any building if you smell gas, floodwaters remain around the building or your home was damaged by fire and the authorities have not declared it safe.
- Inspect your home for damage. Take pictures of damage, both of the building and its contents, for insurance purposes. If you have any doubts about safety, have your residence inspected by a qualified building inspector or structural engineer before entering.
- Use battery-powered flashlights in the dark. Do NOT use candles. Note: The flashlight should be turned on outside before entering - the battery may produce a spark that could ignite leaking gas, if present.
- Watch your pets closely and keep them under your direct control. Watch out for wild animals, especially poisonous snakes. Use a stick to poke through debris.
- Avoid drinking or preparing food with tap water until you are sure it's not contaminated.
- Check refrigerated food for spoilage. If in doubt, throw it out.
- Wear protective clothing and be cautious when cleaning up to avoid injury.
- Use the telephone only for emergency calls.
- **NEVER** use a generator inside homes, garages, crawlspaces, sheds, or similar areas, even when using fans or opening doors and windows for ventilation. Deadly levels of carbon monoxide can quickly build up in these areas and can linger for hours, even after the generator has shut off.

"Hurricanes." Ready. FEMA. 5 June 2013. Web. <http://www.ready.gov/hurricanes>



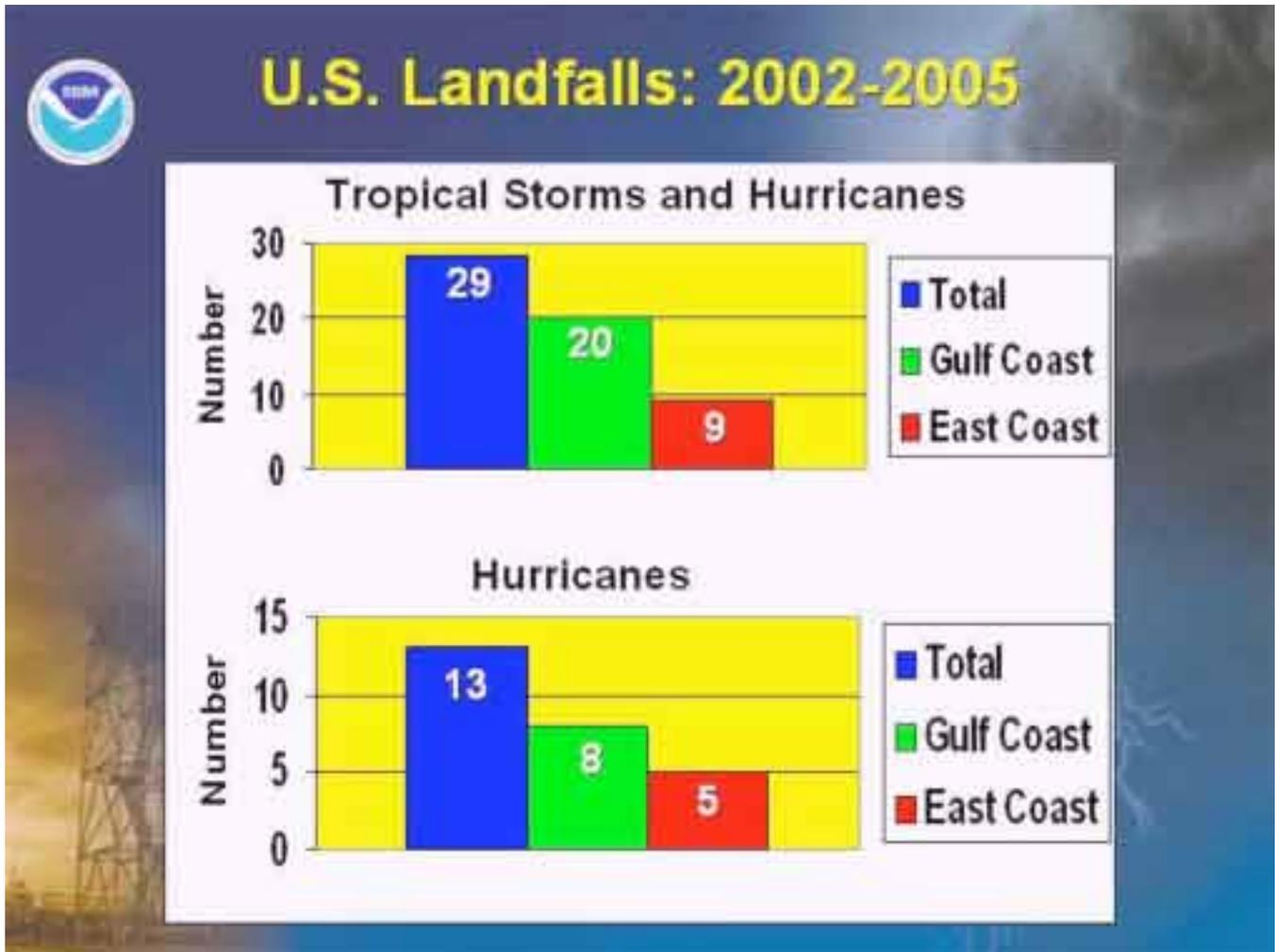
Setzer, Craig. "Does the Late Start to the Season Mean a Big Finish? Not Necessarily So." Weather Notions. WeatherNation, 10 Sept 2013. Web. Image courtesy of NOAA. <http://blog.weathernationtv.com/2013/09/10/does-the-late-start-to-the-season-mean-a-big-finish-not-necessarily-so/>



