

Natural Hazards And Responses



Unit Essentials



- The unit is comprised of 25 sessions.
- The unit includes - Theory, videos, images, learning engagements, skills development and guest session.
- The SA will be conducted on 23rd July 2019.
- The subject-group objectives that will be majorly catered in this unit are - A (Knowing and Understanding) and D (Critical Thinking)

Session 1 - Tuning in



1. Connect the puzzle

2. Identify the sounds

3. Observe the images

4. Watch the video

5. Identify me!

6. Identify KC, GC and RC



Instructions



Make 5 groups.

1. Continents are provided, you need to refer the legends and connect them in the best suitable way.
2. Identify the sound and write your understanding about the same.
3. Observe the images and come up with at least five different observations about the images.
4. Watch the video and write your observation.
5. Match the answers to the questions and find the disaster related words in the puzzle below
6. Find a suitable KC, GC, and RC for this unit.



Skills Developed

Social skills - Collaboration -
Encouraging each other to contribute.



Session- 2



KC-Systems

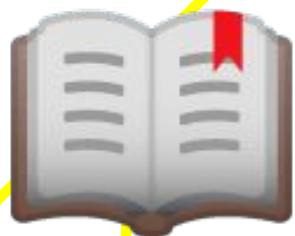
RC-Causality, (Management and intervention)

GC-Orientation in Space and Time

SOI

Societies can be affected by different types of hazards having different causalities and require innovative systems , management and intervention in order to respond effectively to them.

In this unit we are going to understand.....



Causes and consequences of natural hazards

Case studies of natural hazards and how societies have responded to them.

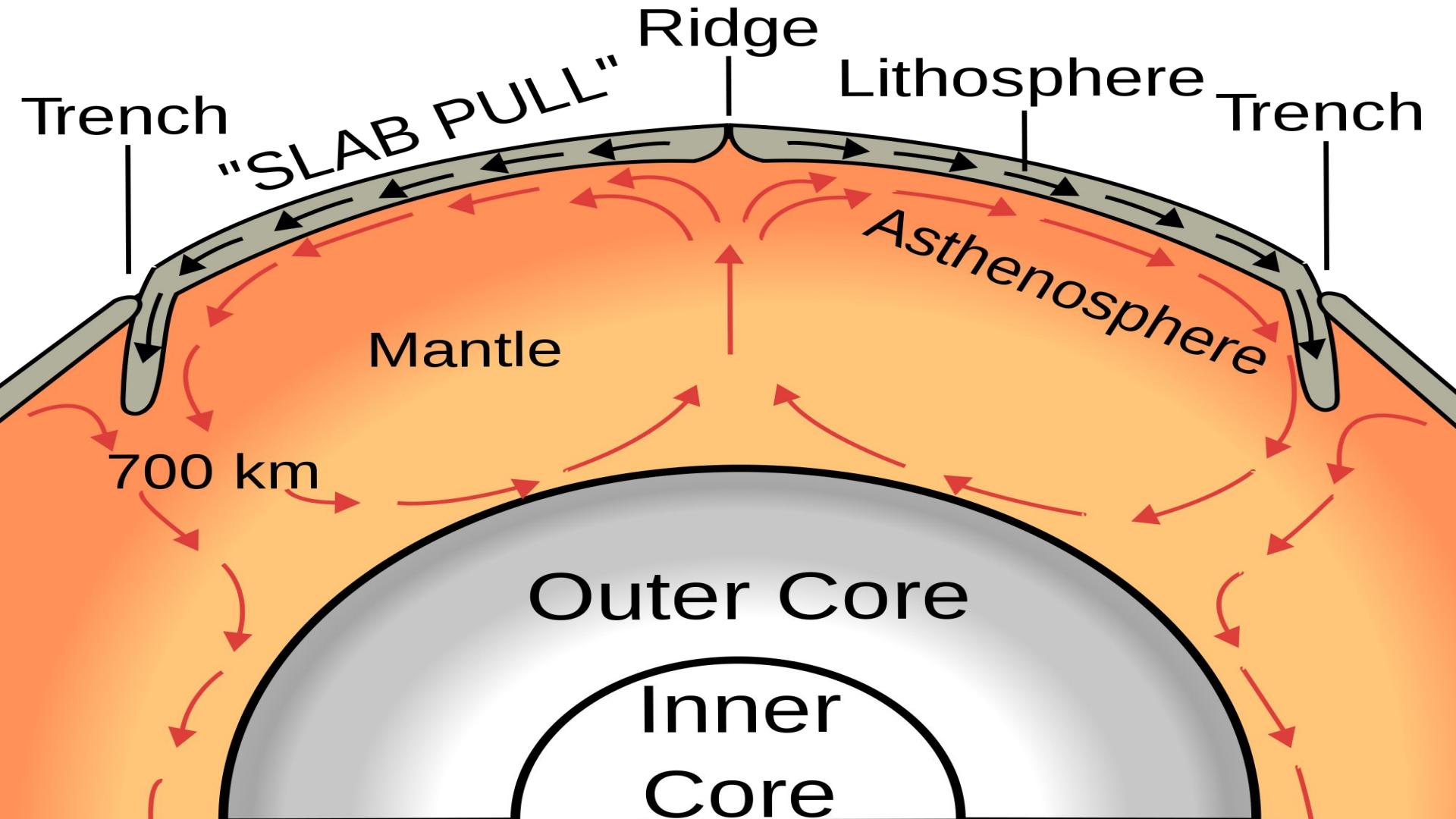
By raising campaign to help an area of the world affected by natural hazards

How is the earth structured?

Through simulation-experiment (30 mins)

Link to the theory





Skills Developed

Thinking skills - Transfer skills - how to use effective learning strategies in subject groups. For eg - Here we included cooking and learning plate tectonics.



Session -3



What makes the earth's crust?

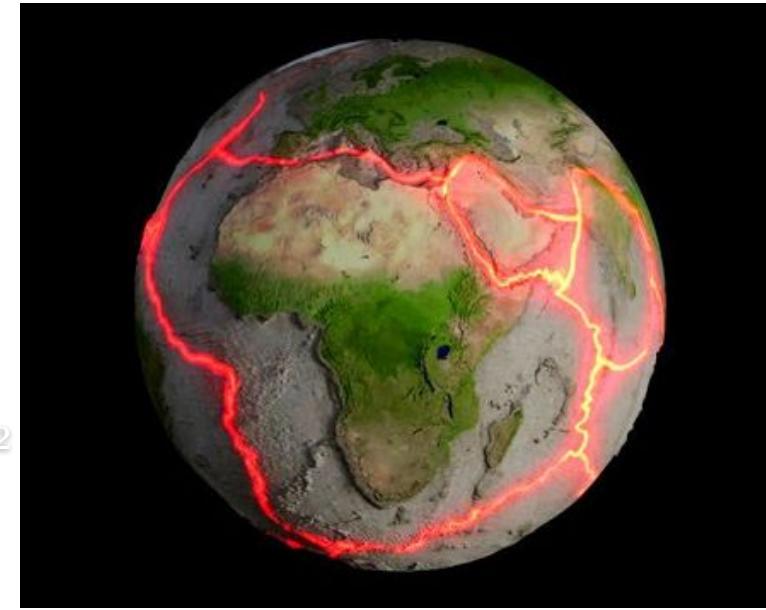
The earth's crust is not one seamless layer, but is broken up into many different sections of varying sizes called **tectonic plates**.

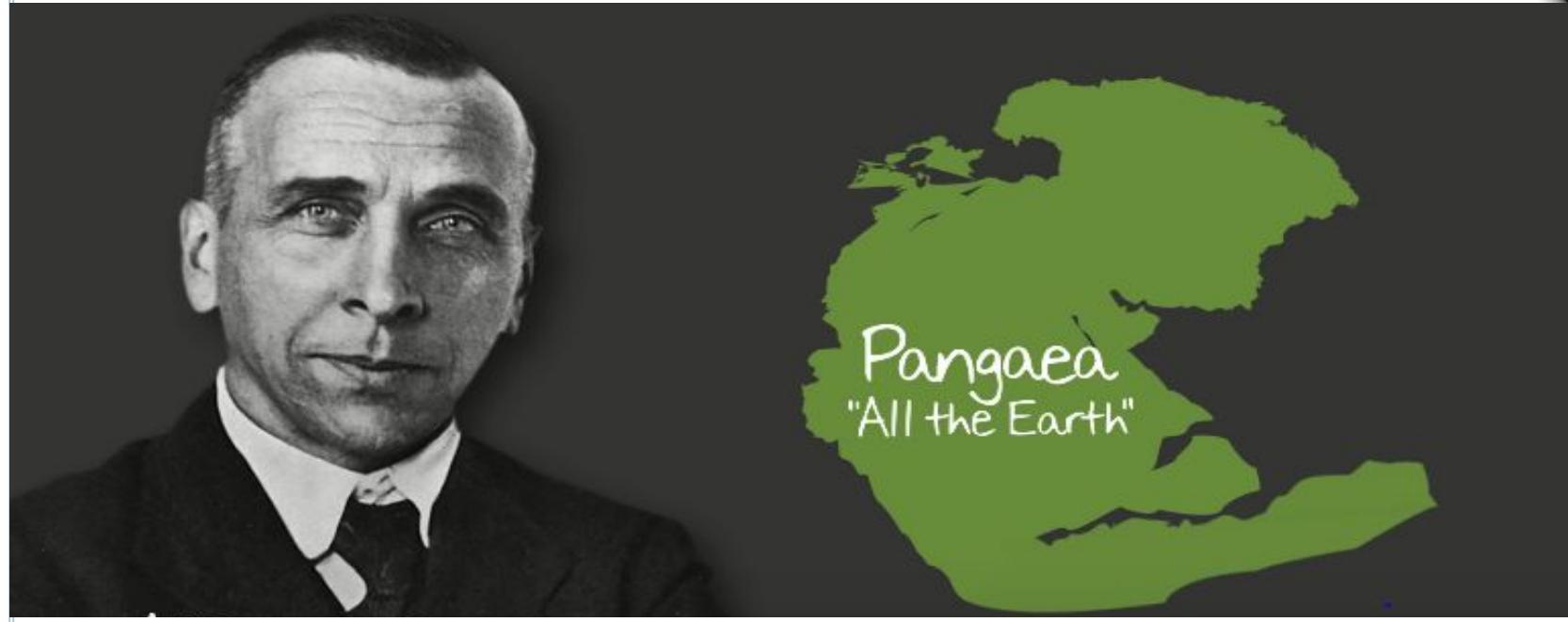
Tectonic plates



The tectonic plates of the earth's surface rest upon the deep semi-solid layer of the mantle beneath them. The edges where the plates meet are called **plate boundaries.**

12





Alfred Wegener (1880-1930)



Alfred Wegener
1880-1930

Pangaeo

200 million years ago

Student Reference



So, now can you answer why this change happened?



Let's understand....



Do you know why this continental drift happened??

The world's plates move about very slowly in relation to each other. Currents of heat originating from deep within the Earth called convection currents drive the movement of the plates.

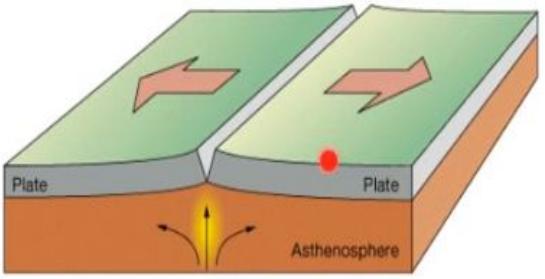


There are three types of plate boundaries:



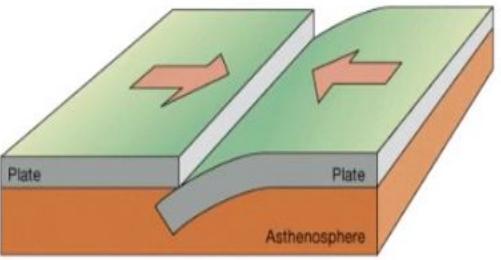
Constructive Margin-

Where two plates
are moving apart



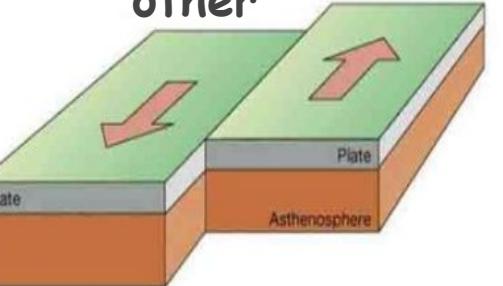
Destructive Margin-

Where two plates
are moving together



Conservative Margin-

Where two plates
are slipping
alongside each
other





What happens when the plate moves?



