COMMON ENTRANCE • KEY STAGE 3

ENDORSED BY ISEB Independent Schools Examinations Board

CE

13+

Geography

Revision Guide

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Boost

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Contents

Introduction

How to use this book

I hope that you find this guide as useful as the pupils of Thomas's Clapham have over the past years. It will be a vital aid before your Common Entrance examination, or your school examinations, and will also be of use during lessons and for homework. Keep it with you as often as possible so that you can make the most of any free time you have.

Throughout the book, you will find the following:

Revision tip

Revision tips will provide guidance to help you revise.

Exam-style questions

You can use these to practise the kinds of question that you will see in the exam. There are answers near the end of the book.

Located towards the end of each chapter, 'Make sure you know' sections contain a summary of the things you really need to know.

Test yourself

At the end of each chapter, these sections will allow you to check that you have learned the chapter properly. There are answers near the end of the book. They also include a list of 'words you need to know' for the exam.

If you are unsure of any topic area, remember to ask your teacher for help. I wish you the best of luck in all of your examinations. Remember that you can be a top geographer!

The Common Entrance 13+ Geography exam

The Common Entrance 13+ Geography exam is one hour long. The paper is split into four sections:

- location knowledge
- Ordnance Survey
- physical geography
- human and environmental geography

You should answer all the questions in all four sections.

The location knowledge and Ordnance Survey sections are each worth 10–15 marks and the physical geography and human and environmental geography sections are each worth 20–30 marks. Another 20 marks come from your fieldwork investigation. This makes a total of 100 marks. Your Common Entrance paper will be marked by the senior school that you hope to attend. The school will work out your final percentage and turn this into a grade (A, B, C, etc.). The percentage required to obtain a particular grade differs between schools.

Location knowledge

- It is best to start with this section of the exam as it can be completed quickly and easily if you have learnt your locations.
- You should spend about **8 minutes** on this section.
- Make sure that you read the questions carefully. If, for instance, you are asked for the name of a country do not write the name of a city!
- If you are asked to mark something on a map, such as a line of latitude or a mountainous area, do not forget to label it.

- Make sure that you practise marking the locations on the continent and world maps in this book.
- This is the most straightforward section to revise for as it is just a case of learning and practising. Quizzes with your family and friends will also help you to revise.

Ordnance Survey

- Ensure that you have a sharp pencil, a ruler and a scrap of paper or a piece of string.
- It is important that you have a flat surface onto which you can place the OS map. You may need to move some items from your desk onto the floor.
- You should spend **10–12 minutes** on this section.
- Make sure that you read the instructions carefully and double-check all your answers. If the question asks for a distance, do not give a direction as your answer!
- Ensure that you always add the correct units to any answer. Use kilometres (km) for distance and metres (m) for altitude.
- Give a six-figure reference for any spot (small) features such as a post office or milestone but a four-figure reference for large features such as woodlands or towns.
- Ensure that you look carefully at the word 'from' in a direction question so that you do not 'go' the wrong way.
- If you are asked to describe a route, remember to break the route into sections and give altitudes, directions and distances, and mention any features that you pass.

Physical geography and human and environmental geography

- You should spend **35–40 minutes** on this section.
- Only two of the three themes will be tested in each of these topic areas.
- Some questions may refer back to the OS map; other questions may use resources such as photos, graphs or diagrams. You must study these carefully before answering the question. (Remember that the line on a climate graph is the temperature and the blocks are the rainfall.)
- You will be given marks for including examples and for drawing relevant diagrams, even if the question does not specifically ask you to do this.
- If you are asked a question about a case study, make sure that you make your answer specific by using names of places and actual figures from the case study.

General points

- Have a watch on your desk. Work out how much time you need to allocate to each question and try to stick to it.
- Make sure you read and understand the instructions and rules on the front of the exam paper.
- Always read the questions carefully, underlining, circling or highlighting key words or phrases.
- Look at the number of marks available in order to assess how much to write for each answer. If you use bullet points to answer a question that offers a high mark, you must make sure that the bullet points include sufficient detail.
- Do not leave blanks. If you do not know the answer, take an educated guess. Wrong answers do not lose marks.
- Make sure that all your diagrams are clearly annotated (labelled with explanations). There are certain diagrams that it is essential you know how to draw. These are clearly marked throughout this book.

