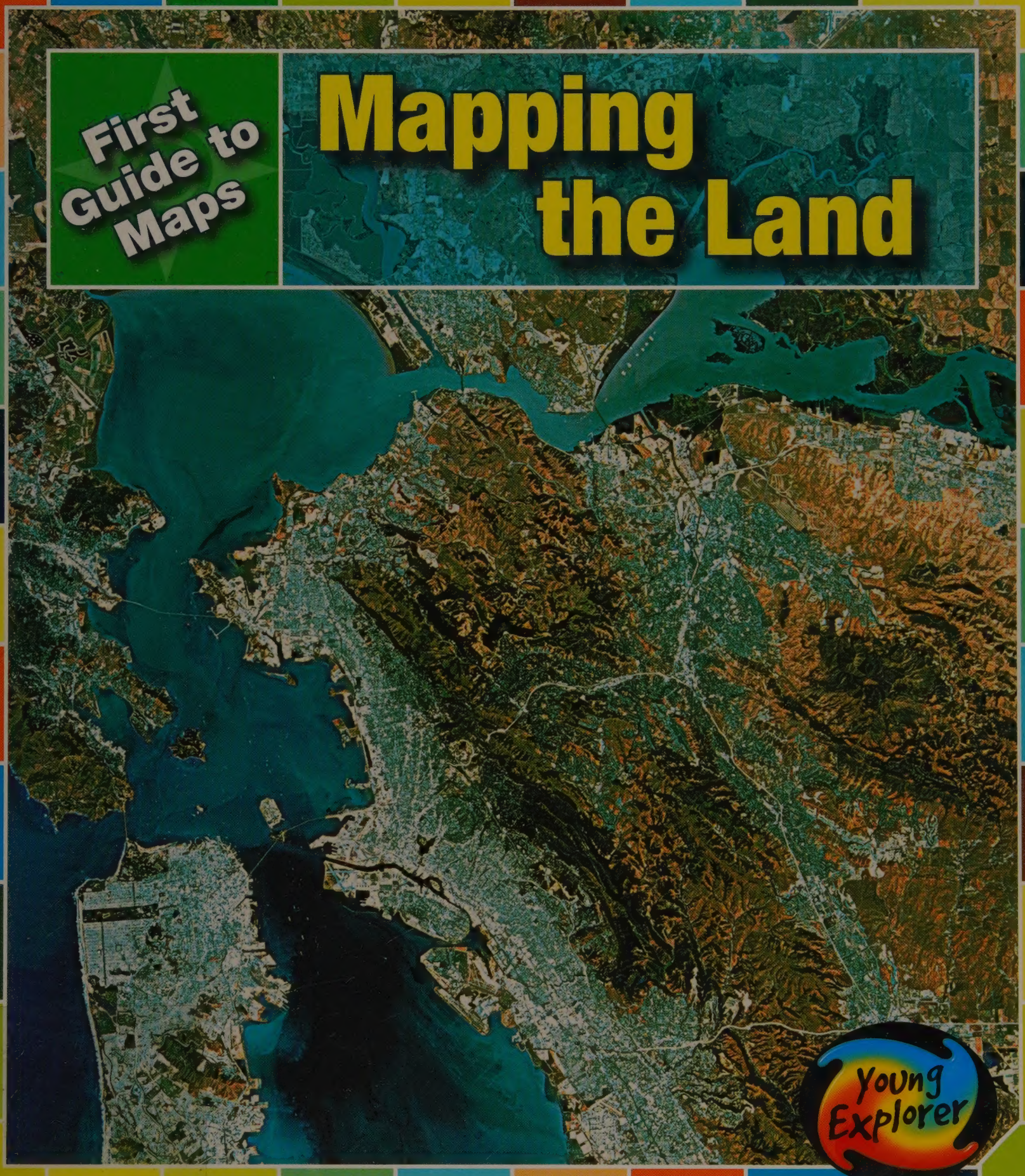
First Guide to Maps
Mapping the Land
Young Explorer

First Guide to Maps

Mapping the Land

Marta Segal Block and
Daniel R. Block

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Contents

Any words appearing in the text in bold, **like this**, are explained in the glossary.

What are maps?

Maps can help you to find places around the world.

A map is a flat drawing of a part of the world. People who make maps are called **cartographers**.

This map shows the location of mountains, rivers, and the Amazon rainforest in South America.

