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# Development and Validation of Interactive Multimedia Package on Disaster Management Learning Activities

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## I. INTRODUCTION

India is one of the natural disaster prone country .Due to large population growth and migration of people to the urban areas .the country has increasing vulnerability to the socio economic impacts of extreme weather like flood, droughts, cyclones etc.

In 2004, nearly 250000 people died due to deadliest disaster, Tsunami. On December 15, 2011 Thane cyclone occurred and destroyed more than 1000 hectares of agriculture lands. Simultaneously flood has occurred in Cuddalore, Karaikal, Chennai and Pondicherry.in November 2020, very Severe Cyclonic Storm Nivar a tropical cyclone which brought severe impacts to portions of Tamil Nadu and Andhra Pradesh. If one has awareness on tsunami, cyclone and floods, one could take action to minimize the loss of lives and possessions which includes safety and security of life. Knowledge about disaster, disaster preparedness and disaster management plays a vital role in minimizing the effects of disaster.

From the research studies, it has been observed that children are mostly affected by natural hazards and them suffering both physically and mentally. Teaching Disaster management in the schools, colleges and universities will make the youth to aware about the various disasters and it will make them to face the disasters or any crisis with their knowledge, self-confidence and survival skills.

Hence the disaster management is important for the School children to safeguard themselves and they can also impart it to family, society and others in future. In the view of the above, the investigator has decided to develop and validate activity based Interactive Multimedia package on Disaster Management Learning Activities for school students and it is entitled as “DEVELOPMENT AND VALIDATION OF INTERACTIVE MULTIMEDIA PACKAGE ON DISASTER MANAGEMENT LEARNING ACTIVITIES FOR SCHOOL STUDENTS”

## II. OPERATIONAL DEFINITIONS

### A. Disaster

In this present study the investigator refers disaster is an unexpected natural flood, cyclone and tsunami, etc which causing significant physical damage or destruction, loss of life or sometimes permanent change to the natural environment.

### B. Disaster Management

Disaster management means managing resources and various responsibilities to deal with all humanitarian aspects of emergencies. This may include preparedness, response and recovery. The purpose of disaster management is to lessen the impact of disasters.

### C. Web definition (Wiki Pedia)

In this present study the investigator refers Disaster management to how one can manage and implement the action of plan with reference to cyclone, flood and tsunami.

### D. Interactive Multimedia

Multimedia is the technology engaging a variety of media, including text, audio, video, graphics and animation, either separately or in combination with computers to communicate ideas or to disseminate information.

In this present study the investigator refers multimedia to teach the electronic module which includes both audio / video.

### III. OBJECTIVES OF THE STUDY

#### A. Major Objectives

To develop and validate the Interactive Multimedia package on Disaster Management Learning Activities for secondary school students

Development and Validation of Interactive Multimedia Package on Disaster Management Learning Activities

The interactive multimedia package is self-explanatory and conveys all the information regarding safety, preparedness, relief and rescue, and rehabilitation to safeguard the lives and property from all the disasters. This interactive multimedia package also provides information such as how and when disasters occur? What are the reasons for occurrence of disasters? What are the preventive measures and precautions do's and don'ts at the time of disasters are depicted in the interactive multimedia package.

Interactive Multimedia is a combination of audio, video, animation, text etc. The module was prepared with the help of web and interactive multimedia technology.

When the information is provided visually, it will remain in the minds of the school students forever. When the concept is delivered in demonstration form, it provides the first-hand experience and in depth knowledge about disaster management. It teaches the school students about various disasters.

The interactive multimedia package is effectively delivered.

This interactive multimedia package is such an edutainment that serves the purpose of teaching learning in the present scenario.

This is an educational module on disaster management which has been prepared by using the HTML CSS, JAVASCRIPT .

The Researcher used following steps for developing product as above mentioned

#### 1) Predevelopment Steps

a) *Content Analysis And Content Selection For The Interactive Multimedia Package:* The content for the package has been taken from the 6th, 7th, 8th, 9<sup>th</sup> and 10<sup>th</sup> standard Social Science book of the Tamilnadu state board. The prepared content has been given to the subject experts to check the validity and reliability. The same has been given to the number of 10 students from different standards for the pilot study based on their suggestions changes have been carried out. Finally, the following disasters content were selected for the interactive multimedia package preparation

- Disaster and types
- Natural disasters and Manmade Disaster
- Earthquake
- Volcanoes
- Tsunami
- Cyclones
- Flood
- Landslide
- Avalanche
- Thunder and Lightning
- Hurricane
- Blizzards/Winter Storm &
- Pandemic Diseases

b) *Story Board Writing:* After finalizing the content the story board was prepared by the researcher with the help of the technical experts

c) *Collection Of Necessary Materials:* Researcher collected necessary material related to the selected content of disasters from the 6th, 7th, 8th, 9<sup>th</sup> and 10<sup>th</sup> standard Social Science book of the Tamilnadu state board and the internet. Researcher also collected pictures, videos, text, animated videos, and sound for the development of the Interactive multimedia package

#### 2) Development Stage

Researcher use the script and organize the videos picture, animations, texture material, sound as per script. The Package was prepared with the help of web and interactive multimedia technology.-HTML CSS, JAVASCRIPT and Adobe Flash

### 3) Post Development Stage

After the development of the package, pilot study was conducted among the small group of tenth standard students and it has been given to the technical reviewers and content reviewers to check the accessibility and validity of the content. Based on their views and suggestions the package was finalized.

#### Features of the Interactive Multimedia Package

The interactive package has text, images, video, animation, and activity. The entire package has the ‘Speak Now’ option which is disable friendly; it will enable the entire content to be read. Each page has the option to go for the previous page and the next page. The package starts with the registration page, followed by each disaster and activity page. It is designed in such a way that the learner can go step by step. There is a provision to visit the previous page but the next page will appear only if they finish the particular activity. Each activity contains the try again and checks answer option. After each activity, the score screen will appear along with the feedback.

## IV. REGISTRATION LINK

The module registration page consists of the following personal details of those who are using the Interactive multimedia package.

Name

Standard - 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>

Medium- Tamil, English

Sex - Male, Female

Locality- Rural, Semi-Urban, Urban

Type of School- Matric, Government Aided, Government

District

### Registration Link

**REGISTER NOW !**

Name  
Please Enter Your Name

Standard  
choose

Medium  
choose

Sex  
choose

Locality  
choose

Type of the School  
choose

District  
Please Enter Your district

Submit

**Disaster**

Disaster Activity

Earthquake

Earthquake Activity

Volcanoes

Volcanoes Activity

Tsunami

Tsunami Activity

Cyclones

Cyclones Activity

Floods

Floods Activity

Landslide

Landslide Activity

Avalanche

avalanche Activity

Thunder and lightning

Thunder Activity

Hurricane

hurricane Activity

Blizzard / winter storm

blizzard Activity

Pandemic Disease

Pandemic Activity

Man Made disasters

manmade Activity

**Disaster**

A disaster is a serious disruption generally defined as "A serious losses which exceed the ability of life, injury, disease and other property, destruction of assets are termed as Disasters when

**Disaster is broad**

**Natural Disaster**

- Earthquake
- Volcanoes
- Tsunami
- Cyclones
- Floods
- Landslide
- Avalanche
- Thunder and lightning

**Man-made Disaster**

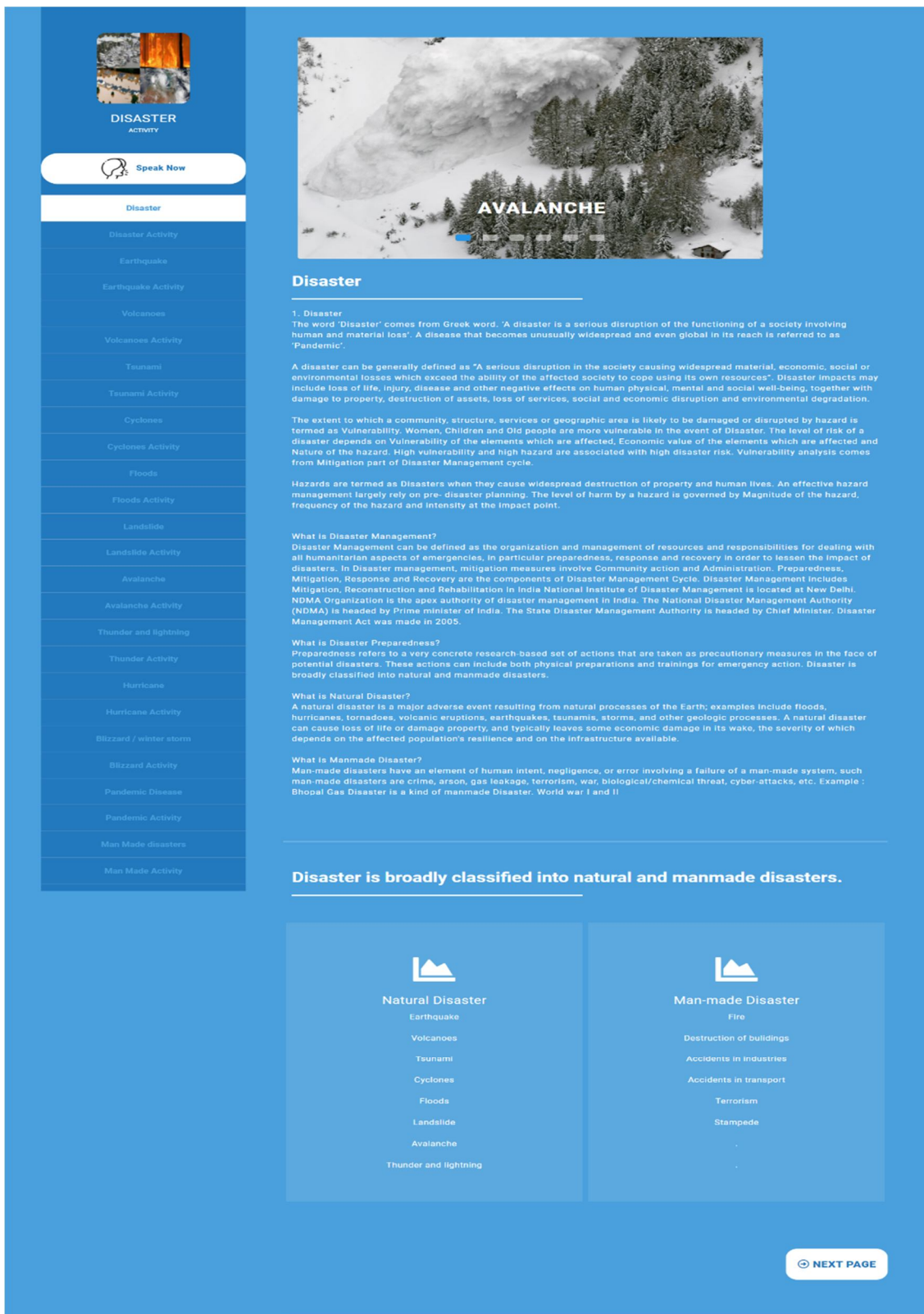
- Fire
- Destruction of buildings
- Accidents in industries
- Accidents in transport
- Terrorism
- Stampede

© NEXT PAGE



1) Page One: Disaster

The first page consists of the definition of disaster and a classification chart of natural disasters and manmade disasters; it has a flash image of all the disasters.



The screenshot shows a web page with a blue background. On the left is a vertical navigation menu with a 'Disaster' header and a 'Speak Now' button. The menu items include: Disaster Activity, Earthquake, Earthquake Activity, Volcanoes, Volcanoes Activity, Tsunami, Tsunami Activity, Cyclones, Cyclones Activity, Floods, Floods Activity, Landslide, Landslide Activity, Avalanche, Avalanche Activity, Thunder and lightning, Thunder Activity, Hurricane, Hurricane Activity, Blizzard / winter storm, Blizzard Activity, Pandemic Disease, Pandemic Activity, Man Made disasters, and Man Made Activity. The main content area features a large image of an avalanche with the word 'AVALANCHE' overlaid. Below the image is the heading 'Disaster' followed by a definition: 'The word 'Disaster' comes from Greek word. A disaster is a serious disruption of the functioning of a society involving human and material loss'. A disease that becomes unusually widespread and even global in its reach is referred to as 'Pandemic'. A disaster can be generally defined as 'A serious disruption in the society causing widespread material, economic, social or environmental losses which exceed the ability of the affected society to cope using its own resources'. Disaster impacts may include loss of life, injury, disease and other negative effects on human physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation. The extent to which a community, structure, services or geographic area is likely to be damaged or disrupted by hazard is termed as Vulnerability. Women, Children and Old people are more vulnerable in the event of Disaster. The level of risk of a disaster depends on Vulnerability of the elements which are affected, Economic value of the elements which are affected and Nature of the hazard. High vulnerability and high hazard are associated with high disaster risk. Vulnerability analysts comes from Mitigation part of Disaster Management cycle. Hazards are termed as Disasters when they cause widespread destruction of property and human lives. An effective hazard management largely rely on pre- disaster planning. The level of harm by a hazard is governed by Magnitude of the hazard, frequency of the hazard and intensity at the impact point. What is Disaster Management? Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. In Disaster management, mitigation measures involve Community action and Administration. Preparedness, Mitigation, Response and Recovery are the components of Disaster Management Cycle. Disaster Management includes Mitigation, Reconstruction and Rehabilitation in India National Institute of Disaster Management is located at New Delhi. NDMA Organization is the apex authority of disaster management in India. The National Disaster Management Authority (NDMA) is headed by Prime minister of India. The State Disaster Management Authority is headed by Chief Minister. Disaster Management Act was made in 2005. What is Disaster Preparedness? Preparedness refers to a very concrete research-based set of actions that are taken as precautionary measures in the face of potential disasters. These actions can include both physical preparations and trainings for emergency action. Disaster is broadly classified into natural and manmade disasters. What is Natural Disaster? A natural disaster is a major adverse event resulting from natural processes of the Earth; examples include floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, storms, and other geologic processes. A natural disaster can cause loss of life or damage property, and typically leaves some economic damage in its wake, the severity of which depends on the affected population's resilience and on the infrastructure available. What is Manmade Disaster? Man-made disasters have an element of human intent, negligence, or error involving a failure of a man-made system, such man-made disasters are crime, arson, gas leakage, terrorism, war, biological/chemical threat, cyber-attacks, etc. Example : Bhopal Gas Disaster is a kind of manmade Disaster. World war I and II.