- Whenever possible, include impressive geographical terms from the lists of ‘words you need to know’. This creates a good impression and will gain you higher marks.
- If a question is particularly hard, move on to the next one. Go back to it if you have time at the end.
- Organise your time so that you have time to check your answers at the end.

Command words

Make sure you completely understand these words and phrases. Cover up the definitions with a sheet of paper in order to test yourself.

annotate	add descriptive explanatory labels
choose	select carefully from a number of alternatives
complete	finish, make whole
define	give an exact description of
describe	write down the nature of the feature
develop	expand upon an idea
explain	write in detail how something has come into being and/or changed
give	show evidence of
identify	find evidence of
list	put a number of examples in sequence
mark and name	show the exact location of and add the name
name	give a precise example of
select	pick out as most suitable or best
shade and name	fill in the area of a feature and add the name
state	express fully and clearly in words
study	look at and/or read carefully
suggest	propose reasons or ideas for something

These words are only used in the scholarship exam:

discuss	present viewpoints from various aspects of a subject
elaborate	similar to ‘expand’ and ‘illustrate’
expand	develop an argument and/or present greater detail on
illustrate	use examples to develop an argument or theme

Tips on revising

Get the best out of your brain

- Give your brain plenty of oxygen by exercising. If you feel fit and well, you will be able to revise effectively.
- Eat healthy food while you are revising. Your brain works better when you give it good fuel.
- Think positively. Give your brain positive messages so that it will want to study.
- Keep calm. If your brain is stressed it will not operate effectively.
- Take regular breaks during your study time.
- Get enough sleep. Your brain will carry on sorting out what you have revised while you sleep.

Get the most from your revision

- Don't work for hours without a break. Revise for 20–30 minutes, then take a 5-minute break.
- Do good things in your breaks: listen to your favourite music, eat healthy food, drink some water, do some exercise or juggle. Don't read a book, watch TV or play on a computer: these will conflict with what your brain is trying to learn.
- When you go back to your revision, review what you have just learnt.
- Regularly review the facts you have learnt.
- Use past papers to familiarise yourself with the format of the exam.

Get motivated

- Set yourself some goals and promise yourself a treat when the exams are over.
- Make the most of all the expertise and talent available to you at school and at home. If you don't understand something, ask your teacher to explain.
- Find a quiet place to revise and make sure you have all the equipment you need.
- Organise your time so that you revise all subjects equally.

Tips on taking the exam

Know what to expect in the exam

- Use past papers to familiarise yourself with the format of the exam.
- Make sure you understand the language that examiners use.

Before the exam

- Have all your equipment ready the night before. You will need: ruler, calculator, red, yellow and blue colouring pencils, two normal pencils and two ink pens, either blue or black.
- Make sure you are at your best by getting a good night's sleep before the exam.
- Have a good breakfast in the morning.
- Take some water into the exam if you are allowed.
- Think positively and keep calm.

During the exam

- Have a watch on your desk. Work out how much time you need to allocate to each question and try to stick to it.
- Make sure you read and understand the instructions and rules on the front of the exam paper.
- Allow some time at the start to read and consider the questions carefully before writing anything.
- Read all the questions at least twice. Don't rush into answering a question before you have a chance to think about it.
- If a question is particularly hard, move on to the next one. Go back to it if you have time at the end.
- Check your answers make sense if you have time at the end.

1 Tectonics (earthquakes and volcanoes)

1.1 The Earth's structure, tectonic plates and plate boundaries

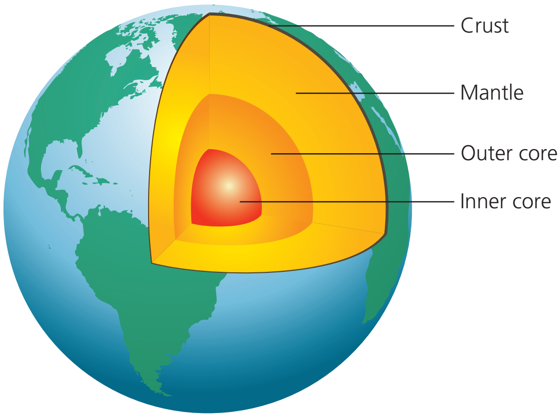


Figure 1.1: The structure of the Earth

The Earth is made up of the following parts:

- Crust – the solid outer layer of the Earth on which we walk.
- Mantle – the next layer towards the centre of the Earth. This is the thickest layer and is made of semi-molten rock called magma.
- Outer core – the next layer towards the centre of the Earth. This is made of liquid metal.
- Inner core – the centre of the Earth. This is made of solid metal and is at a temperature of up to 5500 °C.

