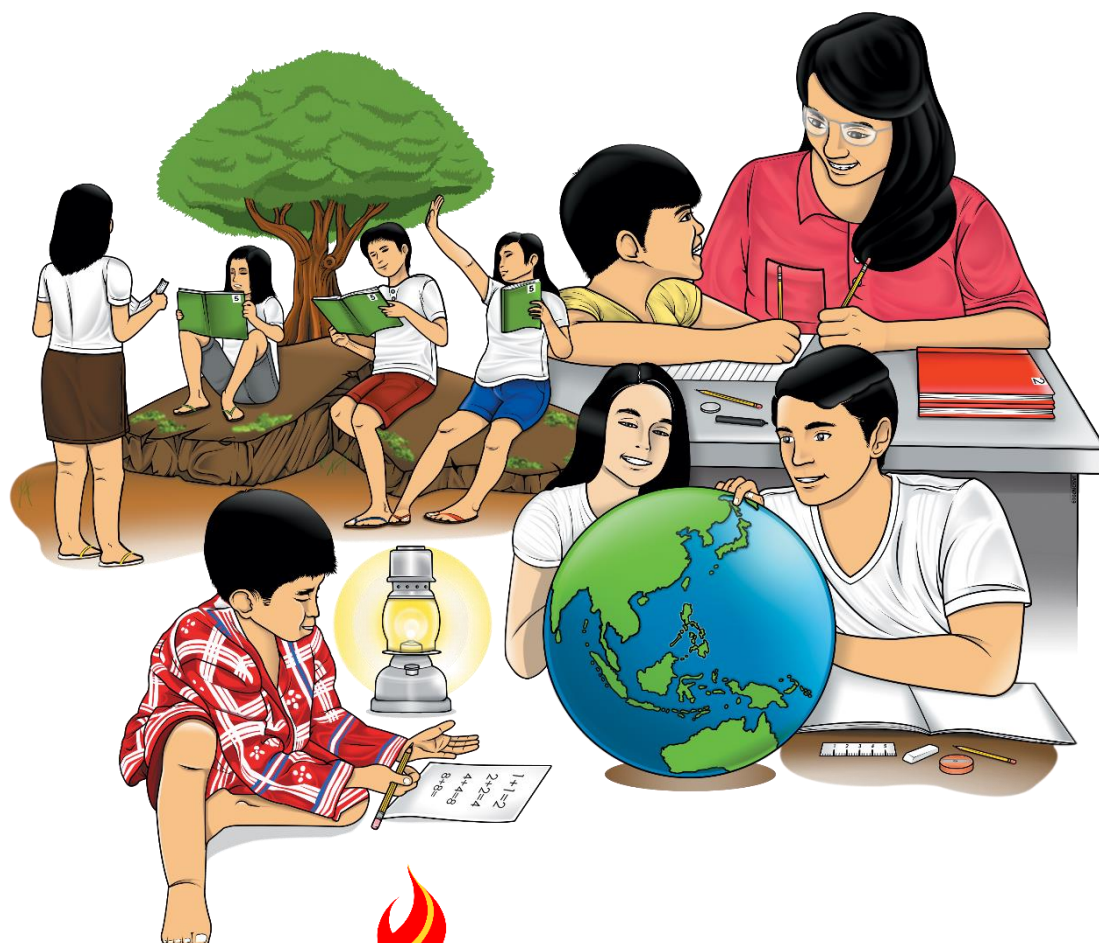


Disaster Readiness and Risk Reduction

Quarter 1 – Module 9: Hazard and Its Types



Disaster Readiness and Risks Reduction
Alternative Delivery Mode
Quarter 1 – Module 9: Hazard and Its Types
First Edition, 2020

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Disaster Readiness and Risk Reduction

Quarter 1 – Module 9: Hazard and Its Types

Introductory Message

For the facilitator:

Welcome to the Grade 11/12 Disaster Readiness and Risks Reduction (DRRR) Alternative Delivery Mode (ADM) Module on Hazard and Its Types!

This module was collaboratively designed, developed, and reviewed by educators from public institutions to assist you, the teacher or facilitator, in helping the learners meet the standards set by the K to 12 Curriculum while overcoming their personal, social, and economic constraints in schooling.

This learning resource hopes to engage the learners into guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

In addition to the material in the main text, you will also see this box in the body of the module:



Notes to the Teacher

This contains helpful tips or strategies that will help you in guiding the learners.