**Disaster is broadly classified into natural and manmade disasters.**

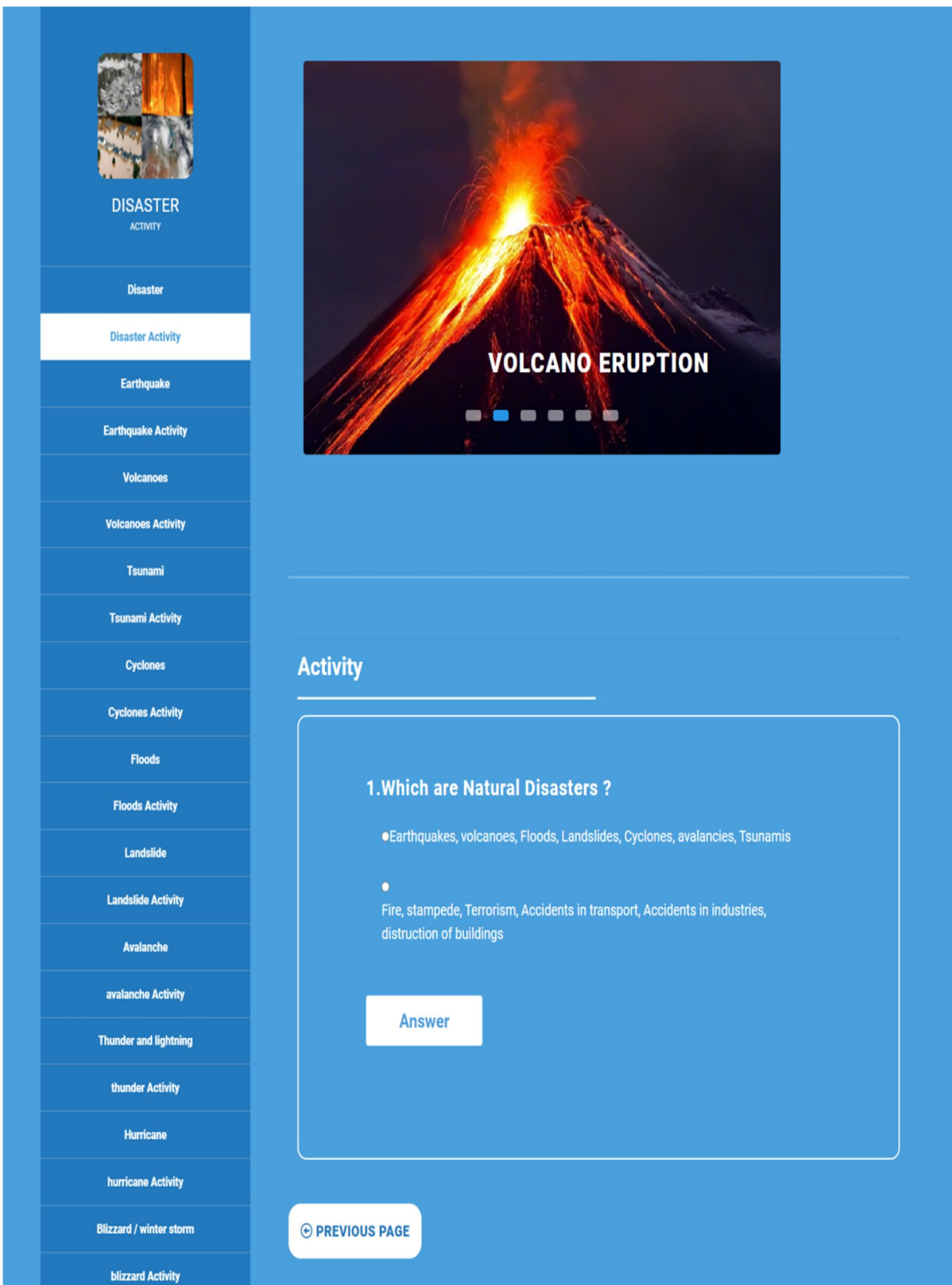
Natural Disaster	Man-made Disaster
Earthquake	Fire
Volcanoes	Destruction of buildings
Tsunami	Accidents in Industries
Cyclones	Accidents in transport
Floods	Terrorism
Landslide	Stampede
Avalanche	
Thunder and lightning	

[NEXT PAGE](#)

Page 1: Disaster

2) Page two: Disaster Activity

This page contains a total of 7 activities in the form of choose the best option and choose multiple option questions for natural disasters and man-made disasters.



Page 2: Disaster Activity

### 3) Page Three: Earthquake

This page contains the definition, effects, do's, before, during, after the earthquake, pictures of a protection chart during the earthquake, and a video about the earthquake for 2.06 minutes.



**DISASTER**

Speak Now

- Disaster
- Disaster Activity
- Earthquake**
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- Avalanche Activity
- Thunder and Lightning
- Thunder Activity
- Hurricane
- Hurricane Activity
- Blizzard / winter storms
- Blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- Manmade Activity



## Earthquake

A sudden movement (or) trembling of the earth crust is called as earthquake. The movement of the tectonic plates, plate shifting, landfalling, surface fault, etc., causes earthquake. The sudden shaking of the earth at a place for a short spell of time is called an earthquake. The duration of the earthquake may be a few seconds to some minutes. The point where an earthquake originates is called its "focus". The vertical point of the surface from the focus is called "epicentre". The Richter scale express an earthquake's magnitude. Generally the number on Richter Scale ranges between 0 to 9. A seismograph, or seismometer, is an instrument used to detect and record earthquakes.

**Effects**

Due to a strong earthquake, loss of lives, buildings, roads, bridges and dams are damaged. Earthquake cause floods, tsunamis, landslides, fires, breakdown of water supply and electrical lines. It may change the course of a river too.





**What to do?**

**DROP** : where you are, crouch your hands and knees. This position protects you from being knocked down and also allows you to stay low and crawl to shelter if needed.

**COVER** : your head and neck with your arms and hand

1. If a sturdy table or desk is nearby, crawl underneath it for shelter
2. If no shelter is nearby, crawl next to an interior wall away from windows

**HOLD ON** : until the shaking stops.

1. Under shelter, hold on to it with one hand be ready to move with your shelter if it shifts
2. No shelter: hold on to your head and neck with both arms and hands.
3. HOLD ON to your shelter and be prepared to move with it until the shaking stops.

**Before**

1. Build an emergency kit.
2. Make a family communication plan.
3. Know the safe spots in every room—under a sturdy table or against an inside wall.
4. Secure household items.
5. Ask your family to hold earthquake drills—drop, cover, and hold on!

**During**

1. If you are inside: stay on the ground. If you're yourself cannot or unable to stay in a room or other heavy furniture, if there is nothing to get under, crouch your head and neck with your arms and hands near a sturdy table or desk. If you are outdoors: if you're in a car, stay in the car. If you're on foot, stay away from windows, glass, lighting fixtures, or furniture that could fall. Don't bunk down.
2. If you're outdoors: stay away from windows, glass, lighting fixtures, or furniture that could fall. Don't bunk down.
3. If you're in a vehicle: stay there. Move away from buildings, overpasses, and wires until the shaking stops. Be very careful before or entering your home or other buildings. Be sure to be aware of debris in your way.

**After**

1. Expect aftershocks. They are usually not as strong but can cause damage.
2. Do not enter a damaged building.
3. Open cabinets carefully. Objects might have moved and could fall on you.
4. Wear hard hats, safety glasses, and gloves to protect your skin from grinding materials by broken objects.
5. Test, don't talk. Check there's a life-threatening situation, and a test so that you don't be up phone lines needed by emergency workers. Plus, talking may mean you'll get service to slow.

## Protect Yourself During Earthquakes!

<b>IF POSSIBLE</b>			
	<b>DROP!</b>	<b>COVER!</b>	<b>HOLD ON!</b>
<b>USING CANE</b>			
	<b>DROP!</b>	<b>COVER!</b>	<b>HOLD ON!</b>
<b>USING WALKER</b>			
	<b>LOCK!</b>	<b>COVER!</b>	<b>HOLD ON!</b>
<b>USING WHEELCHAIR</b>			
	<b>LOCK!</b>	<b>COVER!</b>	<b>HOLD ON!</b>



0:00 / 2:06

PREVIOUS PAGE
NEXT PAGE

Page 3: Earthquake

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1630

4) Page Four: Earthquake Activity

This page consists of the instruction for the activities followed by 3 activities namely, crossword puzzle game, pick the image for Do's and Don'ts.

**DISASTER**  
ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity**
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

**CROSS WORD GAME**  
Instructions:  
click and Drag on correct word  
if it is correct Answer it is disappeared from clues.

T	R	E	M	B	L	I	N	G
S	H	A	K	I	N	G	R	A
W	A	S	T	I	N	G	A	A
F	O	C	U	S	A	A	A	R
S	Q	W	E	D	A	A	A	A
D	A	M	A	G	E	A	A	A
R	T	W	B	I	T	O	E	A
B	A	N	A	G	E	A	S	E
E	A	R	T	H	Q	U	A	K

ALL CLUES  
TREMBLING  
EARTHQUAKE  
SHAKING  
WASTING FOCUS  
DAMAGE

**Activity**  
1. Pick the images for do's during Earth Quake?

Option 1:

Option 2:

2. Pick the images for don'ts during Earth Quake?

Option 1:

Option 2:


PREVIOUS PAGE

Page 4: Earthquake Activity



5) Page Five: Volcanoes

This page contains the definition, before, during, and after volcano along with images and a video of 1.59 minutes.



DISASTER  
ACTIVITY

Speak Now

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- thunder Activity
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity



### Volcanoes

Volcanoes are openings or vents where lava, small rocks, molten rock, gases, and steam erupt onto the earth's surface. Volcanoes are openings or vents where lava, small rocks, molten rock, gases, and steam erupt onto the earth's surface. Volcanoes are generally found where tectonic plates pull apart or are coming together. A volcanic eruption may release acid, gases, rocks, and ash into the air. Lava and debris can flow at up to 100 miles per hour, destroying everything in their path. About 11 percent of the world's active volcanoes are located in the U.S., which has approximately 170 volcanoes. These volcanoes are both active and dormant. Earthquakes, flash floods, landslides, debris and mudflow (lahar), or acid rain may happen at the same time as a volcanic eruption.



### Before

1. Build an emergency kit.
2. Make a family communications plan.
3. In addition to all hazard supplies, include: goggles, N-95 disposable mask, long sleeved shirts, long pants, and supplies to seal ash out of your home. Since volcanic ash may ruin water supplies, include additional supplies of water.
4. Learn about your community's volcanic eruption warning systems and emergency evacuation plans. Many communities have sirens to alert public of a possible volcanic eruption.
5. **NORMAL (green):** Volcano is in a noneruptive state, or has returned to a noneruptive state after a higher level of volcanic activity.
6. **ADVISORY (yellow):** Volcano is showing signs of heightened activity above known background level. An advisory (yellow) could also mean that volcanic activity has decreased significantly after being at a higher level, but continues to be closely monitored in case it returns to a high level.
7. **WATCH (orange):** Volcano is showing higher unrest with increased potential of eruption, timeframe uncertain. A watch could also mean that an eruption is underway but poses limited hazards.
8. **WARNING (red):** Hazardous eruption is imminent, underway, or suspected.




### During

Follow the evacuation order issued by authorities. Evacuate immediately from the volcano area. You may be asked to evacuate early to provide time to leave the area while routes are available.

Look out for a flowing river of mud (mudflow). Look upstream before you cross any bridges to make sure a mudflow is not coming. If it is, do not cross the bridge. The mudflow could destroy it.

For lahars—move to high ground off valley floors.

### After

1. Listen to safety officials.
2. Text, don't talk. Unless there's a life-threatening situation, send a text so that you don't tie up phone lines needed by emergency workers. Plus, texting may work even if cell service is down.



