

PiXL Independence:

Geography – Student Booklet

KS5

AQA Style Tectonics

Contents:

- I. Multiple Choice Questions – 10 credits
- II. Short Answer Questions – 10 credits each
- III. Annotation – 30 credits each
- IV. Suggested Reading/Watching – 50 credits each
- V. Long Answer Questions – 100 credits and 20 for marking your own
- VI. Synoptic Thinking – 30 credits each

I. Multiple Choice Questions

1. Which two plates run adjacent along the West coast of the USA?
 - a. Pacific and North American
 - b. North American and Eurasian
 - c. Eurasian and African
 - d. African and South American

2. Hawaii is located on:
 - a. Constructive plate boundary
 - b. Volcanic hotspot
 - c. Conservative boundary
 - d. Destructive plate boundary

3. Which one of the following is not a major plate?
 - a. Nazca
 - b. Antarctic
 - c. Japanese
 - d. African

4. Intra plate means what?
 - a. Edge of plates
 - b. Oceanic plates
 - c. Continental plates
 - d. In the middle of plates

5. Which is the hottest layer of the earth?
 - a. Inner core
 - b. Outer core
 - c. Crust
 - d. Mantle

6. The process involving the descent of an oceanic plate into the upper mantle beneath a continental plate is known as:
- a. Supra glacial
 - b. Subduction
 - c. Stratification
 - d. Slab pull
7. The upper mantle is also known as:
- a. Mesosphere
 - b. Lithosphere
 - c. Asthenosphere
 - d. Mantle plume
8. Which landforms are associated with collision boundaries?
- a. Ridges and scars
 - b. Fold mountains and plateaus
 - c. Island arcs and ocean trenches
 - d. Rift valleys
9. Which of the following is evidence for the plate tectonic theory?
- a. Paleomagnetism
 - b. Epicentre
 - c. Soil types
 - d. Eruptions
10. Which seismic waves are the fastest?
- a. Primary waves
 - b. Love waves
 - c. Secondary waves
 - d. Rayleigh waves

11. Which of the following is a secondary hazard of an earthquake?

- a. Building collapse
- b. Roads blocked
- c. Liquefaction
- d. Injuries

12. Which scale measures the impact of an earthquake?

- a. Richter scale
- b. Moment magnitude scale
- c. Modified Mercalli scale
- d. Tsunami intensity scale

13. Which type of lava is associated with shield volcanoes?

- a. Andesitic lava
- b. Basaltic lava
- c. Pyroclastic flows
- d. Rhyolitic lava

14. What model refers to how countries can reduce the impact of a disaster; root causes, dynamic pressures and unsafe living conditions?

- a. Risk hazard equation
- b. Dregg's model
- c. Pressure and Release model
- d. Park's model

15. What does the V stand for in the Risk Hazard Equation?

- a. Volcano
- b. Vulnerability
- c. Velocity
- d. VEI

16. Which of the following is not included on hazard profile?

- a. Speed of onset
- b. Magnitude
- c. Location
- d. Spatial area

17. Which of the following countries is in a known hazard hotspot?

- a. UK
- b. Philippines
- c. France
- d. Egypt

18. Park's response curve has which stage last?

- a. Relief
- b. Reconstruction
- c. Rehabilitation
- d. Pre-disaster

19. Mitigation is part of which stage of the hazard management cycle?

- a. Pre- disaster
- b. Response
- c. Relief
- d. Recovery

20. Which of the following is a mitigation method of hazard management?

- a. Earthquake retrofitting buildings
- b. First aid kits
- c. Evacuation drills
- d. Land use zoning

21. Which are the key players for responses to hazards?

- a. Building companies
- b. School teachers
- c. Emergency services
- d. United Nations

22. What does the C stand for in the Risk Hazard Equation?

- a. Capacity to Cope
- b. Children
- c. Climate change
- d. Careful planning

23. Physical vulnerability is:

- a. When there is a lack of education
- b. When people live in hazard prone areas
- c. When a household is unable to cope with a hazard
- d. When the population is too big