Tectonic plates are the huge slabs of rock that form the Earth's crust and float on the mantle (the semi-solid rock beneath the crust).

- Continental plates are thick but light in weight (less dense) and form land. They are made of granite.
- Oceanic plates are thinner but heavier (more dense) and have sea over them. They are made of basalt.

The movement of plates is called continental drift. It is incredibly slow – 4–5 cm per year (about as fast as your fingernails grow). Nevertheless, over millions of years, this movement adds up and can result in continents shifting their positions around the Earth's surface. It can push the plates together or push them apart. Continental drift occurs due to the movement of the magma in the mantle below the plates. The movement of the magma is caused by convection currents generated by the immense heat at the Earth's core.

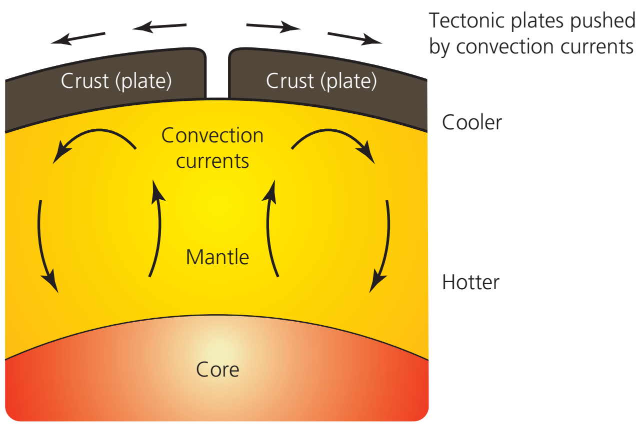


Figure 1.2: Continental drift and plate movement

You will not be required to draw diagrams of plate boundaries in your exam but looking at these may help you to understand the processes.

The edges where the plates meet are called plate boundaries. There are four types of plate boundary: constructive, destructive, conservative (or sliding) and collision.

Constructive plate boundary

- At a constructive plate boundary two plates move apart.
- Magma rises to the surface, due to gas bubbles in the magma that make it lighter than the surrounding rock.
- Volcanoes are formed.
- Gentle eruptions occur which may continue for years.

Most constructive boundaries are under the sea and form chains of volcanic islands. The Mid-Atlantic Ridge is the most famous of these chains.

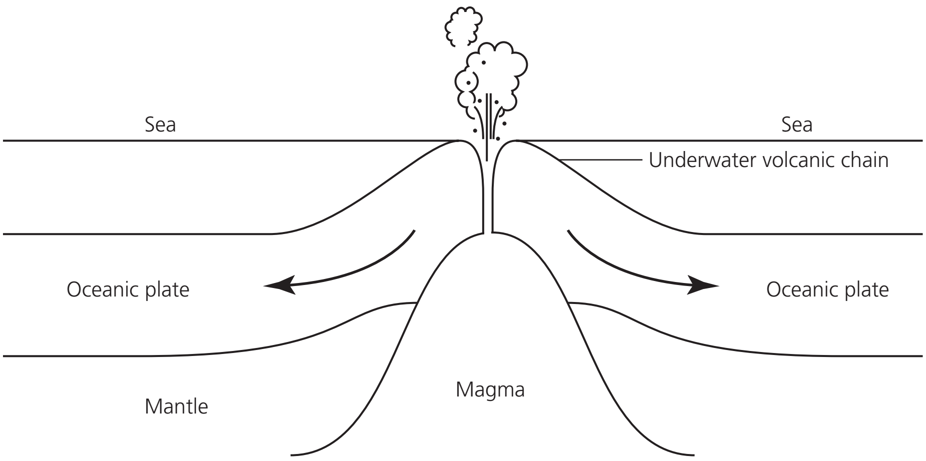


Figure 1.3: Constructive plate boundary

Destructive plate boundary

- At a destructive plate boundary, an oceanic and a continental plate collide.
- The heavier oceanic plate sinks under the continental plate into what is known as a subduction zone.
- The melted crust rises (due to the gas bubbles in the magma that make it lighter than the surrounding rock) to form explosive, dangerous volcanoes.
- When the two plates rub together, friction occurs, leading to earthquakes.