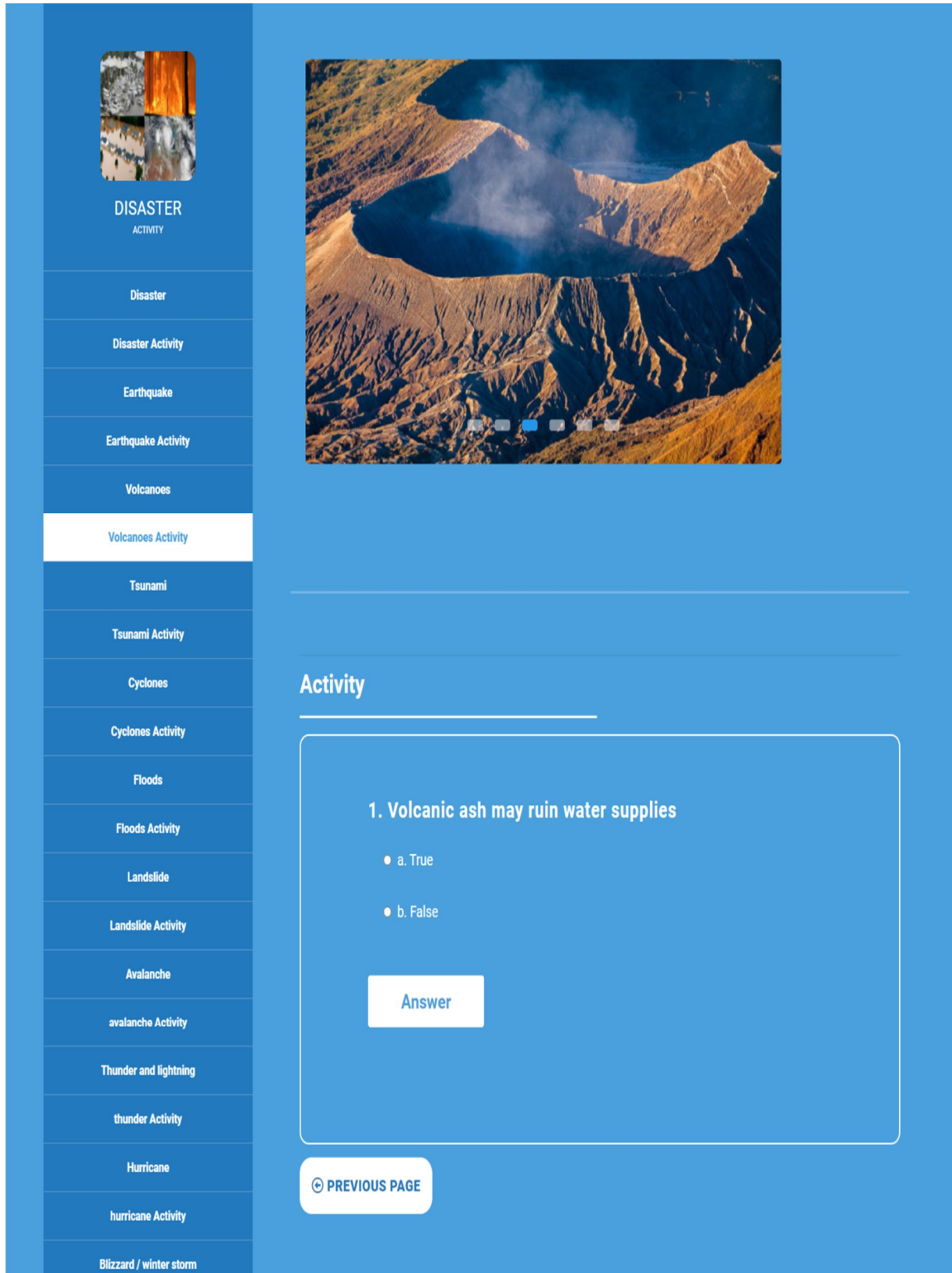
0:00 / 1:59

[PREVIOUS PAGE](#)

[NEXT PAGE](#)


6) Page Six: Volcanoes Activity

This page consists of 3 activities namely true or false and chooses the best option followed one by one.



**DISASTER**  
ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity**
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm



**Activity**

1. Volcanic ash may ruin water supplies

- a. True
- b. False

**Answer**

[PREVIOUS PAGE](#)

Page 6: Volcanoes Activity

7) Page Seven: Tsunami


This page contains the definition, effects, before, after tsunami along with images and a video of 1.57 minutes.

DISASTER

Speak Now

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- Avalanche Activity
- Thunder and Lightning
- Thunder and Lightning Activity
- Hurricanes
- Hurricanes Activity
- Blizzard / winter storms
- Blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

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Design



### Tsunami

Tsunamis are waves generated by earthquake, volcanic eruptions, and underwater landslides. When earthquake jolts the ocean floor, the sudden displacement of the sea bed occurs and the resulting displacement of water can produce one or more huge, destructive waves, known collectively as a tsunami. The sea waves rise to several meters and may reach the coast within a few minutes. Tsunami is also known as seismic wave. International Tsunami information centre is located in Honolulu. In India Tsunami warning centre is located at Hyderabad.

#### Effects

It causes flooding and disrupts transportation, power communication and water supply.





#### Before

1. Build an emergency kit.
2. Make a family communications plan.
3. If you see the water pull back from the shore out to sea very quickly, get away from the area immediately.
4. There are four levels of tsunami alerts issued by the tsunami warning centers for United States and Canadian coastlines:
5. **Tsunami Warning: Take Action—Danger!** Follow instructions from local officials. Evacuation is recommended. Move to high ground or inland (away from the water).
6. **Tsunami Advisory: Take Action.** Stay out of the water and away from beaches and waterways. Follow instructions from local officials.
7. **Tsunami Watch: Be Aware.** A distant earthquake has occurred. A tsunami is possible. Stay tuned for more information. Be prepared to take action if necessary.
8. **Tsunami Information Statement: Relax.** An earthquake has occurred, or a tsunami warning, advisory or watch has been issued for another part of the ocean. Most information statements indicate there is no threat of a destructive tsunami.
9. Listen to evacuation orders and leave the area immediately if told to do so.
10. Take any pets with you.
11. Move inland (away from the ocean) and towards higher ground.
12. Stay away from the beach. Never go down to the water to watch a tsunami come in. If you can see the wave, you are too close to escape it.
13. If you see the water pull back from the shore out to sea very quickly, get away from the area immediately.
14. Move to the upper levels of a tall, fortified building to minimize your hazard exposure.




#### After

1. Don't return home unless officials tell you it is safe to do so. Tsunami waves can continue for hours and the next wave may be more dangerous than the first.
2. Carefully watch every step you take. Stay away from debris in the water. It could be dangerous because it could contain harmful chemicals or may be electrified by downed power lines.
3. Stay out of any building with water around it. Water can make floors crack or walls collapse.
4. Test, don't talk. Unless there's a life-threatening situation, send a text so that you don't tie up phone lines needed by emergency workers. Plus, texting may work even if cell service is down.
5. Be very careful before re-entering your home or other buildings. Tsunami-driven floodwater has likely damaged the building in many ways that you can't see. Be sure a parent or adult is with you.

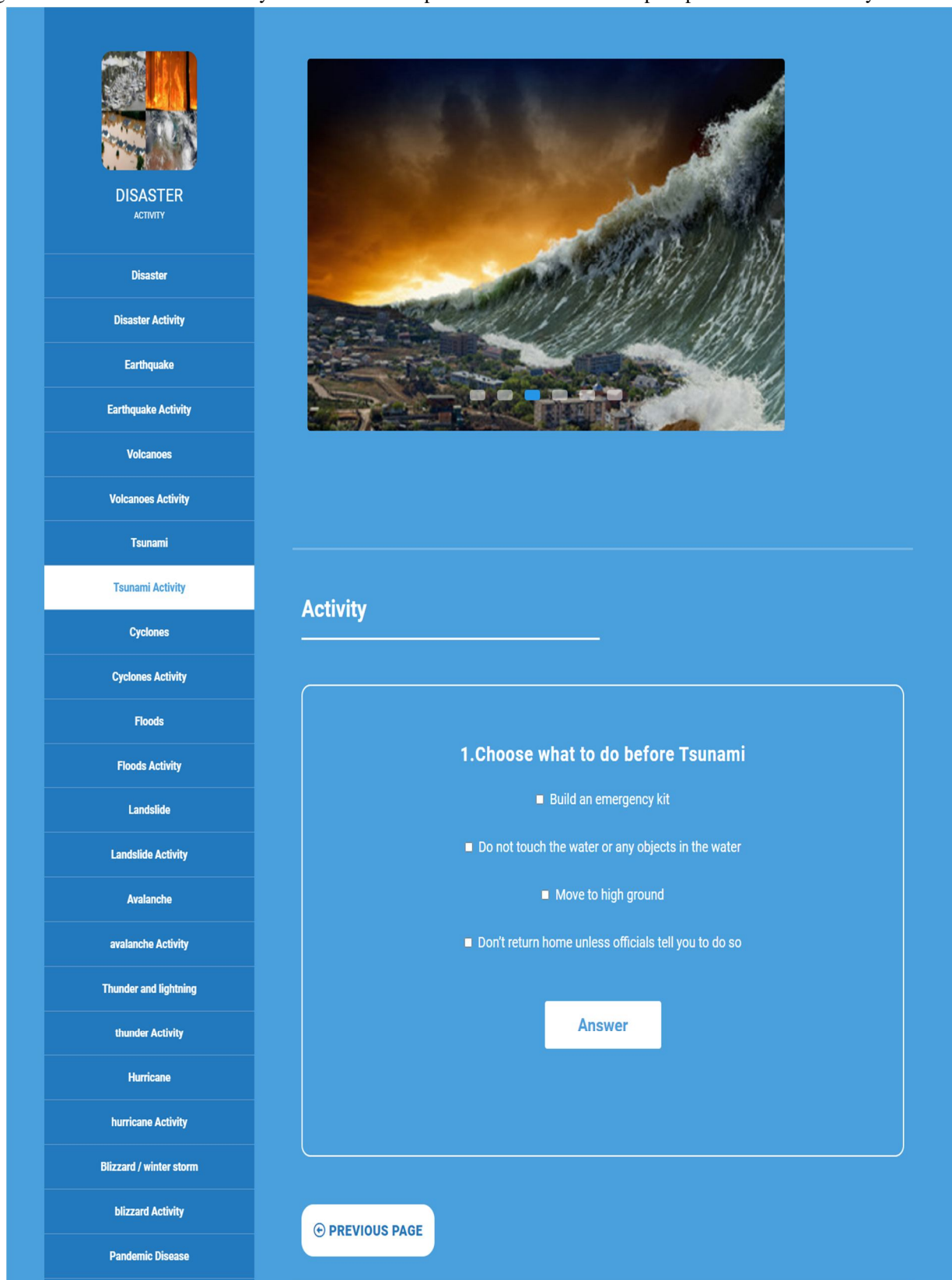


⏪ PREVIOUS PAGE
NEXT PAGE ⏩



8) Page Eight: Tsunami Activity

This page consists of 3 activities namely chooses the best option and choose the multiple options followed one by one.



The screenshot displays the IJRASET website interface. On the left is a vertical sidebar menu with various disaster categories. The 'Tsunami Activity' option is highlighted in white. The main content area features a large image of a tsunami wave crashing over a coastal town. Below the image, the word 'Activity' is written in a large font. A white-bordered box contains the following text:

**1. Choose what to do before Tsunami**

- Build an emergency kit
- Do not touch the water or any objects in the water
- Move to high ground
- Don't return home unless officials tell you to do so


Below the list is a white button with the text 'Answer'.

At the bottom left of the main content area, there is a white button with a left-pointing arrow and the text 'PREVIOUS PAGE'.



9) Page Nine: Cyclones

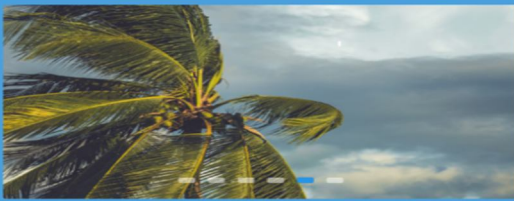
This page contains the definition, effects of cyclone, Pre and post-cyclone effects, Evacuation instruction along with images and a video for 18 seconds.



**DISASTER ACTIVITY**

[Speak Now](#)

- [Disaster](#)
- [Disaster Activity](#)
- [Earthquake](#)
- [Earthquake Activity](#)
- [Volcanoes](#)
- [Volcanoes Activity](#)
- [Tsunami](#)
- [Tsunami Activity](#)
- [Cyclones](#)
- [Cyclones Activity](#)
- [Floods](#)
- [Floods Activity](#)
- [Landslide](#)
- [Landslide Activity](#)
- [Avalanche](#)
- [Avalanche Activity](#)
- [Thunder and lightning](#)
- [Thunder Activity](#)
- [Hurricane](#)
- [hurricane Activity](#)
- [Blizzard / winter storm](#)
- [Blizzard Activity](#)
- [Pandemic Disease](#)
- [Pandemic Activity](#)
- [Man Made disasters](#)
- [manmade Activity](#)



## Cyclones

### Effects of cyclone

A low-pressure area which is encircled by high-pressure wind is Cyclone. Cyclones occurring in North Atlantic Ocean are called hurricanes and 2/3rd of the cyclones that occur in the Indian coast line occur in Bay of Bengal. In India, Cyclone is tracked through INSAT satellite.