Different plate boundaries and different land formations

San Andreas Fault - Conservative Plate Boundary

The Mid-Atlantic Ridge - Constructive Plate Boundary

Andes Mountains - Destructive Plate Boundary
(Subduction)

Himalayan Range - Destructive Plate Boundary
(Collision)

Student references



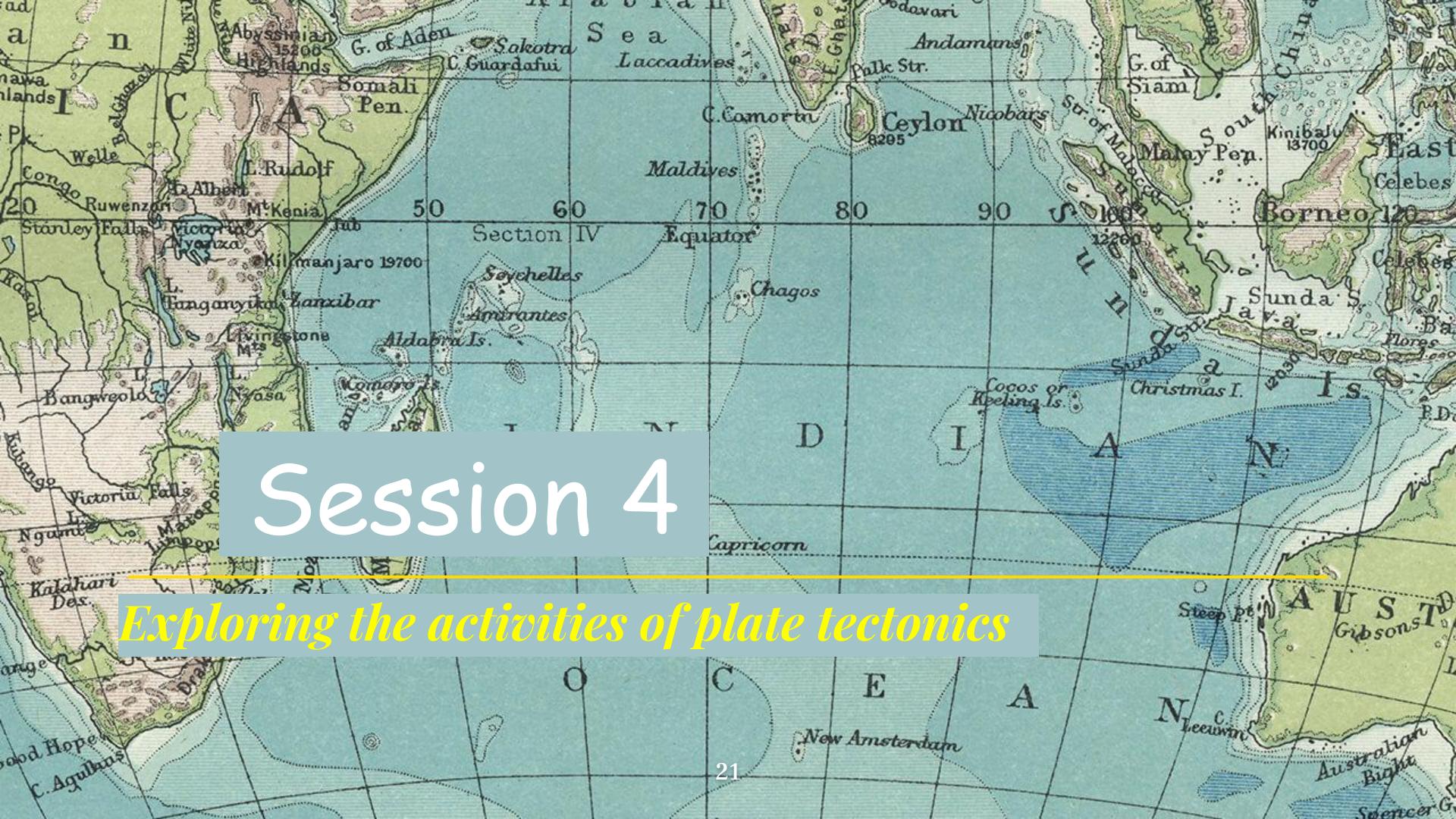
<https://www.thoughtco.com/convergent-plate-boundaries-3866818>

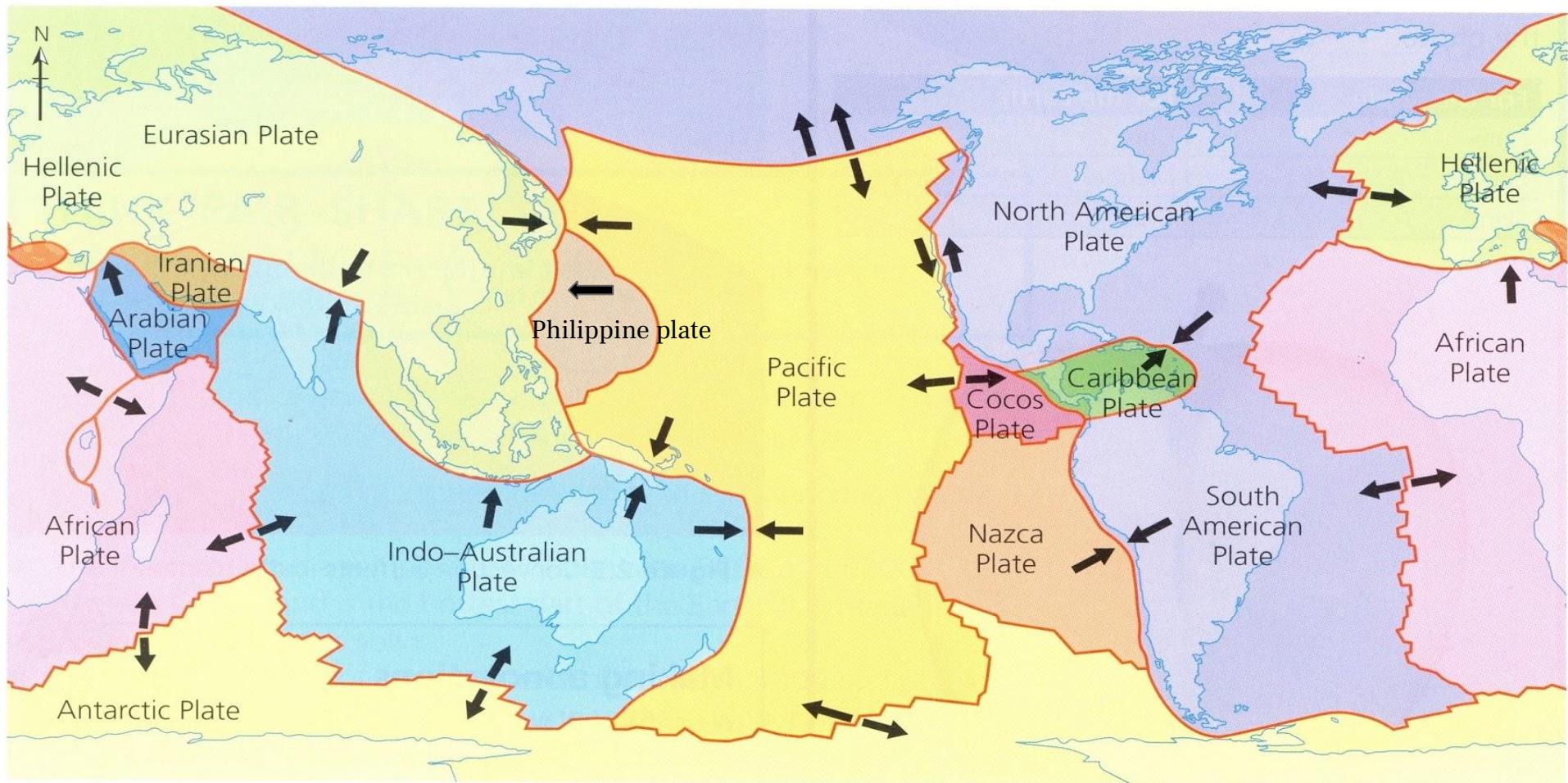
<https://www.amnh.org/explore/ology/earth/plates-on-the-move2>



Session 4

Exploring the activities of plate tectonics





Key

— Plate boundary

← Direction in which plate is moving

Major plates of the earth

Activity plate tectonics



Use the map to answer the questions below:

1 Find an example of two plates that are moving:

- a) Away from each other
- b) Against each other
- c) Alongside each other

2 From the map identify three locations where you would expect there to be a lot of earthquakes and volcanic activity. Explain your answer.

Activity



Use the internet to locate and name the following volcanoes onto the map provided to you:

- Mt Fuji (Japan)
- Mt Unzen (Japan)
- Chimborazo (Ecuador)
- Popocatepetl (Mexico)
- Mt Sinabung (Indonesia)
- Mt Kilimanjaro (Tanzania)
- Kilauea (Hawaii)

Questions

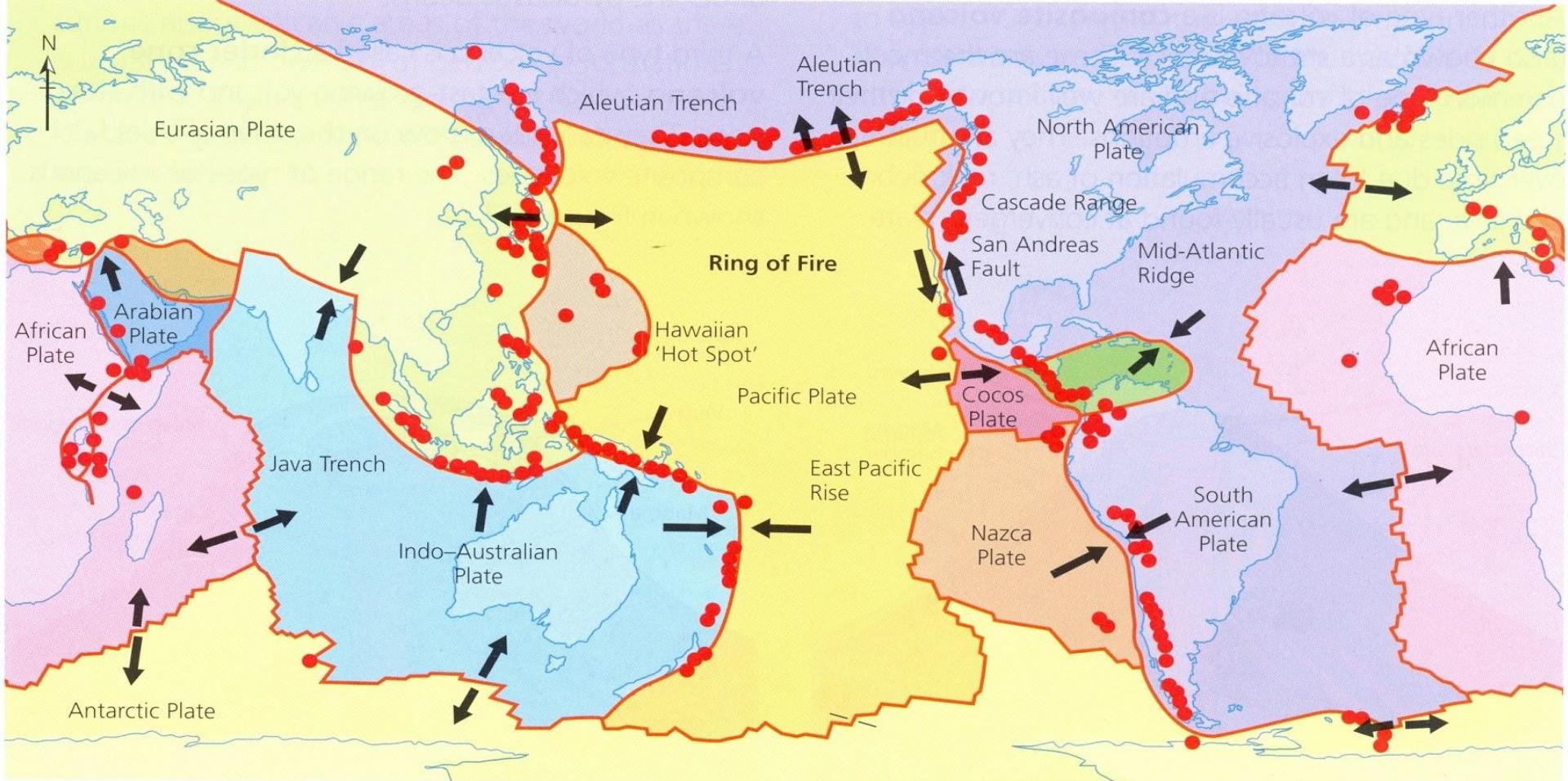


- What do you notice about the location of volcanoes and the plates?
- Mt Fuji and Mt Unzen volcano lies on the margin of which two plates?
- Are the plates moving towards each other or away from each other?
- Are there any exceptions to the general pattern?
- What is rather odd about the location of Mt Kilimanjaro in relation to the plates?

Skills Developed

Research skills - Information literacy
skills - Collect and analyse data to
identify solutions and make informed
decisions





Key

— Plate boundary

← Direction in which plate is moving

● Volcano or earthquake

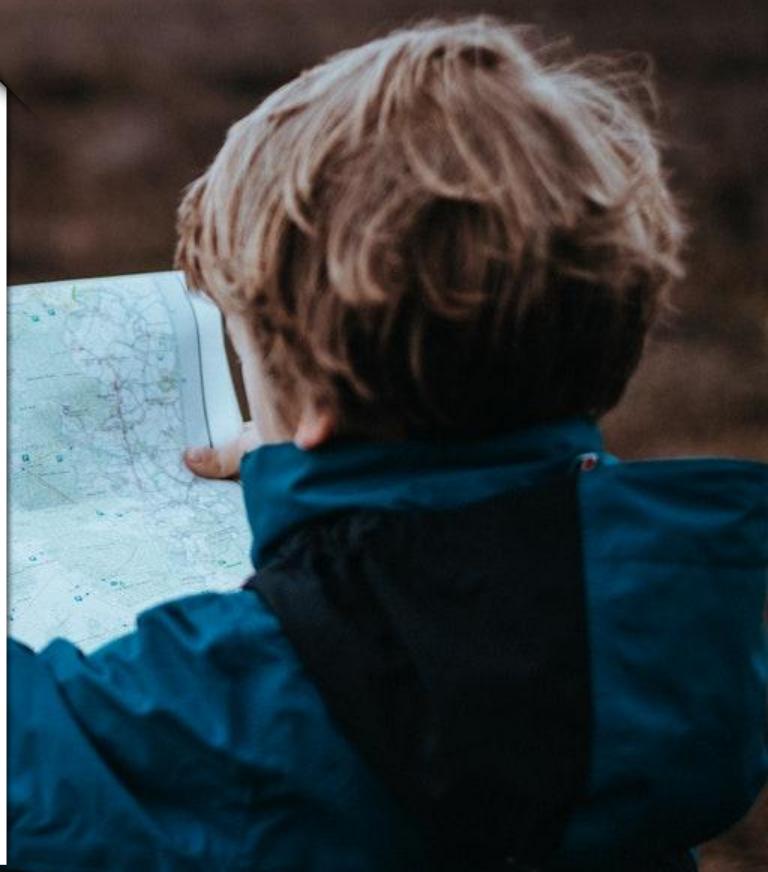
What happens when the plate moves?

