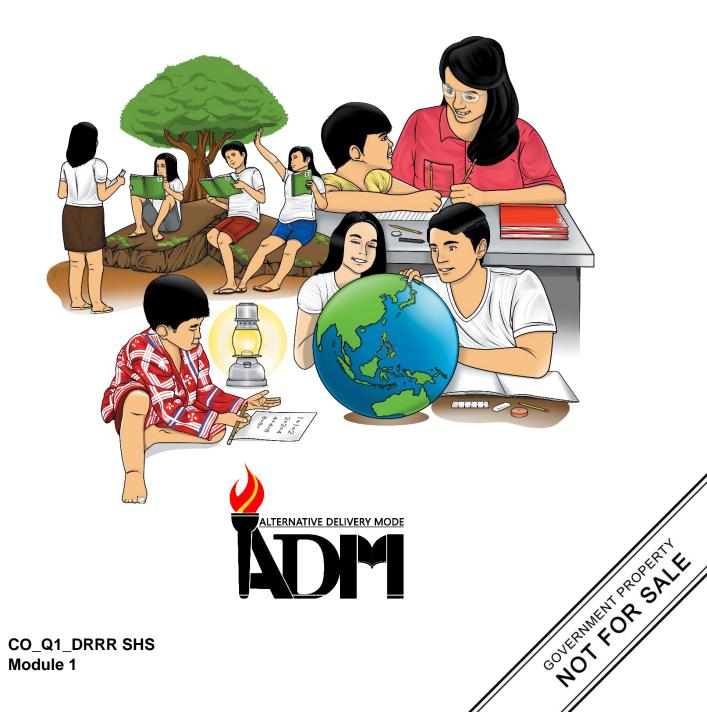


Disaster Readiness and Risk Reduction

Quarter 1 – Module 1: Basic Concept of Disaster and Disaster Risk



Disaster Readiness and Risk Reduction Alternative Delivery Mode Quarter 1 – Module 1: Basic Concept of Disaster and Disaster Risk First Edition, 2020 First Edition, 2021

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Disaster Readiness and Risk Reduction

Quarter 1 – Module 1: Basic Concept of Disaster and Disaster Risk



Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-bystep as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



What I Need to Know

This module is intended to help you understand the concept of disaster. Disasters are reality. Perhaps our most potent response to it must be awareness, knowledge, and understanding of this reality. Hence, this first lesson provides you, our dear learners with a basic but thorough grounding on the concept of disaster and how and when an event turns into a disaster.

The Module is intended to equip you with knowledge to explain the basic concept of disaster.

After going through this module, you are expected to:

- 1. Understand the meaning of disaster.
- 2. Justify different kinds of disasters that are common; the Philippines has experience.
- 3. Observe surroundings and every situation that you may encounter.
- 4. Appreciate the significance of knowing disaster risks and how it may affect one's life.



Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

- 1. What is this inherently unexpected and happening that comes quickly without any warning?
 - a. disaster
 - b. hazard
 - c. phenomenon
 - d. risk
- 2. A natural disaster is a(n) _____ event.
 - a. expected
 - b. planned
 - c. scheduled
 - d. unexpected

- 3. It is also called as the Circum-Pacific belt, the zone of earthquakes surrounding the Pacific Ocean where about 99% of the world's earthquake occurs.
 - a. locust
 - b. drought
 - c. ring of fire
 - d. subsidence
- 4. All of the following show effect of disasters EXCEPT_____.
 - a. displacement of populations
 - b. damage to the ecological environment
 - c. destruction of a population's homeland
 - d. sustained public attention during the recovery phase
- 5. Which of the following is an example of man-caused disaster?
 - a. storm surges
 - b. flooded coastal areas
 - c. landslide on mining sites
 - d. oil spills from shipping boat
- 6. Which of the following is an example of natural hazards?
 - a. factories
 - b. fault lines
 - c. mining sites
 - a. chemical plants
- 7. Which of the following is NOT a type of natural hazard that causes disaster?
 - a. tornado
 - b. typhoon
 - c. earthquake
 - d. car accident
- 8. It is defined as the source of danger and something that may cause injury or harm.
 - a. disaster
 - b. hazard
 - c. phenomenon
 - d. risk
- 9. Which of the following category is NOT part of man-made hazard?
 - a. terrorism/violence
 - b. technological/industrial
 - c. complex humanitarian emergencies
 - d. preventive and precautionary measures
- 10. Which of the following is useful to better establish priorities and response activities, and systematize previous experiences?
 - a. disaster risk
 - b. effects of disaster
 - c. phases of disaster
 - d. categories of disaster