Katrina2005. 2005. Photograph. ©University of Wisconsin Cooperative Institute for Meteorological Satellite Studies.
<http://blog.weathernationtv.com/2013/09/10/does-the-late-start-to-the-season-mean-a-big-finish-not-necessarily-so/>

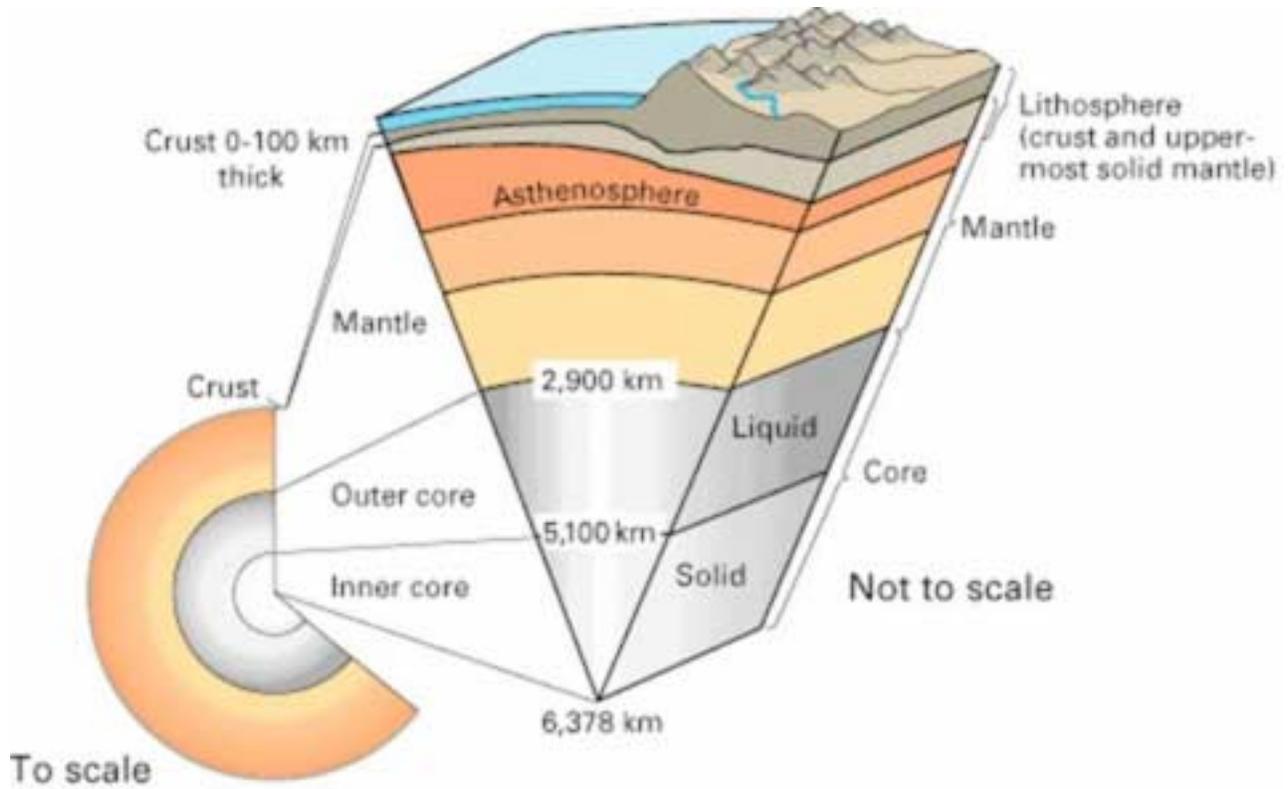


NOAA's GOES-13 satellite image of Hurricane Sandy on Oct 28, 2012. Photograph. NASA web.
http://www.nasa.gov/mission_pages/hurricanes/archives/2012/h2012_Sandy.html