Pattern of earthquakes...

Pattern of volcanoes



- ❖ What can you see in the 'key' which is on the upper right corner?
- ❖ Identify the areas with the highest magnitude of earthquakes and volcanic eruptions.
- ❖ Where did they recently occurred?
- ❖ Have you observed any pattern of their occurrence?



Session 5

Introduction to disasters



What we do not realize...

The earth we live on is constantly changing, with deep forces at work. Most of the time, these changes aren't noticed as we go about our busy lives but, at times, they can result in natural hazards that can have devastating effects on human societies. So in this unit we will examine the causes and consequences of some of these natural hazards and how societies have adapted to response to these dangers.



A natural disaster is the consequence or effect of a natural, hazardous event, occurring when human activities and natural phenomenon (a physical event, such as a volcanic eruption, earthquake, hurricane, tsunami, landslide, etc.) become enmeshed. "Natural disasters result in catastrophic consequences for living things in the vicinity"



List of some of the known natural hazards

- Hurricane
- Tornado
- Earthquake
- Landslide
- Avalanche
- Forest Fire
- Volcanic eruptions
- Floods
- Droughts
- Tsunami



“
It takes an earthquake
to remind us that we
walk on the crust of an
unfinished planet.”

— Charles Kuralt

Earthquake



- What is the cause of an earthquake?
- What are the consequences of an earthquake?

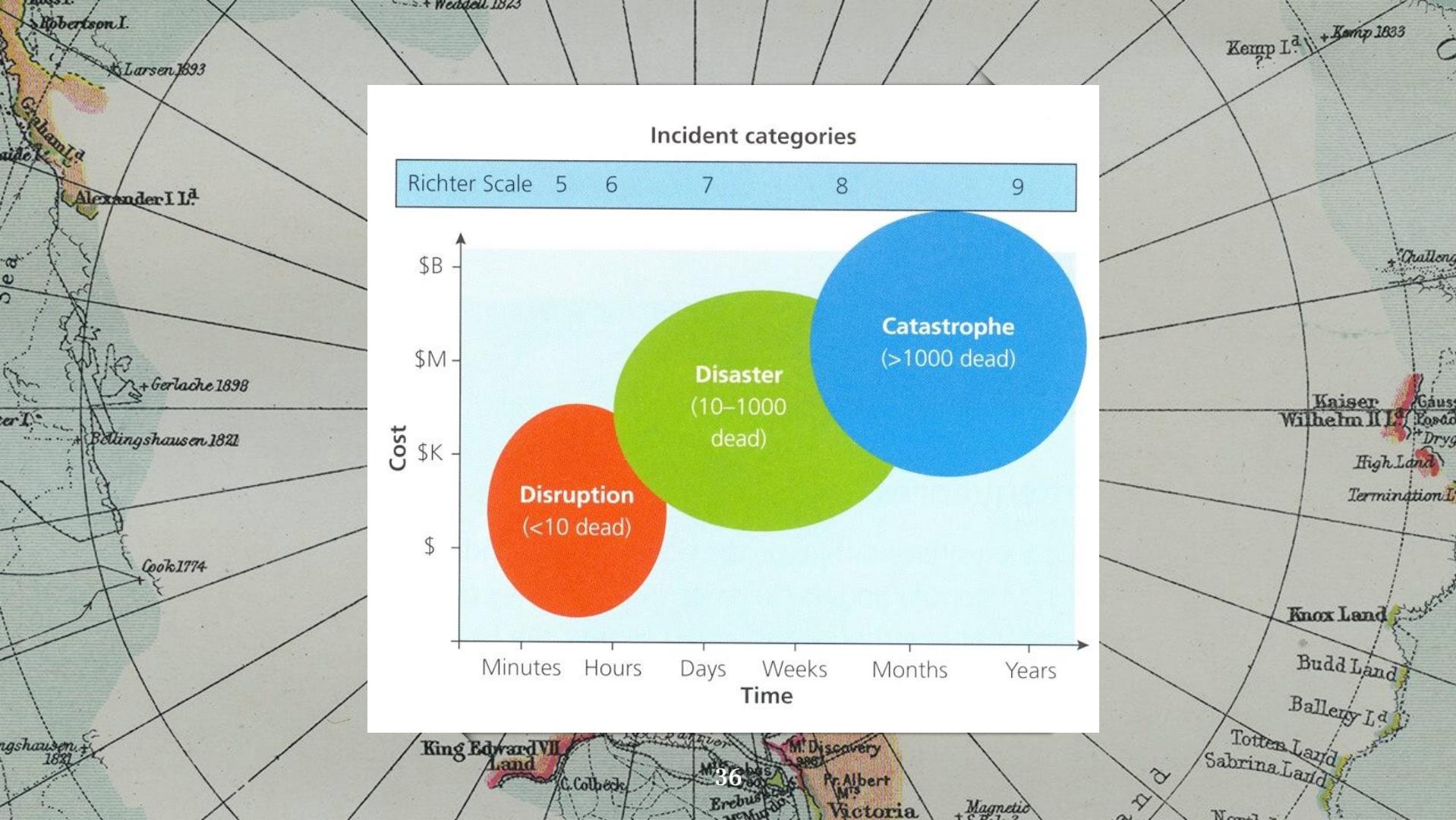


Think-Pair-Share



- Why do you think it is important to classify earthquakes to their strength?
- What do you think is the purpose of this?
- Let's do this...

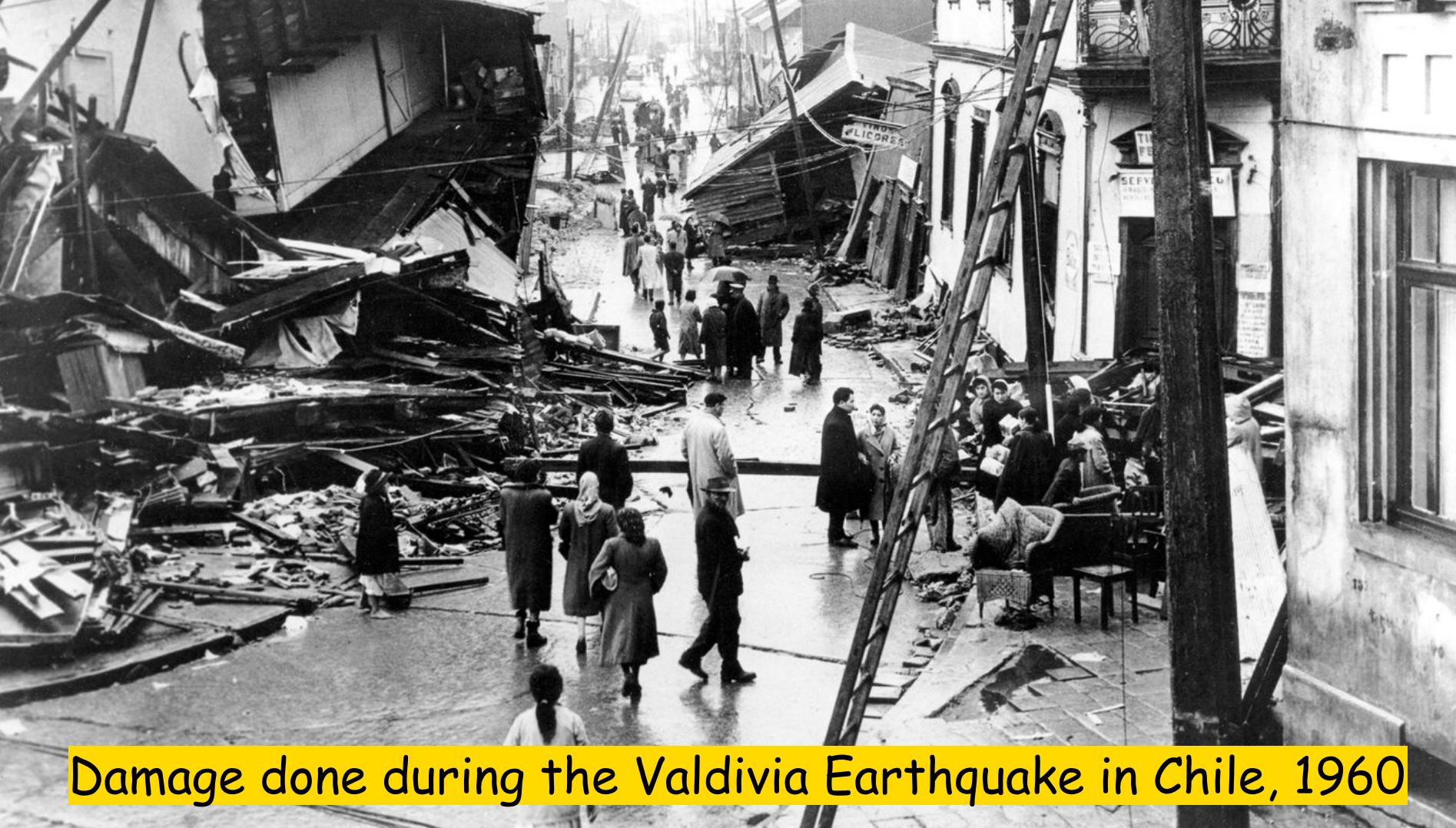




Skills Developed

Thinking Skills - Critical thinking skills
- Analyse complex concepts and projects
into their constituent parts and
synthesize them to create new
understanding





Damage done during the Valdivia Earthquake in Chile, 1960

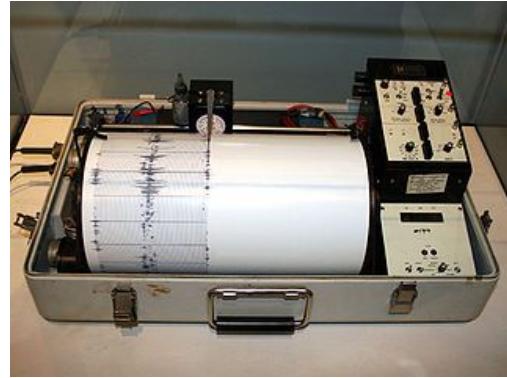
The Richter scale



This scale is used by seismologists to record the strength of earthquakes. Each earthquake is given a numerical value from 1-10. The number indicates the intensity of the earthquake. The strength of the earthquake goes up ten times between each level.

The highest ever reading on the Richter Scale took place in Chile in 1960 when the Valdivia Earthquake measured somewhere between 9.4 and 9.6 on the scale.

A seismometer is an instrument that responds to ground motions, such as caused by earthquakes, volcanic eruptions, and explosions.



Interesting Facts! Can you guess what is this?



An ancient earthquake detector.



The incredible earthquake detector invented nearly 2,000 years ago with the invention of the first seismoscope in 132 AD by a Chinese inventor called Zhang ('Chang') Heng. The device was remarkably accurate in detecting earthquakes from afar, and did not rely on shaking or movement in the location where the device was situated.