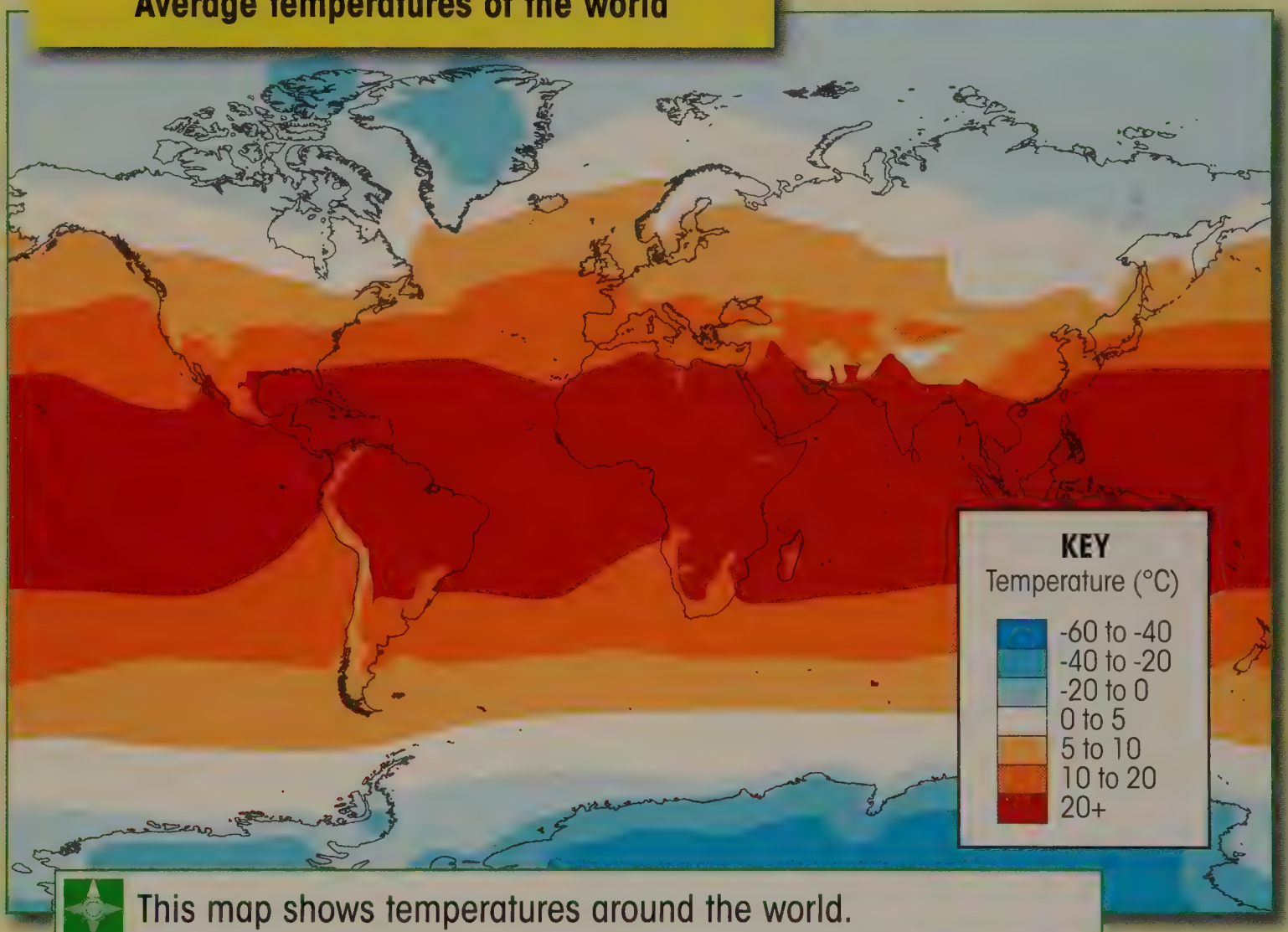
Physical maps show us things about the land. They show us the shape of the land. They show us the location of rivers, lakes, and oceans. They can show us what lives and grows on the land.

Physical maps

A physical map tells us about the Earth's natural features. Physical maps show features such as mountains, valleys, **plains**, and rivers.

This map shows the location of the Alps. These are mountains in Europe.

Average temperatures of the world



This map shows temperatures around the world.

Some physical maps give us information about the environment. They tell us what the weather or temperature is like in an area. They show us what types of plants grow in an area. They can also show us the location of **natural resources**, such as coal.

Reading maps

Physical maps have features to help us to read them. These features are described below.

Map title

The map title tells you what the map is about.

