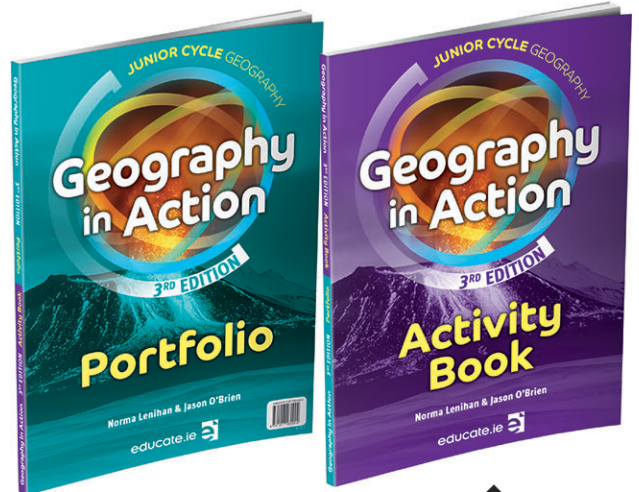
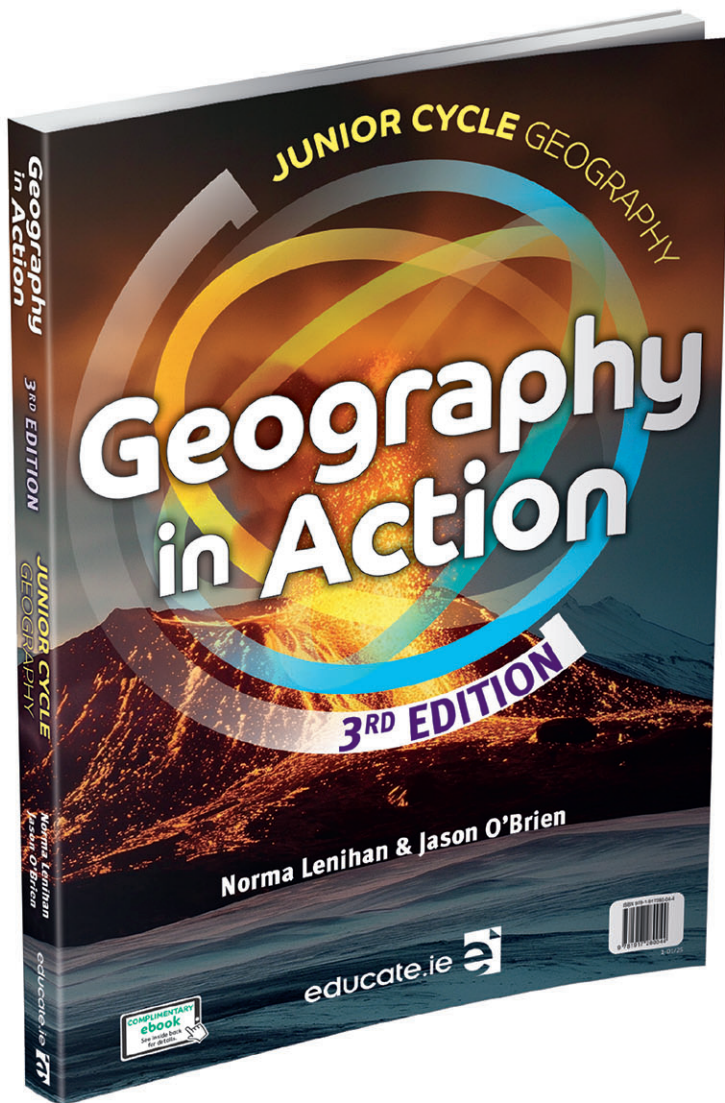