24. A mega disaster is what?

- a. Large volcanic eruption
- b. Secondary effects such as a tsunami or landslide
- c. When a major hazardous event becomes catastrophic
- d. A hazard in a remote area

25. A Jokulhlaup is what?

- a. Tsunami warning sign
- b. Mudslides after a volcanic eruption
- c. When the soil acts like a liquid
- d. Ice melt from an eruption creates floodwaters

II. Short Answer Questions

1. Name the 7 major tectonic plates.
2. What are the major intra-plate processes?
3. Who founded the plate tectonic theory?
4. Explain the link between plate boundary type and the strength of an earthquake.
5. What is the difference between the Richter Scale and the Modified Mercalli Scale?
6. Describe the timeline of a tsunami event.
7. List 3 secondary hazards of an earthquake.
8. List 3 secondary hazards of a volcanic eruption.
9. What type of lava is associated with composite cone volcanoes?
10. Annotate the components of the risk hazard equation.
11. Explain the components of the PAR model.
12. Which hazards are associated with the Philippines?
13. Which are the 4 stages of Park's model?
14. The curve in Park's model is known as what?
15. Give 3 methods of pre-disaster mitigation.
16. CRED is linked to what?
17. How can emergency planners and engineers help to reduce impacts of a tectonic hazard?
18. What is the layer of the earth associated with subduction?
19. What key features would you associate with destructive plate boundaries?
20. Fold mountains and plateaus are caused by what plate boundaries?

21. Name the 4 types of seismic waves.
22. Explain the process of liquefaction.
23. List 3 social, environmental and economic impacts of an earthquake event.
24. List 3 social, environmental and economic impacts of a volcanic eruption.
25. How can poverty impact on a tectonic event?

III. Annotation

Study the images and identify evidence, then explain that evidence.

Annotate is more than just label. You need to identify and then develop this further with an explanation as to why what you have pointed to is relevant to the question asked.

Study the image of the aftermath of the Tohoku earthquake tsunami. Annotate the potential social, economic and environmental impacts of the event. Use a separate colour for primary and secondary impacts.



Study the image of the Trans America Pyramid in San Francisco. Annotate the image with how building design can reduce potential damage in an earthquake.



Study the image of the lava flow on Big Island, Hawaii. Annotate the photo with the key characteristics of a volcanic hotspot, shield volcanoes and basaltic lava.



IV. Suggested Reading/Watching

1. How can technology improve a country's vulnerability?
https://www.ted.com/talks/paul_conneally_digital_humanitarianism
2. Is building earthquake proof buildings the best option?
https://www.ted.com/talks/peter_haas_haiti_s_disaster_of_engineering
3. What are the differences between types of volcanoes?
<https://www.youtube.com/watch?v=hLF0IPv7vUU>
4. How are the elements of the risk hazard equation related?
https://www.youtube.com/watch?v=c_t44xzUwTQ
5. What is happening to the plates?
<https://www.newscientist.com/article/mg22329843-000-earths-tectonic-plates-have-doubled-their-speed/>
6. Create comparison hazard profiles of the different tsunamis.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3644289/>
7. How does $EmR/DR/CatR = H + Ex \times V$ differ from the conventional risk hazard equation?
<http://eei.fiu.edu/equation/the-equation/>
8. How can risks be reduced in subduction zones?
<https://pubs.usgs.gov/circ/1428/cir1428.pdf>
9. What were the primary and secondary impacts of the Loma Prieta Earthquake, 1989?
<https://pubs.usgs.gov/circ/1989/1045/report.pdf>
10. How does California prepare for earthquakes?
<https://pubs.usgs.gov/fs/2014/3083/pdf/fs2014-3083.pdf>