U.S. Landfalls: 2002-2005. 2005. Chart. NOAAWeb. http://www.nasa.gov/mission_pages/hurricanes/archives/2012/h2012_Sandy.html

Gallery Walk 14



Earth internal structure. 2011. Diagram. U.S. Geological Survey. Web.



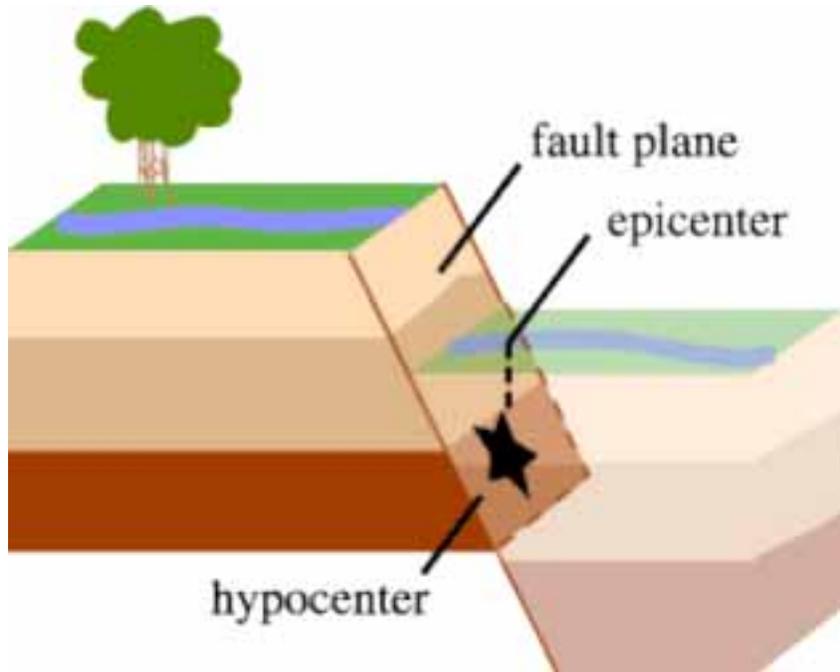
Gallery Walk 15



Klaten collapsed houses.2006 Photograph. US Agency for International Development. Web.
http://commons.wikimedia.org/wiki/File:Klaten_collapsed_houses.jpg



Destroyed buildings and cars after earthquake and tsunami. USMC-110327-M-2155E-036. 2011. Photograph. United States Marine Corp. Web <http://commons.wikimedia.org/wiki/File:USMC-110327-M-2155E-036.jpg>



The Science of Earthquakes. 2012 Graphic. US Geological Survey. Web. <http://earthquake.usgs.gov/learn/kids/eqscience.php>



During an Earthquake

Drop, cover and Hold On. Minimize your movements to a few steps to a nearby safe place and if you are indoors, stay there until the shaking has stopped and you are sure exiting is safe.

If Indoors

- DROP to the ground; take COVER by getting under a sturdy table or other piece of furniture; and HOLD ON until the shaking stops. If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Stay away from glass, windows, outside doors and walls, and anything that could fall, such as lighting fixtures or furniture.
- Stay in bed if you are there when the earthquake strikes. Hold on and protect your head with a pillow, unless you are under a heavy light fixture that could fall. In that case, move to the nearest safe place.
- Do not use a doorway except if you know it is a strongly supported, load-bearing doorway and it is close to you. Many inside doorways are lightly constructed and do not offer protection.
- Stay inside until the shaking stops and it is safe to go outside. Do not exit a building during the shaking. Research has shown that most injuries occur when people inside buildings attempt to move to a different location inside the building or try to leave.
- DO NOT use the elevators.
- Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.