### The Main effects of cyclone Before the Cyclone season:

1. Check the house; secure loose tiles and carry out repairs of doors and windows
2. Remove dead branches, dying trees, lumber piles, loose tin sheets, loose bricks, garbage cans, sign-boards etc., which can fly in strong winds close to the house
3. Prepare the emergency kit with essential items for you and family.

### Necessary actions:

The actions that need to be taken in the event of a cyclone threat can broadly be divided into:

1. Immediately before the cyclone season
2. When cyclone alerts and warnings are communicated
3. When evacuations are advised
4. When the cyclone has crossed the coast

### When the Cyclone starts:

1. Listen to the weather warnings news & Keep monitoring the warnings
2. Pass the information to others.
3. Ignore rumours Believe in the official information.
4. When a cyclone alert is on don't panic but stay alert to the news warnings for the next 24 hours

### When your area is under cyclone warning get away from low-lying beaches or other low-lying areas close to the coast:

1. Leave early to high ground before your shelter gets flooded. Do not delay and run the risk of being left.
2. Board up glass windows or put storm shutters in place and Provide strong support for outside doors.
3. Get dry foods and clean water.
4. Move your valuable articles to upper floors to minimize flood damage.
5. Keep the hand light with extra batteries
6. Do not go out listen to the news
7. Switch off the electrical mains in your house.
8. Remain calm.

### When Evacuation is instructed:

1. Pack essentials for yourself and your family to last a few days.
2. Head for the proper shelter or evacuation points indicated for your area.
3. Do not worry about your property
4. At the shelter follow instructions of the person in charge.
5. Remain in the shelter until you are informed to leave.

### Post-cyclone measures:

1. You should remain in the shelter until informed that you can return to your home.
2. You must get immunized against diseases immediately.
3. Strictly avoid any loose and dangling wires from lamp posts.
4. Clear debris from your premises immediately.
5. Report the correct losses to appropriate authorities.

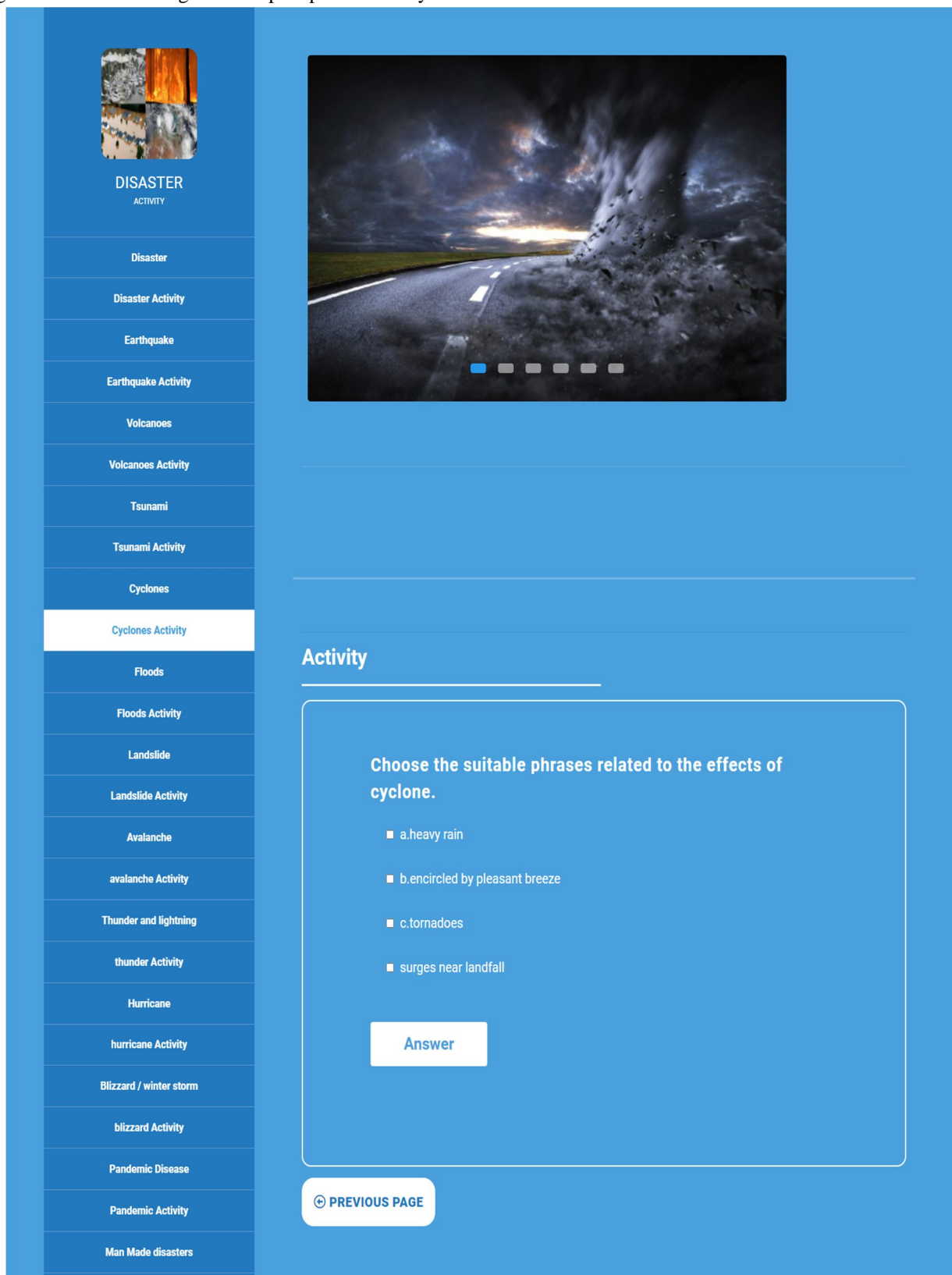


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[PREVIOUS PAGE](#) [NEXT PAGE](#)

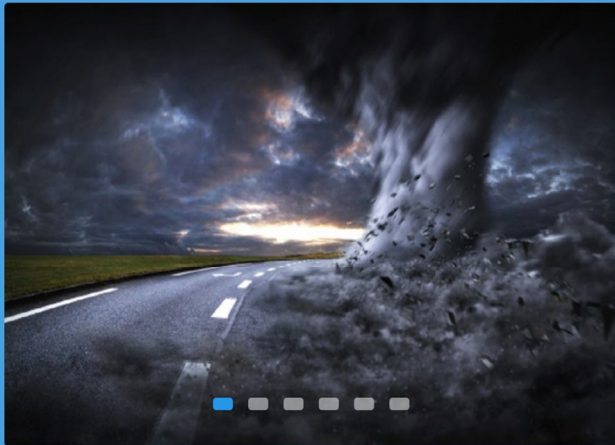
10) Page Ten: Cyclones Activity

This page consists of choosing the multiple options activity.



**DISASTER**  
ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity**
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters



**Activity**

Choose the suitable phrases related to the effects of cyclone.

- a. heavy rain
- b. encircled by pleasant breeze
- c. tornadoes
- d. surges near landfall

**Answer**

[PREVIOUS PAGE](#)

Page 10: Cyclones Activity

11) Page Eleven: Flood


This page contains the definition, effects of flood, flood safe tip, before-during-after flood, how to stay safe when the flood threatens along with images and a video for 1:30 minutes.

DISASTER  
Activities

Speak Now

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods**
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- Avalanche Activity
- Thunder and Lightning
- Thunder Activity
- Hurricane
- Hurricane Activity
- Blizzard / winter storm
- Blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- Manmade Activity

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### Floods

An overflow of a large amount of water, beyond its normal limits, especially on the rainfall areas is called a flood. Sudden over flow of water in a large amount caused due to heavy rainfall, cyclones, melting of snow, tsunami or a dam burst.

#### Effects

- Loss of life and property
- Displacement of people
- Spread of contagious diseases such as Cholera and Malaria etc.,

#### Flood Safe Tips:

- Never take cover under a bridge or culvert when it is raining.
- Monitor the NOAA Weather Radio, or your favorite news source for vital weather related information.
- If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, creeks, etc.
- Avoid areas already flooded, especially if the water is flowing fast. Do not attempt to cross flowing streams. Turn around Don't Drown!
- Be especially wary for "hidden" and "invisible" flood dangers. Do not drive through flooded roadways. If your vehicle is suddenly caught in rising water, leave it immediately and seek higher ground.
- Do not camp or park your vehicle along ditches and streams, particularly during threatening conditions.
- Be especially cautious at night when it is harder to recognize flood dangers.

#### Before

- Build an emergency kit.
- Make a family communication plan.
- Test an adult if you have a flood warning on the TV or radio.
- Help your family move important items to an upper floor.

#### During

- Listen to authorities and safety officials. If there is any possibility of a fast flood, find shelter.
- Do not walk, swim, or ride a car through flood waters. Even the force of moving water can make you fall.
- Stay off bridges over fast moving water.

#### After

- Do not touch electrical equipment if it is wet or if you are standing in water.
- Stay away from flood water. Flood water may be contaminated, meaning increasing dangerous substances.
- Stay away from moving water. It can knock you off your feet.
- Stay out of the way of emergency workers as they can do their job easily.
- During clean up, wear heavy gloves and boots.

#### HOW TO STAY SAFE WHEN A FLOOD THREATENS


##### Prepare NOW

##### Survive DURING

- Get to the safe location you previously identified.
- If told to evacuate, do so immediately. Never drive around barricades. Local responders use them to safely direct traffic out of flooded areas.
- Listen to radio.
- Do not walk, swim or drive through flood waters. Turn around, Don't Drown!
- Stay off bridges over fast-moving water. Fast-moving water can wash bridges away without warning.
- If you can't get to higher ground, get on top of a building. If water is rising inside the car get on the roof.
- If trapped in a building go to the highest level. Do not climb into a chimney attic. You may become trapped by rising floodwater. Only get out if it is necessary and only when there is light for help.

##### Be Safe AFTER

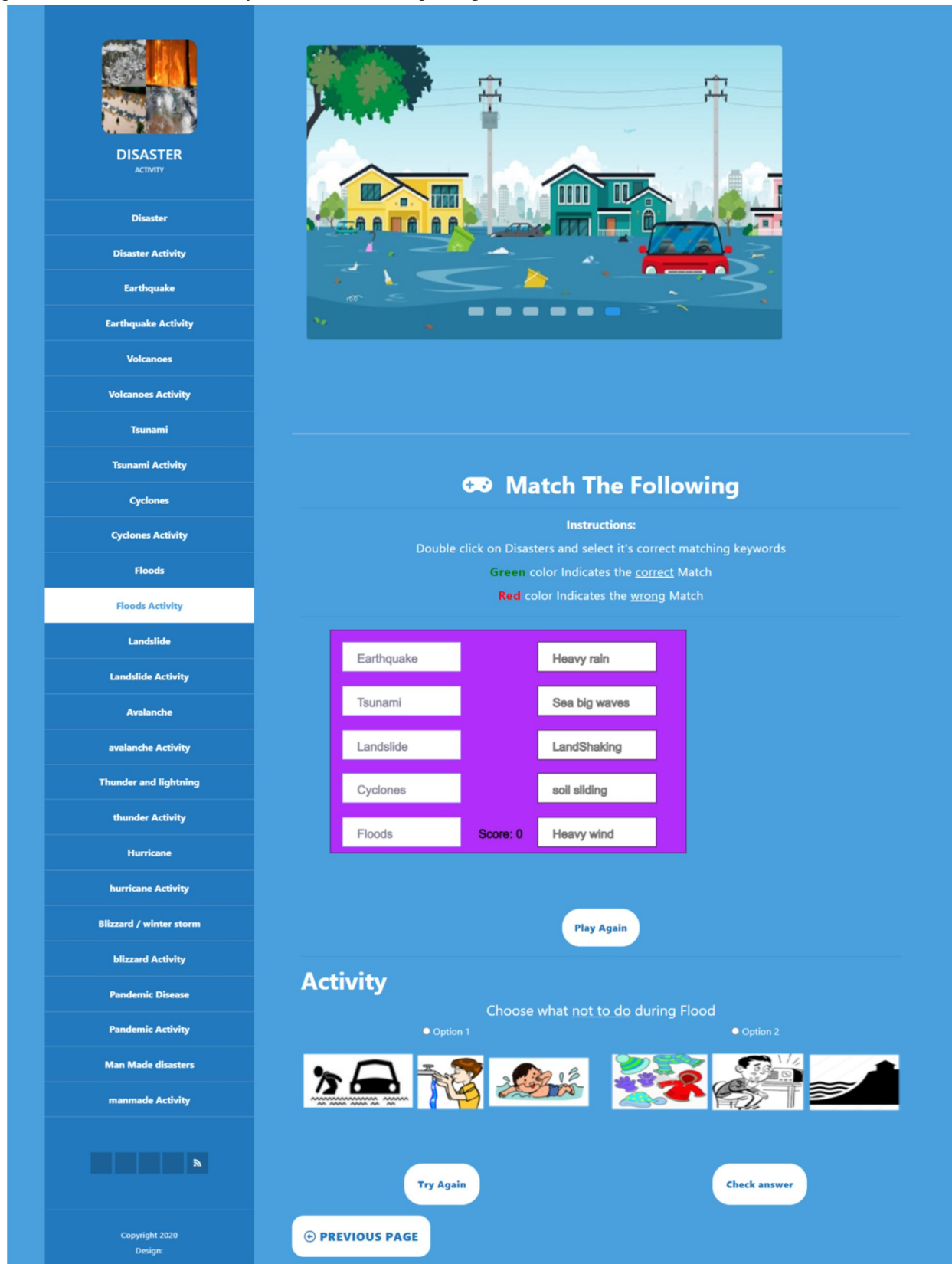
- Listen to authorities for information and instructions. Return home only when authorities say it is safe.
- Avoid driving through an emergency.
- Snakes and other animals may be in your house. Wear heavy gloves and boots during clean up.
- Be aware of the risk of electrocution. Do not touch electrical equipment if it is wet or if you are standing in water. If it is safe to do so, turn off the electricity to prevent electric shock.
- Avoid wading in floodwater, which can be contaminated and contain dangerous debris. Underground or overhead power lines can also electrically charge the water.
- Use a generator or other gasoline-powered machinery ONLY outdoors and away from windows.