V. Long Answer Questions

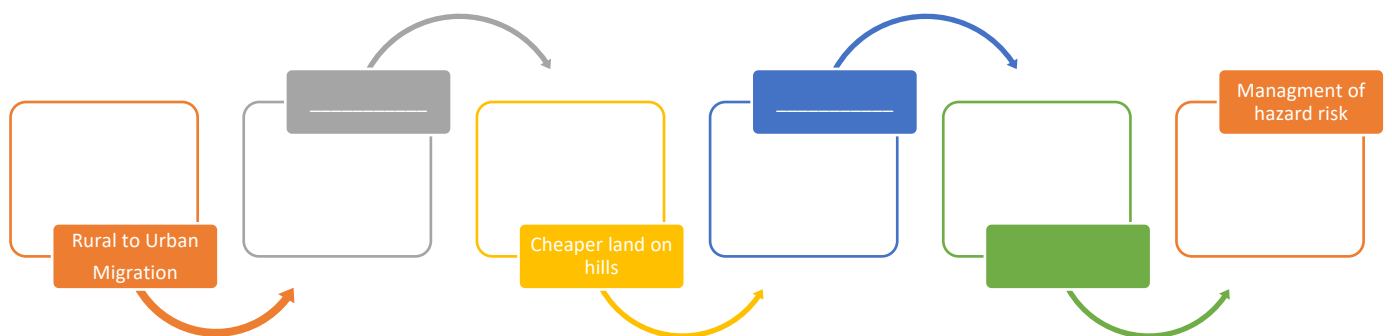
All answers should be written in full sentences and use geographical terminology.

1. To what extent is the Park Model of human response applicable in understanding response to a tectonic event?
2. "There is no realistic defence against earthquakes/volcanic eruptions/tsunamis, wherever they occur." How far do you agree with this view?
3. Discuss the responses to one earthquake/volcanic eruption/tsunami you have studied.
4. Describe the characteristics of, and explain the causes of, volcanic eruptions.
5. With reference to a place you have studied, describe the characteristics that make a multi hazard environment.
6. Assess the range of hazards caused by an explosive volcanic eruption.
7. With reference to a local place you have studied, explain how its social OR economic OR political situation impact upon its ability to cope.
8. Assess the significance of hazard profile in relation to the effectiveness of management strategies.
9. Assess the evidence that supports the theory of plate tectonics.
10. Using an example, assess the relative importance of the concept of vulnerability in understanding hazard impacts.

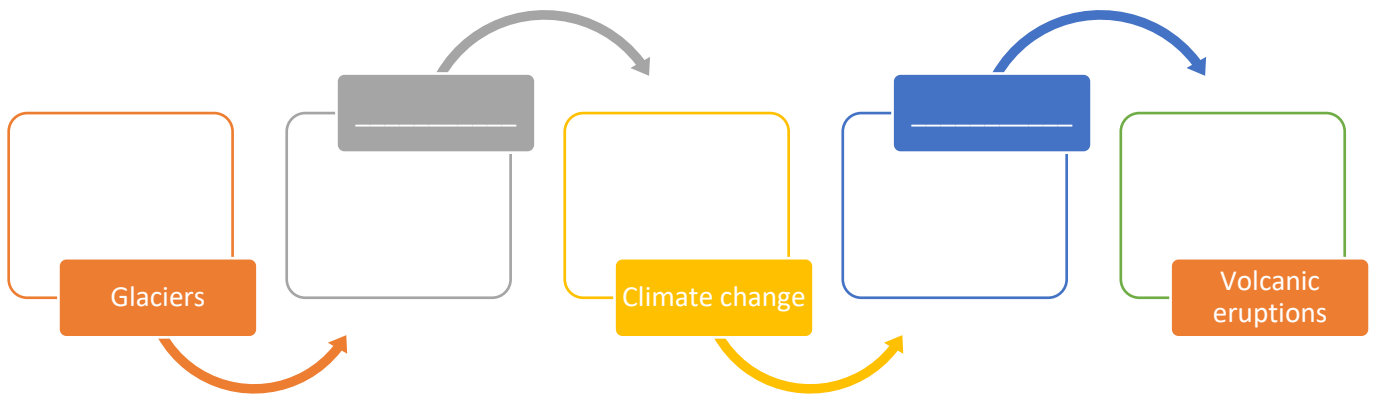
VI. Synoptic Thinking

Can you find the processes, interactions, links that connect the top and the bottom of the chain?