As a facilitator, you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their learning. Furthermore, you are expected to encourage and assist the learners as they do the tasks included in the module.

For the learner:

Welcome to the Grade 11/12 Disaster Readiness and Risks Reduction (DRRR) Alternative Delivery Mode (ADM) Module on Hazard and Its Types!

The hand is one of the most symbolized parts of the human body. It is often used to depict skill, action, and purpose. Through our hands, we may learn, create, and accomplish. Hence, the hand in this learning resource signifies that you as a learner is capable and empowered to successfully achieve the relevant competencies and skills at your own pace and time. Your academic success lies in your own hands!

This module was designed to provide you with fun and meaningful opportunities for guided and independent learning at your own pace and time. You will be enabled to process the contents of the learning resource while being an active learner.

This module has the following parts and corresponding icons:



What I Need to Know

This will give you an idea of the skills or competencies you are expected to learn in the module.



What I Know

This part includes an activity that aims to check what you already know about the lesson to take. If you get all the answers correct (100%), you may decide to skip this module.



What's In

This is a brief drill or review to help you link the current lesson with the previous one.



What's New

In this portion, the new lesson will be introduced to you in various ways such as a story, a song, a poem, a problem opener, an activity or a situation.



What is It

This section provides a brief discussion of the lesson. This aims to help you discover and understand new concepts and skills.



What's More

This comprises activities for independent practice to solidify your understanding and skills of the topic. You may check the answers to the exercises using the Answer Key at the end of the module.



What I Have Learned

This includes questions or blank sentence/paragraph to be filled in to process what you had learned from the lesson.



What I Can Do

This section provides an activity which will help you transfer your new knowledge or skill into real life situations or concerns.



Assessment

This is a task which aims to evaluate your level of mastery in achieving the learning competency.



Additional Activities

In this portion, another activity will be given to you to enrich your knowledge or skill of the lesson learned. This also tends retention of learned concepts.



Answer Key

This contains answers to all activities in the module.

At the end of this module you will also find:

References

This is a list of all sources used in developing this module.

The following are some reminders in using this module:

1. Use the module with care. Do not put unnecessary mark/s on any part of the module. Use a separate sheet of paper in answering the exercises.
2. Don't forget to answer *What I Know* before moving on to the other activities included in the module.
3. Read the instruction carefully before doing each task.
4. Observe honesty and integrity in doing the tasks and checking your answers.
5. Finish the task at hand before proceeding to the next.
6. Return this module to your teacher/facilitator once you are through with it.

If you encounter any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator. Always bear in mind that you are not alone.

We hope that through this material, you will experience meaningful learning and gain deep understanding of the relevant competencies. You can do it!



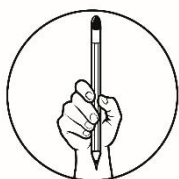
What I Need to Know

This module was designed and written with you in mind. It is here to help you master the Disaster Readiness and Risks Reduction on the topic *Hazard and Its Types*. It contains different information about hazard and comprises of various samples.. The scope of this module permits it to be used in many different learning situations specifically in dealing various hazards. The language used recognizes the diverse vocabulary level of students. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the module you are now using.

The module focused on the concept of hazard and its types.

After going through this module, you are expected to:

1. Define and cite examples of the types of hazards
2. observe proper precautions signs and symbols in hazard areas; and
3. appreciate the importance of observing precautionary measures



What I Know

Read the following sentences carefully and choose the letter of the correct answer.

1. Which is not the meaning of Hazard?
 - A. Hazard is an agent which has the potential to cause harm to vulnerable target.
 - B. Hazard cannot cause harm or damage to humans, property, or environment.
 - C. Hazard is defined as the source of danger and is something that may cause injury or harm. It is also the uncertain course of events in a country.
 - D. Hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
2. Which is not an example of Natural Hazards?
 - A. fires
 - B. floods
 - C. landslides
 - D. tsunami