Map key

The map **key** tells you what the **symbols** on the map mean. Symbols are small pictures or shapes that stand for things in real life.

Scale

The **scale** tells you the distance between things on the map.

Compass rose

The **compass rose** shows direction.


New Zealand
Title
KEY
Lake
Mountains
River
Capital city
City
Key
North Cape
PACIFIC OCEAN
Great Barrier Island
Auckland
Manukau
North Island
Tauranga
Hamilton
Rotorua
New Plymouth
Lake Taupo
Gisborne
Hastings
0 150 miles
0 150 kilometres
Wanganui
Palmerston North
Scale
Wellington
Cook Strait
Nelson
Blenheim
Tasman Sea
Greymouth
Mt. Cook
Christchurch
N
W
E
S
South Island
Milford Sound
Dunedin
Invercargill
Compass rose

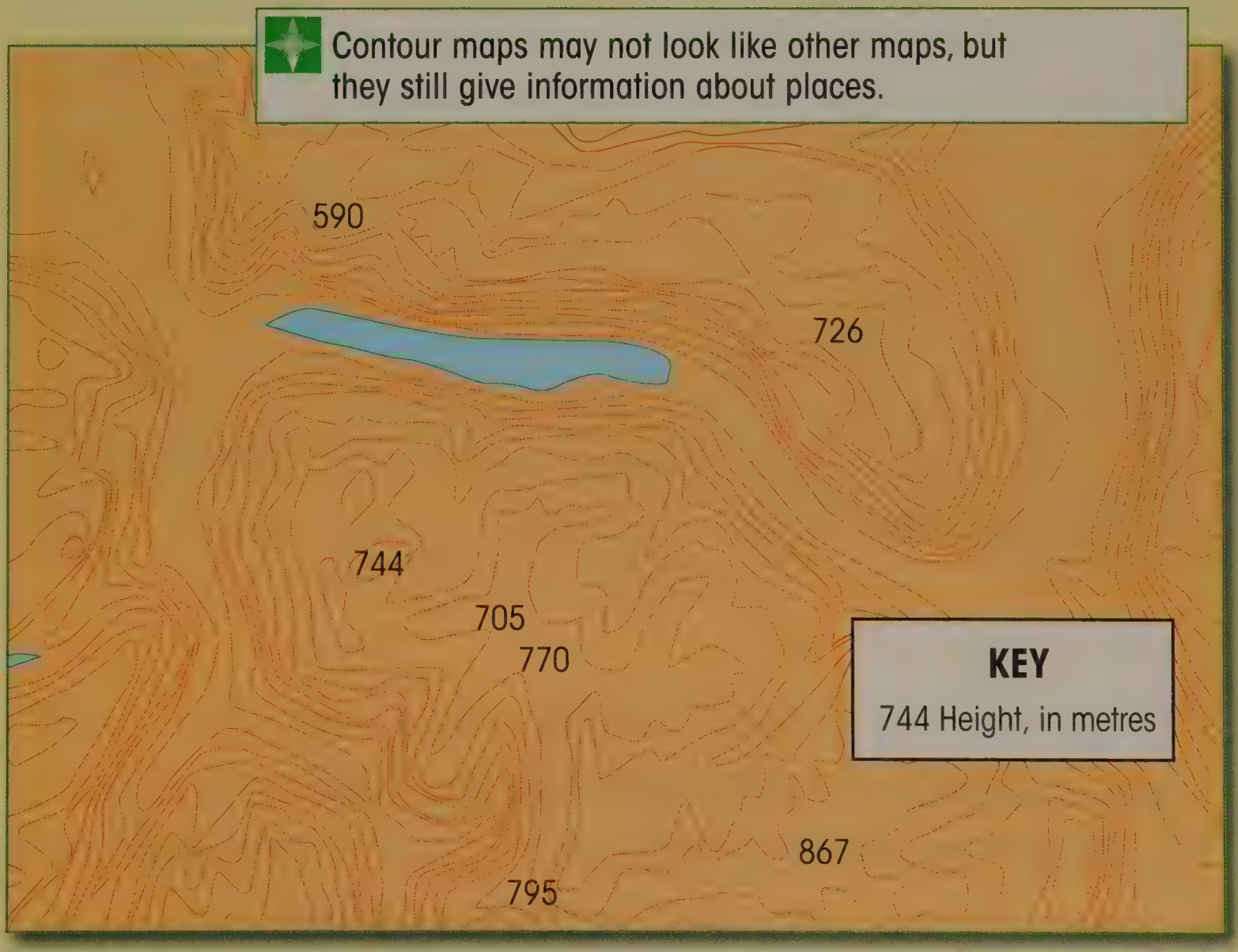
The shape of the land

Maps can show the shape of the land in many ways. Some maps use **symbols** for hills and mountains. These symbols often look like the things they stand for.