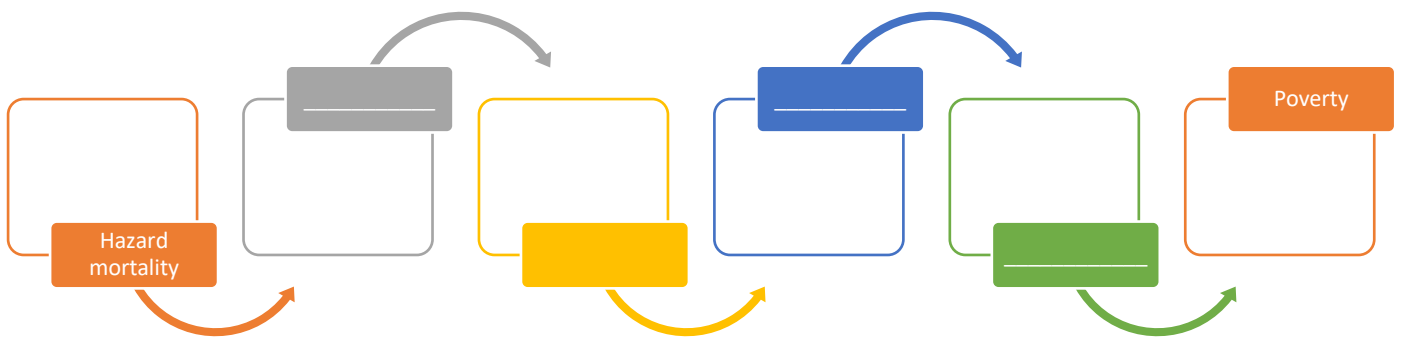
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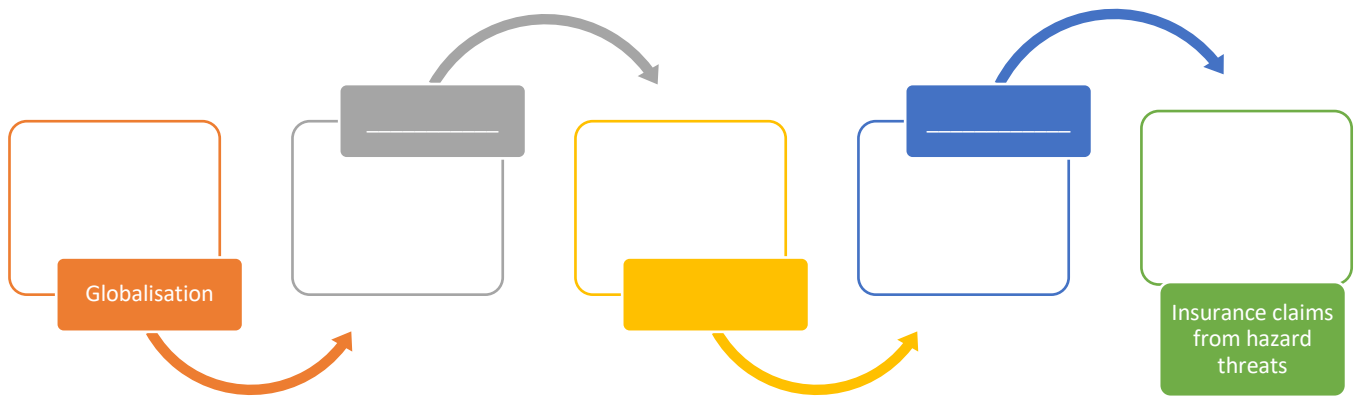
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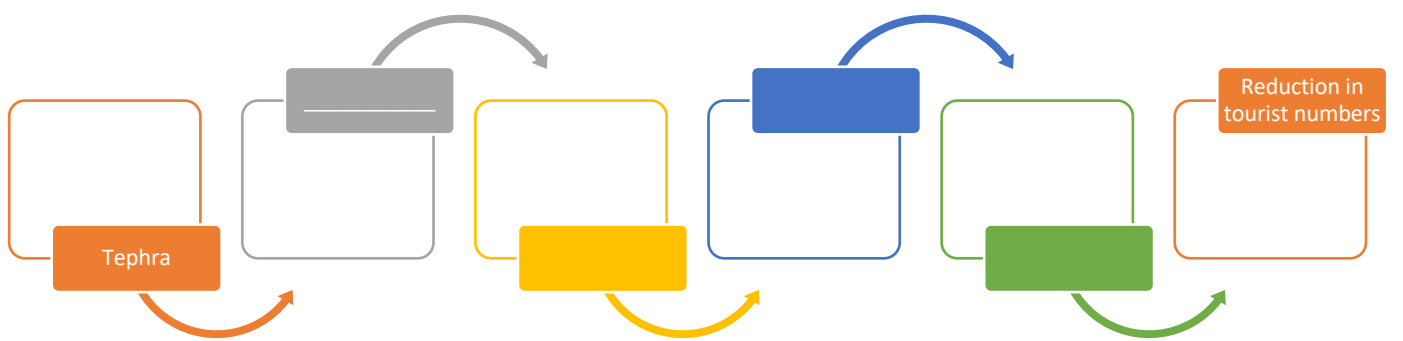
