The Challenge of Natural Hazards – Q1

Natural hazards pose major risks to people and property

What is a natural hazard?

_____

_____

_____

What is hazard risk?

_____

_____

Why is the frequency and strength of natural hazards increasing? (Think about the world's population and what people are doing to make the problem worse).

_____

_____

_____

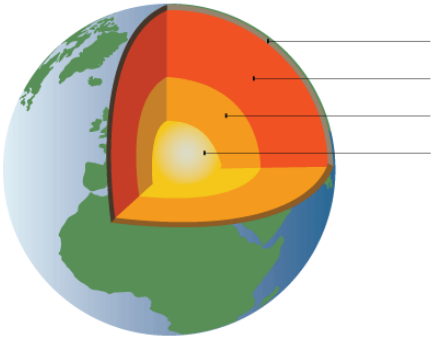
_____

_____

_____

Earthquakes and volcanic eruptions are the result of physical processes

Label the layers of the earth on the image below and give three differences between oceanic and continental crust:

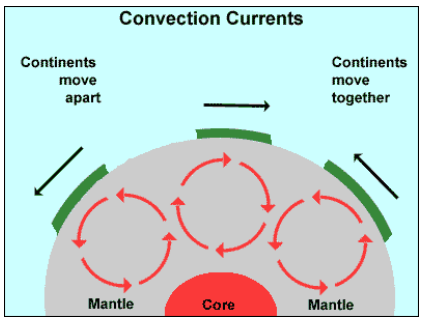


Oceanic crust	Continental crust

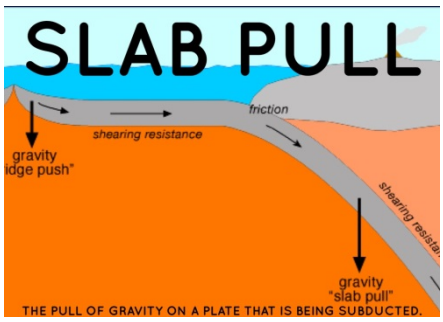
Outline the evidence that tectonic plates are moving.

What are the two theories behind why tectonic plates move?

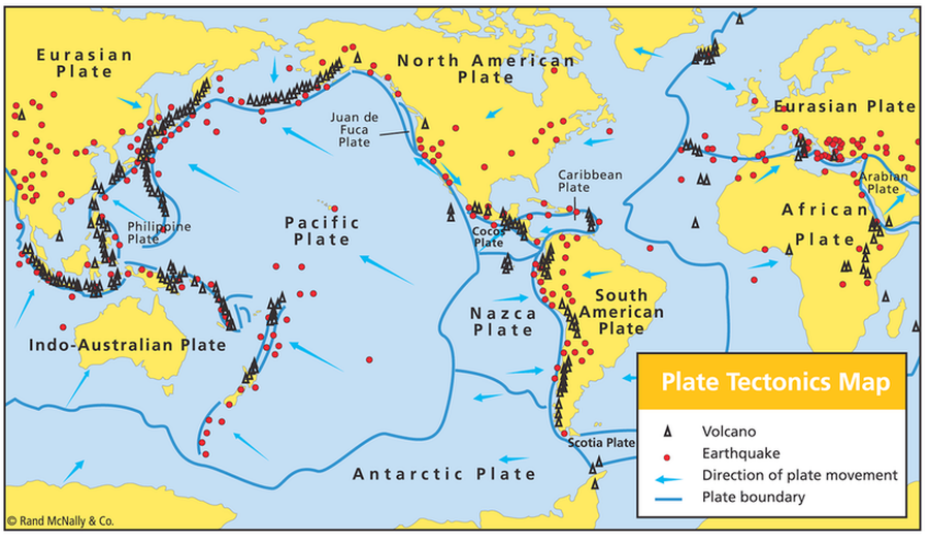
THEORY 1



THEORY 2



Describe the **global distribution** of volcanoes and earthquakes, i.e. where are they?



Draw and annotate the 4 different plate margins in the boxes below. Be sure to explain why earthquakes and volcanoes occur at the plate margins.

Constructive Margin	**Destructive Margin**
Conservative Margin	**Collision Margin**

The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth (i.e. effects of earthquakes are different in rich and poor countries).

What are primary and secondary effects?

_____

_____

_____

What are immediate and long-term responses?

_____

_____

_____

Complete the table below with 3 primary and 3 secondary effects of an earthquake and 3 immediate and 3 long-term responses to an earthquake:

Primary effects	Secondary effects
Immediate responses	**Long-term responses**

Named example of a tectonic hazard in a high income country (HIC)

_____

_____

_____

Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS.