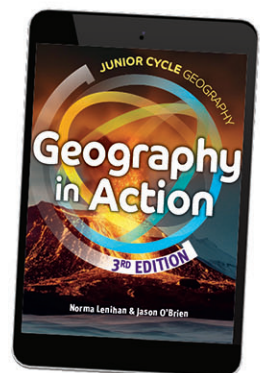
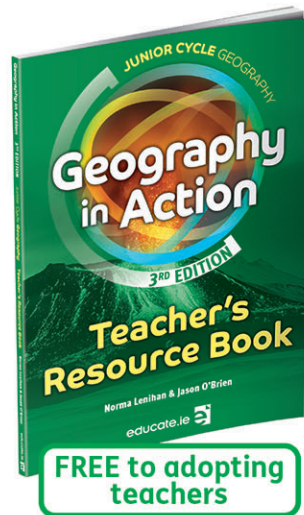
JUNIOR CYCLE GEOGRAPHY

Geography in Action

3RD EDITION



Portfolio and Activity Book combined in one book



The popular *Geography in Action* package has been tried and tested in classrooms around the country. This new edition is informed by:

- ✓ insight on assessment from the final exam
- ✓ teacher feedback
- ✓ changes in the world around us.



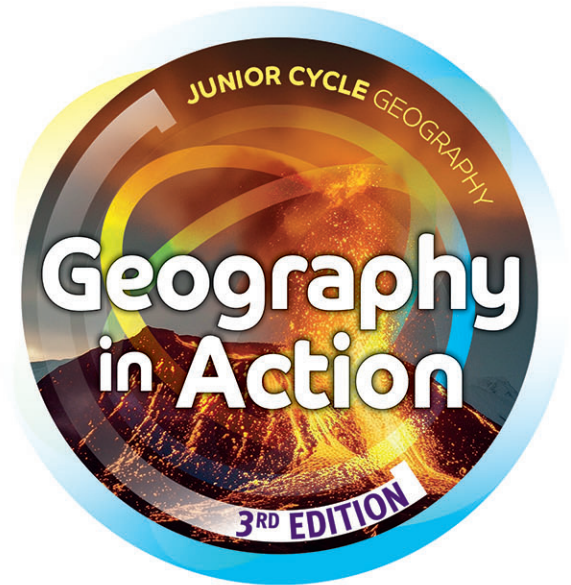
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The Complete Package

Geography in Action (3rd Edition) is the complete package for Junior Cycle Geography. This new edition has been updated to reflect the changes in the world around us and the approaches taken in the final exam in recent years. Much-loved features have been maintained and mixed with timely updates to provide an even better classroom experience for students and teachers alike.

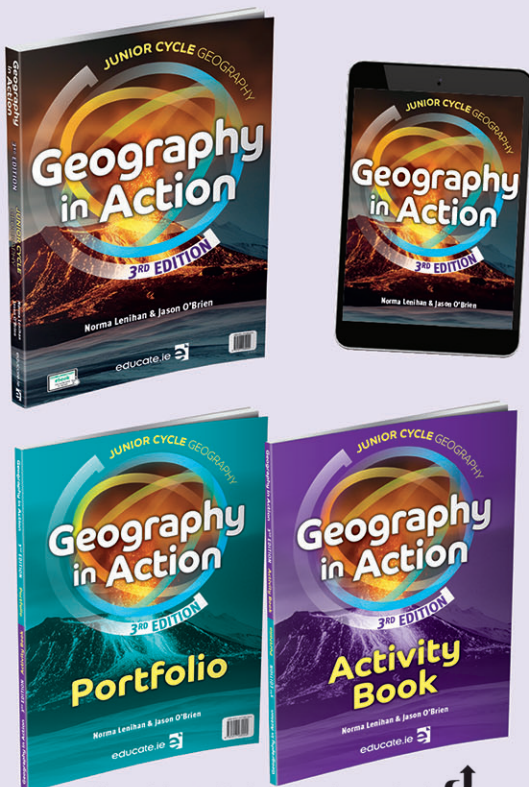
Upgrade to the 3rd Edition for:

- ✓ new Exam Expert sections with annotated sample questions and answers and practice exam-style questions based on the final exam and marking schemes
- ✓ new and updated case studies
- ✓ a new CBA, Assessment Task and Final Exam Advice chapter
- ✓ examples of and information on OS maps at different scales, as seen in the final exam in recent years
- ✓ clear highlighted definitions of key terms
- ✓ accessible language to facilitate all learners
- ✓ comprehensive coverage of geographical skills in Geographical Skills chapters and throughout the book
- ✓ visual summaries at the end of each chapter
- ✓ an easy-to-navigate pathway through the Junior Cycle Geography specification where students meet Learning Outcomes from the three stands in each year of study.