If Outdoors

- Stay there.
- Move away from buildings, streetlights, and utility wires.
- Once in the open, stay there until the shaking stops. The greatest danger exists directly outside buildings, at exits and alongside exterior walls. Many of the 120 fatalities from the 1933 Long Beach earthquake occurred when people ran outside of buildings only to be killed by falling debris from collapsing walls. Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.



If in a Moving Vehicle

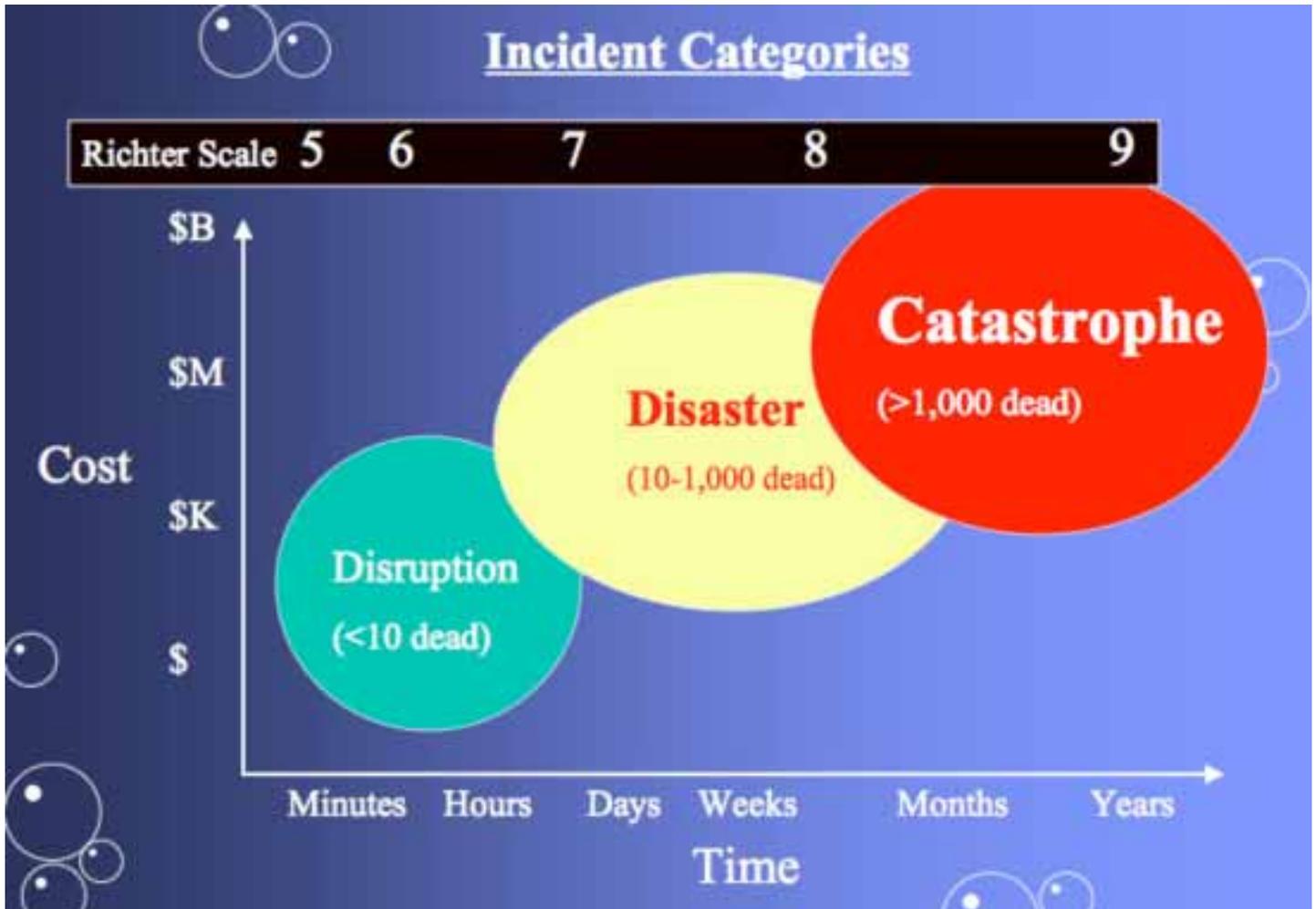
- Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires.
- Proceed cautiously once the earthquake has stopped. Avoid roads, bridges, or ramps that might have been damaged by the earthquake.