Primary effects	Secondary effects

Immediate responses	Long-term responses

Do you think primary effects or secondary effects were more significant?

_____

_____

_____

Do you think immediate or long-term responses were more significant in? Why?

_____

_____

_____

_____

Named example of a tectonic hazard in a low income country (LIC)

Outline the causes of the earthquake.

_____

_____

_____

_____

Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS,

Primary effects	Secondary effects

Immediate responses	Long-term responses

Explain why the effects and responses were so different in an LIC tectonic event compared to a HIC.

The effects were so different because _____

_____

_____

_____

_____

_____

The responses were so different because _____

_____

_____

_____

_____

_____

Management can reduce the effects of a tectonic hazard

Give 4 reasons why people continue to live in areas at risk from a tectonic hazard:

- _____
- _____
- _____
- _____

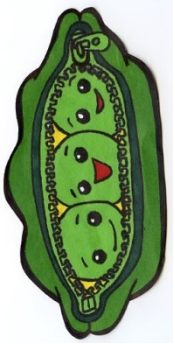
What are some of the benefits of living in Iceland near lots of volcanoes? Which is the biggest benefit and why?

_____
_____
_____
_____
_____
_____

_____
_____
_____
_____
_____
_____
_____

What is monitoring and what are the 3 Ps used to reduce the effects of earthquakes?

Monitoring is _____
_____



Prediction is _____
_____

Protection is _____
_____

Planning is _____
_____

Which of the above four strategies is the most effective in reducing the effects of earthquakes? Why?

Which of the above four strategies is the least effective in reducing the effects of earthquakes? Why?

Which of the above four strategies is the most effective in reducing the effects of volcanoes? Why?

Which of the above four strategies is the least effective in reducing the effects of volcanoes? Why?

Global atmospheric circulation helps to determine patterns of weather and climate

On the model below, add the following features:

- 0° (equator), 30°N and S, 60°N and S and 90°N and S
- Polar, Ferrell and Hadley cells
- Areas of high and low pressure with sun and rain
- NE trade winds, SE trade winds, south-westerly winds, north-westerly winds and polar easterly winds

What is the Coriolis Effect?

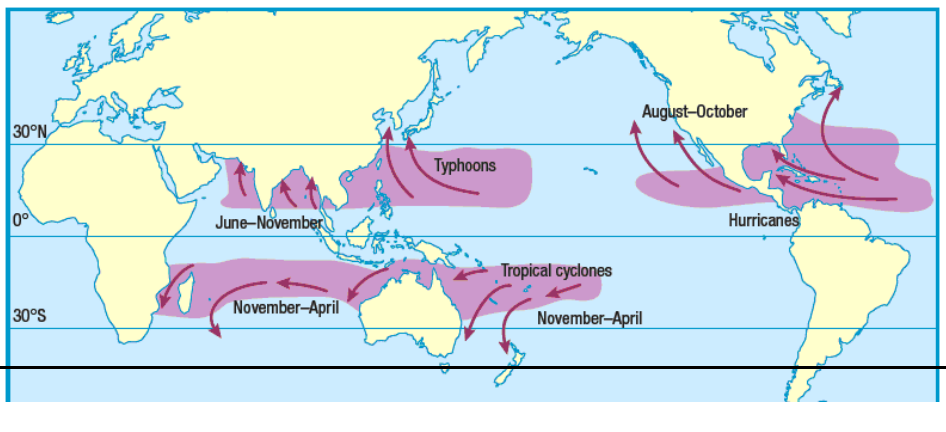
_____

_____

_____

_____

Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions



Describe the distribution of tropical storms. Use lines of latitude and key terms in your answer.

_____

_____

_____

_____

_____

_____

_____

Give 2 conditions needed for tropical storms to form:

- _____
- _____

Write a paragraph to explain the sequence of formation of a tropical storm.