3. It is the type of Hazard that arises through interaction of natural processes and human activities.
 - A. natural hazards
 - B. quasi-natural hazards
 - C. technological (or man-made) hazards
 - D. none of the above
4. Which is an example of Natural Hazard?
 - A. avalanche
 - B. plane crash
 - C. pollution
 - D. smog
5. This type of hazards arises directly as a result of human activities.
 - A. natural hazards
 - B. quasi-natural hazards
 - C. technological (or man-made) hazards
 - D. none of the above
6. Which is not an example of Quasi- Natural Hazards?
 - A. air pollution
 - B. smog
 - C. volcanic eruptions
 - D. water Pollution
7. Which is an example of Quasi- Natural Hazards?
 - A. fog
 - B. landslides
 - C. strom surge
 - D. toxic
8. It is the type of hazards that arises from natural processes in the environment.
 - A. natural hazards
 - B. quasi-natural hazards
 - C. technological (or man-made) hazards
 - D. none of the above
9. Which is an example of Natural Hazards?
 - A. dam failures
 - B. sandstorm
 - C. plane Crashes
 - D. smog
10. Which of the following is a man-made disaster?
 - A. major fire
 - B. pollution
 - C. terrorism
 - D. all of the above
11. Bush Fire is an example of what types of Hazards?
 - A. natural hazards
 - B. quasi-natural hazards
 - C. technological (or man-made) hazards
 - D. none of the above
12. Which one of the following is a Type of Natural Hazard?
 - A. acid rain
 - B. oil spill
 - C. pollution
 - D. wild fire
13. What is drought?
 - A. No rainfall for a long continuous period
 - B. Heavy rainfall for a long continuous period
 - C. Moderate rainfall for a long continuous period
 - D. None of the above
14. Which is not associated with the word HAZARD?
 - A. cautious
 - B. menace
 - C. peril
 - D. risk
15. These are the examples of Natural Hazards in the Philippines EXCEPT
 - A. avalanche
 - B. lightning
 - C. volcanic eruptions
 - D. none of the above

Lesson

1

Hazard and Its Types

This lesson introduces various concepts underlying hazard and determine types of hazard and its example. In the varied information given in this module it will help students understand the major effects of hazards and how to prevent and avoid that to happen. It will also serve as a warning signal for the students to be aware and extra cautious.



What's In

Activity 1: Let's Study and Analyze: Volcano and Parachutist



Let's Think About This

Based on the illustration, answer the following tasks/questions below:

1. What are the possible dangers that can be encountered here? Is it life threatening?
2. What do you think should be a better situation for the person jumping from the plane or should we say the parachutist?
3. How do feel if you are in the same situation?

Source: Richard J. King,
hazard_risk_cartoon_456.jpg, 2012,
<https://d32ogoqmya1dw8.cloudfront.net/images>



Notes to the Teacher

Teachers are expected to answer the students queries contain in the module via internet, messenger, email or text if necessary.



What's New

Identifying potential hazards can eliminate or control unintentional injuries, property damage or even worst, losing one's life that might happen in the future.

Activity 2.1: Let's Know! SPOT THE HAZARD



Observe the picture and answer the following questions below.

1. What objects do you see in the illustration above? How many objects are there on the table?
2. If you are going to shake the table, which object would be affected the most by the shaking? Why?
3. Based on the picture what object/s can be considered hazard?

Source: *Disaster, Hazard, Types of Hazard (Natural and man Made Hazards)*,
<https://image.slidesharecdn.com/lesson1-180511083518/95/disaster-hazard-types-of-hazard-natural-and-man-made-hazards-and-vulnerability-categories-of-vulnerability-16-638.jpg?cb=1557750308>

Activity 2.2. Let's Know Deeper! SPOT THE HAZARDS

Find hazards on the given pictures and answer the following questions below

A. hazard at home



Source: *Danger in the kitchen*, www.google.com, accessed October 2019, <https://www.twinkl.co.uk/resource/cfe-h-011-dangers-in-the-kitchen-activity-sheet>

B. hazard at school



Source: *Slip, Trip and Fall Hazards*, accessed March 9, 2015, www.youtube.com, <https://youtu.be/ChQ8aoeHoEQ?t=146>