PREVIOUS PAGE
NEXT PAGE

12) Page Twelve: Flood Activity

This page consists of activities namely Match the following, and picture selection.




The screenshot shows a digital learning interface for a 'Floods Activity'. On the left is a vertical navigation menu with categories like 'DISASTER ACTIVITY', 'Earthquake', 'Tsunami', 'Cyclones', and 'Floods'. The 'Floods' section is highlighted. The main content area features a large illustration of a flooded street with houses and a car. Below this is a 'Match The Following' game with instructions: 'Double click on Disasters and select it's correct matching keywords'. It lists keywords such as 'Earthquake', 'Tsunami', 'Landslide', 'Cyclones', 'Floods', 'Heavy rain', 'Sea big waves', 'LandShaking', 'soil sliding', and 'Heavy wind'. A 'Score: 0' and a 'Play Again' button are also present. Below the matching game is an 'Activity' section titled 'Choose what not to do during Flood' with two options and six corresponding illustrations of people in various situations. At the bottom, there are buttons for 'Try Again', 'Check answer', and 'PREVIOUS PAGE'. The footer includes 'Copyright 2020 Design:' and a social media icon.

Page 12: Floods Activity




13) Page Thirteen: Landslide

This page contains detailed notes of Landslide along with a 26 seconds video.




DISASTER  
ACTIVITY

 SPEAK NOW

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

🔊



### Landslide


The movement of a mass of rocks, debris, soil etc., downslope is called a landslide. A landslide is a large amount of earth, rock, and other material that moves down a steep slope. Landslides happen when a layer of earth or rocks separates from the layer below it. The force of gravity pulls the loose layer downward. Landslides can be highly destructive. They can bury or sweep away everything in their path. They can block rivers or cover entire towns. A landslide needs a steep slope to get its start.

A landslide is defined as the movement of a mass of rock, debris, or earth down a slope due to gravity. The materials may move by falling, toppling, sliding, spreading, or flowing. Almost every landslide has multiple causes.

The biggest reason for a landslide is always that there is a slope and material goes down the slope because of gravity.

**But other things also contribute to landslides:**

- erosion by • rivers, • glaciers, or ocean • waves makes slopes too steep
- rock and soil slopes made weak through • saturation by • snowmelt or heavy • rains
- earthquakes create stresses that make weak slopes fail
- volcanic eruptions produce loose ash deposits, heavy rain, and debris flows
- vibrations from • machinery, • traffic, • blasting and even • thunder may trigger failure of weak slopes
- weight from much rain or snow, stockpiling of rock or ore, from waste piles, or from buildings may stress weak slopes to failure and other structures
- groundwater pressure making the slope unstable
- in shallow • soils, the removal of deep-• rooted • plants that bind the colluvium to • bedrock



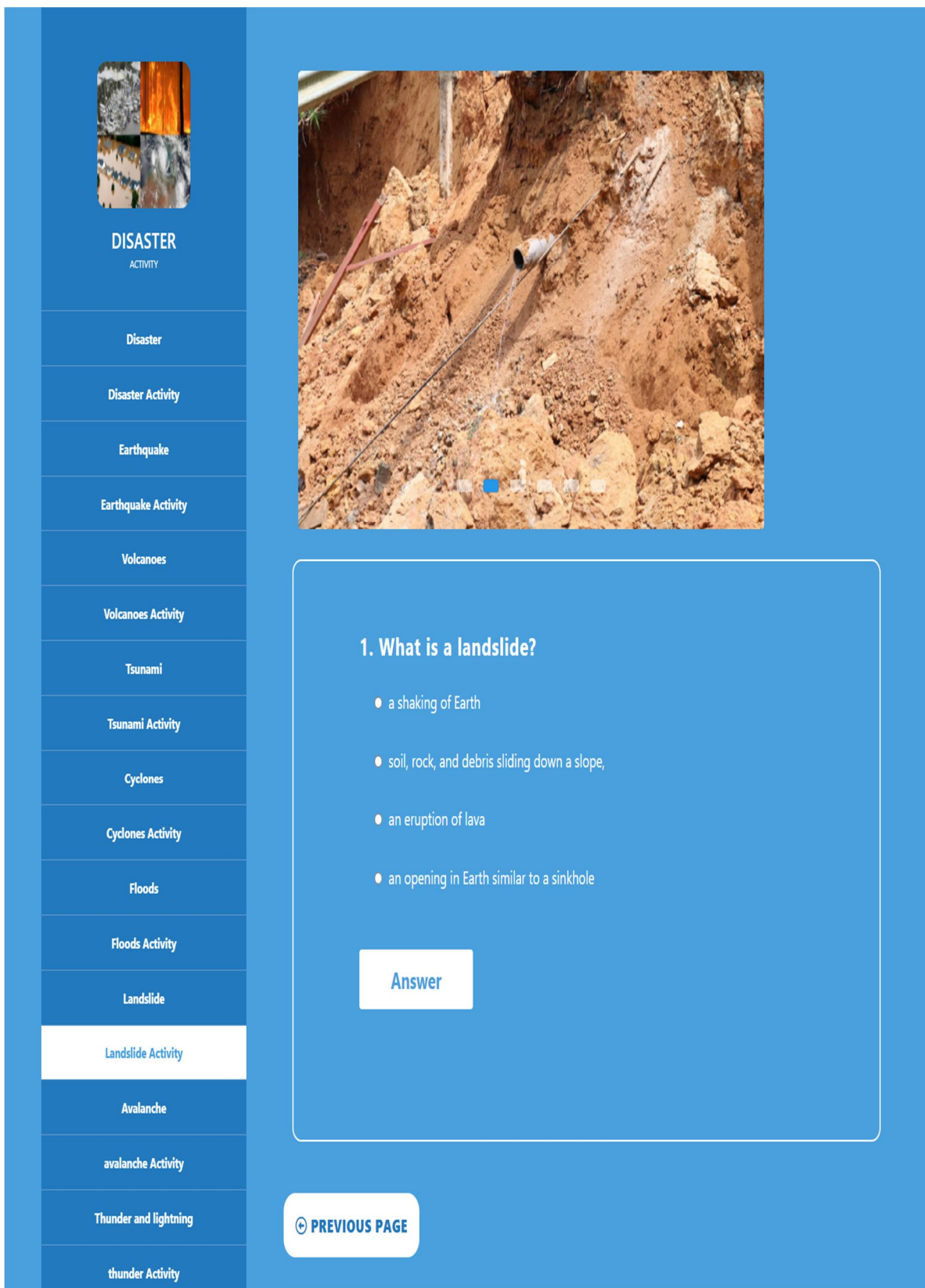
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◀ PREVIOUS PAGE

NEXT PAGE ▶

14) Page Fourteen: Landslide Activity


This page consists of 3 different activities related to landslides




The screenshot shows a digital learning interface with a blue background. On the left is a vertical navigation menu with a 'DISASTER ACTIVITY' header and a list of categories: Disaster, Disaster Activity, Earthquake, Earthquake Activity, Volcanoes, Volcanoes Activity, Tsunami, Tsunami Activity, Cyclones, Cyclones Activity, Floods, Floods Activity, Landslide, Landslide Activity (highlighted), Avalanche, avalanche Activity, Thunder and lightning, and thunder Activity. The main content area features a photograph of a landslide site with a red measuring tape and a white pipe. Below the photo is a question: '1. What is a landslide?' followed by four multiple-choice options: 'a shaking of Earth', 'soil, rock, and debris sliding down a slope', 'an eruption of lava', and 'an opening in Earth similar to a sinkhole'. An 'Answer' button is positioned below the options. At the bottom left of the main area is a 'PREVIOUS PAGE' button.

15) Page Fifteen: Avalanche

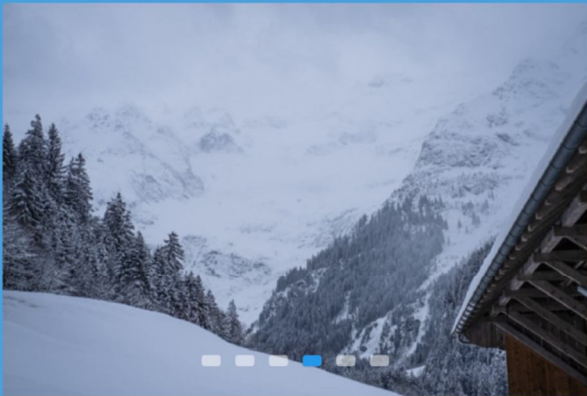
This page contains detailed notes of Avalanche along with a 25 seconds video.



**DISASTER**  
ACTIVITY

 SPEAK NOW

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche**
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity




### Avalanche

An avalanche is a large amount of snow that quickly moves down a slope. An avalanche can be deadly because it will bury or sweep away anything in its path. Large amounts of sliding rocks, earth, or other materials may also be called avalanches. But these are often known as landslides.

An avalanche is a phenomenon of nature. It is linked to snow. When there is too much snow on a mountain, some of the snow may fall, causing damage to things in its path. This is called an avalanche. • An avalanche occurs when a large mass of ice and snow breaks away from the side of a mountain and surges down the mountain with tremendous speed and force.

- Some avalanches are small and only a minimal amount of snow moves down the mountain. When this occurs it is called sloughing.
- Most avalanches are triggered by people skiing, snowboarding, hiking, or snowmobiling on top of the snow.
- Avalanches kill more than 150 people throughout the world every year
- When a slab of snow begins to move down the mountain it can reach speeds of 80 miles per hour (130 kilometres).
- Most avalanches occur within 24 hours after storm drops 12 or more inches (30 centimetres) of fresh snow.
- Other areas that are extremely vulnerable to avalanches are where layers of wind-driven snow have accumulated
- People those access areas where avalanches are known to occur need to find out from park rangers if that part of the mountain has been declared to be safe.
- People are encouraged to never travel into risky areas alone.
- People skiing or snowboarding in areas where avalanches occur need to let someone know where they will be, and they also are encouraged to wear an avalanche beacon, so if they are trapped the rescuers will be able to find them.




⏪ PREVIOUS PAGE
NEXT PAGE ⏩



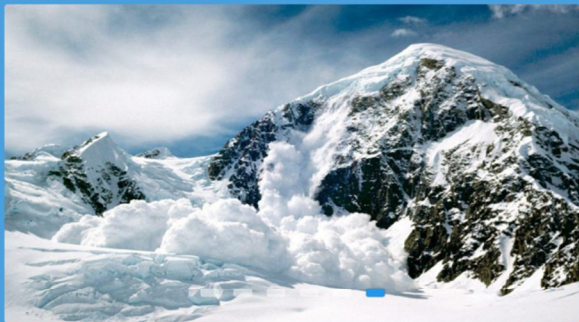
16) Page Sixteen: Avalanche Activity

This page consists of 2 different activities related to landslides such as identification of images and Quiz.



DISASTER  
ACTIVITY


- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity



Quiz

Question 1 of 5

Q1: Identify the Game



skiling

hiking

snowboarding

snowmobiling

Check Answer

ACTIVITY COMPLETED !

Your Score is: 1 of 1

NEXT PAGE

PREVIOUS PAGE



17) Page Seventeen: Thunder and Lightning

This page contains detailed notes of thunder and lightning, instruction for if you are outdoors, if someone is stuck in lightning, thunderstorm safety, during a thunderstorm along with a 1:54 minutes video.

**DISASTER ACTIVITY**

- Speak Now
- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- Avalanche Activity
- Thunder and Lightning**
- Thunder Activity
- Hurricanes
- Hurricanes Activity
- Blizzard / winter storm
- Blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made Disasters
- manmade Activity

**Thunder and Lightning**

Thunder is a series of sudden electrical discharges resulting from atmospheric conditions. This discharge results in sudden flashes of light and irregular sound waves which are commonly known as thunder and lightning.