- 11.It involves the identification and mapping of the elements at risk and the assessment of people, animals and plants that may be affected?
 - a. exposure
 - b. vulnerability
 - a. disaster risk
 - c. risk assessment
- 12. The potential disaster losses in lives, health statuses, livelihoods, assets, and services, which could occur in a particular community or a society over some specified future time period is called ______.
 - a. disaster risk
 - b. disaster mitigation
 - c. disaster preparedness
 - d. disaster prevention
- 13. Disaster has a great impact on _____.
 - a. buildings
 - b. garden
 - c. humanity
 - d. Parks
- 14. Which of the following is a product of the massive damages to life and property caused by a hazard due to the vulnerability within a community?
 - a. destruction
 - b. disaster
 - c. disaster risk
 - d. vulnerability
- 15.Disaster risk can be determined by the presence of the following elements of Disaster EXCEPT _____.
 - a. phenomenon
 - b. coping capacity
 - c. vulnerability to a hazard
 - d. hazard (natural or man-made)

Lesson What is Disaster and Disaster Risk?

In this module, the learners will hold an understanding about disaster and develop a firm grasp of a very crucial factor that has direct bearing on disaster and disaster risk.

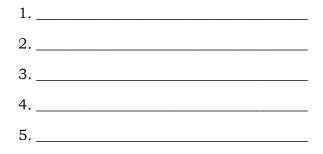


Philippines: A Country Prone to Natural Disasters

The Philippines has experienced from an inexhaustible number of deadly earthquakes, volcano eruptions, and other natural disasters. This is due to its location along the Ring of Fire, a large Pacific Ocean region where many volcanic eruptions and earthquakes occur.

Activity 1: "Count Me In"

Direction: Write five (5) disastrous events in the Philippines in the last five years that you could still recall. Write your answer on a separate sheet of paper.





What's New

Activity 1.1 Understanding Disaster



Clockwise from top left: Photo by Mildred De Leon; "Life Goes on Amid the Ruins" by BernieMack, licensed under CC BY-NC 2.0; "Marawi City Visit 04 Dec 2017" by Bongbong Marcos is licensed under CC BY-NC-SA 2.0; "Thank you signs, Leyte, Philippines" by Oxfam International is licensed under CC BY-NC-ND 2.0

Instructions: Analyze the given images and answer the given questions below:

1. In two to three sentences, describe the given images.

2. List down the disasters that you can identify from the images.



What is It

IT'S A DISASTER

Disaster is "a sudden, calamitous occurrence that causes great harm, injury, destruction, and devastation to life and property". It disrupts the usual course of life, causing both physical and emotional distress such as an intense feeling of helplessness and hopelessness. A preceding definition of disaster stresses that two elements are affected – life (whether human or animal) and property. The effects vary – it maybe a minor damage (like broken windows and doors), major damage (like torn rooftops, collapsed walls), total destruction (like completely destroyed houses and structures rendering them useless and inhabitable) and the worst scenario, it can lead to death. (Asian Disaster Preparedness Center, ADPC, 2012)

According to the Food and Agriculture Organization (FAO, 2008), disaster is "a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources".