The most famous destructive boundary is the Pacific Ring of Fire, which forms a band of volcanoes around the edge of the Pacific Ocean and includes many active volcanoes in Indonesia. Many earthquakes also occur on the Ring of Fire.

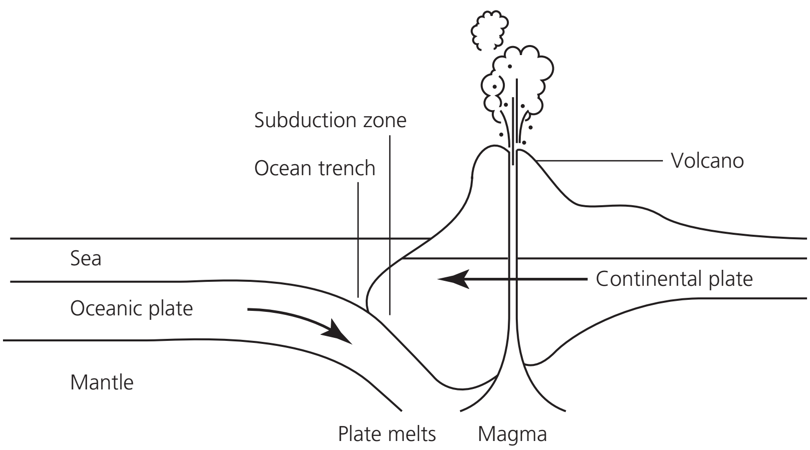


Figure 1.4: Destructive plate boundary

You need to know how to draw this diagram.

These two types of plate boundary are interesting to know about but not needed for the Common Entrance examination.

Conservative (or sliding) plate boundary

- At a conservative plate boundary, two plates slide past each other.
- The plates become locked and tension builds up over years.
- Eventually, the plates will jolt past each other, causing powerful earthquakes.
- Volcanic activity does not occur.

The most famous conservative plate boundary is the San Andreas fault.

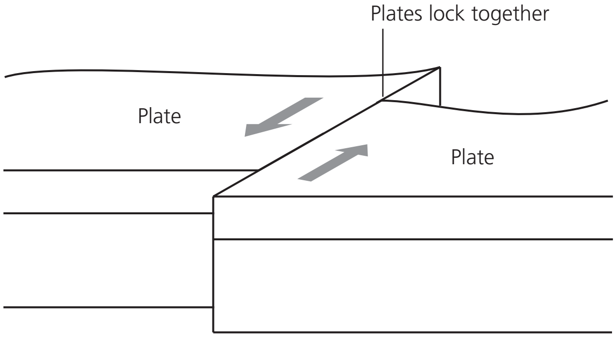


Figure 1.5: Conservative plate boundary

Collision plate boundary

- At a collision plate boundary, two continental plates push together.
- Neither sinks beneath the other as they are both made from light rock.
- The plates buckle to form fold mountains and violent earthquakes occur.
- Volcanic activity does not occur.
- The area where the earthquake starts underground is known as the focus. Directly above the focus, on the Earth's surface, is the epicentre of the earthquake.

The Himalayas are the most famous fold mountains.

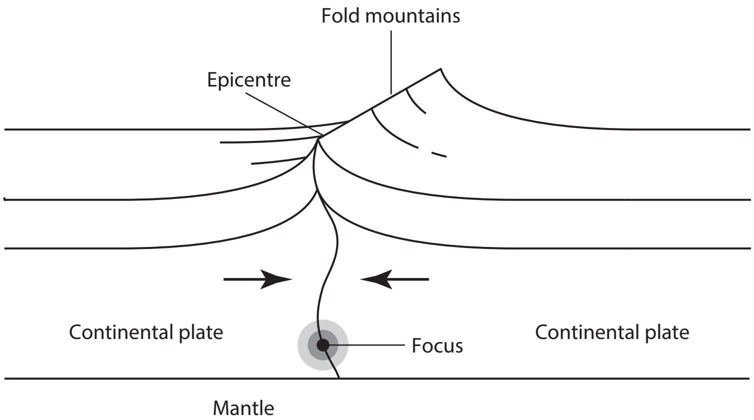


Figure 1.6: Collision plate boundary

Revision tip

Try thinking of hand gestures for each of the four plate boundaries. For example, a constructive plate boundary could be represented by the fingers of your two hands touching on their tips and then moving apart; a collision plate boundary could be represented by clapping your hands. You could make sure that in each gesture, each flat hand represents a plate. Now test your friends.