**IF YOU'RE OUTDOORS:**

1. Keep an eye at the sky. Look for darkening skies, flashes of lightning, or increasing winds. Lightning often precedes rain, so don't wait for the rain to begin. If you hear the sound of thunder, go to a safe place immediately.
2. The best place to go is a sturdy building or a car, but make sure the windows in the car are shut. Avoid sheds, picnic areas, baseball diamonds and bleachers.
3. If there is no shelter around you, stay away from trees. Crouch down in the open area, keeping feet as far away from a tree as far as it is tall. Put your feet together and place your hands over your ears to minimize hearing damage from thunder.
4. If you're with a group of people stay about 15 feet from each other.
5. Stay out of water. It's a great conductor of electricity. Swimming, wading, snorkeling and scuba diving are not safe. Also, don't stand in puddles.
6. Avoid metal. Stay away from clotheslines, fences, and drop your backpacks because they often have metal on them.
7. If you're playing an outdoor activity, wait at least 30 minutes after the last observed lightning strike or thunder.

**THUNDERSTORM SAFETY**

**Thunderstorm Watch**  
A thunderstorm is possible in the area you live in. Be prepared to move indoors.

**Thunderstorm Warning**  
A thunderstorm is happening in the area you live in. You should be indoors at this time and away from windows.

**During a Thunderstorm**

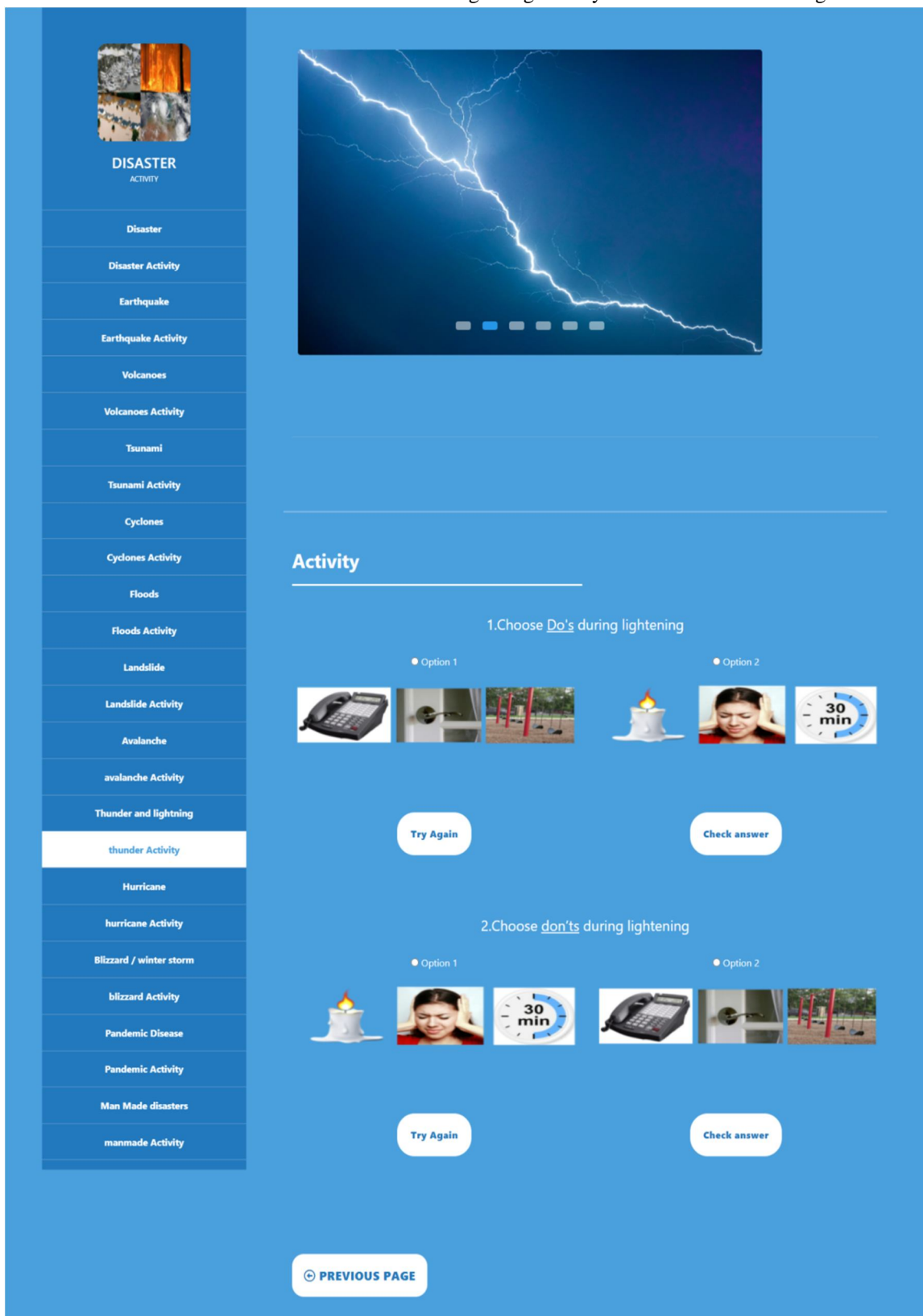
1. If you hear thunder or see lightning, move indoors immediately. Do NOT wait for rain to begin.
2. If you can not get inside a building, stay in your car. (Make sure all windows and door are closed)
3. If you do not have a car, crouch down in an open area. Keep your feet together and cover your ears from thunder.
4. Stay as far away from trees as you can.
5. Stay out of ALL water (it can conduct electricity)
6. Do NOT touch anything metal.
7. Do NOT use a telephone with a cord. (Lightning could hit a phone line)
8. Do NOT use electrical equipment like appliances or computers.
9. Wait at least 30 minutes after you last see lightning or heard thunder before returning outside.

© 2020 / 1:54

PREVIOUS PAGE      NEXT PAGE

18) Page Eighteen: Thunder and Lightning Activity

This page consists of 2 different activities related to thunder and lightning namely the identification of images.



The screenshot shows a digital interface with a blue background. On the left is a vertical sidebar menu with various disaster categories. The main area features a large image of lightning, followed by an 'Activity' section with two multiple-choice questions. Each question has two options, each with a set of three representative images. The interface includes 'Try Again' and 'Check answer' buttons for each question, and a 'PREVIOUS PAGE' button at the bottom.


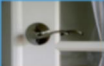




**DISASTER ACTIVITY**

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity**
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

**Activity**

1. Choose Do's during lightening







● Option 1      ● Option 2

**Try Again**      **Check answer**

2. Choose don'ts during lightening

● Option 1      ● Option 2


**Try Again**      **Check answer**

**PREVIOUS PAGE**

Page 18: Thunder and Lightning Activity

19) Page Nineteen: Hurricane

Definition of the hurricane, before, during, and after hurricane along with images the video for 1:21 minutes are the contents present on this page.

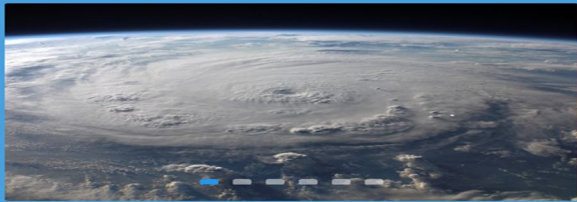


DISASTER ACTIVITY

Speak Now

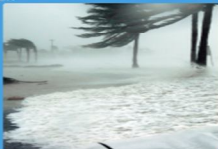
- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- Thunder Activity
- Hurricane
- Hurricane Activity
- blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

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### Hurricane

Hurricane is a natural hazard. It develops at sea. When it reaches land and destroys buildings and kills people, it can be described as a disaster.



#### BEFORE A HURRICANE:

1. Have a disaster plan.
2. Have a pet plan. Before a storm threatens, contact your veterinarian or local humane society for information on preparing your pets for an emergency.
3. Board up windows.
4. Bring in outdoor objects that could blow away.
5. Make sure you know which county or parish you live in.
6. Know where all the evacuation routes are.
7. Prepare a disaster supplies kit for your home and car. Have enough food and water for at least 3 days. Include a first aid kit, canned food and a can opener, bottled water, battery operated radio, flashlight, protective clothing and written instructions on how to turn off electricity, gas, and water.
8. Have a NOAA weather radio handy with plenty of batteries, so you can listen to storm advisories.
9. Have some cash handy. Following a hurricane, banks and ATMs may be temporarily closed.
10. Make sure your car is filled with gasoline.

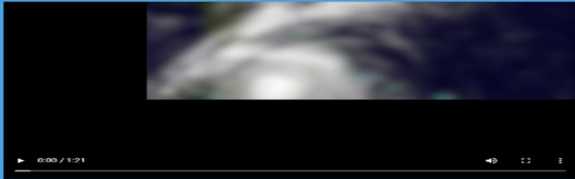


#### DURING A HURRICANE:

1. Stay away from low lying and flood prone areas.
2. Always stay indoors during a hurricane, because strong winds will blow things around.
3. Leave mobile homes and to go to a shelter.
4. If your home isn't on higher ground, go to a shelter.
5. If emergency managers say to evacuate, then do so immediately.

#### AFTER A HURRICANE:

1. Stay indoors until it is safe to come out.
2. Check for injured or trapped people, without putting yourself in danger.
3. Watch out for flooding which can happen after a hurricane.
4. Do not attempt to drive in flooding water.
5. Stay away from standing water. It may be electrically charged from underground or downed power lines.
6. Don't drink tap water until officials say its safe to do so.

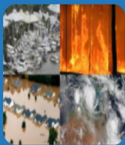


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NEXT PAGE

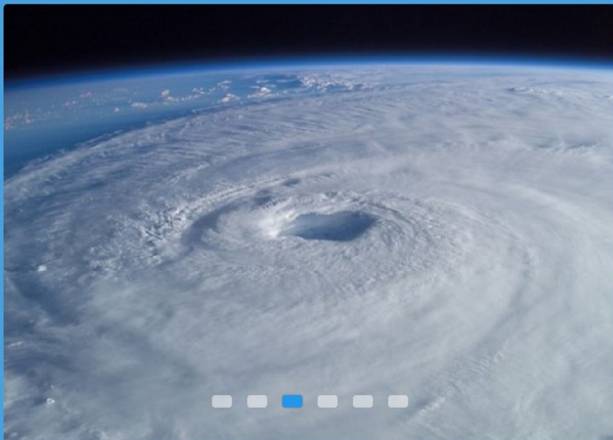
20) Page Twenty: Hurricane Activity

Drag and drop puzzle game is given as an activity for a hurricane on this page.



**DISASTER**  
ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity



## ✖ DRAG AND DROP GAME

**Instructions:**  
click and Drag on correct word  
if it is correct Answer it is seated on the correct box.

Ramu got a hurricane alert. He does not know what to do's and dont's kindly help him.

Do's	Dont's
Listen to the weather news	Play outside
Don't come out immediately after hurricane	Using electronic gadgets like laptop, microwave
Follow the local officials instruction	Watch through the window
Stay Inside	fire up the grill indoors.
Stay away from sharp and heavy objects	Drink the tap water

congratulations  
You  
successfully  
helped Ramu


⏪ PREVIOUS PAGE

NEXT PAGE ⏩




21) Page Twenty-One: Blizzards/Winter Storm

This page contains detailed notes of blizzards/winter storms, before, during, and after blizzard along with images and 1:21 minutes video.




**DISASTER**  
ACTIVITY

 **Speak Now**

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm**
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity

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### Blizzard / Winter Storm

A blizzard is a winter storm that can be really dangerous. During a blizzard, it's snowy and windy, and it can be hard to see. A lot of the time, blizzards are also really cold, even freezing. When it snows heavy, it's hard to get around. Stay inside where it's warm and dry if you can. If you're outside during a blizzard, dress warmly and be sure to wear gloves and a jacket. Always wear a hat to keep your head warm too. Try to stay dry and wear a scarf that you can use to cover your mouth when you breathe.


**BEFORE A WINTER STORM:**

Have a disaster plan and prepare a disaster supplies kit for your home and car. Include a first aid kit, emergency food supply, bottled water, battery-operated radio, flashlight, protective clothing, and blankets. Don't forget, be aware of changing weather.



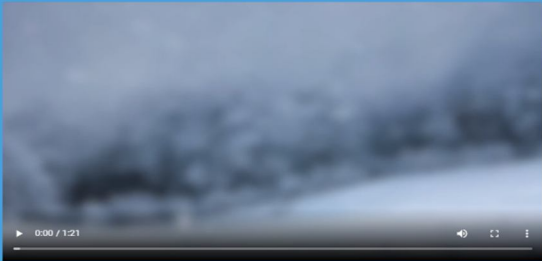
**DURING A WINTER STORM:**

Stay indoors and dress warmly. Eat regularly, because food provides the body with energy for producing its own heat. Also, drink lots of water. If you must go outside, wear layered clothing, mittens and a hat. Watch for signs of hypothermia and frostbite. Remember to keep dry. Always change wet clothing to prevent the loss of body heat. If you must drive, carry a cell phone. Always, keep the gas tank full. Don't forget, let someone know where you're going, just in case your car gets stuck. If you're car gets stuck, stay with it and wait for help unless help is visible within 100 yards. Use maps and car mats to stay warm.



**AFTER A WINTER STORM:**

Avoid driving until conditions have improved. Avoid overexertion! Heart attacks from shoveling snow are the leading cause of deaths during the winter. Also, check on neighbors to make sure they're okay.