C. hazard outside

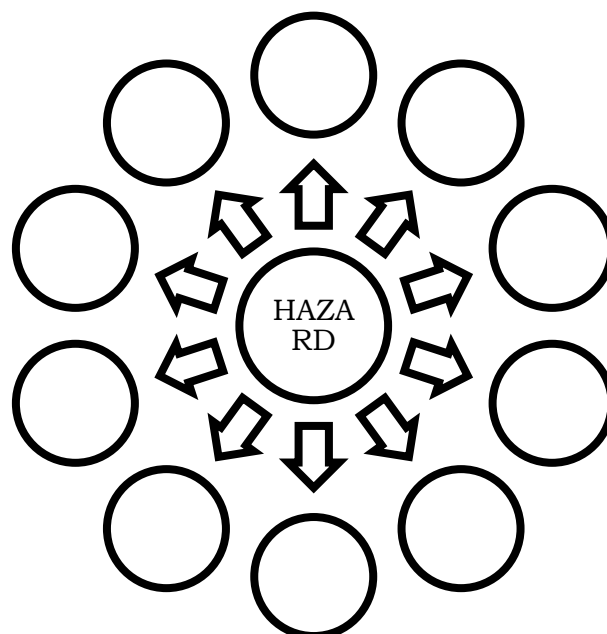


Source: Macky Lim, *Sun Star Davao*, June 2, 2020, <https://www.sunstar.com.ph/article/1801175>

1. List down the 5 different hazards found at home, school and outside.
2. Classify the types of Hazards present on the given picture.
3. Can the effects of hazards be avoided? How?

Activity 2.3 Concept Cluster

Give words associated with the word **HAZARD**. (10 points)



Activity 2.4 Give your own definition of the term HAZARD by completing the acrostic.

H -

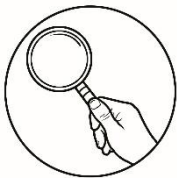
A -

Z -

A -

R -

D -



What is It

Let's Learn

After identifying hazards in the previous activity, this part gives information about the types of hazard and its example.

Hazards can be categorized in different types:

- 1. Natural hazards** - arise from natural processes in the environment.
e.g. earthquakes, tsunami, landslides, volcanic eruptions and floods
- 2. Quasi-natural hazards**- arise through the interaction of natural processes and human activities
e.g. pollution or desertification, smog and fog
- 3. Technological (or man-made) hazards**- These arise directly as a result of human activities.
e.g. accidental release of chemicals, toxic and pesticides to floral and fauna

Hazards Signs and Symbols

These signs and symbols with corresponding meaning below help people to be extra cautious, aware and observant in surroundings.

Each picture is designed to become recognizable to anyone as a signal word like “danger” or “warning”.

Technology or Man Made Hazards Signs and Symbols

- **FLAME**



- Flammable
- Self-heating
- Emits Flammable Gas
- Pyrophoric

Source: *Safety Symbols and Their Meanings*, February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

- **HEALTH HAZARD**



- Reproductive toxicity
- Respiratory sensitizer
- Target organ toxicity
- Aspiration toxicity

Source: *Safety Symbols and Their Meanings*, February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

- **EXPLODING BOMB**



- Explosives
- Self-reactives
- Organic Peroxides

Source: *Safety Symbols and Their Meanings*, February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

- **SKULL AND CROSSBONES**



- Fatal or toxic
- Acute toxicity

Source: *Safety Symbols and Their Meanings*, February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

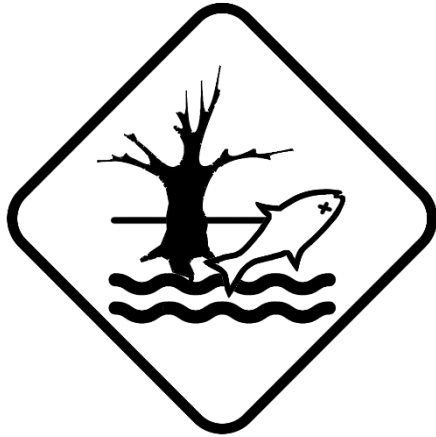
Natural Hazards Signs and Symbols



Source: Much Mania, *Natural Disaster Warning Signs, Caution, Danger, Hazard Symbol Set*, 2003-2020, <https://www.shutterstock.com/image-vector/natural-disaster-warning-signs-caution-danger-302759177>

Quasi-Natural Signs and Symbols

- **ENVIRONMENT**



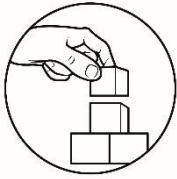
- Aquatic toxicity

Source: *Safety Symbols and Their Meanings*, February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>



- Air toxicity

Source: Wamsler, *Smog warning sign, grungy style, vector illustration*,
[www.google.com.](https://www.google.com/),
https://www.123rf.com/photo_37312853_stock-vector-smog-warning-sign-grungy-style-vector-illustration.html



What's More

Activity 1.1 Arrange Me!

Choose the right example of types of hazards below and write it on the corresponding table.