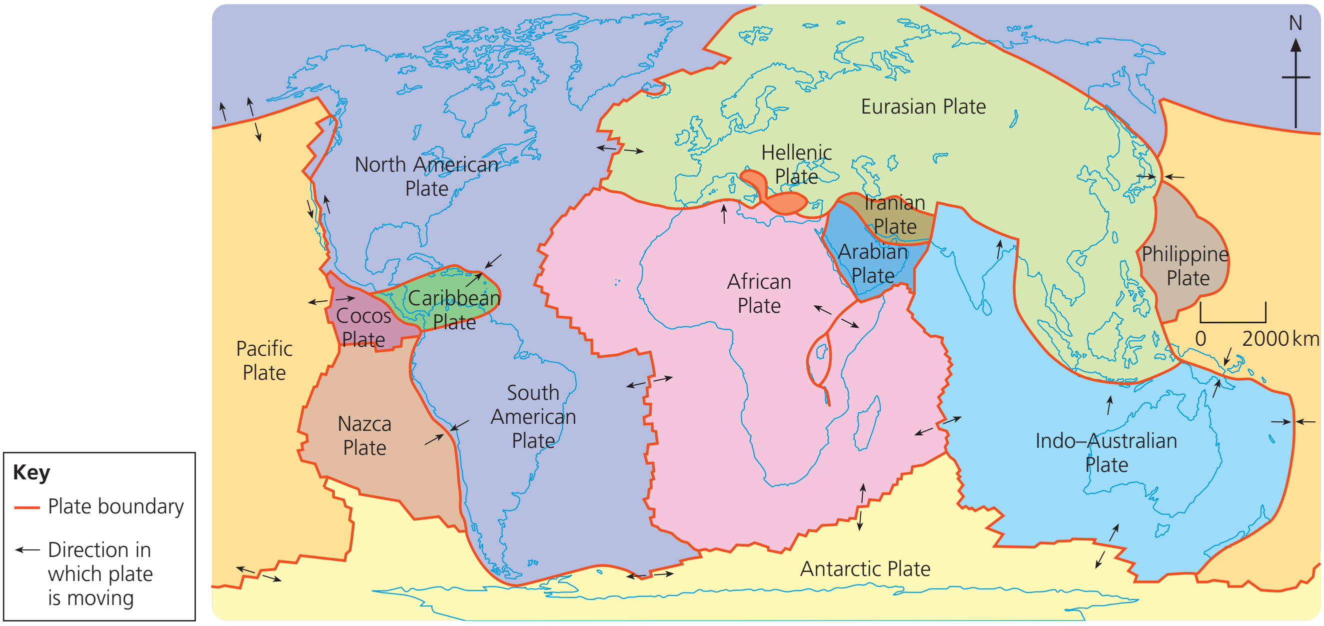


Figure 1.7: Map showing locations of plate boundaries

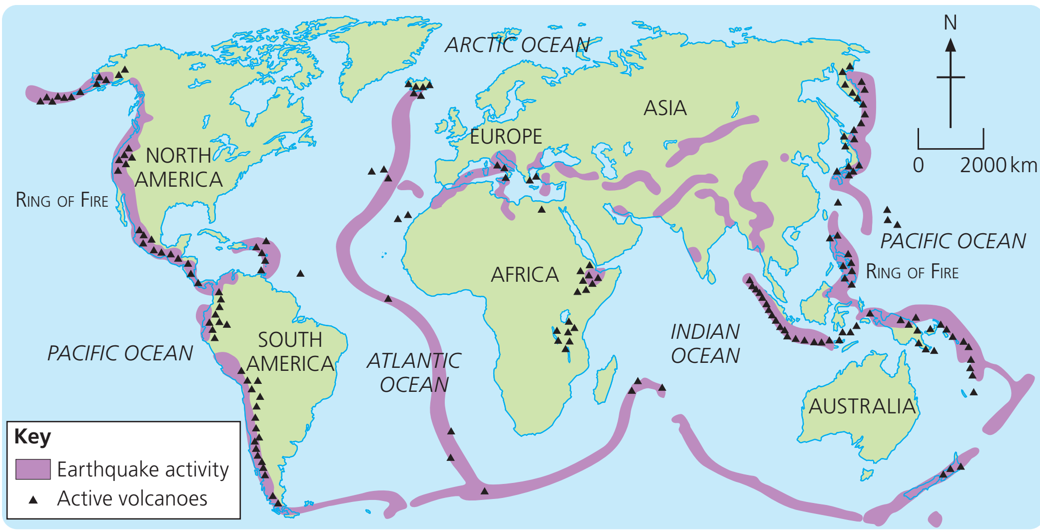


Figure 1.8: Map showing locations of volcanoes and earthquakes

1.2 Types of volcano

There are two types of volcano: composite and shield.

Composite volcanoes

- These steep-sided volcanoes occur in areas of destructive plate boundaries.
- The eruptions are violent, ejecting thick and sticky lava.
- Ash and lava are ejected into the air and descend as slow-flowing, thick lava. The process is then repeated, building up layers of ash and lava.