For the Student

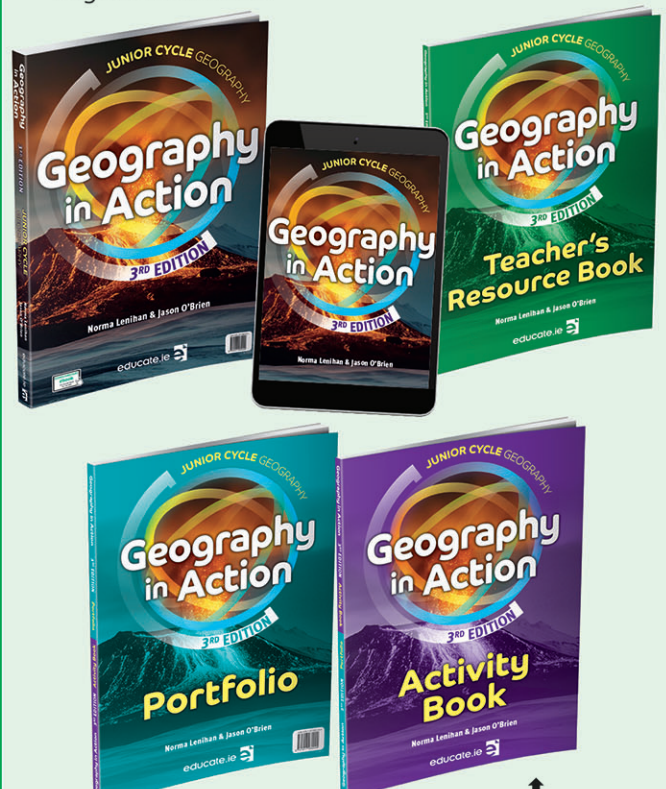
- Textbook with **complimentary** ebook
- Portfolio
- Activity Book
- Digital resources



Portfolio and Activity Book combined in one book

For the Teacher

- Textbook with **complimentary** ebook
- Portfolio
- Activity Book
- Teacher's Resource Book
- Digital resources



Portfolio and Activity Book combined in one book

Take a Look Inside

The **Learning Outcomes** addressed in each chapter are listed at the start of each chapter to aid teacher planning.

In this chapter, you will learn tells students what they will learn about in the chapter.

Chapters open with an **Ice-Breaker Activity** to introduce students to the chapter topic.

Chapters are split into **easy-to-navigate lessons** that open with clear **learning intentions** and a list of **key terms**.

Key terms are **highlighted** and **defined** the first time they appear in the text.

The Earth's Surface: Shaping the crust

Learning Outcomes: 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.21, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28, 2.29, 2.30, 2.31, 2.32, 2.33, 2.34, 2.35, 2.36, 2.37, 2.38, 2.39, 2.40, 2.41, 2.42, 2.43, 2.44, 2.45, 2.46, 2.47, 2.48, 2.49, 2.50, 2.51, 2.52, 2.53, 2.54, 2.55, 2.56, 2.57, 2.58, 2.59, 2.60, 2.61, 2.62, 2.63, 2.64, 2.65, 2.66, 2.67, 2.68, 2.69, 2.70, 2.71, 2.72, 2.73, 2.74, 2.75, 2.76, 2.77, 2.78, 2.79, 2.80, 2.81, 2.82, 2.83, 2.84, 2.85, 2.86, 2.87, 2.88, 2.89, 2.90, 2.91, 2.92, 2.93, 2.94, 2.95, 2.96, 2.97, 2.98, 2.99, 3.00

In this chapter you will learn:

- ✓ that the Earth is made up of layers
- ✓ what plates are and how they move
- ✓ what happens when plates meet or separate
- ✓ how to describe volcanoes, earthquakes and fold mountains and the effects they have on people
- ✓ how people respond to natural disasters like volcanoes and earthquakes.