0:00 / 1:21

◀ PREVIOUS PAGE

NEXT PAGE ▶

Page 21: Blizzard/ Winter Storm

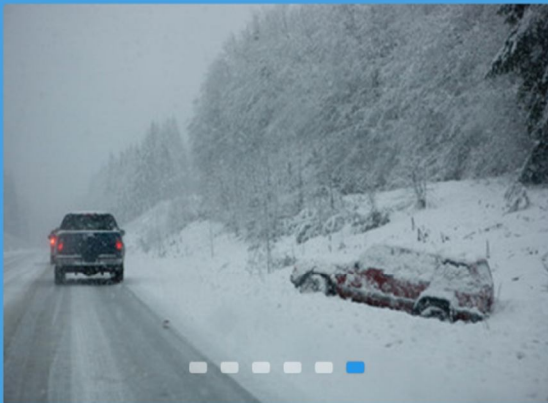
22) Page Twenty-Two: Blizzards/Winter Storm Activity

This page consists of 2 different activities related to blizzard as identification of images.



DISASTER  
ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters
- manmade Activity





### Activity

---

1.Choose the do's during Blizzard

Option 1

Option 2


Try Again



Check answer

2.Choose the Don'ts during Blizzard

Option 1

Option 2



Try Again

Check answer

⏪ PREVIOUS PAGE

23) Page Twenty-Three: Pandemic Disease

A detailed note of pandemic outbreak, Covid-19, epidemic & pandemic, and prevention details are given on this page along with relevant images and a video of 3:01 minutes.



**DISASTER**  
ACTIVITY

 Speak Now

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease**
- Pandemic Activity
- Man Made disasters
- manmade Activity



### Pandemic Disease

A pandemic is defined as "an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people". The classical definition includes nothing about population immunity, viriology or disease severity. You probably know that COVID-19, the illness caused by the new coronavirus SARS-CoV-2, is a pandemic. But what's the difference between a pandemic, an epidemic, and an outbreak? And when does a disease become a public health concern? Here are the basics of the spread of serious diseases and what you can do to protect yourself, your family, and your community.

**Outbreak**

An outbreak is when an illness happens in unexpected high numbers. It may stay in one area or extend more widely. An outbreak can last days or years. Sometimes, experts consider a single case of a contagious disease to be an outbreak. This may be true if it's an unknown disease, if it's new to a community, or if it's been absent from a population for a long time.

Coronaviruses are a large family of viruses that cause diseases in mammals and birds, and cause respiratory tract infections in humans. Respiratory tract infections in humans can range from mild, such as the common cold, to severe infections such as Severe Acute Respiratory Syndrome (SARS), and Middle East Respiratory Syndrome (MERS). Coronaviruses vary significantly in risk factor. Prior to COVID-19, two of the most publicized human coronaviruses were the MERS-CoV and SARS-CoV.

**COVID-19**

The coronavirus disease of 2019, or commonly known as COVID-19, is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). On December 31, 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia with unknown causes in Wuhan City, in the Hubei Province of China. Common symptoms of COVID-19 include fever, cough, and shortness of breath. Some less common symptoms include muscle pain, sputum production, and sore throat. There are cases that proceed to pneumonia, multi-organ failure, and death. The incubation period of the virus ranges from two to 14 days. There are three main paths that the disease might take: mild disease, like other common upper respiratory tract illnesses, pneumonia, which is an infection of the lower respiratory system, most severe, a rapid progression to Acute Respiratory Distress Syndrome (ARDS). Coronavirus can be transmitted through close human contacts via respiratory droplets generated by sneezing and coughing.

**PREVENTION**

The WHO released several basic preventive measures against COVID-19. Wash hands regularly. Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water for 20 seconds. By washing hands with soap and water or by using an alcohol-based hand rub, the virus that may be on your hands can be killed.

Avoid close contact with people who are sick. This can also be called social distancing. Maintain at least 1 meter (3 feet) distance between yourself and anyone who is sick. Cover coughs and sneezes. Cover your mouth and nose with a tissue or use the inside of your elbow. Wear facemasks. If you are sick, wear a facemask to prevent your respiratory droplets from spreading. Clean and disinfect. Clean and disinfect frequently-touched surfaces.



**Epidemic**

An epidemic is when an infectious disease spreads quickly to more people than experts would expect. It usually affects a larger area than an outbreak.

**Pandemic**

A pandemic is a disease outbreak that spreads across countries or continents. It affects more people and takes more lives than an epidemic. The World Health Organization (WHO) declared COVID-19 to be a pandemic when it became clear that the illness was severe and that it was spreading quickly over a wide area.



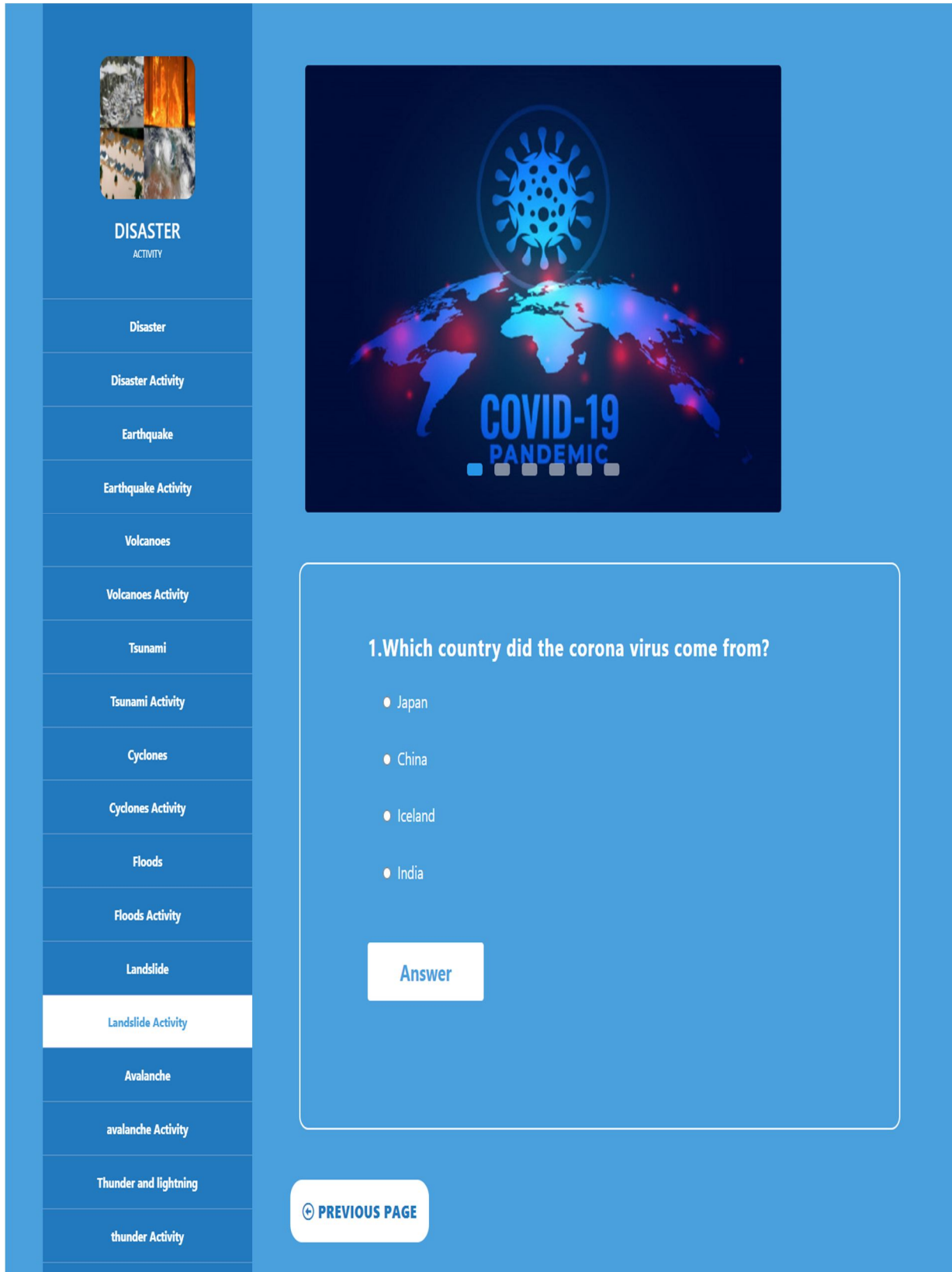
⏪ PREVIOUS PAGE

NEXT PAGE ⏩

Page 23: Pandemic

24) Page Twenty-Four: Pandemic Disease Activity

This page consists of 5 different activities related to pandemic diseases followed one by one.



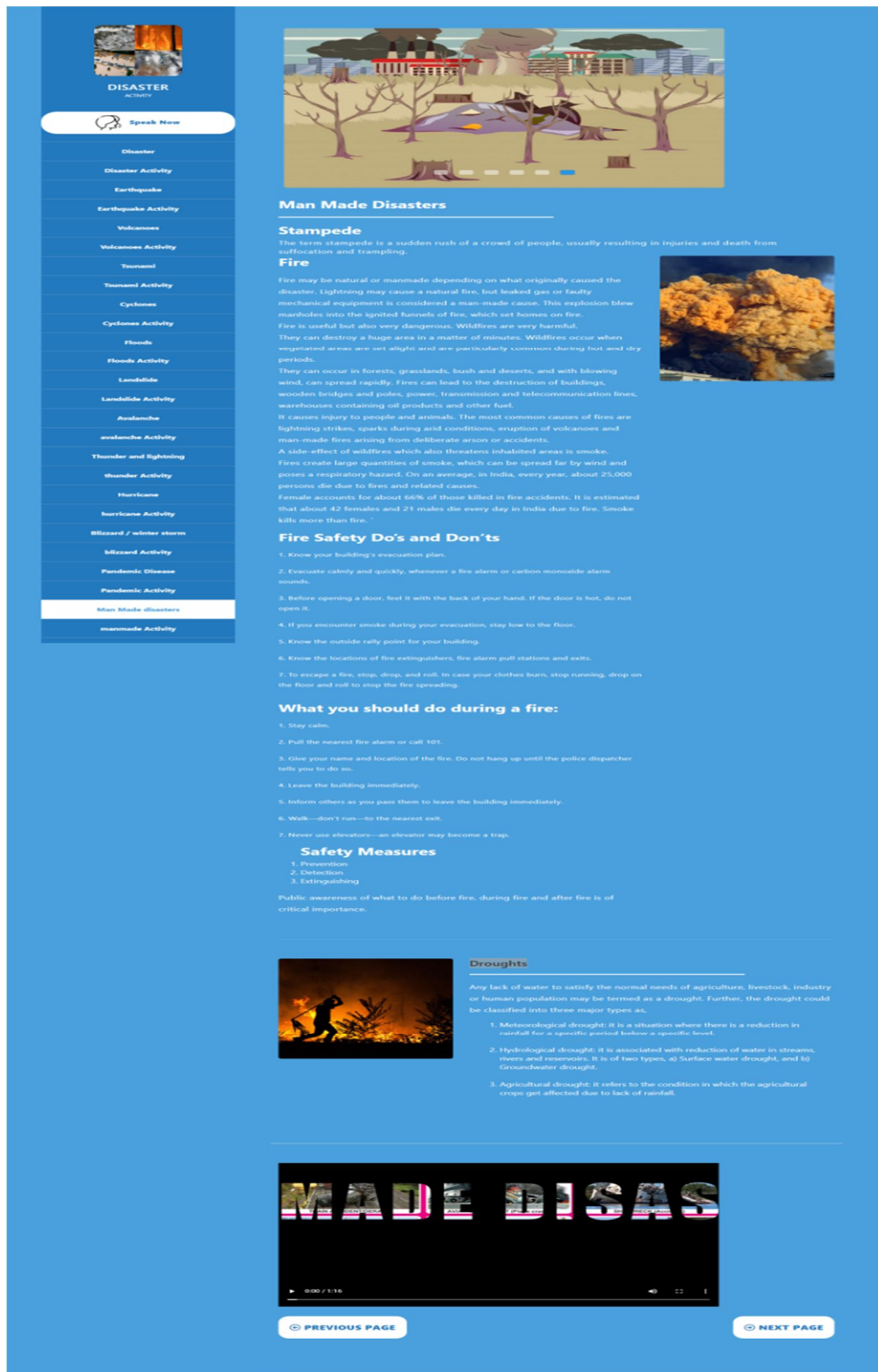
The screenshot shows a web application interface with a blue theme. On the left is a vertical navigation menu with a 'DISASTER ACTIVITY' header and a list of disaster types: Disaster, Disaster Activity, Earthquake, Earthquake Activity, Volcanoes, Volcanoes Activity, Tsunami, Tsunami Activity, Cyclones, Cyclones Activity, Floods, Floods Activity, Landslide, Landslide Activity (highlighted), Avalanche, avalanche Activity, Thunder and lightning, and thunder Activity. The main content area features a large graphic of a globe with a virus icon and the text 'COVID-19 PANDEMIC'. Below this is a quiz question: '1. Which country did the corona virus come from?' with radio button options for Japan, China, Iceland, and India. An 'Answer' button is positioned below the options. At the bottom left of the main area is a 'PREVIOUS PAGE' button.