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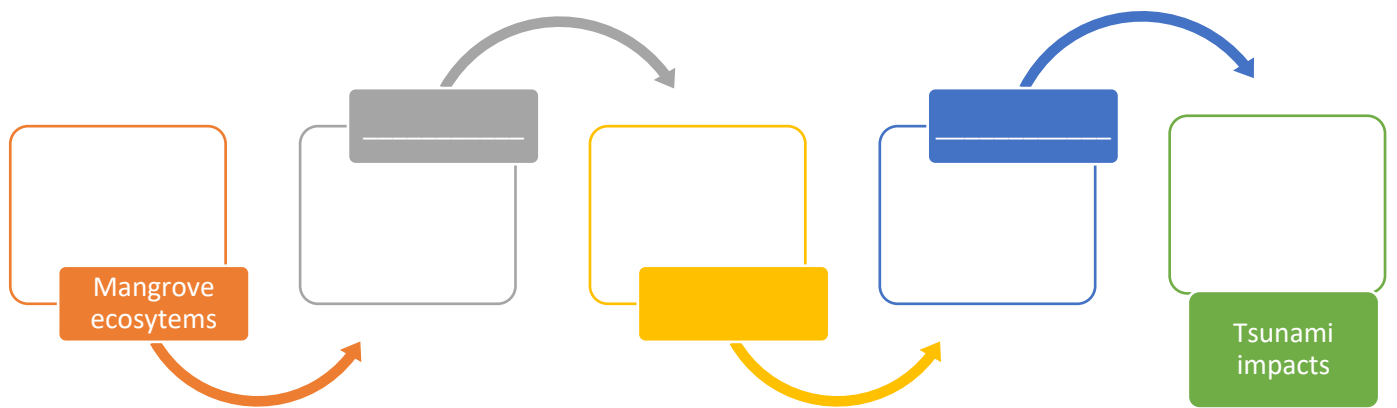
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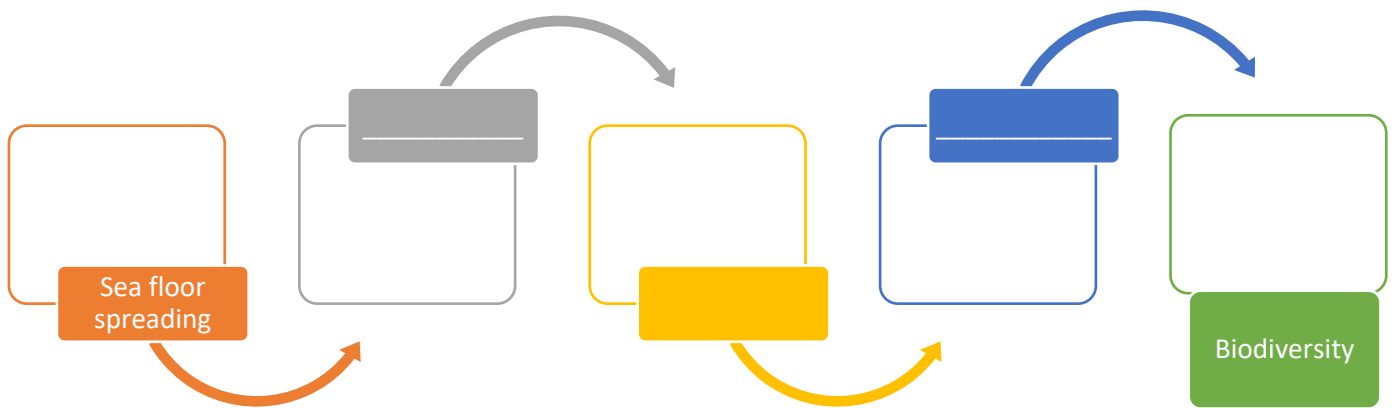
