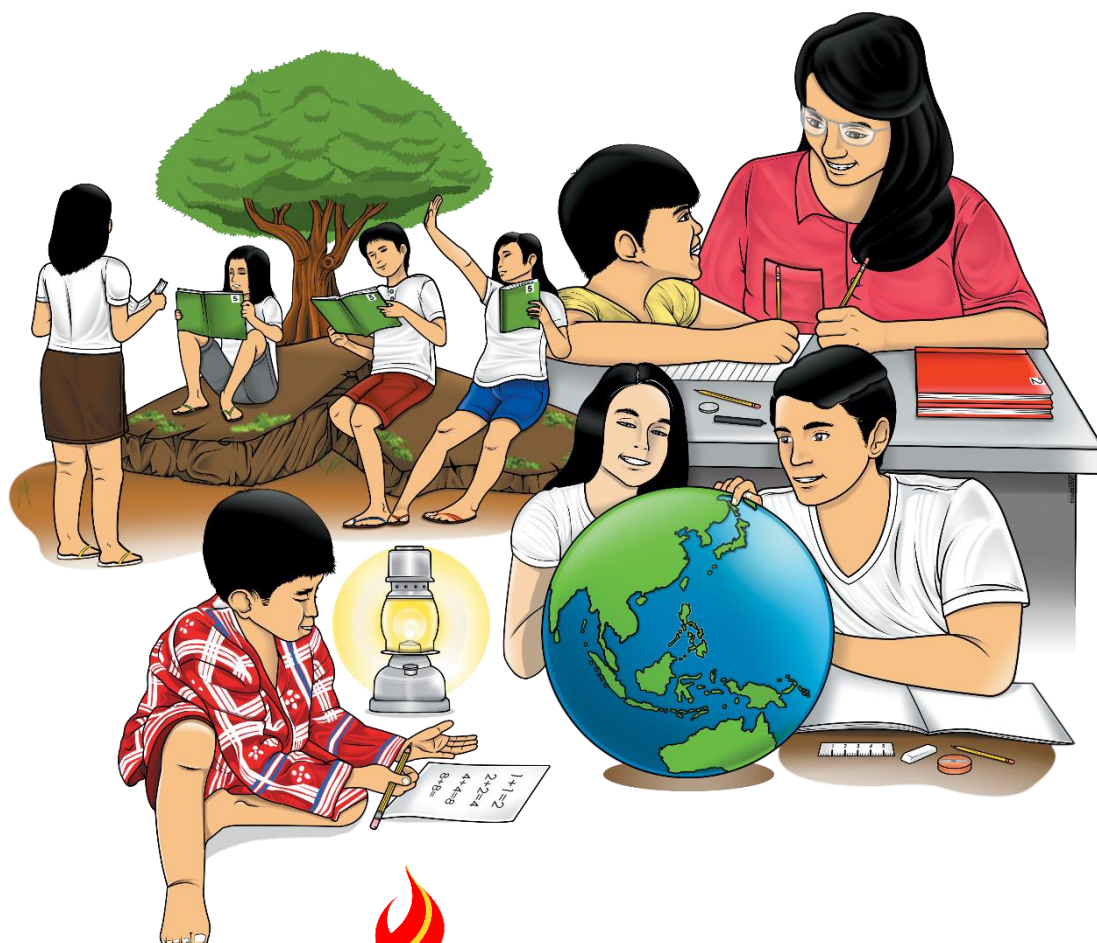


# Disaster Readiness and Risk Reduction

## Quarter 2 – Module 14: Key Concepts, Principles and Elements of DRR



**Disaster Readiness and Risk Reduction**  
**Alternative Delivery Mode**  
**Quarter 2 – Module 14: Key Concepts, Principles and Elements of DRR**  
**First Edition, 2021**

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# **Disaster Readiness and Risk Reduction**

## **Quarter 2 – Module 14: Key Concepts, Principles and Elements of DRR**

# **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-by-step 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***

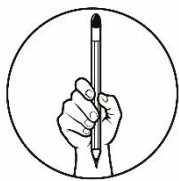
This module is intended to help you understand the key concepts, its principles and elements of disaster risk and reduction. Disaster Risk Reduction (DRR) is the concept and practice of reducing disaster risks through analysis and management of the causal factors of disasters.

The module consists of one lesson:

- Discuss the Key Concepts, Principles and Elements of Disaster Risk Reduction

After going through this module, you are expected to:

1. explain the key concepts and principles of DRR;
2. distinguish the elements of DRR; and
3. cite the significance of understanding the concepts, principles and elements of DRR.