Page 24: Pandemic Activity



25) Page Twenty-Five: Man-made Disaster

This page contains detailed notes of man-made disasters via, stampede, fire: fire safety do's and don'ts before, What one should do during a fire, safety measures, and short notes on droughts along with images and 1:61 minutes video on the man-made disasters.



**DISASTER ACTIVITY**

Speak Now

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- Thunder Activity
- Hurricanes
- Hurricane Activity
- Blizzard / winter storm
- Blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made Disasters
- manmade Activity

## Man Made Disasters

### Stampede

The term stampede is a sudden rush of a crowd of people, usually resulting in injuries and death from suffocation and trampling.

### Fire

Fire may be natural or manmade depending on what originally caused the disaster. Lightning may cause a natural fire, but leaked gas or faulty mechanical equipment is considered a man-made cause. This explosion blew manholes into the ignited funnels of fire, which set homes on fire. Fire is useful but also very dangerous. Wildfires are very harmful. They can destroy a huge area in a matter of minutes. Wildfires occur when vegetated areas are not stable and are particularly common during hot and dry periods. They can occur in forests, grasslands, bush and deserts, and with blowing wind, can spread rapidly. Fires can lead to the destruction of buildings, wooden bridges and poles, power, transmission and telecommunication lines, warehouses containing oil products and other fuel. It causes injury to people and animals. The most common causes of fires are lightning strikes, sparks during and conditions, eruption of volcanoes and man-made fires arising from deliberate arson or accidents. A side-effect of wildfires which also threatens inhabited areas is smoke. Fires create large quantities of smoke, which can be spread far by wind and poses a respiratory hazard. On an average, in India, every year, about 25,000 persons die due to fires and related causes. Female accounts for about 66% of those killed in fire accidents. It is estimated that about 42 females and 21 males die every day in India due to fire. Smoke kills more than fire.

### Fire Safety Do's and Don'ts

1. Know your building's evacuation plan.
2. Evacuate calmly and quickly, whenever a fire alarm or carbon monoxide alarm sounds.
3. Before opening a door, feel it with the back of your hand. If the door is hot, do not open it.
4. If you encounter smoke during your evacuation, stay low to the floor.
5. Know the outside rally point for your building.
6. Know the locations of fire extinguishers, fire alarm pull stations and exits.
7. To escape a fire, stop, drop, and roll. In case your clothes burn, stop running, drop on the floor and roll to stop the fire spreading.

### What you should do during a fire:

1. Stay calm.
2. Pull the nearest fire alarm or call 101.
3. Give your name and location of the fire. Do not hang up until the police dispatcher tells you to do so.
4. Leave the building immediately.
5. Inform others as you pass them to leave the building immediately.
6. Walk—don't run—to the nearest exit.
7. Never use elevators—an elevator may become a trap.

### Safety Measures

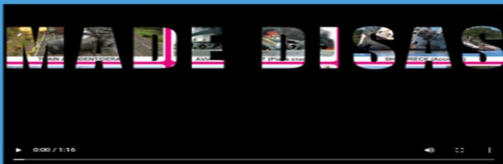
1. Prevention
2. Detection
3. Extinguishing

Public awareness of what to do before fire, during fire and after fire is of critical importance.

### Droughts

Any lack of water to satisfy the normal needs of agriculture, livestock, industry or human population may be termed as a drought. Further, the drought could be classified into three major types as:

1. Meteorological drought: It is a situation where there is a reduction in rainfall for a specific period below a specific level.
2. Hydrological drought: It is associated with reduction of water in streams, rivers and reservoirs. It is of two types, a) Surface water drought, and b) Groundwater drought.
3. Agricultural drought: It refers to the condition in which the agricultural crops get affected due to lack of rainfall.



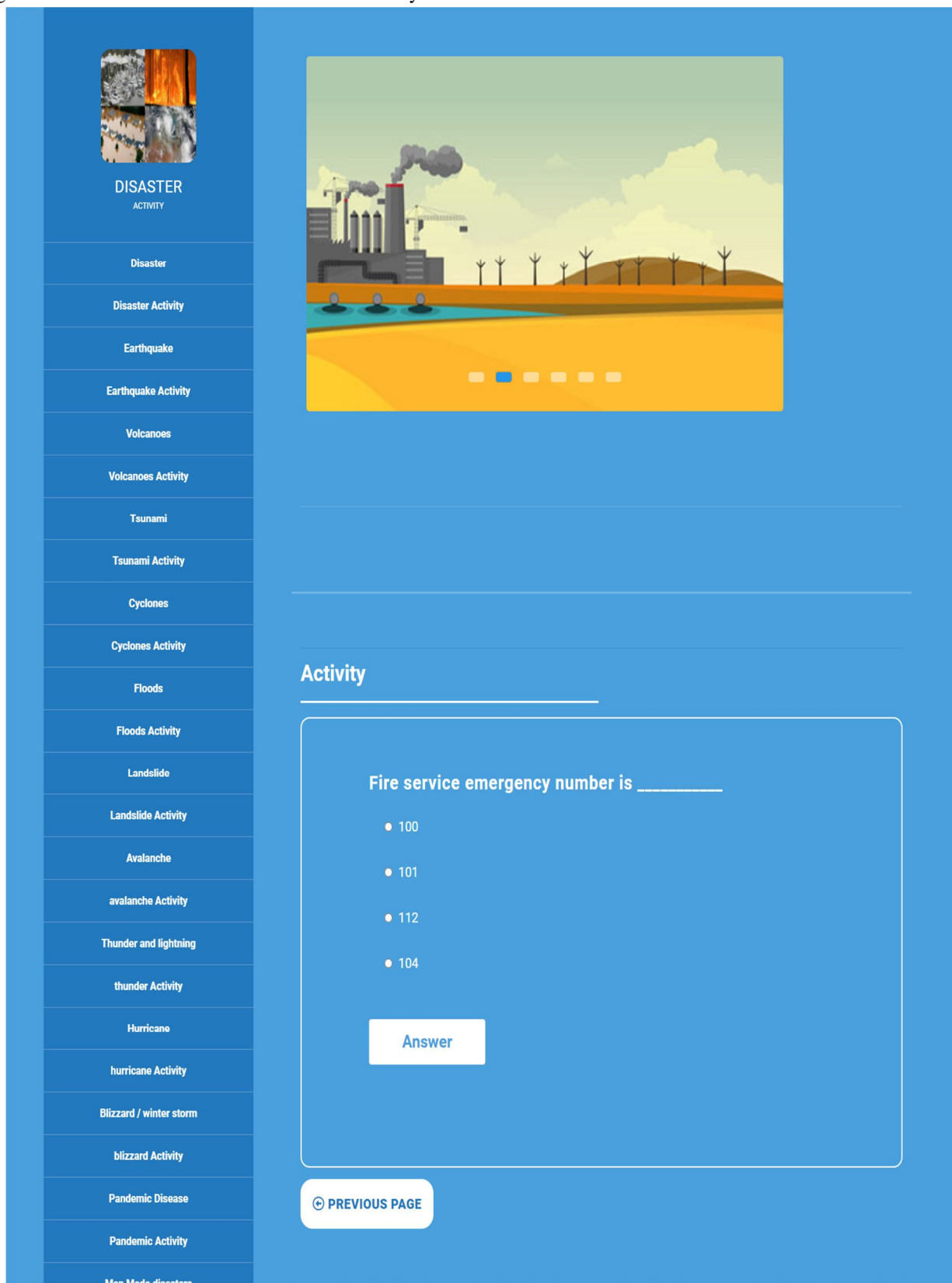
0:00 / 1:15

PREVIOUS PAGE      NEXT PAGE

Page 25: Man-made Disasters

26) Page Twenty-Six: Man-made Disaster Activity

This page consists of 2 different activities followed one by one related to man-made disasters.



The screenshot shows a digital interface with a blue background. On the left is a vertical navigation menu with a list of disaster types and their corresponding activity pages. The main content area on the right features a large illustration of an industrial factory with smokestacks emitting grey smoke into a cloudy sky. Below the illustration is a progress indicator with six small squares, the second of which is filled with blue. Underneath the illustration is a section titled 'Activity' with a white rounded rectangle containing a question: 'Fire service emergency number is \_\_\_\_\_'. Below the question are four radio button options: 100, 101, 112, and 104. A white button labeled 'Answer' is positioned below the options. At the bottom of the main content area is a white button with a left-pointing arrow and the text 'PREVIOUS PAGE'.

DISASTER ACTIVITY

- Disaster
- Disaster Activity
- Earthquake
- Earthquake Activity
- Volcanoes
- Volcanoes Activity
- Tsunami
- Tsunami Activity
- Cyclones
- Cyclones Activity
- Floods
- Floods Activity
- Landslide
- Landslide Activity
- Avalanche
- avalanche Activity
- Thunder and lightning
- thunder Activity
- Hurricane
- hurricane Activity
- Blizzard / winter storm
- blizzard Activity
- Pandemic Disease
- Pandemic Activity
- Man Made disasters

Activity

Fire service emergency number is \_\_\_\_\_

- 100
- 101
- 112
- 104

Answer

PREVIOUS PAGE

## V. VALIDATION OF INTERACTIVE MULTIMEDIA PACKAGE

The Interactive Multimedia package was taken to the following personnel and its validation was checked by using the questionnaire constructed by the investigator.

- 1) Secondary School Teachers
- 2) Technical Experts( Educational Technologists, Software Specialists, Technicians and Computer programmer)

The content, the clarity of video and audio, the usage of the interactive multimedia package were discussed with the above personnel and the validity and reliability of the Interactive Multimedia Package was checked and confirmed. The Interactive Multimedia Package on Disaster Management Learning activities is attached with this report in CD form.

- a) *Construction Of Disaster Management Awareness And Preparedness Test:* The Disaster Management Awareness and Preparedness test was designed to measure the knowledge and awareness on Disaster management among secondary school students.
- b) *Development of Item Pool:* To construct the initial test items, the investigator collected the literature and collected the material from the Tamilnadu state board secondary school science text books. After that the investigator has tried to write as many questions as possible. The investigator has written totally 80 questions.
- c) *Pre-Pilot Study:* After writing the statements, the investigator placed the tool before the experts in order to examine the suitability. Based on the comments and suggestions from them, the statements were reconstructed and eliminated after which 72 statements were retained and a pilot study was done
- d) *Pilot Study:* Before the questionnaire is finalized, the pre pilot version of the test items was administered for 30 students. On collecting the returned pilot data, the tool was subjected to item analysis.

Procedure of item Analysis of the Tool

The investigator has done the Item analysis. 30 sample scores were arranged in descending order i.e highest score at the top and the lowest at the bottom. After that, the topmost 27 % of the samples and bottommost 27% of the sample were taken into consideration for item analysis out of 30, 8 samples were taken in the upper group and 8 samples were taken in the lower group and the chart was prepared for the same and the scores for each sample were noted down in the chart for each item and scored for the upper and lower group separately. The formula  $D_i = \frac{U-L}{2N}$  and  $D_p = \frac{U-L}{N}$  were used to find out the difficulty index and Discrimination power. 'U' is the total score for the upper group and 'L' is the total score for the lower group and 'N' is the number of subjects.  $D_i$  measure content validity and  $D_p$  measure Construct Validity of the test.

After item analysis  $D_i$  values ranging from 0.625 -0.875 and the  $D_p$  value 0.3 -0.75 were taken into consideration. 57 items were retained in the test and 15 items were eliminated. Higher values of  $D_i$  indicate that items were easy.

- e) *Standardization of the Disaster management and awareness Test:* Standardization of a test or tool involves finding out its reliability and validity.

- Validity
- Face Validity

Face validity refers how good a measurement instrument appears to measure what it was designed to measure. The Disaster Management and Awareness Test have items to test the subject's awareness and knowledge on Disaster management. So it has face validity.

- Content Validity

To establish the content validity the Disaster Management and Awareness Test was given for expert's opinion. Based on their feedback and suggestions modifications were made in the tool.

- Discriminant Validity

The items in Disaster Management and Awareness Test discriminate between the low, medium and high achievers. So it has discriminant validity.

- Reliability

The reliability of the tool was calculated to be 0.72 by using split-half reliability test method, which showed that the items are substantial and relevant to the test.

- Scoring procedure

Each correct answer is to given a score of '1' and '0' is to be given for incorrect answer.

## VI. CONCLUSION

Disaster can strike at any time, at any place. Many research studies have stressed the importance of educating the children in the early years in planning and preparedness for disasters. School children are mostly affected in the recent disasters and it shows that the current educational system is not enough to teach the consequences of the disasters to the students and the teachers. Implementing Technology for imparting knowledge regarding the disaster was found effective in many research studies

An Interactive multimedia package was prepared with an urge to create awareness among the school children to equip them to safeguard themselves, their family and community. The main objective of the present study is to develop and validate the Interactive Multimedia Package on Disaster Management Learning Activities for School students. The Interactive multimedia package was developed and validated.

## VII. ACKNOWLEDGEMENT

This project is fully funded by impress-ICSSR, and I thank ICSSR for sanctioning the project and funding it without which the project will not exist.

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I wish to register my gratitude to Dr.K.Murugan and Dr.Murugavel Regitrar i/c , Bharathiar University for enabling me to proceed with the project work successfully.

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## Textbooks

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