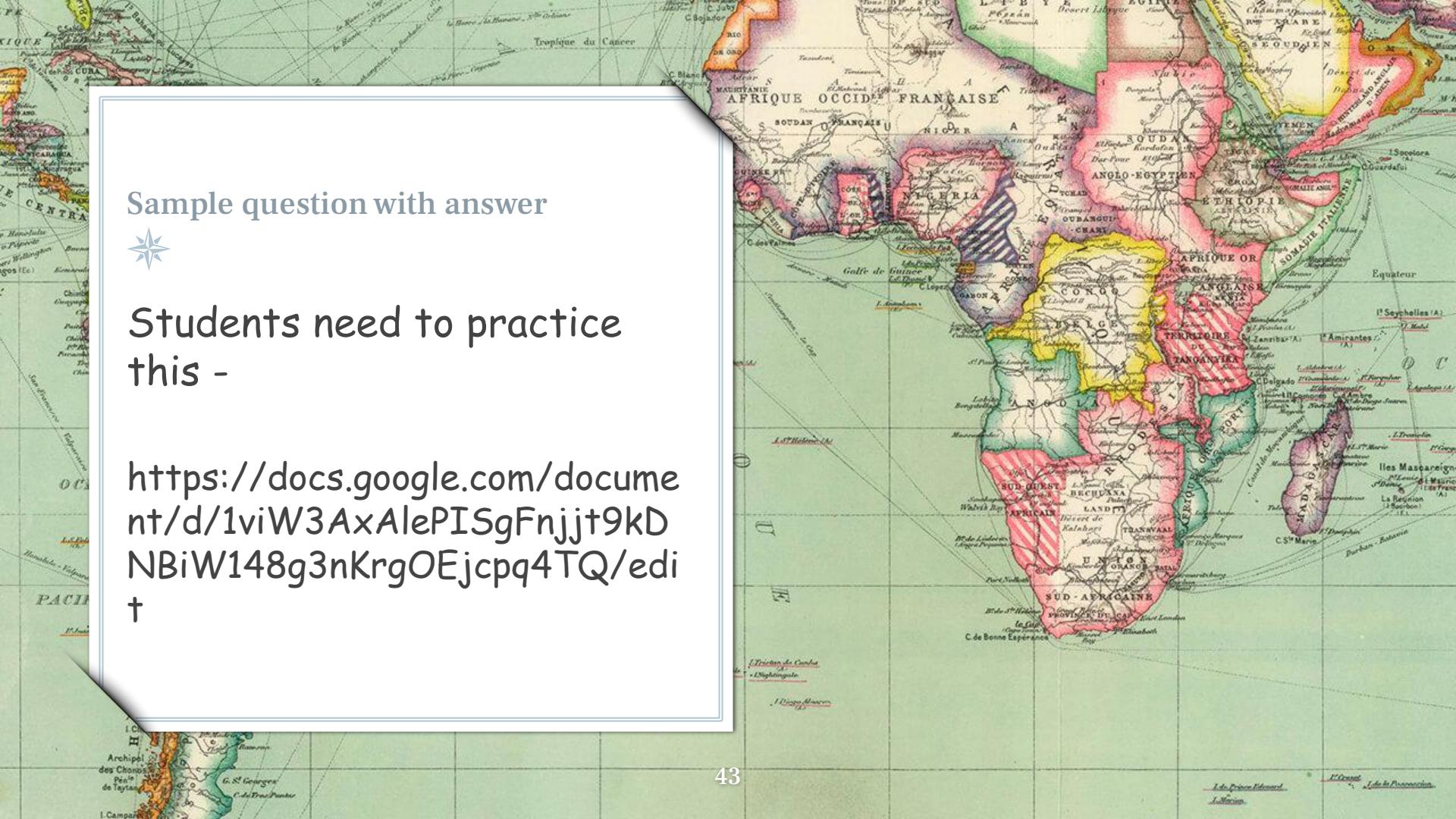
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Student Reference





A historical map of Africa and surrounding regions, showing various colonies and territories. The map includes labels such as 'AFRIQUE OCCIDENTALE FRANÇAISE', 'SUDAN FRANÇAIS', 'NIGER', 'ANGLO-EgyptIAN', 'ETHIOPIE', 'AFRIQUE OR. ANGLAISE', 'TANZANIA', 'AFRIQUE AFRICAINE', 'SUD-AFRICAINE', and 'Mauritius'. It also shows the 'Gulf de Guinée' and the 'Equateur'.

Sample question with answer



Students need to practice
this -

<https://docs.google.com/document/d/1viW3AxAlePISgFnjjt9kDNBiW148g3nKrgOEjcpq4TQ/edit>

Skills Developed

Communication skills - Comprehending information, reading critically, structuring information.



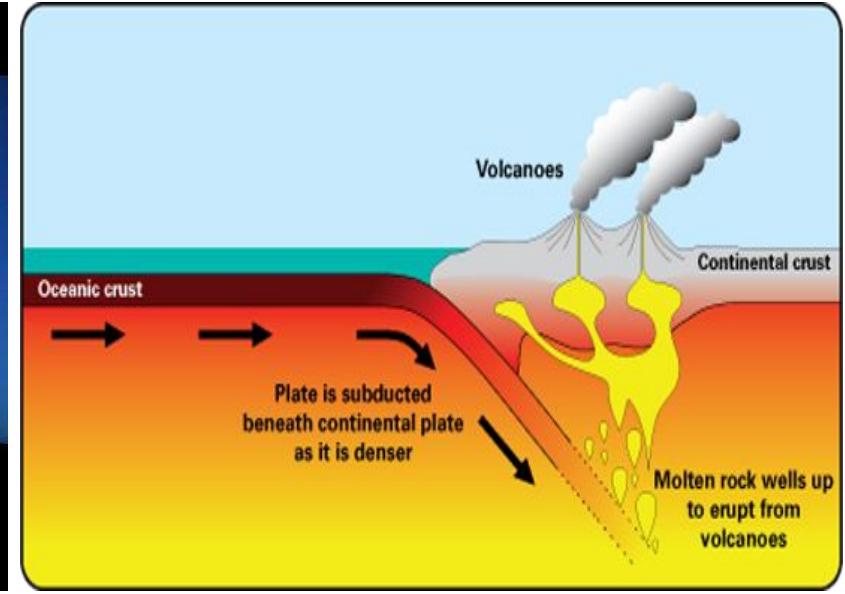
Session 6

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Remind me that the
most fertile lands
were built by the
fires of volcanoes.

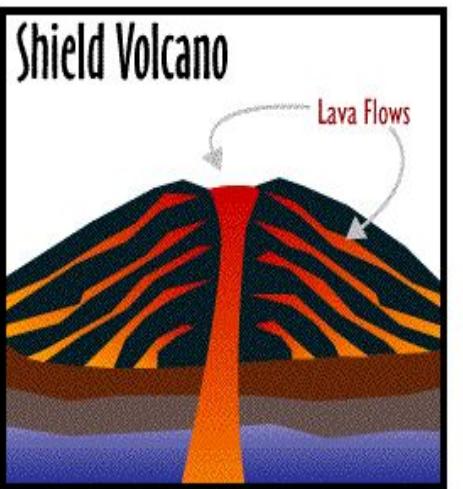
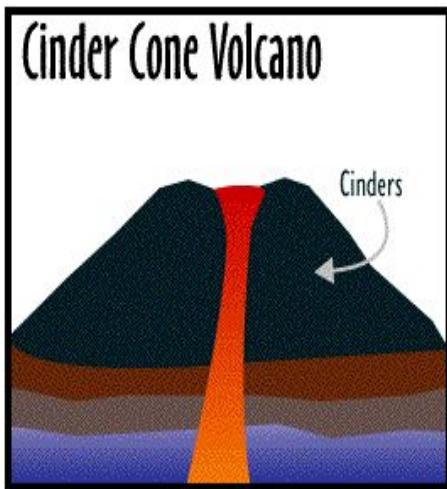
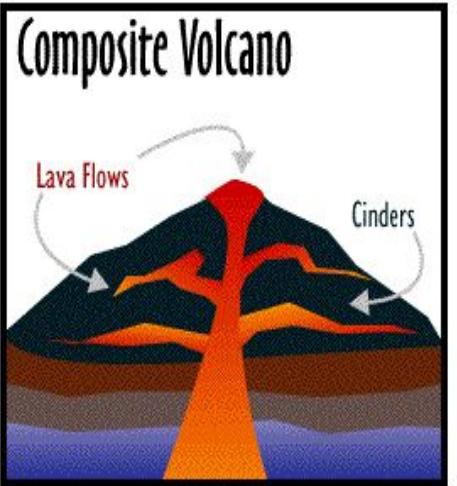
— Andrea Gibson, *The Madness
Vase*

What causes a volcanic eruption?



Different types of volcanoes

Link to theory



Incident in Sumatra (Indonesia)



A massive column of smoke and ash shot nearly 10 miles into the sky above Sumatra on Feb 20, 2018 as Mount Sinabung, one of three currently active volcanoes in Indonesia, began erupting.



Incident in Sumatra (Indonesia)



Mount Sinabung has a tragic history, with deadly eruptions in 2010, 2014, and 2016. More than 30,000 people have left the area in recent years due to the volcano. No fatalities or injuries were reported after Monday's eruption.



Session 7

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A SILENT TSUNAMI WHICH KNOWS NO BORDERS IS SWEEPING THE WORLD

JOSETTE SHEERAN

Tsunami



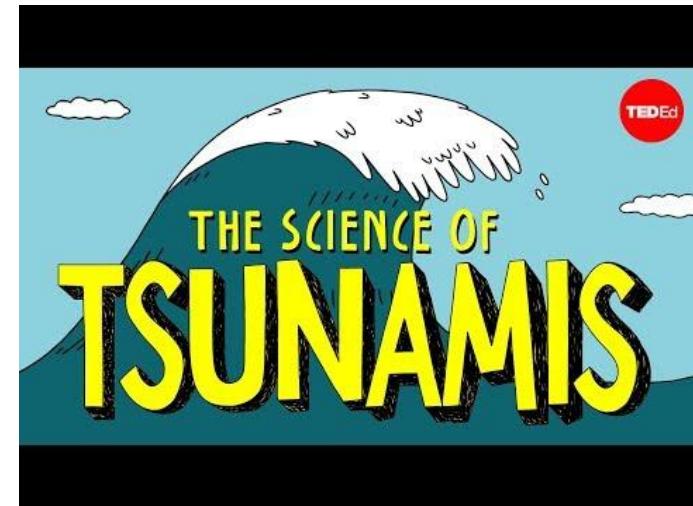
What is a tsunami?

A tsunami is a series of ocean waves that are usually caused by seismic events.

The word tsunami is a Japanese word and is pronounced "soo-nah-mee".

It means harbour wave with tsu meaning harbour and nami meaning wave. Japan has experienced many tsunami throughout its history.

Student Reference

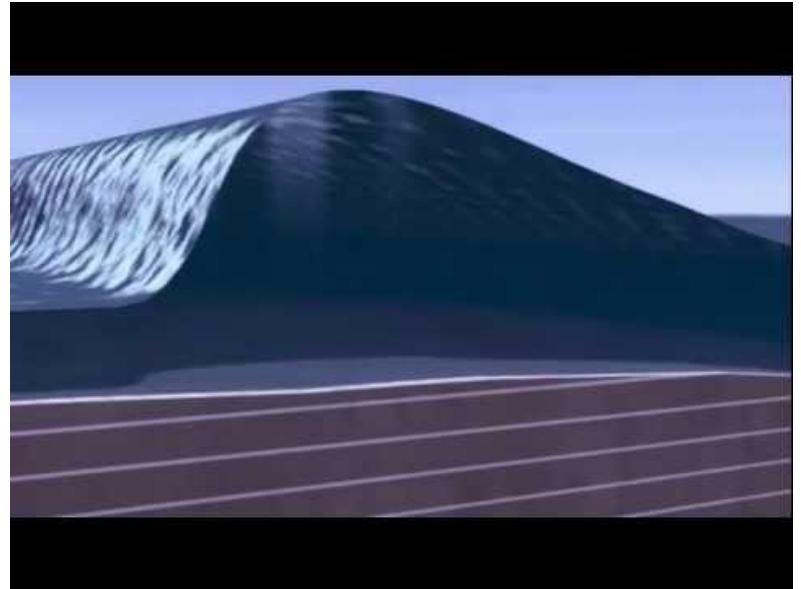


Tsunami are also called monster walls of water



What causes a tsunami?

When an undersea event or other major disturbance causes a section of the ocean floor to suddenly rise or sink, the mass of water above the affected area also rises or sinks. This unexpected movement of the water creates a series of powerful waves. Undersea earthquakes that cause massive changes to the ocean floor and the displacement of a large volume of water are the most common causes of a tsunami.



Tsunami can be caused by these underwater events...



- earthquakes
- landslides
- erupting volcanoes
- large explosions

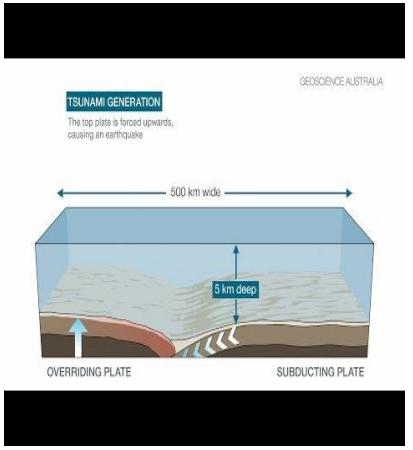
More than 75 percent of tsunami are caused by undersea earthquakes.



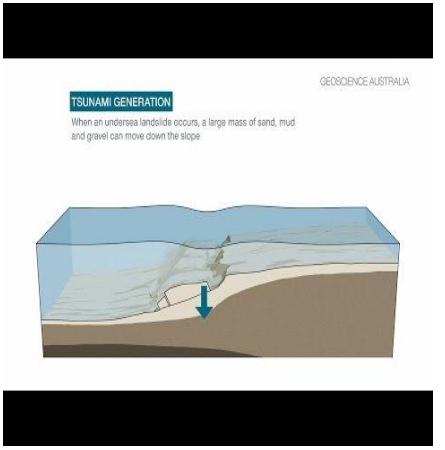
Let's look into the details...