## ***What I Know***

### **Multiple Choice.**

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

1. Which of the following refers to concept and practice of reducing disaster risk through analysis and management of the causal factors of disaster?
  - a. disaster
  - b. disaster impacts
  - c. disaster risk reduction
  - d. disaster prevention and mitigation
2. It is often described as a result of the combination of several things; exposure to hazard and condition of vulnerability and insufficient capacity measures.
  - a. disaster
  - b. exposure
  - c. hazard
  - d. vulnerability
3. Which of the following is not part of the negative consequences of a disaster?
  - a. disease
  - b. drought
  - c. economic growth
  - d. loss of life
4. All of the following show effect of practice of reducing disaster risk reduction EXCEPT \_\_\_\_\_.
  - a. destruction of assets
  - b. improved preparedness for adverse events
  - c. lessening of vulnerability of people and assets
  - d. effective management of land and the environment

5. Which of the following Republic Act (RA) provides a comprehensive, all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management?
  - a. RA 10121
  - b. RA 11012
  - c. RA 20121
  - d. RA 20220
6. Which of the following is the main objective in creating DRRM?
  - a. building a resilient community
  - b. increasing the risk of disaster
  - c. proposing law and policies to prevent disaster
  - d. increasing the number of community ready for disaster
7. Which of the following is **NOT** part of pre-event elements of disaster risk reduction?
  - a. adaptation
  - b. mitigation
  - c. prevention
  - d. recovery
8. It is a pre-event disaster risk element which lessens or limits the adverse impacts of hazards and related disasters.
  - a. adaptation
  - b. mitigation
  - c. preparedness
  - d. prevention
9. Which of the following is **NOT TRUE** about DRRM?
  - a. It builds a resilient community.
  - b. It lessens the impact of disaster.
  - c. It saves lives and property measures.
  - d. It is developed to increase the disaster risk.
10. Which of the following is the **BEST** reason why DRRM policies, laws and regulations should be implemented?
  - a. to save lives
  - b. to educate the community
  - c. to lessen the number of natural disasters that might affect the community
  - d. to communicate the possible effects of disasters that might affect the community
11. Which of the following is an important practice that is being implemented not only in schools but also in community for awareness and to save lives and properties?
  - a. drills
  - b. seminars
  - c. training
  - d. workshops
12. Which of the following are the two post event elements of disaster risk reduction?
  - a. adaptation and response
  - b. mitigation and recovery
  - c. preparedness and prevention
  - d. Recovery and response
13. A pre-event disaster risk element which is the outright avoidance of adverse impacts of hazards is called \_\_\_\_\_.
  - a. adaptation
  - b. mitigation
  - c. preparedness
  - d. prevention
14. Which of the following is the correct sequence of pre-event elements of disaster risk reduction?
 

I. Preparedness	III. Adaptation
II. Prevention	IV. Mitigation

  - a. I, II, III, IV
  - b. II, IV, III, I
  - c. III, II, I, IV
  - d. IV, III, II, I
15. It is a post-event disaster risk element wherein the provision or emergency services and public assistance during or immediately after a disaster.
  - a. adaptation
  - b. mitigation
  - c. recovery
  - d. response

## Lesson

# 1

## What is Disaster and Disaster Risk?

In this module, the learners will hold an understanding about the concepts, principles and elements of disaster risk reduction. The term disaster risk therefore refers to the potential (not actual) disaster losses, in lives, health status, livelihoods, assets and services, which could occur in a particular community or society over some specified future time period.



### *What's In*

RA 10121 provides a comprehensive, all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management through the formulation of the National Disaster Risk Management Framework. The Act shifted the policy environment and the way the country deals with disasters from mere response to preparedness (Carmela and Ochoa, 2018).

### Activity 1

**Direction:** Fill in the box with the correct letter/s being described in each item. Write your answer in your notebook.

1. It is often described as a result of the combination of several things: the exposure to a hazard.

	<b>i</b>			<b>s</b>			
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2. A pre-event element of DRR which is the outright avoidance of adverse impacts of hazards and related disasters.

	<b>r</b>		<b>v</b>			<b>t</b>			<b>n</b>
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3. A post event element with the provision of emergency services and public assistance during or immediately after a disaster.

<b>R</b>		<b>s</b>				<b>s</b>	
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4. It provides a comprehensive, all-hazard, multi-sectoral, inter-agency, and community-based approach to disaster risk management.

<b>R</b>		<b>-</b>		<b>O</b>	<b>1</b>		
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5. A pre-event element which pertains to the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects.