Natural Hazards	Quasi-Natural Hazards	Technological Or Manmade Hazards

avalanche
 oil spill
 mining explosions
 wild fires or bush fires
 transportation accidents
 train accident
 falling objects
 air pollution
 global warming
 lightning
 plants and animals

volcanic eruptions
 biological attacks
 polluting ground water
 dam failures
 storm surge
 plane crashes
 typhoon
 water pollution
 desertification
 sandstorm

hurricanes
 landslides
 droughts
 fires
 earthquake
 tornadoes
 floods
 acid rain
 smog
 epidemic in human

Activity 1.2 Match Me!

A. See the following pictures below and give the sign and symbol and its description

1.



Source: Much Mania, *Natural Disaster Warning Signs, Caution, Danger, Hazard Symbol Set*, 2003-2020, <https://www.shutterstock.com/image-vector/natural-disaster-warning-signs-caution-danger-302759177>

2.



Source: Wamsler, *smog warning sign, grungy style, vector illustration*, www.google.com, https://www.123rf.com/photo_37312853_stock-vector-smog-warning-sign-grungy-style-vector-illustration.html

3.



Source: Much Mania, *Natural Disaster Warning Signs, Caution, Danger, Hazard Symbol Set*, 2003-2020, <https://www.shutterstock.com/image-vector/natural-disaster-warning-signs-caution-danger-302759177>

4.



Source: *Safety Symbols and Their Meanings*, February 1, 2018, <https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

5.



Source: *Safety Symbols and Their Meanings*, February 1, 2018, <https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

B. Answer the following questions.

1. Have you seen the following signs before? If not what signs are presents in your area?
2. Have you encountered people who failed to comply with the hazards signs and symbols?
3. What did you feel upon observing it?
4. Do you think it is important to know this precautionary signs? Why?

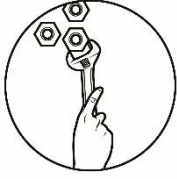


What I Have Learned

Complete Me!

Complete the following sentences by giving the appropriate answer needed in the blank.

Hazard is _____. It becomes hazard when _____. The different types of hazards are _____, _____, _____. We can minimize the effects of hazards through _____.



What I Can Do

A. Let's Pretend!

Based on the world risk index The Philippines is considered as the third most prone to hazard country in the world, having more than 20 tropical cyclones in a year, earthquakes, and more than 20 active volcanoes found all over the country. Let's say that you represent your school as a disaster advocate, what are the things that you can contribute to possibly minimize the risks of disaster in your home and school?

B. Let's Try This: Significant interview

Conduct an interview among your family members about the hazards they encounter in the following settings. Then classify them according to types of hazards.

1. At home (When they were young)

2. In barangay/ town/ province

3. In workplace

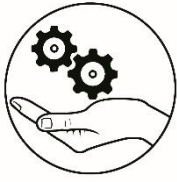


Assessment

Read the following sentences carefully and choose the letter of the correct answer.

1. Which is not the meaning of Hazard?
 - A. Hazard is an agent which has the potential to cause harm to vulnerable target.
 - B. Hazard cannot cause harm or damage to humans, property, or environment.
 - C. Hazard is defined as the source of danger and is something that may cause injury or harm. It is also the uncertain course of events in a country.
 - D. Hazard is a dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
2. Which is not an example of Natural Hazards?
 - C. fires
 - C. landslides
 - D. floods
 - D. tsunami
3. It is the type of Hazard that arises through interaction of natural processes and human activities.
 - C. natural hazards
 - C. technological (or man-made) hazards
 - D. quasi-natural hazards
 - D. none of the above
4. Which is an example of Natural Hazard?
 - C. avalanche
 - C. pollution
 - D. plane crash
 - D. smog
5. This type of hazards arises directly as a result of human activities.
 - C. natural hazards
 - C. technological (or man-made) hazards
 - D. quasi-natural hazards
 - D. none of the above
6. Which is not an example of Quasi- Natural Hazards?
 - C. air pollution
 - C. volcanic eruptions