Any adverse episode or phenomenon can exploit a vulnerability in the affected population or community to create damage and this awareness will form the basis for an adequate intervention.

Meanwhile, the United Nations International Strategy for Disaster Reduction defines disaster as a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

Disasters are often a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences.

Its impacts may include loss of life, injury, disease and other negative effects on human physical, mental, and social wellbeing, together with damage to properties, destruction of assets, loss of services, social and economic disruptions, and environmental degradation.

Republic Act 10121 also known as "An Act Strengthening the Philippine Disaster Risk Reduction and Management System, Providing for the National Disaster Risk Reduction and Management Plan, Appropriating Funds, Therefore and Other Purposes" was passed and approved on May 27, 2010 after 21 years of revisions and refiling in the two legislative bodies. This new law, unlike the previous Presidential Decree P.D. 1566, is pro-active in giving importance to disaster mitigation and preparedness measures.

One of the law's salient points is the immediate release of calamity funds to local government units (LGUs) so they can prepare for disaster mitigation and preparedness. This is a welcome provision because local government units can utilize 70 percent of the total calamity fund to risk-reduction measures and 30 percent to quick response activities. In the old law, the LGU can only use the calamity fund for quick response activities.

Section 2 of the RA 10121 states that the state shall "develop, promote, and implement a comprehensive that aims to strengthen the capacity of the national government and the LGUs, together with partner stakeholders, to build the disaster resilience of communities, and to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks, and enhancing disaster preparedness and response capabilities at all levels. <u>http://drrknowledge.net/phil-laws-drr/</u>

Mahar, Patrick, et.al, "Disasters and their Effects on the Population: Key Concepts," Accessed (01 June 2020), <u>https://www.aap.org/en-us/Documents/disasters_dpac_PEDsModule1.pdf</u>



Image 1. Different kinds of Natural Disasters

Natural Disasters – a natural phenomenon is caused by natural forces, such as earthquakes, typhoon, volcanic eruptions, hurricanes, fires, tornados, and extreme temperatures. They can be classified as rapid onset disasters and those with progressive onset, such as droughts that lead to famine. These events, usually sudden, can have tremendous effects.

Hazard - A hazard is a source or condition that has the potential to cause harm to humans in the form of injury or illness, property damage, environmental damage, or a combination of these.

A. A natural hazard occurs when an extreme natural event is destructive to human life and property. This event could interfere with activities in a minor way such as when strong winds blow trees down, or this event could completely disrupt activities like a large earthquake damaging your home, business or school. These natural events have been happening for thousands of years (a long time before we were even around!), but they only become hazards when humans are affected in some way.

B. Human-made induced hazards are caused by human activities. Unlike natural hazards, human-made hazards can often be prevented.

Examples:

1. **Technological/industrial disasters** - Unregulated industrialization and inadequate safety standards increase the risk for industrial disasters.

Examples: leaks of hazardous materials; accidental explosions; bridge or road collapses, or vehicle collisions; Power cuts

2. **Terrorism/Violence** - the threat of terrorism has also increased due to the spread of technologies involving nuclear, biological, and chemical agents used to develop weapons of mass destruction.

Examples: bombs or explosions; release of chemical materials; release of biological agents; release of radioactive agents; multiple or massive shootings; multiples

3. Complex humanitarian emergencies - the term complex emergency is usually used to describe the humanitarian emergency resulting from an international or civil war. In such situations, large numbers of people are displaced from their homes due to the lack of personal safety and the disruption of basic infrastructure including food distribution, water, electricity, and sanitation, or communities are left stranded and isolated in their own homes unable to access assistance. Examples: conflicts or wars and Genocide the deliberate killing of a large group of people, especially those of a particular ethnic group or nation

"Disasters and their Effects on the Population: Key Concepts,", Accessed on 02 June 2020, pages 7-10, <u>https://www.aap.org/en-us/Documents/disasters_</u> <u>dpac_PEDsModule1. pdf</u>.