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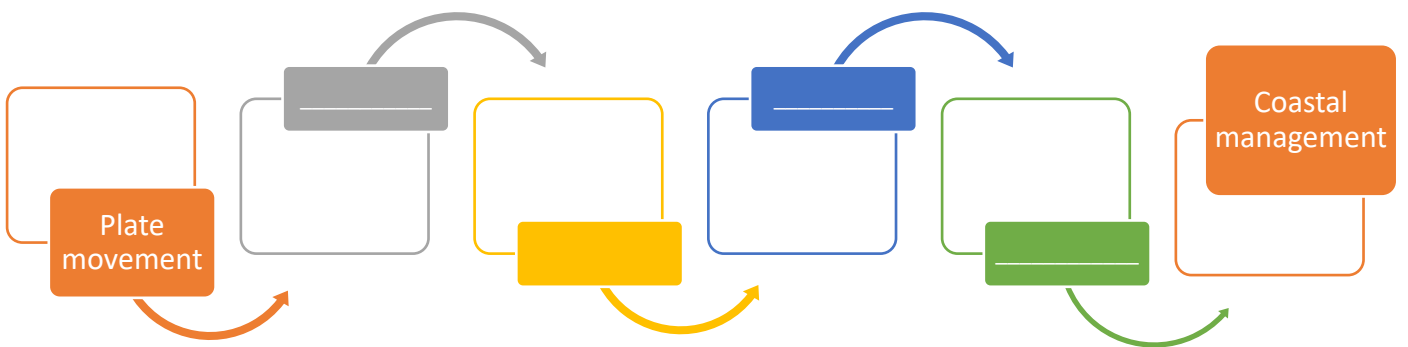
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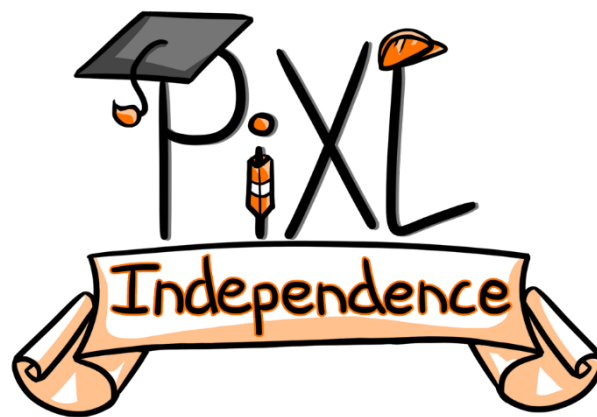


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