	<b>d</b>		<b>p</b>		<b>a</b>		<b>i</b>		
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## What's New

### Activity 2: Picture Analysis

**Directions:** Analyze the pictures below and identify the specific type of disaster that happened. As a learner, identify and explain the things that you need to do to lessen the effect of such disasters. Write your answers in the table below.



Photo Credit: Erik De Castro. Reuters via Unides/Flickr. <https://theecologist.org/2014/nov/08/year-after-typhoon-haiyan-we-demand-climate-justice>



Photo Credit: Erick De Castro/Reuters. A woman carries her baby past a destroyed church belfry in Tubigon, Bohol. Oct. 16. [http://archive.boston.com/bigpicture/2013/10/powerful\\_earthquake\\_strikes\\_th.html](http://archive.boston.com/bigpicture/2013/10/powerful_earthquake_strikes_th.html)



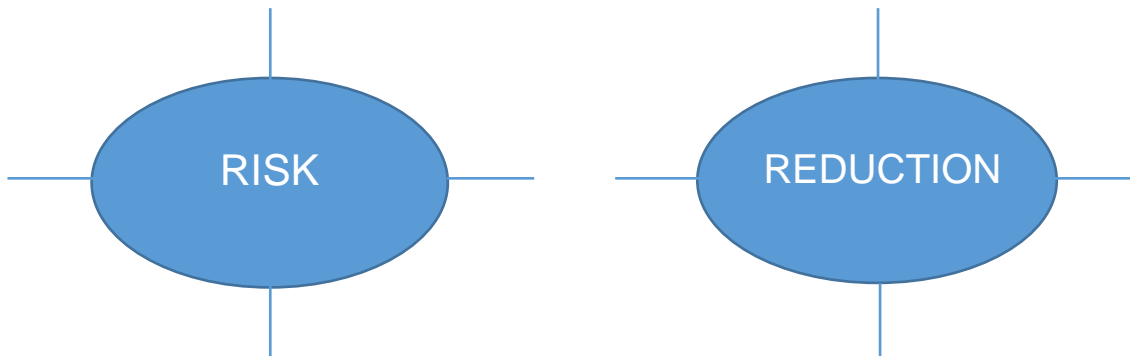
**Photo Credit:** Miguel de Guzman. Firefighters try to extinguish a raging fire that reached Task Force Bravo. <https://www.philstar.com/nation/2019/10/02/1956770/star-city-closed-over-christmas-after-fire-mbc-stations-continue-operations>

Type of disasters	Things to do
1.	
2.	
3.	



### Activity 3: Word Association

A. Give or cite terms that are related or associated to the given words below.



B. By combining the words you have written, construct a simple meaning of *Disaster Risk Reduction*.

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### ***What is It***

Disaster risk reduction (DRR) is a term used for reducing and preventing disaster risks. It is founded on the principle that while hazards are inevitable, its adverse effects like lost lives and/or destruction of property are not. There are steps that we can do to ensure reduction of risks. DRR actions can be political, technical, social and economic.

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

## Disaster Impacts:

- ◆ loss of life
- ◆ Injury
- ◆ Disease
- ◆ other negative effects on human, physical, mental and social well-being,
- ◆ damage to property
- ◆ destruction of assets
- ◆ loss of services, social
- ◆ economic disruption and environmental degradation

Disaster Risk Reduction (DRR) is the concept and practice of reducing disaster risks through analysis and management of the causal factors of disasters.

It leads to:

- ❖ reduced exposure to hazards
- ❖ lessening of vulnerability of people and assets
- ❖ effective management of land and the environment
- ❖ improved preparedness for adverse events

Disaster risk reduction usually requires long-term planning across sectors and must be integrated into general national and regional development strategies. DRR strategies usually begin with plans for assessing the:

- (a) Hazards and risks that threaten the target area,
- (b) Extent of harm that would occur to communities and infrastructure,
- (c) Vulnerable people's capacities to cope with and recover from possible disasters (Ochoa, 2018).

## Key Principles of DRRM

The key principles of DRR justify why certain changes have to be made and explain the urgency of creating a DRRM plan. Key principles should be able to make people realize why disaster plans must be a priority in every community especially those that are vulnerable to hazards. All DRRM are created on the following premises:

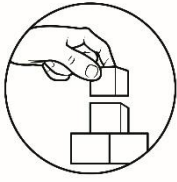
1. Development can either increase or decrease disaster risk.  
When development takes place, disaster risk is always a threat but it can be avoided if localities have effective and functional disaster prevention and mitigation plans.
2. DRRM policies, laws, and regulations can save lives if properly and strictly implemented in the community. Action is the key component of DRRM. Policies, laws, and regulations are useless if it is not properly implemented. Earthquake drills, fire drills, lock-up drills are very important not only in schools but also in the community because the community is the front liner of DRRM. The ultimate purpose of DRRM is to save lives and properties.
3. The main objective of DRRM is to build a resilient community. If community members are well prepared and equipped with sufficient knowledge, the impact of disaster can be lessened (Rimando, R. E. 2015).