- Pyroclastic flows (hot gas and ash) travelling more than 160 km per hour can flatten and burn everything in their path.
- Lahars (melted ice or rain mixed with ash) can occur.
- Thick layers of ash leave areas uninhabitable.

Examples of composite volcanoes are Mount Saint Helens, Mount Fuji and Mount Etna.

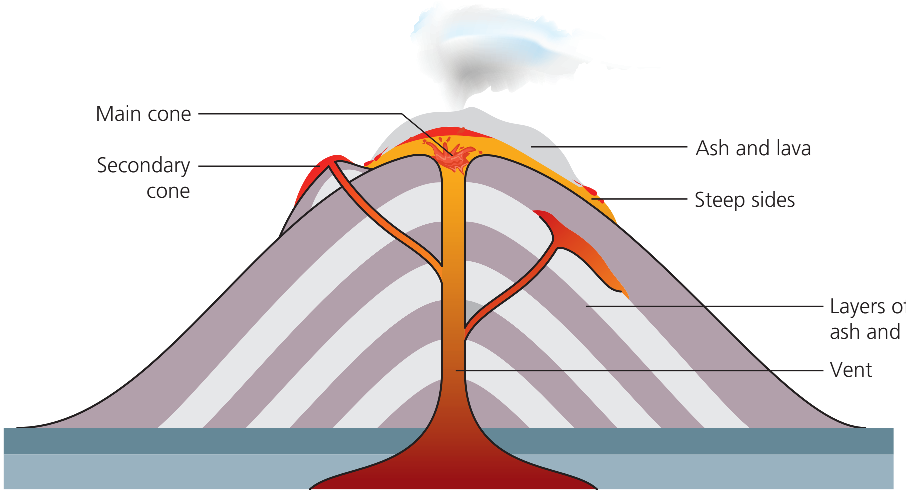


Figure 1.9: Composite volcano

Shield volcanoes

- These occur in areas of constructive plate boundaries.
- Wide, gently-sloping volcanoes eject thin, runny lava.
- The eruptions are not explosive and are less likely to result in loss of life.

Examples of shield volcanoes can be found in Iceland (such as Eyjafjallajökull – see page 17) and Hawaii.