- D. smog
- D. water Pollution
7. Which is an example of Quasi- Natural Hazards?
 - C. fog
 - C. strom surge
 - D. landslides
 - D. toxic
8. It is the type of hazards that arises from natural processes in the environment.
 - C. natural hazards
 - C. technological (or man-made) hazards
 - D. quasi-natural hazards
 - D. none of the above
9. Which is an example of Natural Hazards?
 - C. dam failures
 - C. plane Crashes
 - D. sandstorm
 - D. smog
10. Which of the following is a man-made disaster?
 - C. major fire
 - C. terrorism
 - D. pollution
 - D. all of the above
11. Bush Fire is an example of what types of Hazards?
 - C. natural hazards
 - C. technological (or man-made) hazards
 - D. quasi-natural hazards
 - D. none of the above
12. Which one of the following is a Type of Natural Hazard?
 - C. acid rain
 - C. pollution
 - D. oil spill
 - D. wild fire
13. What is drought?
 - E. No rainfall for a long continuous period
 - F. Heavy rainfall for a long continuous period
 - G. Moderate rainfall for a long continuous period
 - H. None of the above
14. Which is not associated with the word HAZARD?
 - C. cautious
 - C. peril
 - D. menace
 - D. risk
15. These are the examples of Natural Hazards in the Philippines EXCEPT
 - C. avalanche
 - C. volcanic eruptions
 - D. lightning
 - D. none of the above



Additional Activities

Make your own article discussing the effects of hazards and how do people survive in this kind of situation?

1. Guimaras Oil Spill



Source: Shubert Ciencia, *Cleanup in Barangay La Paz, Nueva Valencia, Guimaras*, licensed CC BY 2.0



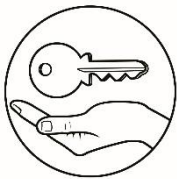
Source: <https://c8.alamy.com/comp/AMYWN2/oil-pollution-philippines-AMYWN2.jpg>

Shubert Ciencia, *Cleanup in Barangay La Paz, Nueva Valencia, Guimaras*, licensed CC BY 2.0

2. Floods in urban areas



Source: Floods in the Philippines 2009, www.google.com,
<https://floodlist.com/wp-content/uploads/2013/04/philippines>



Answer Key

Assessment	What's More			What I Know
1. B 2. A 3. B 4. A 5. C 6. C 7. A 8. A 9. B 10. D 11. A 12. D 13. A 14. A 15. A	Technological Hazards or Man Made	Quasi Natural Hazards	Natural Hazards	1. B 2. A 3. B 4. A 5. C 6. C 7. A 8. A 9. B 10. D 11. A 12. D 13. A 14. A 15. A
	- oil spill - biological attacks - mining - explosions - polluting ground water - dam failures - fires - transportation accidents - falling objects - epidemic in human plants and animals - plane crashes	- air pollution - water pollution - acid rain - global warming - desertification - smog	- avalanche - volcanic eruptions - hurricane - landslides - droughts - storm surge - tornados - typhoon - floods - lightning - sandstorm - wild fires - earthquake	

References

E-book

K. Hewitt and I. Burton, *The Hazardousness of a Place: A Regional Ecology of Damage Events*, University of Toronto, 1971,
<https://www.abebbooks.com/servelet/BookDetailsPL?bi=22573648538>

Eric Gislason, *Types of Hazards National Association of Safety Professionals*,
accessed December 26, 2018, <https://naspweb.com/types-of-hazards/>

Difference between Natural and Man Made Disaster, accessed June 23, 2016,
<https://pediaa.com/difference-between-natural-and-man-made-disaster/>

Caution and Warning: Natural disaster, <https://www.shutterstock.com/image-vector/natural-disaster-warning-signs-caution-danger-302759177>

Website

Richard J. King, *hazard_risk_cartoon_456.jpg*, 2012,
<https://d32ogoqmya1dw8.cloudfront.net/images>

Danger in the kitchen, www.google.com, October 2019,
<https://www.twinkl.co.uk/resource/cfe-h-011-dangers-in-the-kitchen-activity-sheet>

Slip, Trip and Fall Hazards, www.youtube.com, March 9, 2015,
<https://youtu.be/ChQ8aoeHoEQ?t=146>

Sun Star Davao, June 2, 2020, <https://www.sunstar.com.ph/article/1801175>

Safety Symbols and Their Meanings, Retrieved February 1, 2018,
<https://www.dcmgroup.ca/en/news/safety-symbols-and-their-meanings-2/>

Much Mania, *Natural Disaster Warning Signs, Caution, Danger, Hazard Symbol Set*, 2003-2020, <https://www.shutterstock.com/image-vector/natural-disaster-warning-signs-caution-danger-302759177>

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Floods in the Philippines 2009, www.google.com, <https://floodlist.com/wp-content/uploads/2013/04/philippines>

<https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2018.pdf>

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