The damage caused by disaster cannot be measured. It also differs with the kind of geographical location, climate, earth's specific characteristics, and level of vulnerability. These determining factors affect generally the psychological, socio – economic, political, and ethnical state of the affected area.

Risk and Disaster Risk

Risk has various connotations within different disciplines. In general, risk is defined as "the combination of the probability of an event and its negative consequences" (UNISDR, 2009). The term risk is thus multidisciplinary and is used in a variety of contexts. It is usually associated with the degree to which humans cannot cope (lack of capacity) with a situation (e.g. natural hazard).

The term disaster risk refers to the potential (not actual and realized) disaster losses, in lives, health status, livelihoods, assets, and services which could occur in a community or society over some specified future time period.

Disaster risk is the product of the possible damage caused by a hazard due to the vulnerability within a community. It should be noted that the effect of a hazard (of a particular magnitude) would affect communities differently (Von Kotze, 1999:35).

It can also be determined by the presence of three variables: hazards (natural or anthropogenic); vulnerability to a hazard; and coping capacity linked to the reduction, mitigation, and resilience to the vulnerability of a community.



Activity 1.2 FIX ME!!!

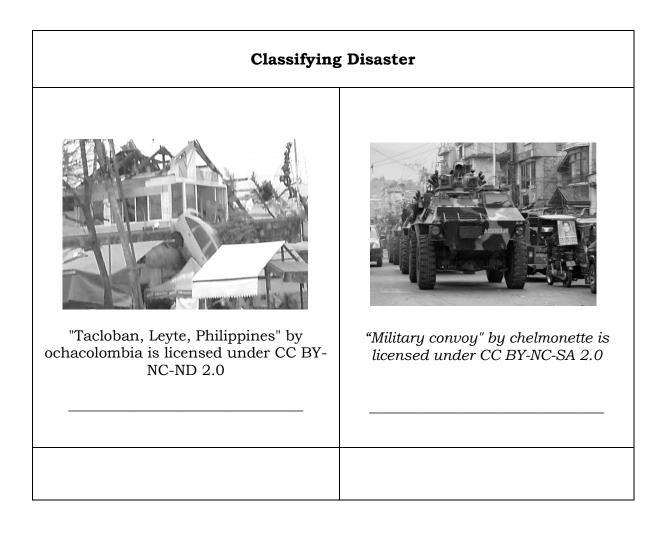
Instruction: Arranged the given jumbled letters to identify the correct terminology. The definition will help you to derive the correct answer. Answering this activity will develop your visual and analysis skills. Write your answer in your answer sheet.

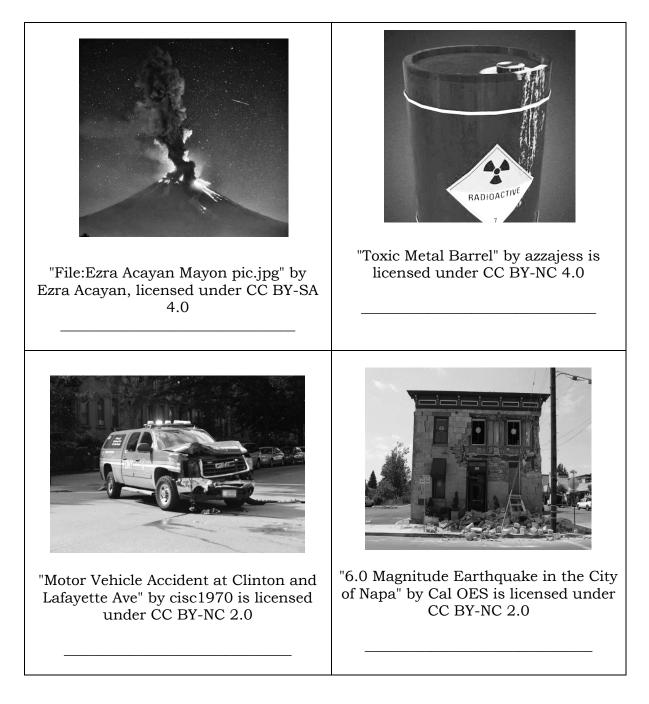
JUMBLED LETTERS	DEFINITION					
1. RTAIESSD	A sudden calamitous event, bringing great damage, loss, destruction, and devastation.					
2. GRNI FO IEFR	A path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes.					
3. TALAYMIC	An event causing great and often sudden damage or distress.					
4. AQRHTEKEAU	Shaking of earth caused by waves moving on and below the earth's surface.					
5. ICNLOVAC IPREOUTN	When lava and gas are discharged from a volcanic vent.					
6. CFCPIAI NEAOC	Largest and deepest of Earth's oceanic divisions.					