Some maps use colour to show different land heights. On the map below, brown shows areas where the land is high, such as mountain ranges. Green shows areas where the land is low.

Some maps use shadows to show the height of the land. These maps are called **relief maps**. The shadows make mountains look high above low areas of land.

Some maps use lines to show land height. These maps are called **contour maps**. If the contour lines are very close together, it means the area is very steep (tall). If the lines are farther apart, it means the area is flatter.



Above and below the land

This map shows a chain of volcanoes called "The Ring of Fire."

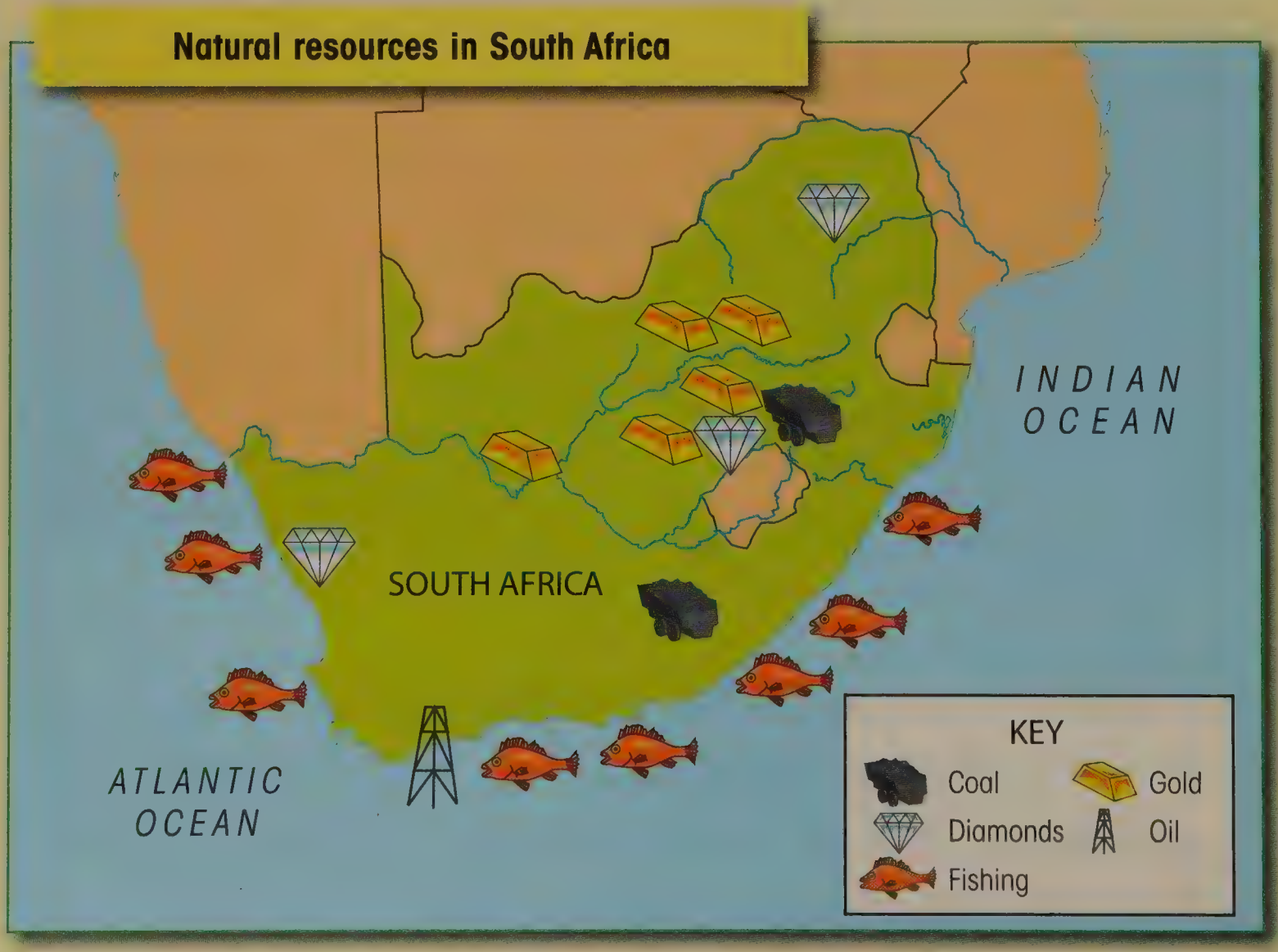
Some maps show what lies above and below the ground. These maps are called **geological** maps. Some geological maps show where certain rocks can be found. Some show the location of volcanoes.