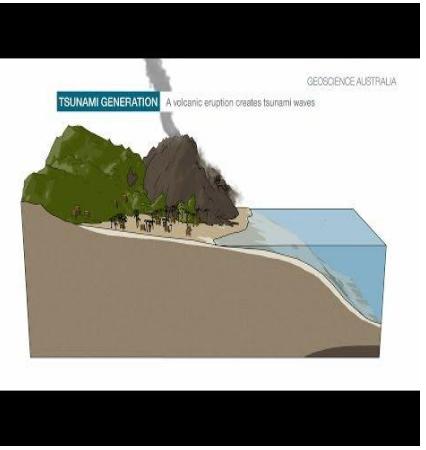
Earthquakes



Landslides

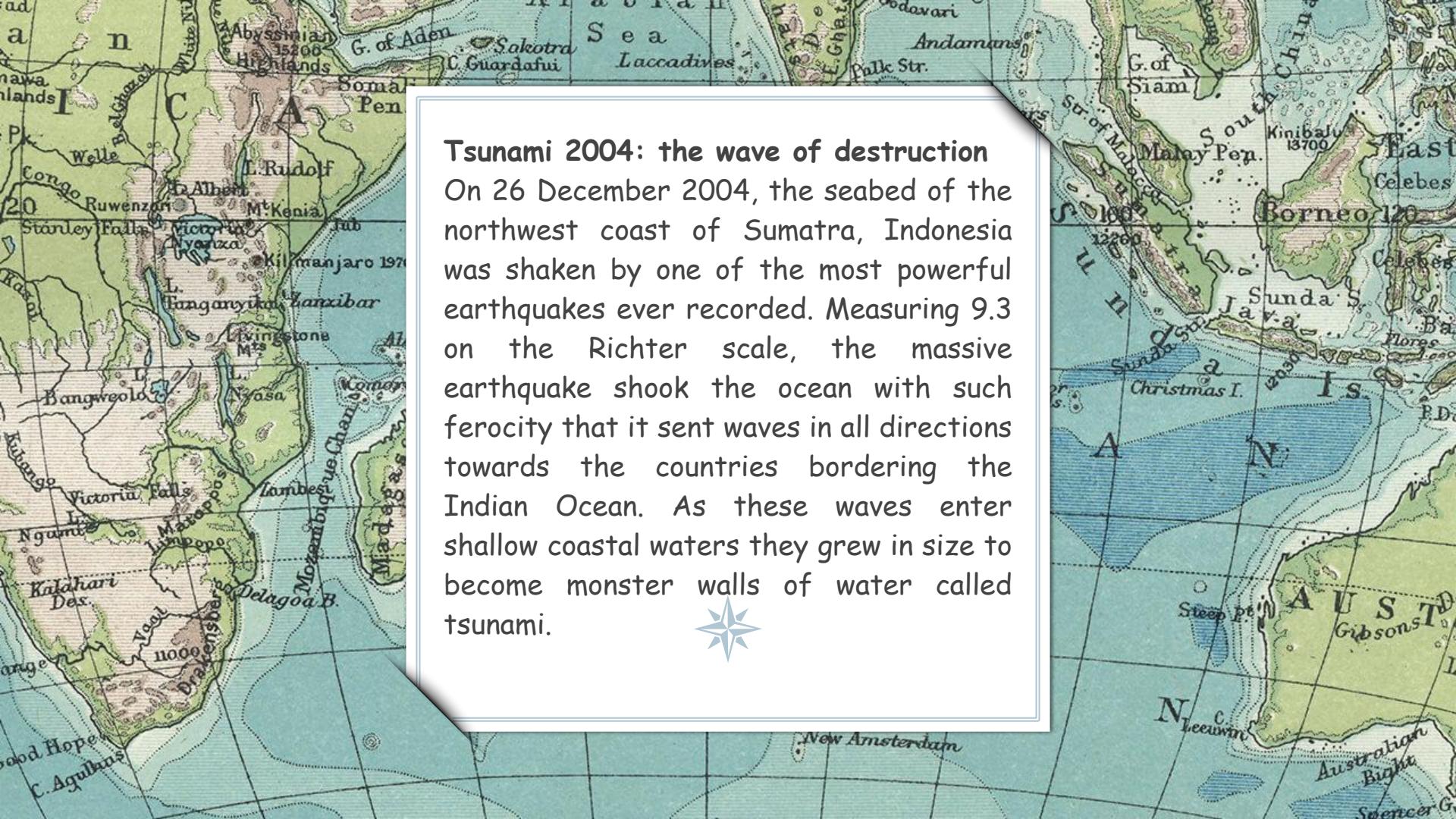


Volcanic Eruptions



Tsunami 2004: the wave of destruction

On 26 December 2004, the seabed of the northwest coast of Sumatra, Indonesia was shaken by one of the most powerful earthquakes ever recorded. Measuring 9.3 on the Richter scale, the massive earthquake shook the ocean with such ferocity that it sent waves in all directions towards the countries bordering the Indian Ocean. As these waves enter shallow coastal waters they grew in size to become monster walls of water called tsunami.



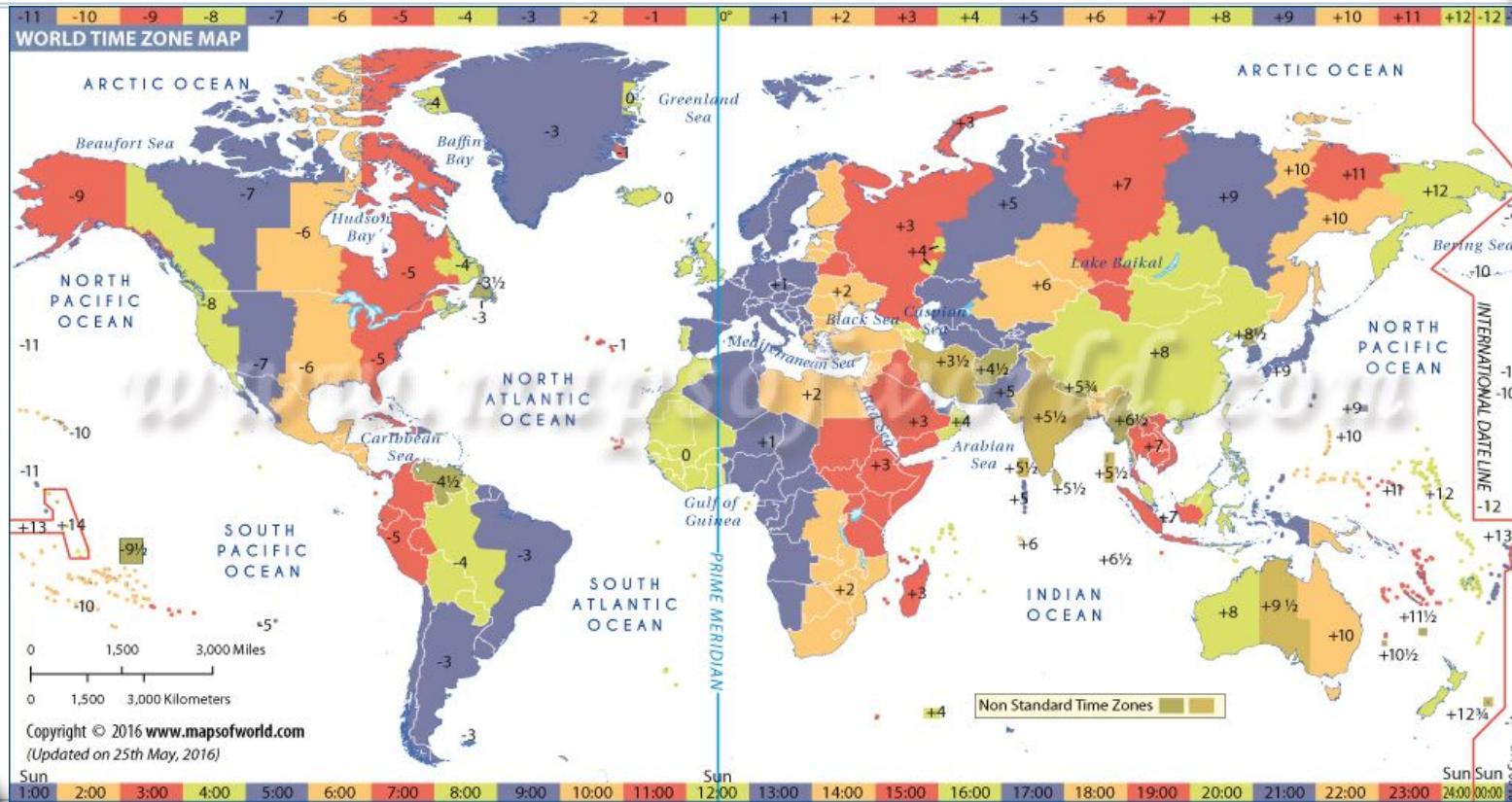
Activity



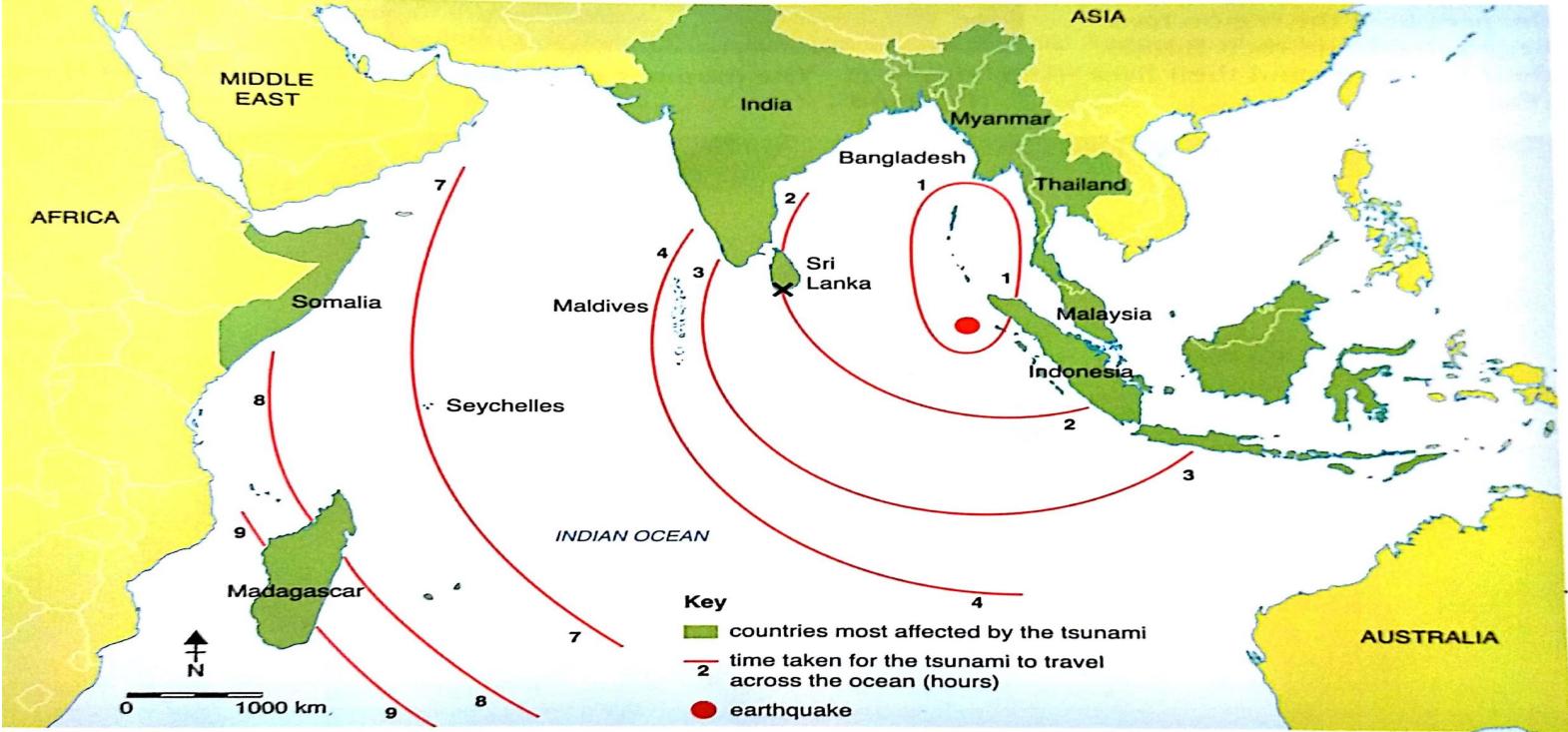
Study the figure given. You will need to refer to the time zone map to help you with some of these questions.

- a) The earthquake occurred at 1 am GMT(Greenwich Mean Time). What was the local time in northwest Indonesia when the earthquake occurred.
- b) Which countries will be hit by the tsunami in the first two hours after the earthquake occurred?
- c) What was the local time when the tsunami hit Sri Lanka?
- d) Work out how fast the tsunami travelled on the way to Sri Lanka. To do this you need to use the scale to work out the distance from the earthquake to X. Now divide the distance by the time taken to give you a speed in km/hour.(1700 km given)
- e) Which part of Madagascar was hit first by the tsunami?
- f) What was the local time when the tsunami first hit Madagascar?
- g) Why do you think no one was killed or injured by the tsunami in Madagascar?

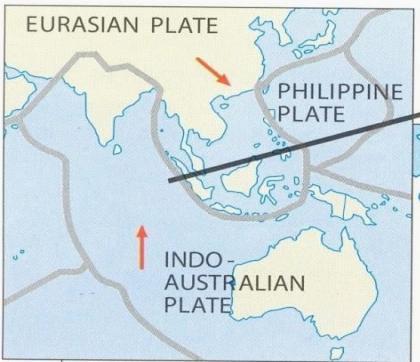
Time zone world map



Countries affected by the 2004 Indian Ocean tsunami



▲ Figure 21 Countries affected by the 2004 Indian Ocean tsunami



1 The Indo-Australian plate is pushing north, and diving under the Eurasian plate. So the ocean floor in this region is under huge pressure.