ICE-BREAKER ACTIVITY

The map of the world below shows the largest 'plates' that make up the Earth's crust and the locations of earthquakes, volcanoes and fold mountains. In pairs, look at the map and discuss these questions:

1. What do you notice about the distribution of fold mountains?
2. What do you notice about the distribution of earthquakes and volcanoes?
3. Do you see any patterns?

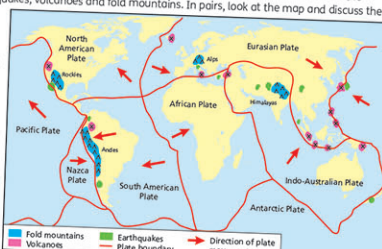


Figure 2.1 The Earth's major plates and plate boundaries today, showing the location of major earthquakes, volcanoes and fold mountains

The structure of the Earth

Learning intentions

In this section, you will learn:

- ✓ that the Earth is made up of layers.

Key terms

Crust
Mantle
Core
Magma

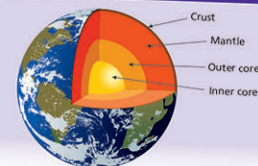


Figure 2.2 Cross-section of the Earth

Content is presented using simple language, accurate diagrams, maps and a well-paced structure.

Animations of some diagrams are available.

Volcanic mountains

- Hot molten rock, known as magma, can rise up from an area within the Earth's crust called the **magma chamber** through a vent. A vent is a narrow tube in the crust. It is called **lava**.
- When the magma reaches the surface, it is called **lava**.
- Lava, hot ash and rocks are thrown into the air as the volcano erupts and an ash cloud is formed. This creates a build-up of material around the vent.
- As more eruptions occur, layers of lava harden on top of other hardened layers until a **cone-shaped volcanic mountain** is formed.
- The lava continues to flow from an opening called a **crater** at the top of the volcano.

Example: Mount St Helens, USA.

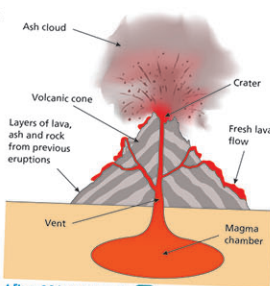


Figure 2.9 An erupting volcano

Types of volcano

There are three types of volcano:

Active volcanoes erupt regularly, for example, Mount Etna in Sicily and Mount St Helens in the USA.

Dormant volcanoes have not erupted for a long time but might erupt again, for example, Mount Vesuvius in Italy.

Extinct volcanoes will not erupt again, for example, Croghan Hill in Co. Offaly.

Mid-ocean ridges

Magma can also rise up from the mantle through the cracks in the crust. The magma then cools, hardens and builds up, forming a ridge of rock called a **mid-ocean ridge** at the constructive boundary.

Example: In the middle of the Atlantic Ocean, the North American Plate and the South American Plate are separating from the Eurasian and African Plates, and the magma that rises up through the cracks or fissures there is creating a chain of mountains on the seabed. This is known as the Mid-Atlantic Ridge.

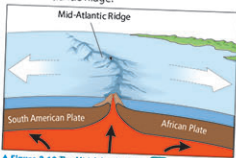


Figure 2.10 The Mid-Atlantic Ridge



Figure 2.11 The Mid-Atlantic Ridge through Iceland

DID YOU KNOW? The word 'volcano' comes from the Latin name Vulcan – the Roman god of fire.

Did you know? boxes provide students with interesting facts related to the chapter topic.

Individual, pair- and group-work **Geography in Action activities** are linked to the Junior Cycle Key Skills and allow students to practise their geographical skills.

Up-to-date and relevant **case studies** bring Geography to life.

Damage caused by earthquakes

- There is loss of life.
- Buildings are damaged or collapse.
- Damage to electricity lines or gas pipelines may cause fires.
- Damage to sewers and water supplies may cause the spread of disease.
- Bridges, roads and railway lines are damaged, often making it difficult to get help into the area.
- Landslides and avalanches can be triggered, causing more death and destruction.
- When an earthquake occurs under the sea, water can be displaced, making a huge wave called a **tsunami**. This may eventually crash onto the coastline, causing devastation.