7. OOYNHPT	Type of tropical cyclone, or severe tropical storm.
8. LTARUNA RTAIESDS	A natural event such as a flood, earthquake, or hurricane that causes great damage or loss of life.
9. ETUTODSRCIN	A sudden or great misfortune or failure.
10. NMA EDMA RESTSAID	Caused by man are those in which major direct causes are identifiable intentional or non-intentional human actions.

Activity 1.3 Understanding Natural and Human Induced Hazard

Direction: Identify the given set of images if it is Natural or Man Made. Put your answer on the blank space below each picture.





Guide Question:

Based on the presented images, how will you differentiate natural from man-made disasters? Explain your answer in 2-3 sentences. Write your answer on a separate sheet of paper.

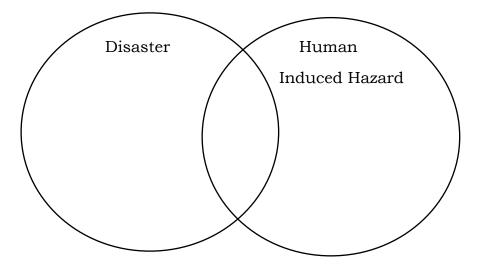
Given the table, give a natural disaster you experienced within your locality or you had heard from the news recently. What makes it a natural disaster?

1. Give a man-made disaster you experienced within your locality or you had heard from the news recently.

Disaster	Human Induced Hazard

Activity 1.5 Compare & Contrast Disaster and Human Induced Hazard

Direction: In this activity, you need to make a Venn Diagram to shoe the comparison between Disaster and Human Induced Disaster.



Activity 1.4 Understanding Disaster Risk

Direction: In this activity, you must identify the classification of disaster as well as the disaster risk of a given disaster situations. Accomplish the table below. Write your answer on a separate sheet of paper.

Disasters	Classification of Disaster (Natural or Human Induced Hazard)	Disaster Risks (Effects)
1. typhoon		
2. war conflicts		
3. volcanic eruption		
4. chemical leakages		
5. vehicular accident		
6. earthquake		
7. drought		
8. thunderstorms		
9. tuberculosis		
10.rainfall-induced		
landslide		
11.floods in rivers and		
coastal areas		
12.avalanche		
13.tsunami		
14. bomb explosion		
15.house		

Stop and Reflect

Now review your previous Activity number 1.3 and 1.4. Do you think the given ideas/concepts are clear for you to understand different kinds of disasters that the country has experienced including its disaster risks? Agree or Disagree?



What I Have Learned

Exit Ticket
Have you learned so much from this module? What are the three things that you learned today? What are the two things you found interesting?
3 Things I learned Today 1
2
3
2 Things I Found Interesting 1
2
Question I have 1



Now that you've already learned and understand the lesson focusing on disaster and disaster risk, it's time to work to demonstrate your learning. Are you ready? Sure, you are!

Activity 1.5 Am I Ready?

Directions: Answer the given question. Write your answer on a separate sheet of paper.