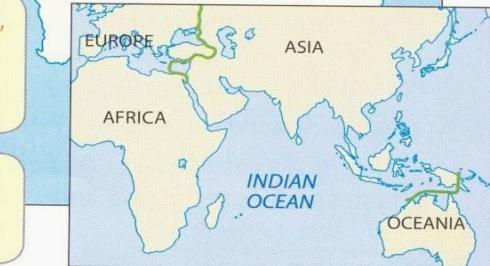
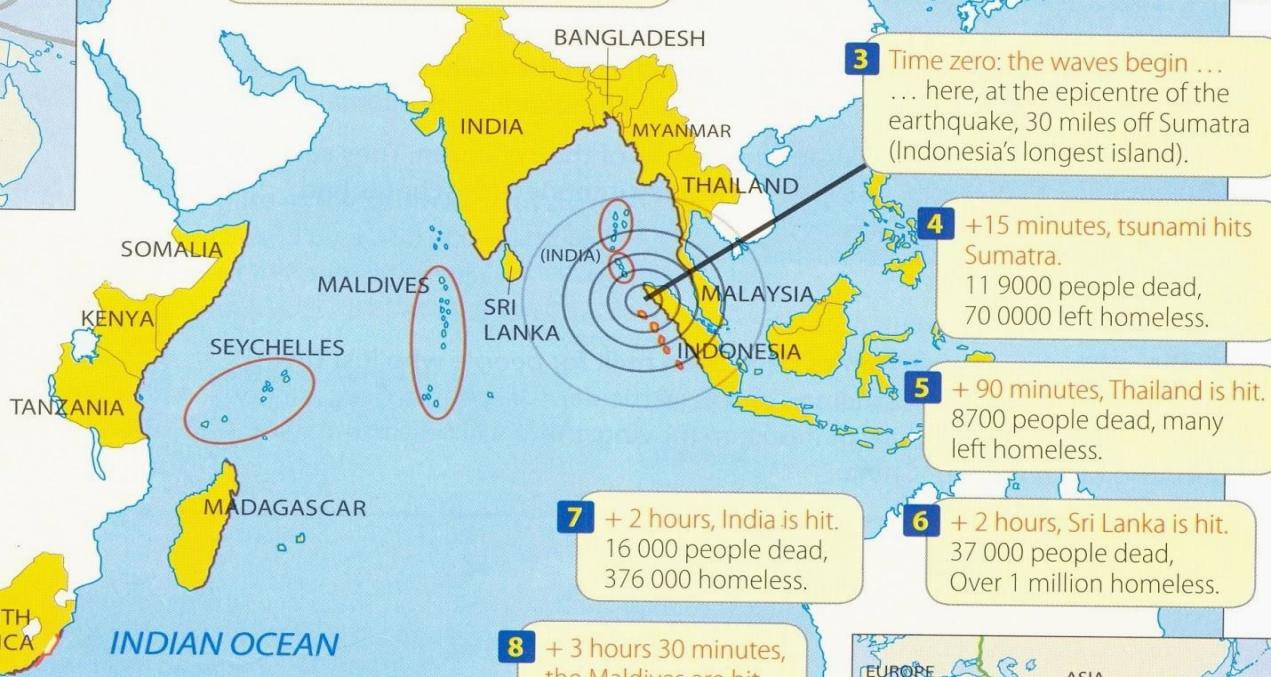
2 On 26 December 2004, at 07.58 local time, a crack about 1000 km long appears in the ocean floor. One side jolts 10 m upwards. The result: an earthquake.

11 + over 9 hours, the east coast of Africa is hit.

Somalia:
310 people dead, over
40 000 homeless.

Kenya:
1 dead.

Tanzania:
at least 10 dead.



Skills Developed

Thinking Skills - Critical thinking skills

- Identify trends and forecast possibilities

Creative thinking skills - Make unexpected or unusual connections between objects and/or ideas



Link of the homework

https://docs.google.com/document/d/1TuwvY0w-7HxaFwJykZaoV7kw8IN9qNlvGj_sXSJAmXM/edit



Session 8

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*Floods are ‘acts of
God’, but flood
losses are largely
acts of man.*

-Gilbert F. White-

Floods

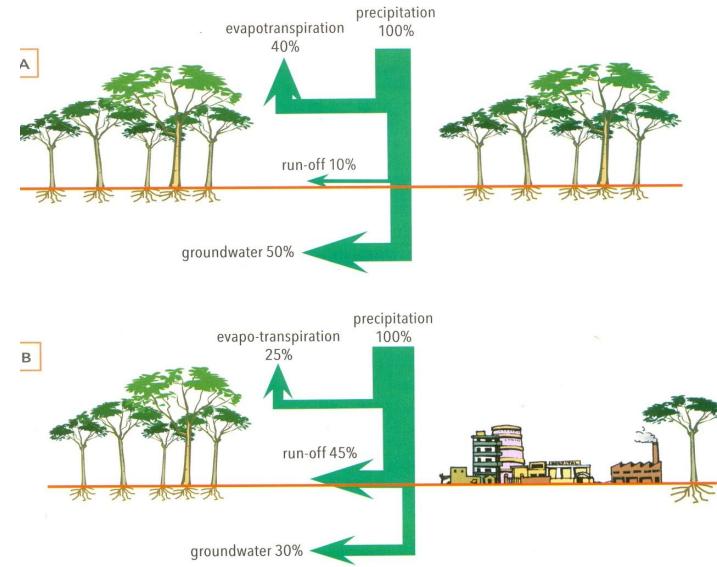


Most flooding is caused by rivers breaking their banks after **heavy rainfall**, or **prolonged periods of rain**, or **rapid snow melt**. The ground becomes **saturated** and cannot absorb any more water. Most rivers flood once in a year. Flat land next to the river is known as **flood plains**, because it is the first area to be flooded once river water overflows the banks.

In water cycle terms, the percentage for **runoff increases** at the expense of the percentages for **interception** and **infiltration**.

Human activity can increase the risk of flooding and make it worse. For example, **clearing of forests** and replacing them with **urban areas** is responsible for the increased flood risk in many towns and cities located in valleys.

Erosion and soil ; Human actions



Changes in the water cycle which increase the likelihood of flooding, caused by the growth of built-up areas (A and B)

Student reference



- The video is talking about which type of flood?
- Define the type of flood mentioned in the video?
- What are the reasons mentioned in the video for causing floods?
- Name the countries mentioned in the video that were affected?
- Explain the reason causing floods in Mississippi and New Orleans.
- Mention the damages caused by floods in these areas.



Impact of a major flood and long-term recovery management



Immediate

Loss of human life, houses destroyed; offices; factories and workplaces flooded out; livestock carried away; crops ruined, road and rail bridges washed away; communications disrupted.

Short-term

People in need of medical treatment for injuries; homeless people; people suffering from water-related diseases; shortage of safe drinking water; food shortages; problems of moving between places.

Long-term

Repair and build new houses; replace bridges, roads, and railway lines; restore essential public services, for example, water and sewerage; reclaim farmland; buy new seeds and animals

Case study : Flooding in Bangladesh



Causes of flooding

The flood risk in Bangladesh is one of the highest in the world. Variety of physical factors responsible for it are-

- Tropical monsoon climate
- Tropical cyclones
- Relief
- Drainage

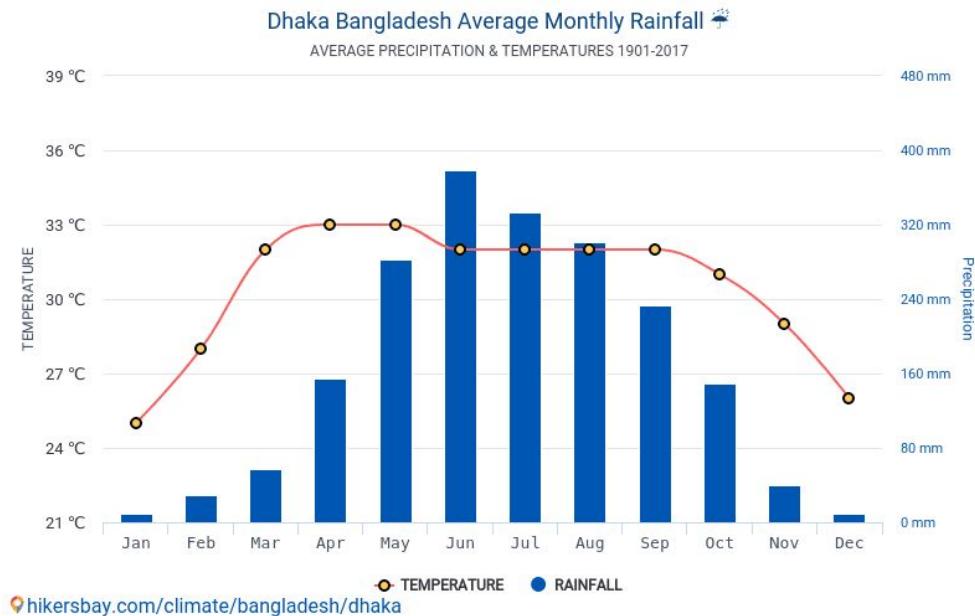


Case study : Flooding in Bangladesh



Tropical monsoon climate

From June to September rainfall is heavy and frequent, ideal for surface runoff. Rainfall totals are high; most places receive 1500 mm and 2000 mm of rain a year.

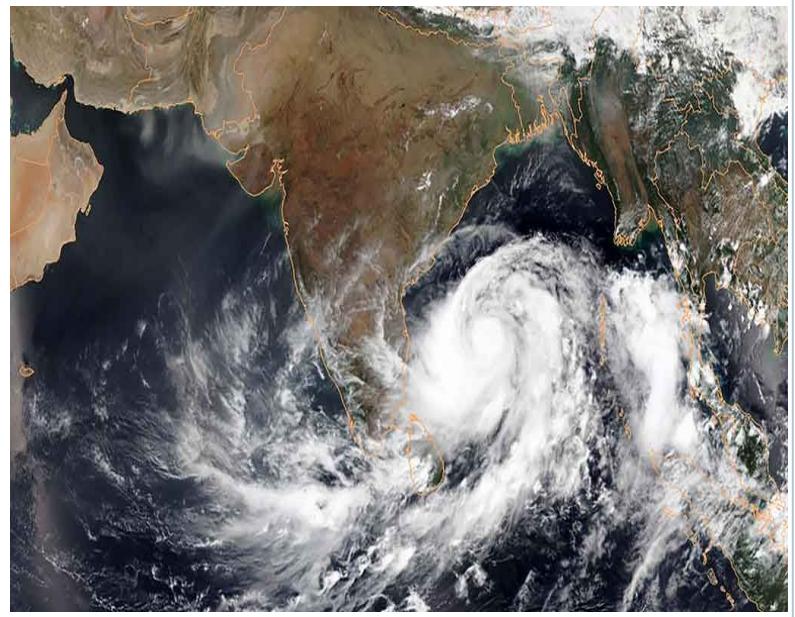


Case study : Flooding in Bangladesh



Tropical cyclones

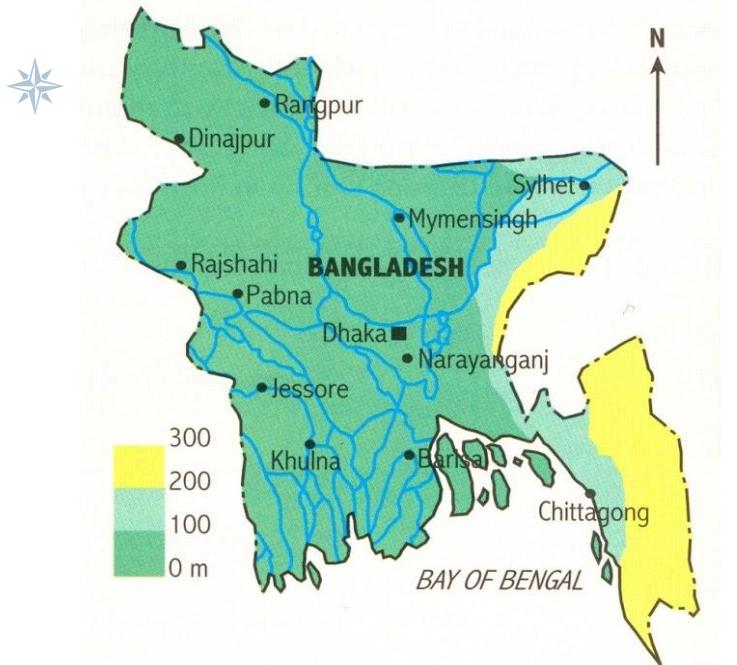
In the period September to November, severe storms develop in the Bay of Bengal. Sometimes they move north to affect Bangladesh as violent tropical cyclones which brings torrential downpours. Water courses are already full from the monsoon rains. Even worse are the storm waves and sea surges that are driven onshore by the violent winds; these raise the water levels along the coast, causing widespread flooding.



Case study : Flooding in Bangladesh

Relief

About two thirds of the country lies less than one metre above sea level. It is on the floodplains and delta of two great rivers, the Ganges and Brahmaputra. These are the first places to flood after heavy rains.