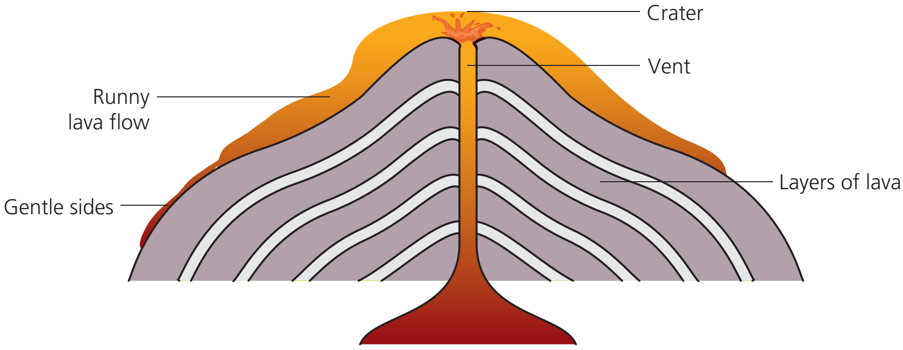


Figure 1.10: Shield volcano

1.3 Immediate effects of a volcanic eruption

- Ash fall
- Mud flow (lahar) – ash mixed with rain or melted ice
- Pyroclastic flow – hot gas and ash rolling down the cone
- Lava flow – molten rock rolling down the sides of the volcano
- Pyroclastic bombs (volcanic bombs) – lava cooling when ejected into the air, falling as solid rock

1.4 Preparing for and reacting to a volcanic eruption

- Hazard maps can be drawn (as in Montserrat) to show which areas are safest and which are most at risk.
- Lava flows can be diverted by channels or explosives, dammed or sprayed with cool water.

- People can be evacuated.
- Seismometers can record the earthquakes that occur as the magma rises.
- Tiltmeters can record changes in the shape of a volcano before an eruption.
- Satellites can record changes in the temperature and shape of a volcano before an eruption.

1.5 Why people live near volcanoes

Despite the dangers of living near a volcano, people continue to live in these areas for a number of reasons:

Revision tip

You could draw a revision picture to represent each of these facts.

- Interest in volcanoes generates tourism and therefore boosts the local economy.
- Geothermal energy can be produced from the rising steam, for example, in Iceland and New Zealand.
- Fertile soil is produced by the weathering of volcanic ash. This soil is particularly good for grapevines.
- Minerals, such as gold and diamonds, can be found in the area.

1.6 Causes and effects of earthquakes

Causes

Earthquakes mainly happen on or near to plate boundaries.

- As the plates slide under, over or past each other, friction causes the plates to lock together.
- As the pressure increases, weaknesses or fault lines in the Earth's crust close to the boundaries begin to fail.
- The fault line breaks, and the stored energy is released and travels outwards from the focus as seismic waves.

Effects

- The epicentre of the earthquake is on the Earth's surface directly above the focus and is likely to suffer the greatest amount of damage.
- The closer the focus is to the crust, the greater the damage.
- The earthquake's energy is recorded by a seismometer, which measures the energy released by the earthquake using the Richter scale (1–10).
- The Mercalli scale (I–XII) is a scale used to measure the damage caused by an earthquake.
- Primary effects happen immediately; they include the destruction of buildings, breaking glass and falling masonry.
- Secondary effects occur hours or days later; these include tsunamis, disease from contaminated water, loss of communications, fire and a damaged economy.

1.7 Preparing for earthquakes

It is very hard to predict an earthquake; only vague predictions can be made from looking at historical patterns of eruptions. However, preparation can be made in areas that are prone to these natural disasters.

- Earthquake drills can be practised in offices and schools.
- Buildings can be built with counterbalances and rubber foundations to withstand even powerful earthquakes.
- Computers can cut off gas supplies as soon as an earthquake breaks, to minimise fires.
- Tsunami walls and shelters can be built in areas prone to this kind of disaster.
- Families can keep survival kits in their homes.

1.8 Factors determining the severity of damage

A number of factors determine the severity of damage caused by a volcano or an earthquake:

- The type of plate boundary that has caused the volcano – destructive plate boundaries cause violent volcanoes.
- The proximity of a volcano or an earthquake's epicentre to a large settlement – those situated near large cities where population is dense cause more deaths than those in less-populated areas.
- The proximity of an earthquake's focus to the Earth's surface – the closer the focus, the more powerful the earthquake.
- The wealth of the country in which it erupts – a high-income country (HIC) can afford scientific prediction instruments, buildings that are designed to withstand earthquakes, a quick reaction force and good medical care for the injured. Low-income countries (LICs) cannot afford equipment to predict earthquakes, to build structures to withstand them or to clean up afterwards.
- The time of day when the earthquake strikes – if it strikes when people are congregated in one area, for example, at rush hour, its results can be more devastating.