## Elements of Disaster Risk Reduction

PRE-EVENT	
PREVENTION	The outright avoidance of adverse impacts of hazards and related disasters. Prevention expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance. Can be in the form of proper land use or using suitable engineering design.
MITIGATION	The lessening or limitation of the adverse impacts of hazards and related disasters. While the adverse impacts of hazards often cannot be prevented fully, their scale or severity can be substantially lessened by various strategies and actions.
ADAPTATION	The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
PREPAREDNESS	The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.

POST-EVENT	
RESPONSE	The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Disaster response is predominantly focused on immediate and short-term needs and is sometimes called “disaster relief”.
RECOVERY	The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors. The recovery task of rehabilitation and reconstruction begins soon after the emergency phase has ended, and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation.

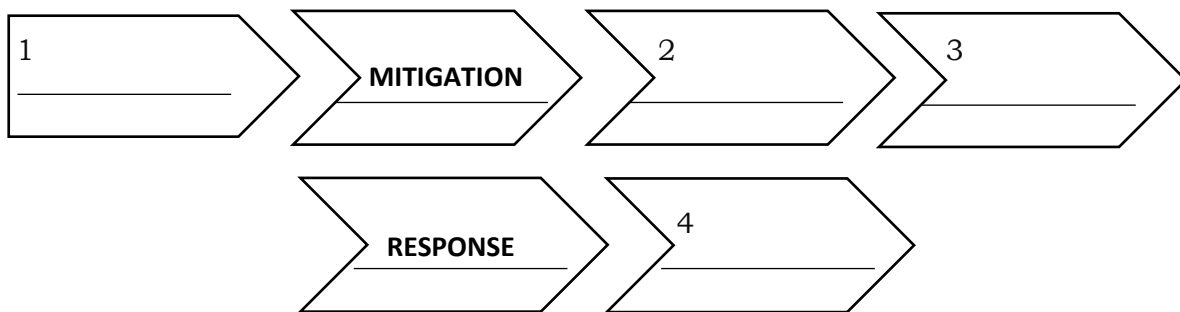
**Source:** Ochoa, Carmela. *Concepts, Principles, and Relevance of Disaster Risk Reduction*. Accessed on January 25, 2018. Retrieved from <https://carmelaochea.wordpress.com/2018/01/25/concepts-principles-and-relevance-of-disaster-risk-reduction/>



## What's More

### Activity 4: What's the Sequence?

Direction: Arrange the sequence of the elements of Disaster Risk Reduction from pre-event to post-event by writing the element on the proper box provided.



### Activity 5: “Express Yourself”

Direction: Write an essay with the title “*My Role in the Community in Saving One's Life*”. (The essay must not exceed to 10 sentences but not less than 5 sentences in a paragraph.)

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### Stop and Reflect

Now review your previous Activity numbers 1, 2, 3, 4 and 5. 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? Do you agree or not?



Have you learned so much from this module? What are the three things that you have learned? What are the two things you've found interesting?

2 Things I Found Interesting      1. \_\_\_\_\_  
    2. \_\_\_\_\_



Now that you've already learned and understood the concepts, principles and elements of disaster risk reduction. Are you ready? Sure, you are!

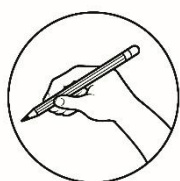
## Activity 5: “Illustrate It!”

Draw your own concept on how to lessen the impact of a disaster like flood, typhoon or earthquake.



Rubrics:

	Criteria				Points
	4	3	2	1	
Explanation	A complete response with a detailed explanation	Good solid response with clear explanation	Explanation is unclear	Misses key points	
Demonstrated Knowledge	Shows complete understanding of the questions, mathematical ideas, and processes	Shows substantial understanding of the problems, ideas, and processes	Response shows some understanding of the problem	Response shows a complete lack of understanding for the problem	
Requirements	Goes beyond the requirements of the problem	Meets the requirements of the problem	Hardly meets the requirements of the problem	Does not meet the requirements of the problem	
				Total	