Figure 2.24 Damage caused by a tsunami

GEOGRAPHY IN ACTION 2.6

In groups, research the impact of a tsunami, such as the one in Southeast Asia in 2004 or Japan in 2011, and answer the following questions.

- What countries were affected?
- What was the death toll?
- How many people were left homeless?
- Describe one short-term response and one long-term response to the event.
- What was life like for people living in these areas afterwards?

How to reduce the damage caused by earthquakes

- Damage can be reduced by constructing earthquake-resistant buildings in earthquake zones. These buildings can be made earthquake-resistant by:
 - putting shock absorbers between a building and its foundations to absorb the tremors
 - reinforcing walls with steel.
- Earthquake and tsunami drills can be conducted so people will know what to do if an earthquake occurs.
- Early-warning systems can be put in place to alert people to the possibility of a tsunami following an earthquake.

GEOGRAPHY IN ACTION 2.7

- Fewer deaths are likely to occur if an earthquake happens at night. Can you suggest why this might be the case?
- Damage is always worse in less economically developed countries. Can you suggest reasons why this might be the case?

The human response to earthquakes

CASE STUDY

Earthquakes in Türkiye/Syria

In the early hours of the morning of 6 February 2023, an earthquake measuring 7.8 on the Moment Magnitude scale struck near the town of Gaziantep in southern Türkiye, near the border with Syria. This was a result of the Eurasian and Arabian Plates colliding. This initial earthquake was closely followed by a second earthquake registering 7.5 on the Moment Magnitude scale nine hours later.



Figure 2.25 Location of the earthquakes

GEOGRAPHY IN ACTION 2.11

Study the OS map and answer the questions.



Figure 2.12 OS map of part of the Wicklow Mountains

- What is the height and grid reference of the highest point you can see on this map?
- Give two pieces of evidence that show that tourists visit this area.
- Draw a sketch of this map and show:
 - a car park
 - land over 400 m
 - the distance of the trail shown on the map.
- Identify three ways in which height is shown on this map.
- Name two land uses shown on this map.

- Name two fold mountain ranges in Ireland.
- Name a fold mountain range in South America.
- Name a fold mountain range in Asia.
- What happens when a lighter plate and a heavier plate collide?
- What happens when two lighter plates collide?
- Can you explain why the Himalayas are still getting bigger but the mountains in Ireland are not?
- Describe the economic and social impacts of how people interact with fold mountains

- I can explain how fold mountains are formed.
- I can say when fold mountains were formed.
- I can describe how people make a living in mountainous areas.

Students get to practise key **geographical skills** throughout the book.

Lessons close with **graded questions** and **self-assessment checks** so that students can manage their own learning.

Chapters close with a **Revision activity**.

REVISION

The layers of the Earth consist of the crust, the _____, the outer core and the _____.

The crust is broken into smaller sections called _____.

There is a _____ between each plate. These plates move due to _____ in the mantle. Alfred Wegener's theory was known as _____ drift.

When plates move towards each other we call them _____ plate boundaries. _____ mountains are formed, and volcanoes and _____ can occur.

The _____ Ring of _____ is an area with a lot of earthquake and _____ activity. _____ are sudden tremors or vibrations in the Earth's crust.

When plates move away from each other we call them _____ plate boundaries. Magma rises from the _____ creating new crust. Landforms include _____ islands and _____ ridges.

Passive plate boundaries are when plates _____ past each other. An example is the San Andreas _____.

Activity Book: There are more activities on pages 8–11 of your Activity Book to put the skills you have learned in Chapter 2 into practice.

EXAM EXPERT

SAMPLE EXAM QUESTIONS AND ANSWERS

Questions

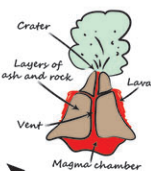
- Using the terms in the box below, explain how a volcano is formed. Use a labelled diagram(s) to support your answer.

