GCSE Geography Knowledge Organiser – 3.2.1a
What are the impacts of tectonic processes – Earthquakes

Physical factors

We refer to the power of tectonic hazards as their **magnitude**. Earthquakes are measured on the magnitude scale whilst volcanoes are measured on the volcanic explosivity index (VEI) scale. Higher magnitude disasters would typically cause more damage and make more people vulnerable; however, there are other factors to consider.

The magnitude of an earthquake is reduced the further away from the **epicentre** you are, so people closer to the epicentre will be more vulnerable than those further away. **Softer bedrock** can also amplify the earthquake's shockwaves and make these areas more vulnerable.

Earthquakes that occur below the oceans can create deadly **tsunamis** such as the one that impacted Japan on the 11th March 2011. Waves up to 10 metres high hit the coastline less than half an hour after the initial earthquake. People and infrastructure located on the **coast** were far more vulnerable than those further inland.

Other secondary impacts of earthquakes linked to their physical location are **landslides** and **avalanches**. Areas located on **steep slopes** are more vulnerable to these. The 2015 earthquake in Nepal triggered avalanches which killed hundreds of people and landslides which blocked the only roads into isolated villages and so hindered rescue attempts.

Factors that increase vulnerability to tectonic hazards can be split into two categories:

- **physical** (boxed in green)
- **human** (social and economic factors boxed in orange).

Make sure you know both – they are important for the exam!

Human factors

A country's level of development can have a huge impact on its vulnerability to tectonic hazards. **Low-income countries (LICs)** tend to have more **lax building regulations** or use **inferior building materials**, meaning there is an increased chance of buildings collapsing and killing or injuring people. It can also result in more damage to infrastructure such as transport links or power supplies, the repair of which could take months or even years.

LICs may have **fewer** rescue services and they may not be as well **trained** or **equipped** as a high-income country (HIC). This can mean injured people are not rescued in time and so **death rates increase**. Less-developed **hospital facilities** may also increase death rates.

Long-term impacts such as homelessness, diseases (due to a lack of clean water) or damage to infrastructure such as power and transport will take longer to fix in a LIC, thus making the country more vulnerable to them.

Tsunamis are a **secondary impact** that happen after an earthquake. LIC's communication networks are not as advanced as other HIC countries, meaning not everyone can be warned to evacuate coastal areas causing more loss of life.