_____

_____

_____

_____

_____

_____

_____

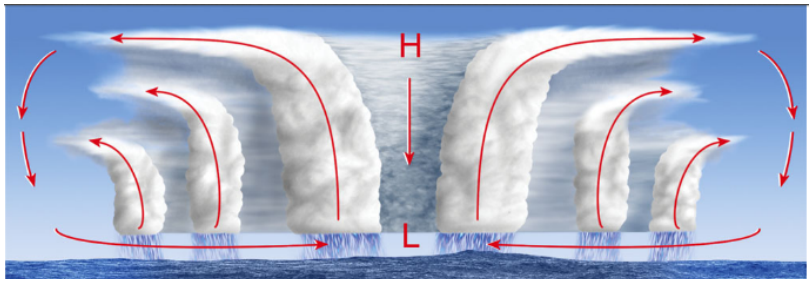
_____

_____

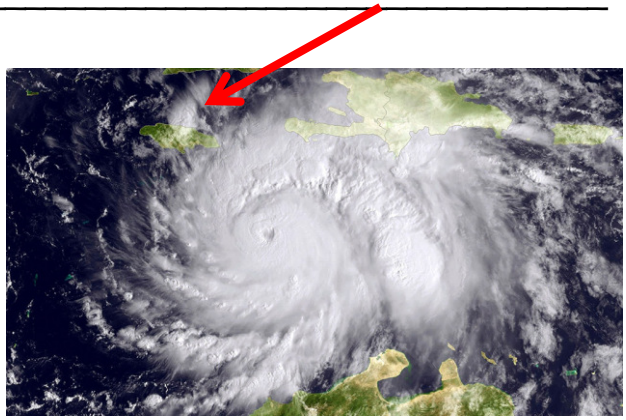
Give 2 reasons why tropical storms may lose their energy:

- _____
- _____

Label the diagram below with the characteristics of tropical storms:



Give the likely 24 – 48 hour weather forecast for the island to the north west of the tropical storm.



How is climate change likely to affect the distribution, frequency and intensity of tropical storms?

Distribution: _____

Frequency: _____

Intensity: _____

Named example of a tropical storm: Typhoon Haiyan, 2013

Describe the path of Typhoon Haiyan.

Complete the tables below with 3 facts in each column – remember to include SPECIFIC FACTS, i.e. facts that could only have happened in Typhoon Haiyan, e.g. numbers, names, etc.

Primary effects	Secondary effects

Immediate responses	Long-term responses

Do you think primary effects or secondary effects were more significant in Typhoon Haiyan?

Do you think immediate or long-term responses were more significant in Typhoon Haiyan?

How can you monitor, predict, protect against and prepare for tropical storms? Give some examples of each in the table below:

Monitor	Predict

Protect	Prepare

The UK is affected by a number of weather hazards

What is extreme weather?

_____

_____

Annotate the photograph below describing the social, economic and environmental impacts of severe snowfall or rainfall in the UK (include impacts you might not be able to see in the images):

Extreme weather events in the UK have impacts on human activity

Named example of a recent extreme weather event in the UK: UK Heatwave, 2015

Outline the causes of the UK Heatwave.

_____
_____
_____
_____
_____
_____
_____

Complete the table below to show the social, economic and environmental impacts of the UK Heatwave 2015 (be specific):

Social impacts	Economic impacts	Environmental impacts

What management strategies were used to reduce the risk to people and the environment?

Immediate responses	Long-term responses

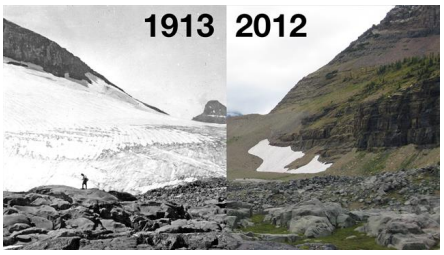
Give 3 pieces of evidence to prove that weather is becoming more extreme in the UK (use your timeline and include facts to show why it was extreme):

- _____
  _____
- _____
  _____
- _____
  _____

Climate change is the result of natural and human factors and has a range of effects

Complete the table below to briefly explain how each factor provides evidence of climate change:

Long-term evidence	Recent evidence
Ice cores:	Melting ice:
Tree rings:	Seasonal changes:
Ocean sediments:	Instrument readings:



Briefly explain how each of the following factors cause climate change:

Natural causes	Human causes
Orbital changes:	Use of fossil fuels:

Volcanic activity:	Agriculture:
Solar output:	Deforestation:

Add 6 labels onto the map below to show the global effects of climate change on people and the environment (they could be positive or negative):

Managing climate change involves both mitigation (reducing causes) and adaptation (responding to change)

What is the definition of mitigation?

_____

_____

_____

What is the definition of adaptation?

_____

_____

Complete the table below to show how we can mitigate and adapt to climate change and briefly outline how each one helps to reduce the effects of climate change:

Mitigation methods	Adaptation methods

What are the advantages and disadvantages of mitigation and adaptation?

Method	Advantages	Disadvantages
Mitigation		
Adaptation		