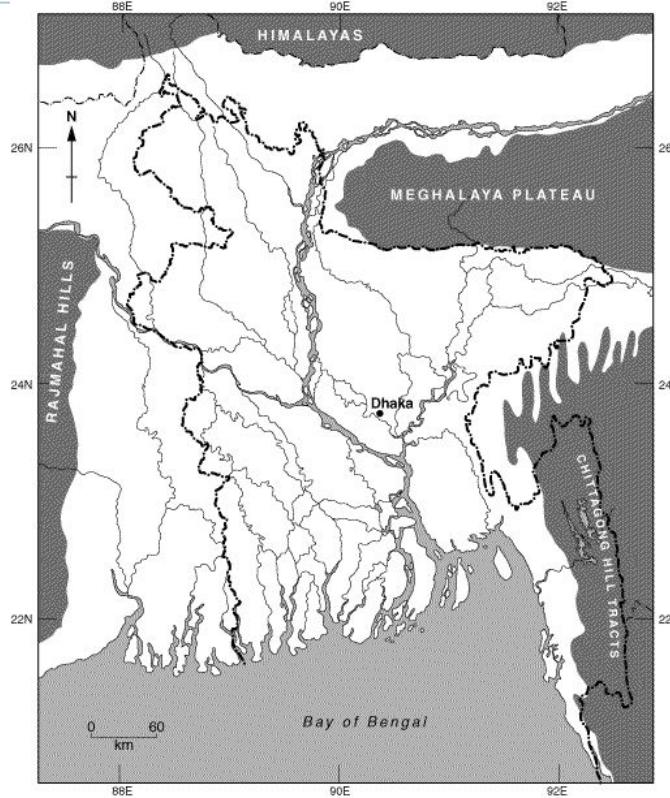
Relief map of Bangladesh

Case study : Flooding in Bangladesh

Drainage

Rivers, lakes and swamps cover 10 percent of the land area even when there is no flooding. At the same time as the river Ganges is swollen by heavy monsoon rains in India, it is carrying extra water from snow melt in the Himalayas.

Human actions make the flooding worst. Large areas of forest have been cleared in Tibet and Nepal, where the Ganges and Brahmaputra have their sources. Because there are fewer trees to absorb water, bind the soil together, run-off during times of heavy rain greatly increased.



Case study : Flooding in Bangladesh



Effects of flooding

One of the worst floods in recent history occurred in summer, 2004. This affected around 30 million Bangladeshis and caused US\$7 billion worth of damage. Forty percent of Dhaka was underwater, and 41 of the country's 64 districts were severely affected. A million acres of crops were destroyed, hundreds of people lost their lives, and millions were made homeless. Rail, road, and air links were disrupted as 2-3 metres of water covered the land.



Can anything be done to stop flooding?



An Action Plan drawn up in 1987 emphasized what are known as 'hard engineering' solutions—constructing seven huge dams to store water, building a coastal embankment to keep the sea water out, increasing the height of embankments running along the sides of rivers, and using embankments to create basins to store and hold back flood water. Not only are all these ideas expensive, but there is no guarantee that they would work to prevent all the flooding. Moreover, Bangladesh is one of the countries most at risk from any rises in sea level due to global warming.

Others have suggested alternatives such as better flood forecasting, improved warning systems, more flood shelters, and better-prepared emergency services. They are all cheaper solutions: more use should be made of the knowledge and skills of local people, instead of so much emphasis on engineering and technology. Environmental disturbance would be less severe because of reduced interference with the delicate natural ecosystems of the delta.

Questions for homework



1. Make a table to show the physical and human causes of flooding in Bangladesh. (Factual question)
2. Explain why flooding occurs frequently in Bangladesh. (Factual question)
3. Flooding is a natural event, but it may be increased or reduced by the actions of humans.
Explain the statement (Conceptual question)
4. Ask your parents, grandparents and friends about their experiences of Surat floods of 2006.

Session 9



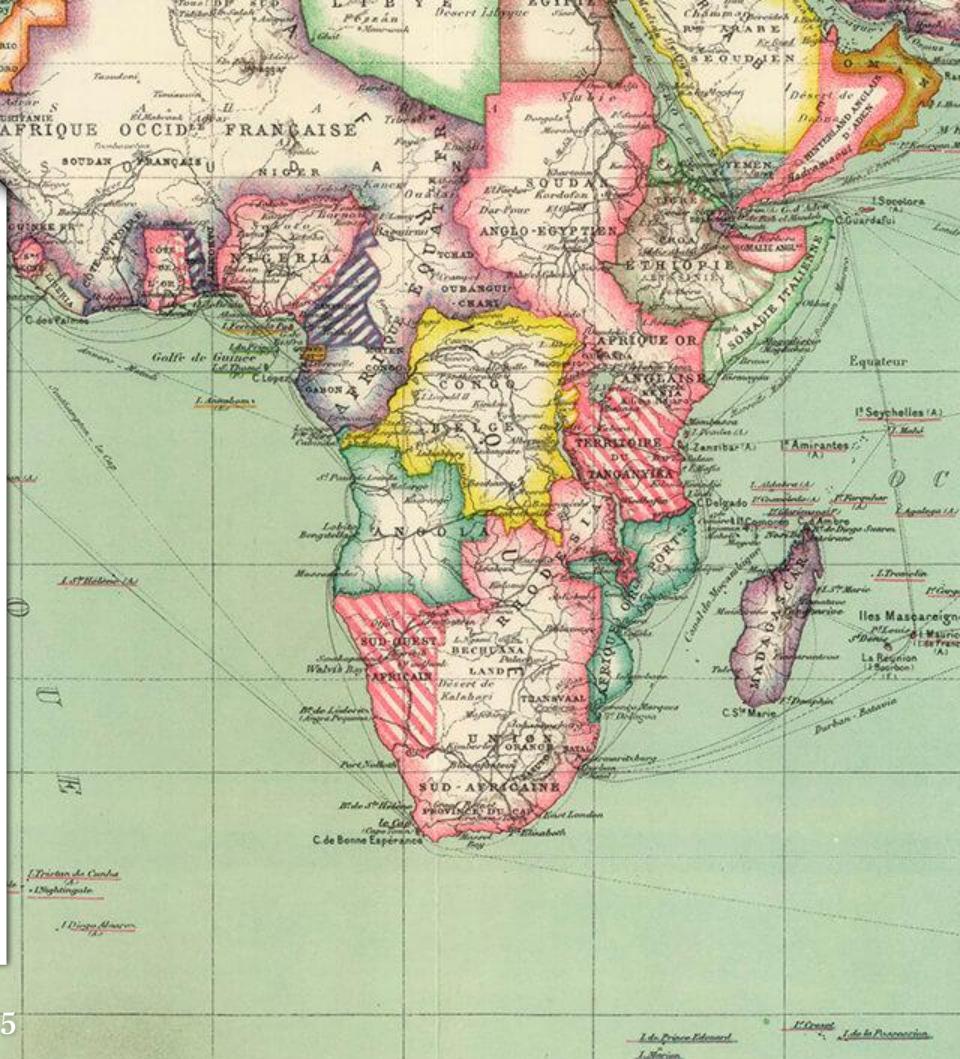
Homework discussion

(Bangladesh case study / student reference work)

Sharing experiences of Surat floods

Kahoot (Compulsory)

<https://play.kahoot.it/#/k/a34a3018-3faf-4e5f-9f1e-b2d7773375e8>



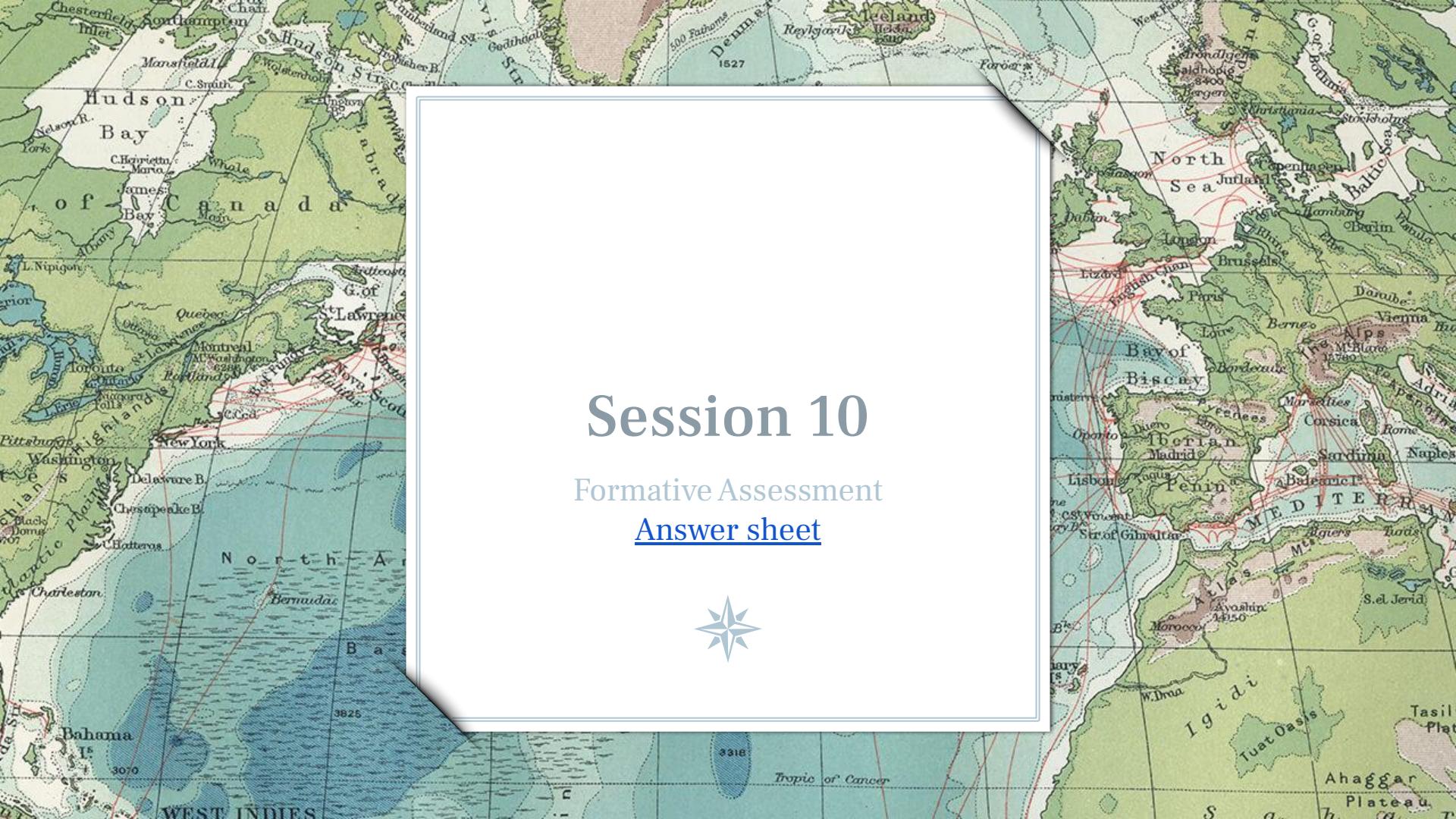
Skills Developed

Communication skills - Paraphrase accurately and concisely;
Preview and skim texts to build understanding;
Organize and depict information logically



Session 10

Formative Assessment
Answer sheet



Session 11



- Worksheet to be taken in class and peer assessment

<https://docs.google.com/document/d/1q-PLrZ5ZVaWM1EEVYlqmZv35CBC-qTpjP8pPJUCL398/edit>

Answer sheet



Skills Developed

Social skills - Collaboration skills
- Giving and receiving meaningful feedback
Communication skills -
Negotiate ideas and knowledge with peers and teachers



Session 12



Research Task

Choose one disaster from the chart(on the next slide) and find a list of all the factors that made this particular disaster so devastating.

Supporting questions:

- Time when the hazard occurred
- Duration of the Hazard
- Other disasters followed by the hazard.
- Casualties happened
- Scale of devastation
- Population of the region or area affected by the hazard
- Is the region affected developed, or developing or underdeveloped.

Type of Natural Disaster	Location	Date	Death Toll and Displaced Persons	Notes
Mudslide	Oso, Washington (USA)	March 22, 2014	42 dead, one missing	This mudslide covered an area of approximately 1 square mile.
Typhoon (Haiyan)	Philippines	November 8, 2013	6,000 dead, 3.6 million displaced	This typhoon had a 13-foot storm surge and winds of up to 235 miles per hour. The typhoon destroyed much coastal infrastructure, including water and sanitation systems, roads, and communication systems.
Tornado	Oklahoma City, Oklahoma (USA)	May 20, 2013	24 dead	These tornadoes had winds of up to 200 miles per hour, and cut a path about 12 miles wide through Oklahoma City. The previous week, tornadoes had killed six people in North Texas.
Earthquake and Tsunami	Fukushima, Japan	March 11, 2011	19,000 dead	This magnitude 9.0 earthquake did tremendous damage and caused a tsunami that inflicted further damage. Three nuclear reactors at a nearby nuclear power plant melted down, releasing radiation into the surrounding areas.
Hurricane (Katrina)	New Orleans, Louisiana (USA)	August 2005	1,800 dead	Hurricane Katrina had winds of up to 175 miles per hour. It is the fourth most-powerful Atlantic hurricane since records have been kept. Eighty percent of New Orleans flooded as a result of this hurricane.

Skills Developed

Research skills - Information literacy skills - Collect and analyse data to identify solutions and make informed decisions ; Make connections between various sources of information



Making connections with the GC - Orientation in Space and Time



- Here we need to look at hazards, **when and where** these hazards happened.
- We need to connect our explorations of **how these hazards impacted, natural and human landscapes and resources.**
- How these hazards based on the **scale, duration, frequency and variability** turned out to be disasters.
- How we will explore all of this through **local, national and global perspectives.**

Class discussion Time!