This map shows the San Andreas fault in the United States of America.

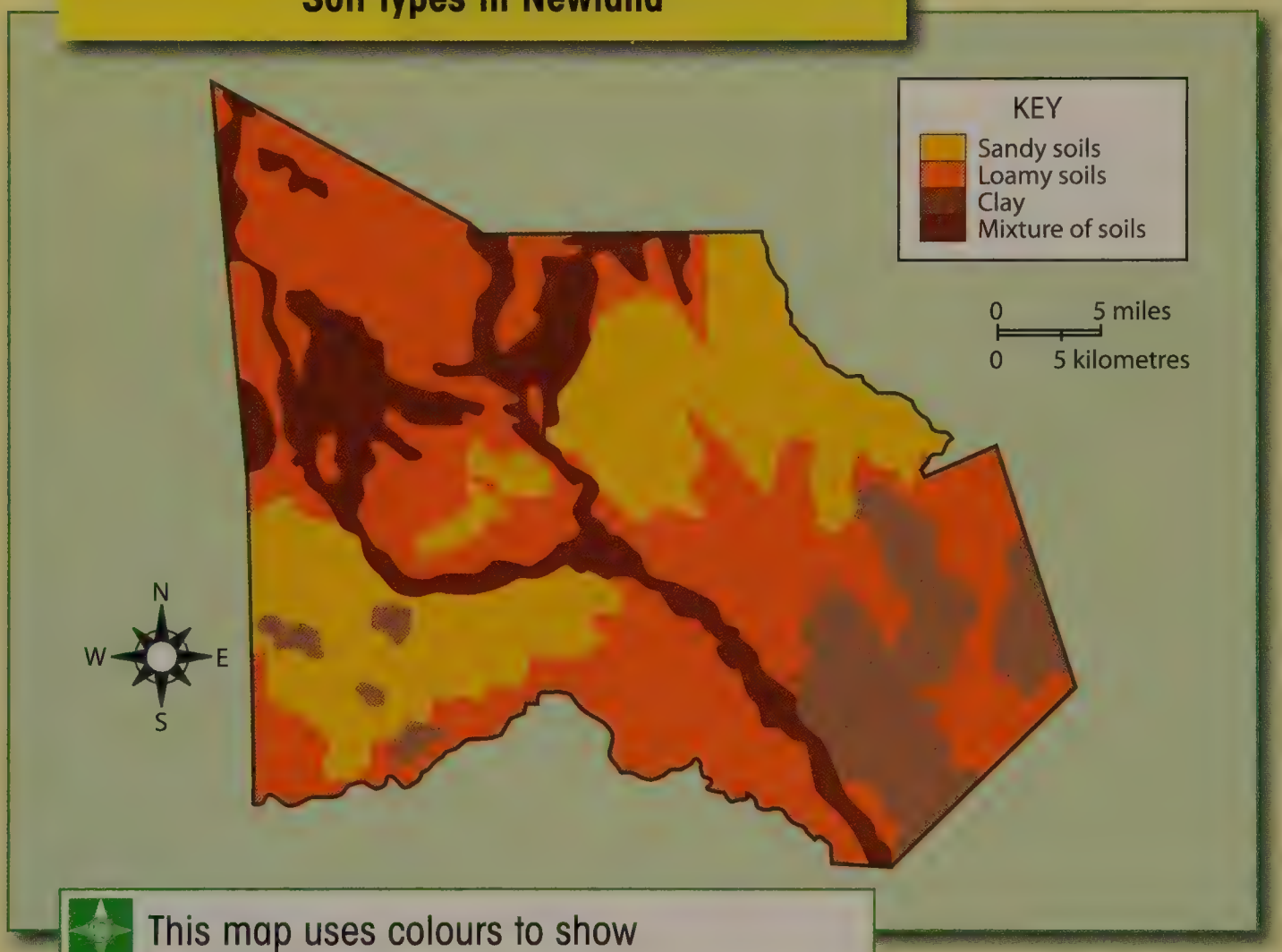
Geological maps can also show the location of cracks on the Earth's surface. These cracks are called **faults**. Scientists look for the location of faults. This helps them to know where an earthquake might happen.