Do you think you are relatively well prepared when a disaster might affect your community either natural or man-made as well as to its effects? List down five (5) important things that you need to prepare in order to lessen the possible danger that you and your family might encounter when a disaster strike. Explain your answers briefly and write it on your answer sheet.





Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.

1. Which of the following is a sudden, calamitous event, bringing great damage, loss, destruction, and devastation to life and property?

- a. disaster
- b. hazard
- c. phenomenon
- d. risk

2. A natural disaster can be a ______.

- a. phenomenon
- b. terrorism/Violence
- c. technological/industrial issues
- d. complex humanitarian emergencies
- 3. All of the following are the effects of disasters EXCEPT _____
 - a. can destroy health infrastructure
 - b. can cause an unexpected number of deaths
 - c. can have adverse effects on the environment
 - d. can cause the ability of every specie to reproduce

4. It is also called as the Circum-Pacific belt, the zone of earthquakes surrounding the Pacific Ocean where about 99% of the world's earthquake occurs.

- a. drought
- b. ring of fire
- c. subsidence
- d. Bermuda Triangle

5. Which of the following is NOT an example of man-caused hazard?

- a. mutiny
- b. genocide
- c. earthquake
- d. bombs or explosions

6. It is defined as the source of danger and something that may cause injury or harm. It is also the uncertain course of events in a country.

- a. disaster
- b. hazard
- c. risk
- d. phenomenon
- 7. Which of the following category is a man-made hazard?
 - a. storm surges
 - b. flooded coastal areas
 - c. Landslide on Mining sites
 - d. Oil Spills from shipping boat
- 8. Which of the following is NOT included in the phases of disaster?
 - a. recovery phase
 - b. planning phase
 - c. emergency phase
 - d. preparedness phase

9. A natural disaster where sea waves of local or distant origin that results from large-scale seafloor displacements associated with large earthquakes, major submarine slides, or exploring volcanic hazards is called _____

- a. earthquake
- b. flood
- c. tsunami
- d. typhoon

10. During the initial stage of a disaster, almost all surface means of transportation within the community are disrupted by broken bridges, roads, and streets that are rendered impassable by landslides or floods. The restricted mobility of vehicles makes rescue and other emergency operations doubly difficult. What is this impact/ effect of disaster?

- a. economic impact
- b. social and political impact
- c. damage to critical facilities
- d. disruption of transportation

11. Which of the following variables will NOT determine the elements in identifying disaster risk?

- a. coping capacity
- b. population explosion
- c. vulnerability to a hazard
- d. hazard (natural or man-made)

12. There are many impacts of Disaster, on what impact it will fall if a person is suffering from post-traumatic stress syndrome?

a. physical wellbeing impact

- b. mental wellbeing impact
- c. social wellbeing impact
- d. none of the above

13. Erica is outside the building. Which action should she do when she feels the ground is shaking?

- a. Stay away from trees, powerlines, post and concrete structures.
- b. Move away from steep slopes which may be affected by landslides.
- c. If near the shore and feel and earthquake, especially if it's too strong, move quickly to higher grounds.
- d. All of the above.

14. The potential disaster losses in lives, health statuses, livelihoods, assets, and services, which could occur in a particular community or a society over some specified future time period is called ______.

- a. disaster risk
- b. disaster mitigation
- c. disaster prevention
- d. disaster preparedness
- 15. Disaster has a great impact on which of the following aspect?
 - a. Bacteria
 - b. Human
 - c. Invention
 - d. Technology



Additional Activities

Activity 1.6 The Search is Over

Direction: Search and encircle among the jumble of letters the key terms in the definition of disaster according to the Asian Disaster Preparedness Center. You should find nine (9) key terms.