1. Did your natural disaster have more of an impact today than it would have 50 or 100 years ago? Why?
2. Would the disaster have been as intense or as big 50 or 100 years ago? Why or why not?
3. Whom do these disasters impact the most? Why?
4. Are disasters today less "natural" than they used to be? Why or why not? (Conceptual question)

Purpose of the activity

Humans have been subjected to the impact of natural disasters for as long as they have been on Earth. Disasters, unfortunately, are happening all the time. They are typically the result of a variety of factors, which begs the question, are these “natural” disasters really natural, or are they a result of something else? This activity is designed to get students to think about the variety of reasons why natural disasters occur.

Factors influencing the impact of a natural disaster



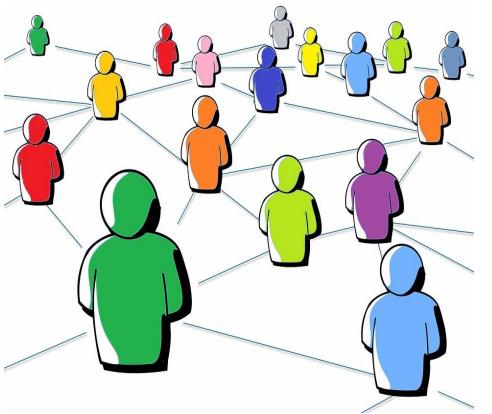
Wealth & development



Time



Population



Homework



- You need to write the answers fairly in your notebook based on the questions discussed in class.
- Use your running notes and insights of the classroom discussion and further research that you have done.



Session 13

“

People shouldn't be living in certain places - on earthquake faults or on flood plains. But they do, and there are consequences.

Vaclav Smil

Nepal earthquake case study:



- Identify the cause of the earthquake.
- What factors made the hazard more disastrous, explain?
- List the consequences of the disaster.
- Can you suggest some responses to such disaster.



Consequences	Human and social impacts	Economic impacts	Environmental impact
Short-term (immediate) impacts	<ul style="list-style-type: none"> • People may be killed or injured. • Homes may be destroyed. • Transport and communication links may be disrupted. • Water pipes may burst and water supplies may be contaminated. 	<ul style="list-style-type: none"> • Shops and business may be destroyed. • Massive infrastructure damage. • Looting may take place. • The damage to transport and communication links can make trade difficult. 	<ul style="list-style-type: none"> • The built landscape may be destroyed. • Fires can spread due to gas pipe explosions. • Fires can damage areas of woodland. • Landslides may occur. • Tsunamis may cause flooding in coastal areas.
Long-term impacts	<ul style="list-style-type: none"> • Disease may spread. • People may have to be re-housed, sometimes in refugee camps. 	<ul style="list-style-type: none"> • The cost of rebuilding a settlement is high. • Investment in the area may be focused only on repairing the damage caused by the earthquake. • Income could be lost. 	<ul style="list-style-type: none"> • Important natural and human landmarks may be lost.

Responses to natural disasters



Short-term responses

- Get people into safe and secure locations.
- Rescue any people trapped or in danger.
- Put out any fires and use emergency services.
- Ensure that there are supplies to clean water, food shelter and medical equipments.
- Ask for help from the international community and aid agencies.

Mid-term responses

- Ensure the transport links are functioning so that aid can reach the people in need.
- Make sure water supplies and electricity are working
- Open schools and hospitals
- Rebuild houses

Long-term responses

- Begin the process of rebuilding infrastructure.
- Develop education programmes to deal with disasters.
- Create buildings suitable to deal with natural hazards
- Improve warning systems.
- Receive long term aid from other countries if needed.

Homework



Imagine you are a government official who has just received news that a magnitude 7.0 earthquake has struck your country. Close to the epicentre, people are trapped in buildings, and entire villages have been flattened as a result of the earthquake. People are in need of essential services and plans need to be made for the long term redevelopment of the affected area. Your brief is to write a 300-word action plan detailing the priorities for the government. Decide what needs to be done and in what order. Explain the short-term, mid-term and long term strategies.



Skills Developed

Organizational skills - Use appropriate strategies for organizing complex information.

Communication skills - Use appropriate forms of writing for different purposes and audiences



Session 14

Formative assessment reportable



Session 15 & 16

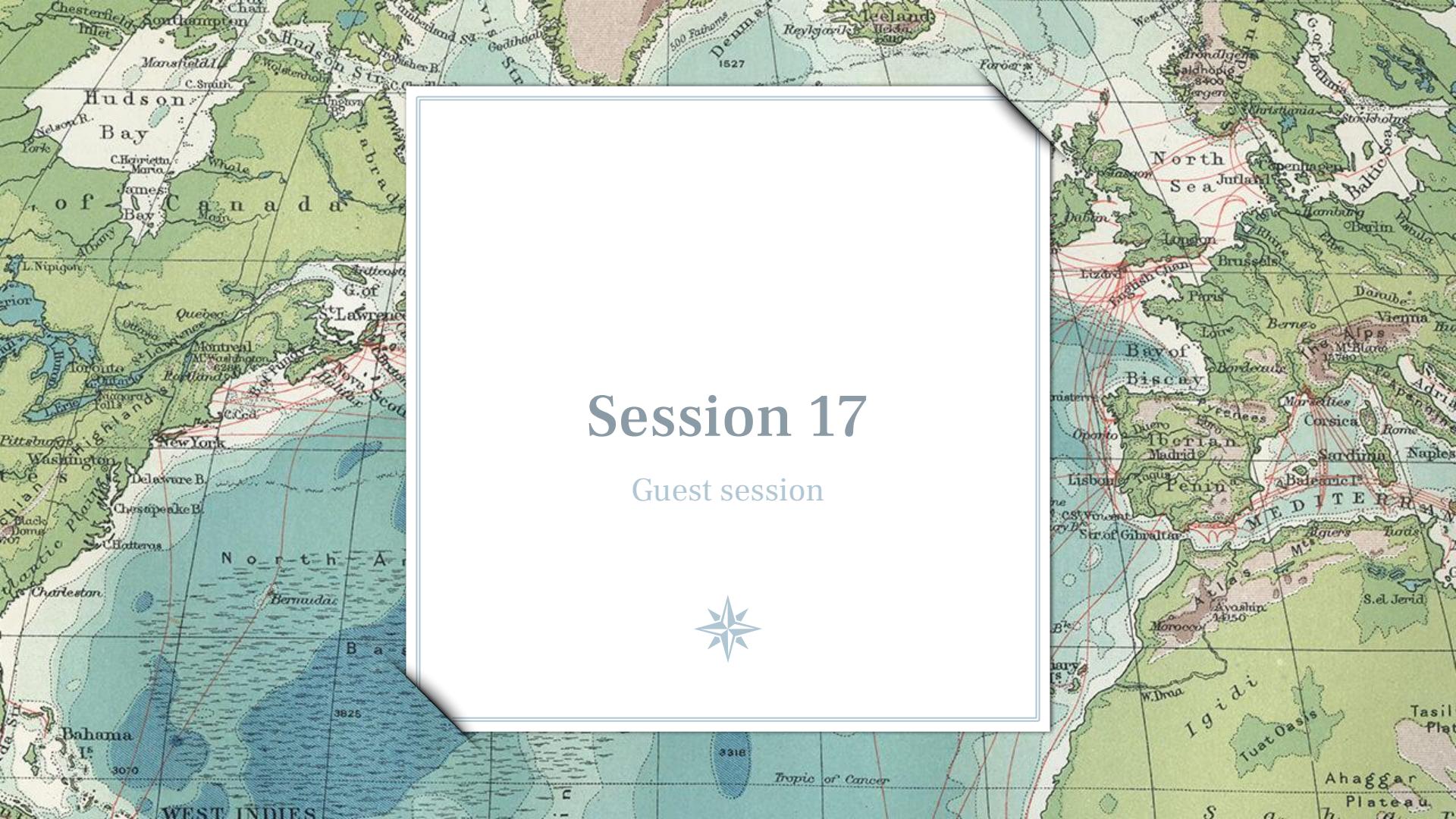
Documentary

<https://www.hotstar.com/movies/before-the-flood/1770004452/watch>



Session 17

Guest session



Session 18

Guest session feedback / Documentary discussion / [FA discussion](#)



Session 19

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We cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness.

Petra Nemcova

Case study of Asian and Japanese tsunami



- Identify the factors which made Indian Tsunami most disastrous ?
- Identify the factors which made Japanese Tsunami most disastrous?
- Can you list the devastation on the humanitarian, economic and environmental level in both the case studies.
- Compare and contrast Indian tsunami with Japan tsunami case study.



Session 20

How natural are natural disasters?



- In pairs list the reasons why wealthier countries may be better able to deal with the consequences of natural disasters than poorer countries.
- Discuss these reasons for it.
- Then discuss and list the reasons why the level of development might not make a difference to the impact of a natural disaster.
- Think about what other factors may play a significant role.



Classwork



Are wealthy countries safer from disaster?

The above is a debatable question. You need to write an answer of 250-300 words. Support of answer with relevant arguments and examples.



Homework



Read the article and other resources provided here, on the recent Kerala floods, and make notes.

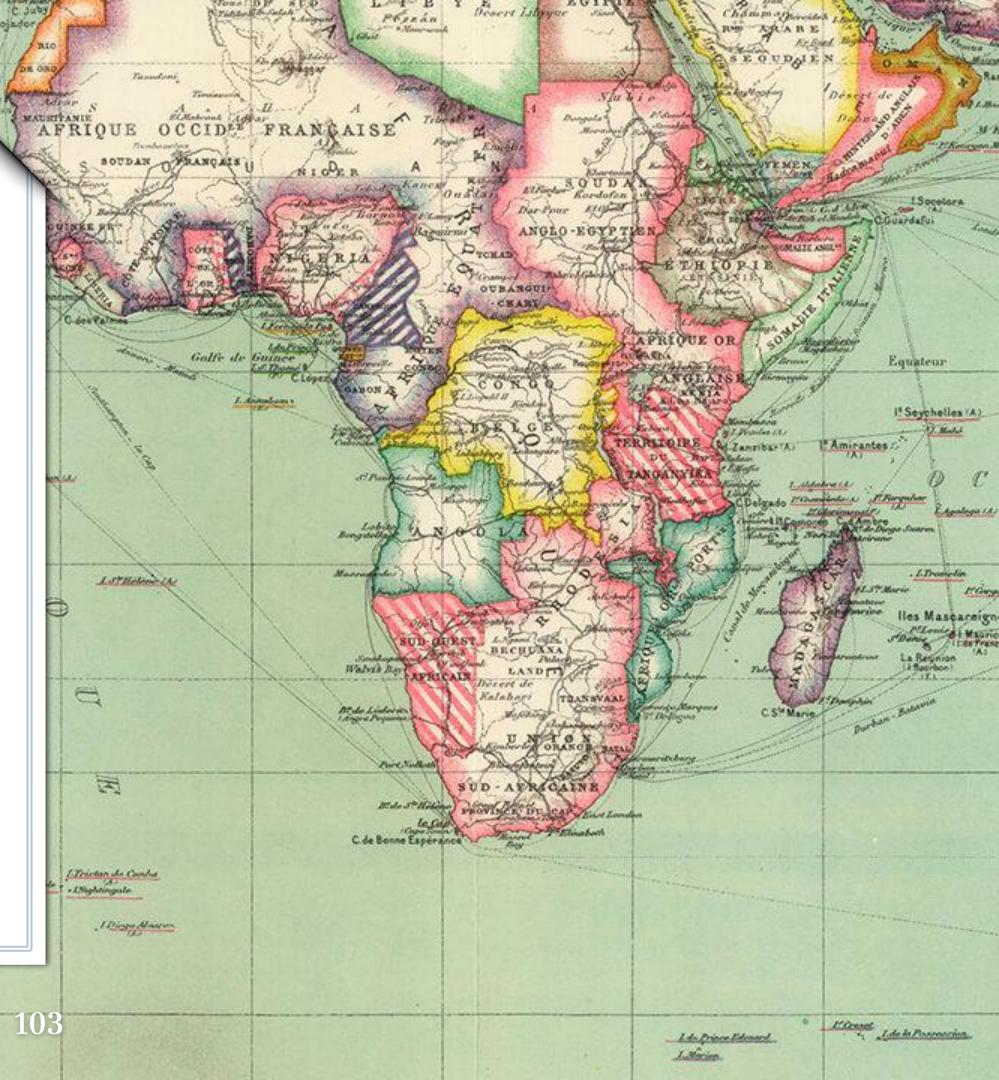
- What caused the rain havoc in Kerala
- Kerala flood documentary (44 min)

Take notes as per Cornell Note Making



Name: _____ Date: _____ Period: _____

Key Points	Details
Summary	



Student Reference

Link of Documentary - World's worst natural disasters

<https://www.hotstar.com/movies/worlds-worst-natural-disaster/1000234014>

Kedarnath Megafloods

<https://www.hotstar.com/tv/kedarnath/s-1214/kedarnath-restoring-the-faith/1770016325>



Session 21



Based on the articles and
analysis of these images and tweets, answer the
below question -

**Is beef eating the reason behind Kerala
floods?**

Your answer should also be in the form of a tweet of 200-250 words.(Write a persuasive writing as a reply to the tweets, after thoroughly investigating multiple sources (articles,newspapers, videos)).

Session 22

“

Some people don't like
change, but you need to
embrace change if the
alternative is disaster.

Elon Musk

(Response and Insurance)



Integrated approach to disaster risk management



(Take notes as per Cornell Note Taking technique)

Name:	Date:	Period:
Key Points	Details	

Skills Developed

Communication skills - Note taking



Session 23 & 24

[Summative Assessment resources](#)
[Summative assessment questions](#)
[Summative assessment answers](#)



Session 25

SA discussion / Unit Feedback