If Trapped Under Debris

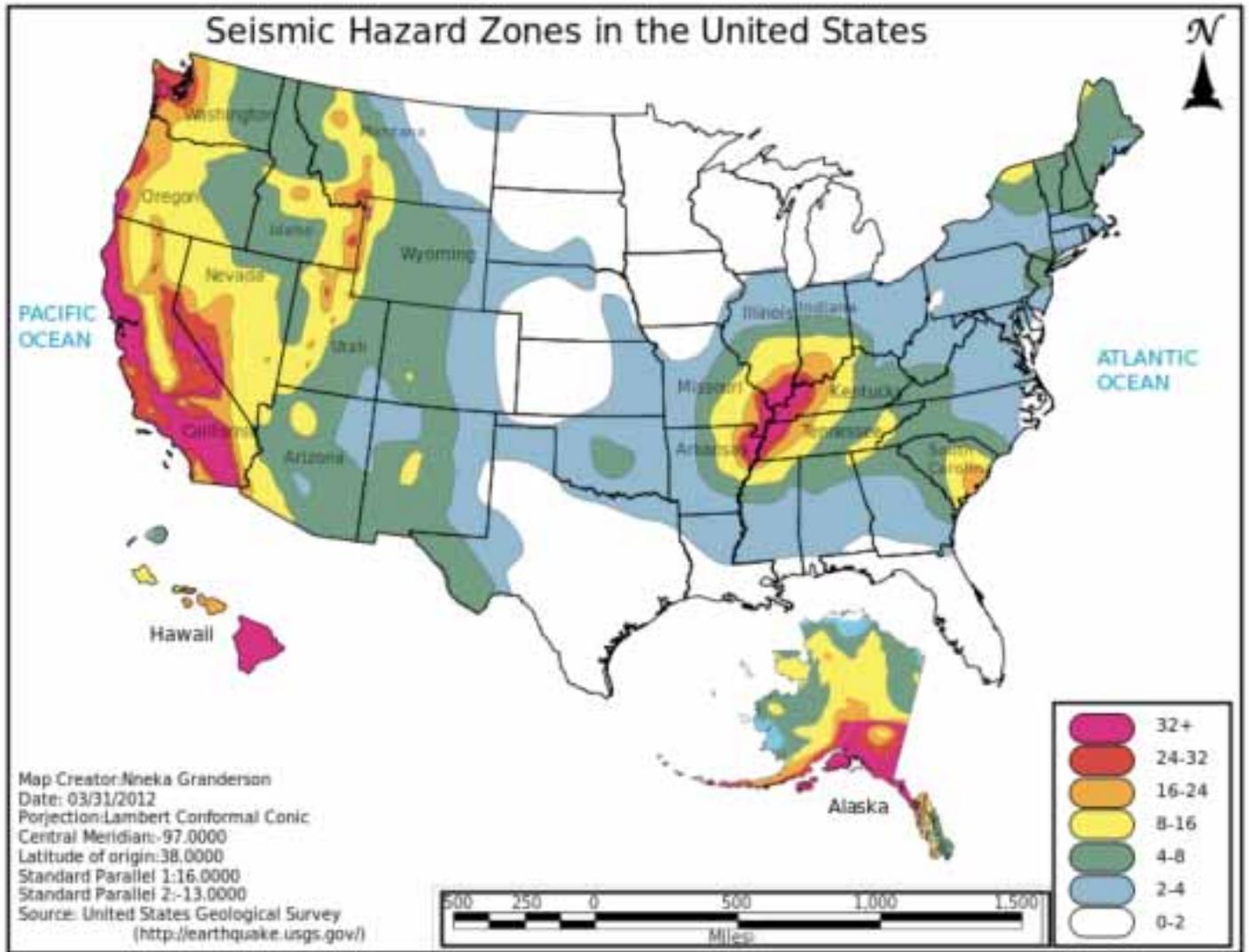
- Do not light a match.
- Do not move about or kick up dust.
- Cover your mouth with a handkerchief or clothing.
- Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.