## Assessment

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

- Which of the following is not part of the negative consequences of a disaster?
  - Disease
  - Drought
  - Economic growth
  - Loss of life
- Which of the following is **NOT** part of pre-event elements of disaster risk reduction?
  - Adaptation
  - Mitigation
  - Prevention
  - Recovery
- All of the following show effect of practice of reducing disaster risk reduction EXCEPT \_\_\_\_\_.
  - destruction of assets
  - improved preparedness for adverse events
  - lessening of vulnerability of people and assets
  - effective management of land and the environment
- Which of the following refers to concept and practice of reducing disaster risk through analysis and management of the casual factors of disaster?
  - Disaster
  - Disaster impacts
  - Disaster risk reduction
  - Disaster prevention and mitigation

5. Which of the following is **NOT TRUE** about DRRM?
  - a. It builds a resilient community.
  - b. It lessens the impact of disaster
  - c. It saves lives and property measures.
  - d. It is developed to increase the disaster risk.
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a. RA 10121	c. RA 20121
b. RA 11012	d. RA 20220
7. Which of the following is the main objective in creating DRRM?
  - a. building a resilient community
  - b. increasing the risk of disaster
  - c. proposing law and policies to prevent disaster
  - d. increasing the number of community ready for disaster
8. It is a pre-event disaster risk element which lessens or limits the adverse impacts of hazards and related disasters.
 

a. adaptation	c. preparedness
b. mitigation	d. prevention
9. Which of the following is an important practice that is being implemented not only in schools but also in community for awareness and to save lives and properties?
 

a. drills	c. Training
b. Seminars	d. Workshops
10. Which of the following are the two post event elements of disaster risk reduction?
  - a. adaptation and response
  - b. mitigation and recovery
  - c. preparedness and prevention
  - d. Recovery and response
11. It is a pre-event disaster risk element which is the outright avoidance of adverse impacts of hazards
 

a. adaptation	c. preparedness
b. mitigation	d. prevention
12. Which of the following is the **BEST** reason why DRRM policies, laws and regulations should be implemented?
  - a. to save lives
  - b. to educate the community
  - c. lessen the number of natural disasters that might affect the community
  - d. Communicate the possible effects of disasters that might affect the community
13. Which of the following is the correct sequence of pre-event elements of disaster risk reduction?
 

I. Preparedness	III. Adaptation
II. Prevention	IV. Mitigation

  - a. I, II, III, IV
  - b. II, IV, III, I
  - c. III, II, I, IV
  - d. IV, III, II, I



14. It is a post-event disaster risk element wherein the provision or emergency services and public assistance during or immediately after a disaster.
- adaptation
  - mitigation
  - recovery
  - response
15. It is often described as a result of the combination of several things; exposure to hazard and condition of vulnerability and insufficient capacity measures.
- disaster
  - exposure
  - hazard
  - vulnerability

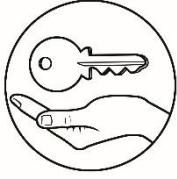


## ***Additional Activities***

### **Activity 6: “Community Based”**

**Direction:** Think of your present community status/situation. Then list down and discuss briefly 5 possible disasters/hazards that can harm the people, infrastructures, and other living organisms.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_



## Answer Key

<p><b>Assessment</b></p> <ol style="list-style-type: none"> <li>1. C</li> <li>2. D</li> <li>3. A</li> <li>4. C</li> <li>5. D</li> <li>6. A</li> <li>7. A</li> <li>8. B</li> <li>9. A</li> <li>10. D</li> <li>11. D</li> <li>12. A</li> <li>13. B</li> <li>14. D</li> <li>15. A</li> </ol>	<p><b>Activity 4</b></p> <ol style="list-style-type: none"> <li>1. Prevention</li> <li>2. Adaptation</li> <li>3. Preparedness</li> <li>4. Recovery</li> </ol>	<p><b>What I Know</b></p> <ol style="list-style-type: none"> <li>1. C</li> <li>2. A</li> <li>3. C</li> <li>4. A</li> <li>5. A</li> <li>6. A</li> <li>7. D</li> <li>8. B</li> <li>9. D</li> <li>10. A</li> <li>11. A</li> <li>12. D</li> <li>13. D</li> <li>14. B</li> <li>15. D</li> </ol>
<p><b>Activity 2</b></p> <ol style="list-style-type: none"> <li>1. Typhoon</li> <li>2. Earthquake</li> <li>3. Fire</li> </ol>	<p><b>Activity 1</b></p> <ol style="list-style-type: none"> <li>1. Disaster</li> <li>2. Prevention</li> <li>3. Response</li> <li>4. RA-10121</li> <li>5. Adaptation</li> </ol>	

## ***References***

Rimando, R. E., Disaster Readiness and Risk Reduction, First ed. Quezon City: Rex Bookstore. 2015.

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