1.9 Comparing an earthquake or volcano in a LIC with one in a HIC

- The level of death and injury may be greater in a LIC as the hospitals and emergency services are less effective.
- The cost of repair may be greater in a HIC as the infrastructure is more developed.
- More death and destruction may occur around a volcano in a LIC as many subsistence farmers will farm close to the volcanic cone in order to benefit from the fertile soil.
- The amount of aid received is probably going to be greater in a LIC as the population's needs are greater.
- Greater scientific monitoring and data gathering will occur in HICs. Therefore, prediction will be more accurate in HICs, although predicting an earthquake is very difficult.
- Emergency action plans are less likely to be prepared or practised in LICs.
- Secondary effects may be worse in a LIC, as the level of poverty means that disease is more likely to spread.

Revision tip

You could make a mind map to revise the whole volcanoes and earthquakes topic. Write 'volcanoes and earthquakes' in the centre and then add branches coming off for the structure of the Earth, plate boundaries, types of volcano, immediate effects of a volcanic eruption, why people live near volcanoes, causes and effects of earthquakes, preparing for earthquakes, factors determining the severity of damage and how effects differ between a HIC and a LIC. Each of these categories could then have branches coming off them explaining all of the important points. Remember to use memory pictures rather than words to represent the facts. Use lots of colours, but try to use colour to good effect.

You do not need to learn any case studies for your exams but you may want to use some of the following information to further support your answers.

1.10 Case study – Soufrière Hills volcano, Montserrat, 1995–2013

Facts

- After a long period of dormancy, the Soufrière Hills volcano became active in 1995 and eruptions continued until 2013.

Cause

- The Soufrière Hills volcano is located on a destructive plate boundary of three plates: North American, South American and Caribbean.

Figure 1.11: Map showing location of Soufrière Hills volcano

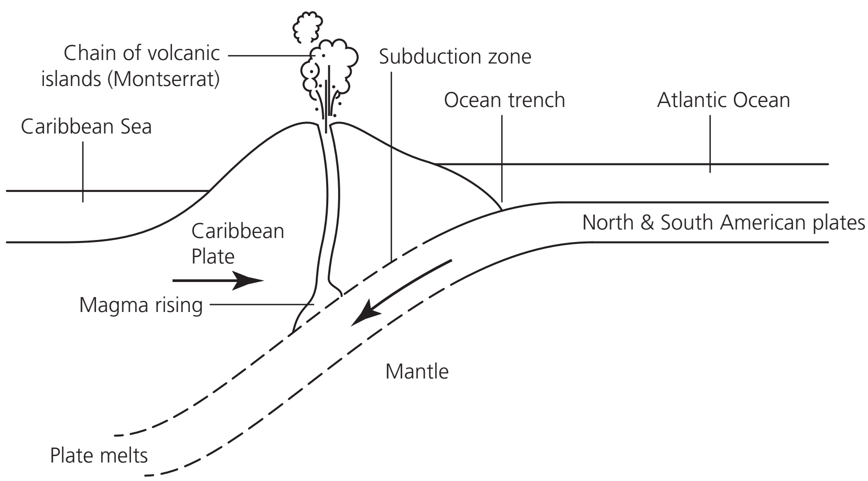
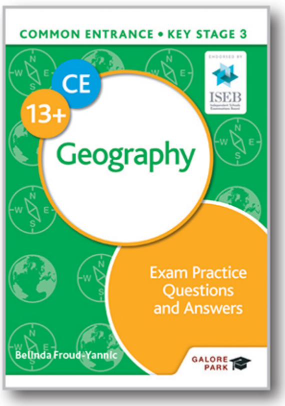


Figure 1.12: Destructive plate boundary (North American, South American and Caribbean plates)

Equip your pupils with the skills and confidence they need to excel in their CE 13+ Geography exams with this comprehensive ISEB-endorsed revision guide.

- **Revise all topics in the specification:** The guide covers all topics in the ISEB specification in depth, including a focus on the environment.
- **Clear illustrations with engaging visuals:** Well-annotated illustrations, photos, maps and charts aid learning and recall.
- **Build confidence ahead of the exam:** Hone technique with the practice of ISEB exam-style questions, with tips and advice along the way.
- **Prepare for the exam:** practice tasks to consolidate revision at the end of each chapter and strategies for performing well in the exam with tips for revising effectively throughout.

Practice with even more exam-style questions with **Common Entrance 13+ Geography Exam Practice Questions and Answers.**



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