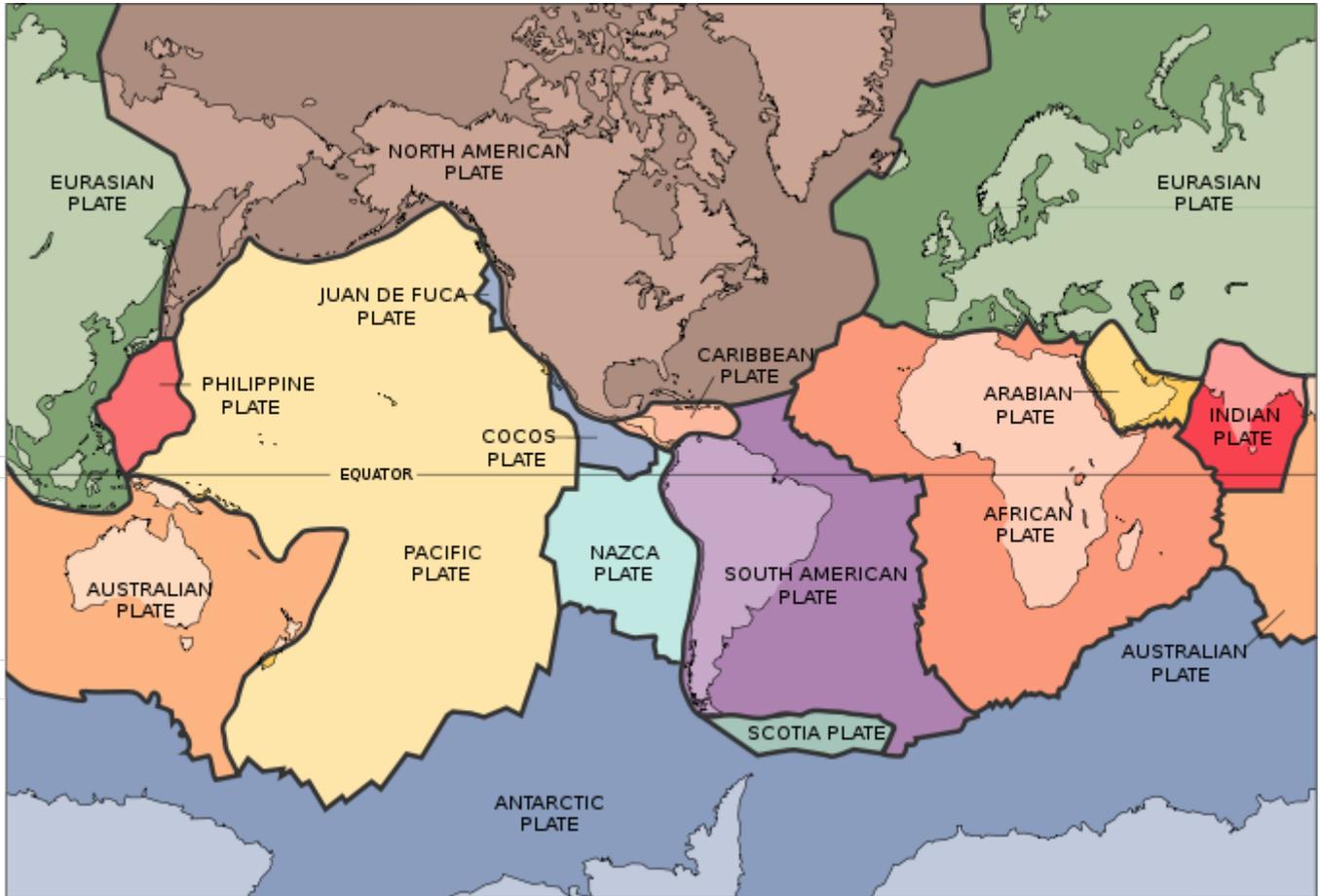
Search and Rescue operations after Van earthquake 2011. 20122. Photograph. AKUT Search and Rescue Association, Istanbul. Web.
http://commons.wikimedia.org/wiki/File:AKUT_2011_Van-2.jpg