Vent Magma chamber Crater Layers of ash and rock Lava

- Explain one way to reduce the damage caused by earthquakes.

Sample exam answers

- Hot molten rock, known as magma, can rise up from an area within the Earth's crust called the magma chamber through a vent. A vent is a narrow tube in the crust. When the magma reaches the surface, it is called lava. Lava, hot ash and rocks are thrown into the air as the volcano erupts. There is a build-up of this material around the vent. As more eruptions occur, layers of ash and rock build up until a cone-shaped volcanic mountain is formed. The lava continues to flow from an opening called a crater at the top of the volcano.



Explain means to give an account, including reasons or causes.

Make sure that you explain all five terms given to you in the question. Use them to structure your answer.

You will pick up marks with a correctly labelled diagram. Again, make sure each term you were asked for is shown and labelled.

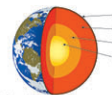
- One way to reduce the damage caused by earthquakes is to build earthquake-resistant buildings in earthquake zones. This can be done by putting shock absorbers between a building and its foundations to absorb the tremors. Reinforcing walls with steel will also make buildings stronger and more earthquake-resistant.

To gain top marks here you need to name your example and then explain how it can reduce damage caused by earthquakes. Two points should be made in the explanation.

PRACTICE EXAM-STYLE QUESTIONS

Question 1

- Examine the diagram showing the different layers of the earth. Match each of the letters A, B, C and D with the term that best matches it in the table opposite.



Term	Letter
Inner core	
Crust	
Outer core	
Mantle	

- Which of the following terms best describes a volcano that has not erupted in a long time but may erupt again? Tick (✓) the correct box.

Active volcano <input type="checkbox"/>	Dormant volcano <input type="checkbox"/>	Extinct volcano <input type="checkbox"/>
---	--	--

- Using an example that you have studied, discuss one impact of volcanic activity.

Question 2

- What is the name for the outer layer of the Earth that is made up of plates?
- Name two plates that are separating from each other.
- Name two landforms that are created when plates separate.
- Name an example of a range of fold mountains located outside of Ireland that you have studied.
- Describe two socio-economic activities you might expect to find in a mountainous area.
- Draw a labelled diagram to show the formation of fold mountains at a colliding plate boundary. Label each of the following on your diagram: two colliding plates, convection currents, mantle, fold mountains

Question 3

Read this article and answer the questions below.



Japan earthquake, 2024

A powerful magnitude 7.5 earthquake hit 85 km away from Tokyo, Japan on 1 January 2024. The earthquake caused a large number of deaths (260 in total) and injuries, while damage to buildings and infrastructure was catastrophic in the areas near the epicentre. The earthquake generated a tsunami that caused a significant part of the damage.

- According to the article how many people died as a result of the disaster?
- Give one example of the destruction caused by the earthquake mentioned in the article above.
- Which of the following is the instrument used to measure an earthquake? Tick (✓) the correct box.

Richter scale <input type="checkbox"/>	Seismograph <input type="checkbox"/>	Moment Magnitude scale <input type="checkbox"/>
--	--------------------------------------	---
- Explain each of the following terms in relation to earthquakes:
 - focus
 - epicentre
 - tsunami
- Explain how an earthquake occurs. Use a labelled diagram to support your explanation.
- Briefly describe one long term response to earthquakes.

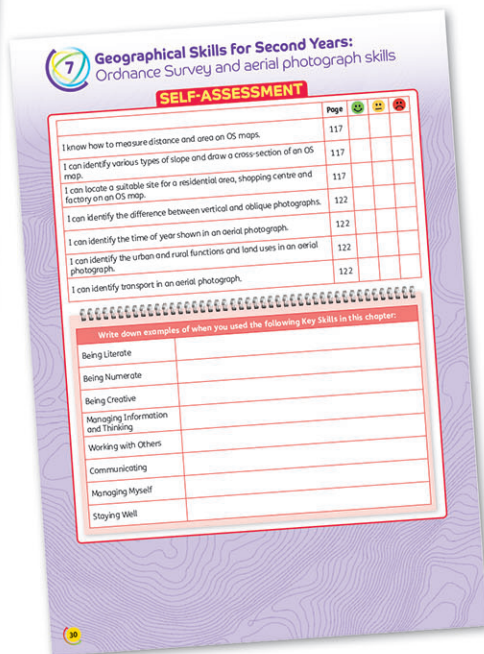
Exam Expert sections at the end of each chapter prepare students for the final exam by giving them annotated sample exam questions and answers, exam advice and practice exam-style questions.