Y	Ν	Η	Е	R	Μ	L	В	V	С	Х	А	S	Т	R	А	Ι	С	Κ	Y
G	Y	R	0	S	С	0	Р	Ι	Ν	Ν	Х	Ι	Р	L	U	С	Κ	Y	S
0	U	R	S	Ι	Е	В	Ι	L	0	S	S	Е	R	0	S	А	R	Ι	0
D	Е	V	А	S	Т	А	Т	Ι	0	Ν	0	U	0	L	А	L	Μ	Е	Ν
S	Е	Е	D	L	Ι	Ν	G	F	0	R	Т	Е	Р	L	А	А	Ν	Κ	G
D	Ι	S	Е	L	Ι	Е	G	Е	V	Е	Ν	Т	Е	Μ	Е	Μ	R	Ι	Т
Y	А	С	Т	Ι	Е	V	Т	Е	Ν	Μ	Ι	0	R	Т	А	Ι	Ν	0	U
Х	А	Ν	А	R	0	U	S	F	0	R	Μ	U	Т	0	Ι	Т	Ι	0	Ζ
С	Η	А	Ν	Е	U	R	S	Е	Y	R	0	S	Y	0	U	0	Μ	Ι	D
F	U	L	L	Ι	А	С	А	Ν	Ν	0	Т	Μ	0	V	Е	U	Р	S	Y
D	R	Ι	V	Е	Ν	S	Т	0	W	А	R	D	Е	S	Т	S	W	Е	Т
Η	0	S	Р	Ι	Т	А	Κ	Ι	Т	S	D	Α	Μ	А	G	Е	Μ	Е	Ν
Т	S	U	D	D	Е	Ν	D	Е	0	Ν	Т	R	Κ	Х	U	Т	0	Р	Y
Т	Y	Ν	D	Α	Κ	0	L	Q	Ι	Ν	U	Т	Т	Ι	Е	S	D	R	0

Once your word hunt is complete, use the key terms to define Disaster. Your definition should be a restatement/paraphrase of the definition by the Asian Disaster Preparedness Center.



		Effects					
	Natural	.9					
	Man-made	.5					
6. Natural	Man-made	.4					
5. Man-made	Iatutal	3.					
4. Man-made	Man-made	.2					
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Answer Key

Activity 1.6

Y	Ν	Η	Е	R	Μ	L	В	V	С	Х	А	S	Т	R	А	Ι	С	Κ	Y
G	Y	R	0	S	С	0	Р	Ι	Ν	Ν	Х	Ι	Ρ	L	U	C	Κ	Y	S
0	U	R	S	Ι	Е	В	Ι	Ŀ	0	S	S	Е	R	0	S	А	R	Ι	0
D	E	V	A	S	Т	A	Т	1	0	N	0	U	0	L	А	L	Μ	Е	Ν
S	Ē	Е	D	L	Ι	Ν	G	F	0	R	Т	Е	Р	L	А	А	Ν	Κ	G
D	Ι	S	Е	L	Ι	Е	G	E	V	E	Ν	T	E	Μ	Е	Μ	R	Ι	Т
Y	А	С	Ť	Ι	Е	V	Т	Е	Ν	Μ	Ι	0	R	Т	А	Ι	Ν	0	U
Х	А	Ν	А	R	0	U	S	F	0	R	Μ	U	Т	0	Ι	ť	Ι	0	Ζ
С	Η	А	Ν	Е	U	R	S	Е	Y	R	0	S	Y	0	U	0	Μ	Ι	D
F	U	L	L	Ι	А	C	А	Ν	Ν	0	Т	Μ	0	V	Е	U	Р	S	Y
D	R	Ι	V	Е	Ν	S	Т	0	W	А	R	D	Е	S	Т	S	W	Е	Т
Η	0	S	Р	Ι	Т	А	Κ	Ι	Т	S	D	А	Μ	А	G	Е	Μ	Е	Ν
Т	S	U	D	D	Е	Ν	D	Е	0	N	Т	R	Κ	Х	U	Т	0	Р	Y
Т	Y	Ν	D	А	Κ	0	L	Q	Ι	N	U	Т	Т	Ι	Ε	S	D	R	0

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