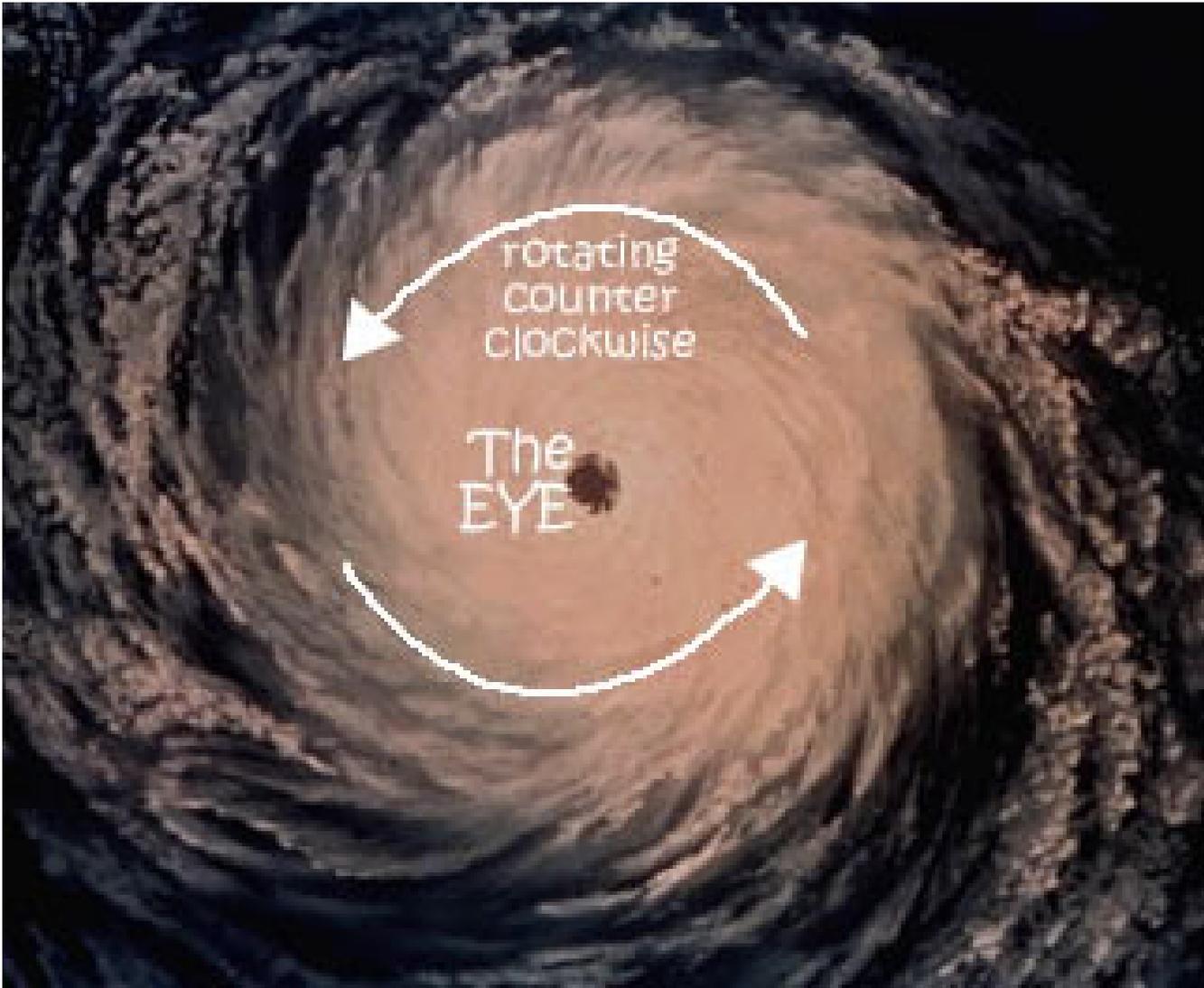
Webber. Earthquake severity. 2007. Chart. Wikimedia Commons. Web. http://commons.wikimedia.org/wiki/File:Earthquake_severity.jpg



NGranderson. Seismic Hazard Zones in the United States. 2012. Map. Wikimedia Commons. Web.
http://commons.wikimedia.org/wiki/File:Seismic_Hazard_Zones_in_the_United_States..svg



Tectonic Plates. 2005. Map. US Geological Survey. Web. http://commons.wikimedia.org/wiki/File:Tectonic_plates.svg



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Observe-Question-Infer
Note-Catcher

| What do you OBSERVE ? | What QUESTIONS do you have? | What INFERENCES can you make? |
|------------------------------|------------------------------------|--------------------------------------|
| | | |



World Café Prompts

(Write each question at the top of a large piece of chart paper. Be sure to have one chart for each triad. There will be between 3 and 4 charts for each question.)

What makes a natural event a disaster?

How can natural disasters affect people?

What causes Natural Disasters?



Hurricanes Anchor Chart
For Teacher Reference

| Things We Have Learned | Questions We Still Have |
|------------------------|-------------------------|
| | |



Earthquakes Anchor Chart
For Teacher Reference

| Things We Have Learned | Questions We Still Have |
|------------------------|-------------------------|
| | |