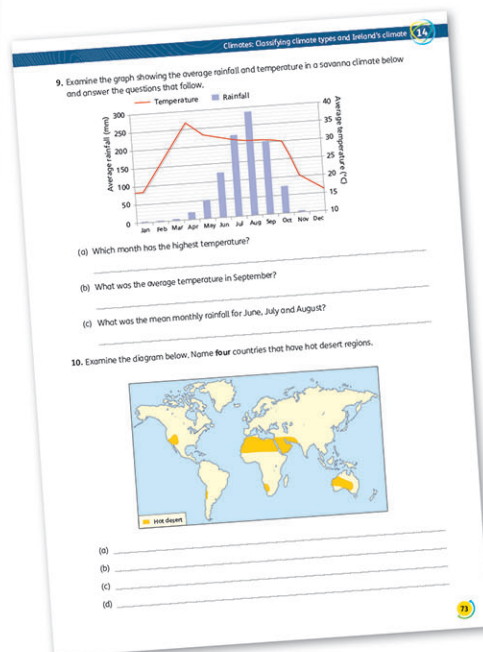
View the flipbook

Portfolio

- create and store fantastic examples of their work
- reflect on their learning and their use of the Junior Cycle Key Skills
- complete self-assessment checklists
- develop action plans based on their self-assessment
- prepare for their CBAs.



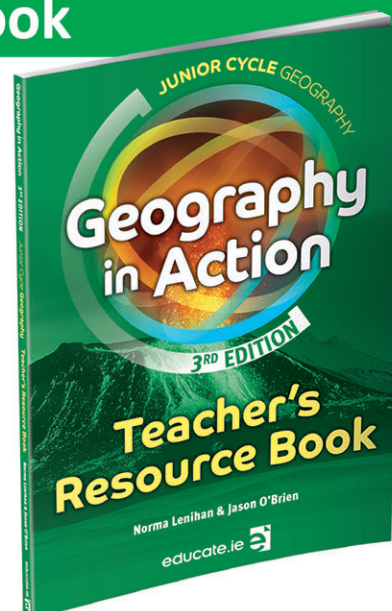
Activity Book



Teacher's Resource Book

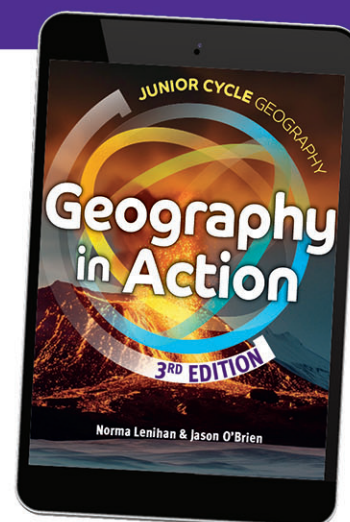
The invaluable *Geography in Action* Teacher's Resource Book provides the ultimate support for planning, teaching and assessing Junior Cycle Geography. It includes:

- information on the specification
- sample schemes of work and year plans
- chapter guidelines and additional resources
- solutions
- information on assessment.



Digital Resources

- PowerPoints
- Editable planning documents
- Videos
- Animations
- ebook



About the Authors

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Jason O'Brien is a Geography teacher with over 20 years teaching experience in St Munchin's College, Limerick. He is a graduate of Mary Immaculate College with an honours degree in Geography and History. He also has a HDip in Education from University College Cork and an MA in History from University of Limerick. Jason has corrected at state exam level for both Junior and Senior Cycle Geography. He also creates and advises on mock examinations for Junior Cycle Geography.



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