Mapping natural resources

Maps are often used to show **natural resources**. Natural resources are materials from the Earth that can be used by people. Some maps show the location of natural resources such as forests, coal, or diamonds.



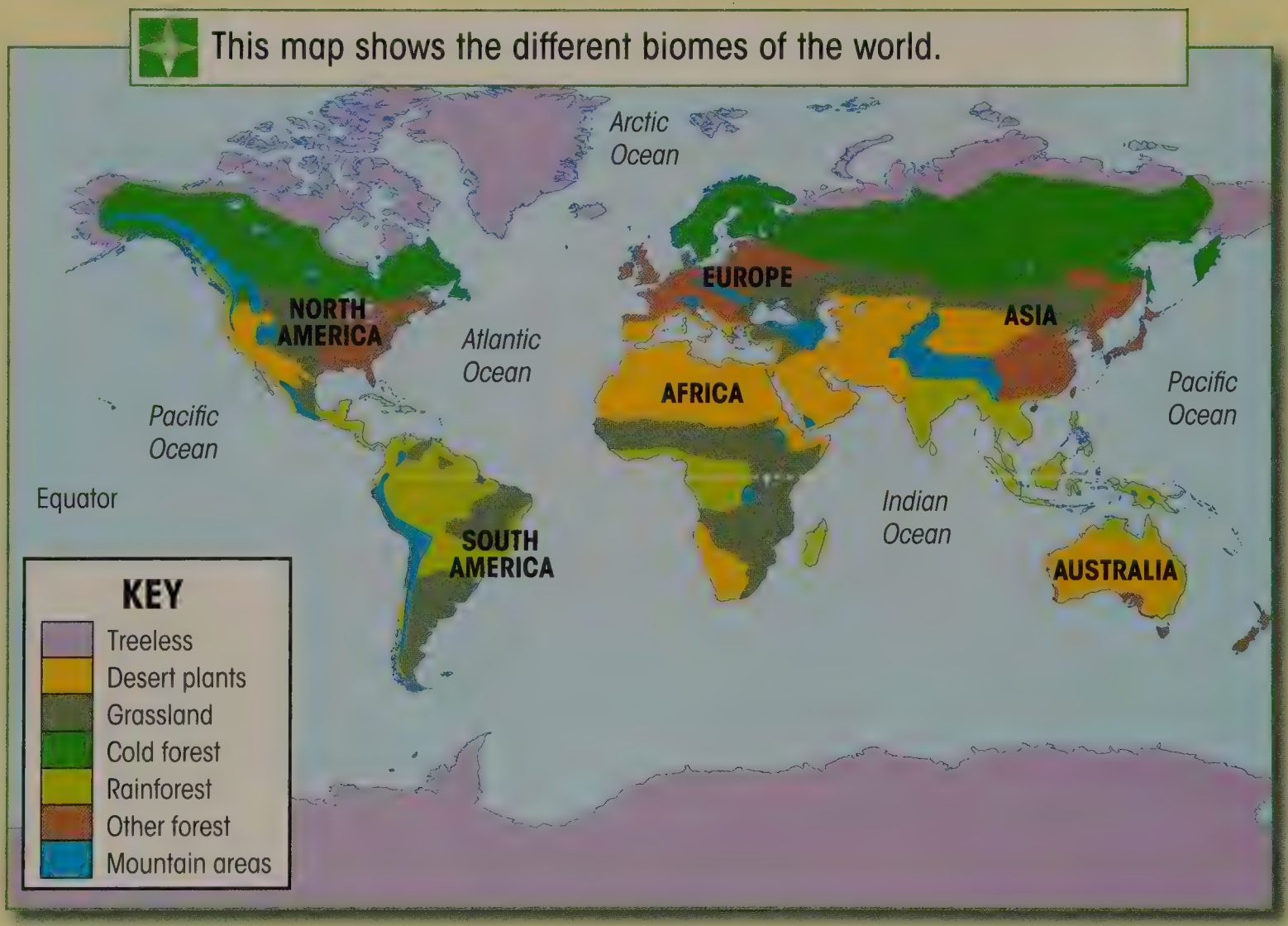
Soil types in Newland



This map uses colours to show different types of soil.

Soil is a material that people use to grow plants. Soil maps show us what types of soil are found in an area. A farmer could use a soil map to decide what **crops** to plant.

Mapping living things



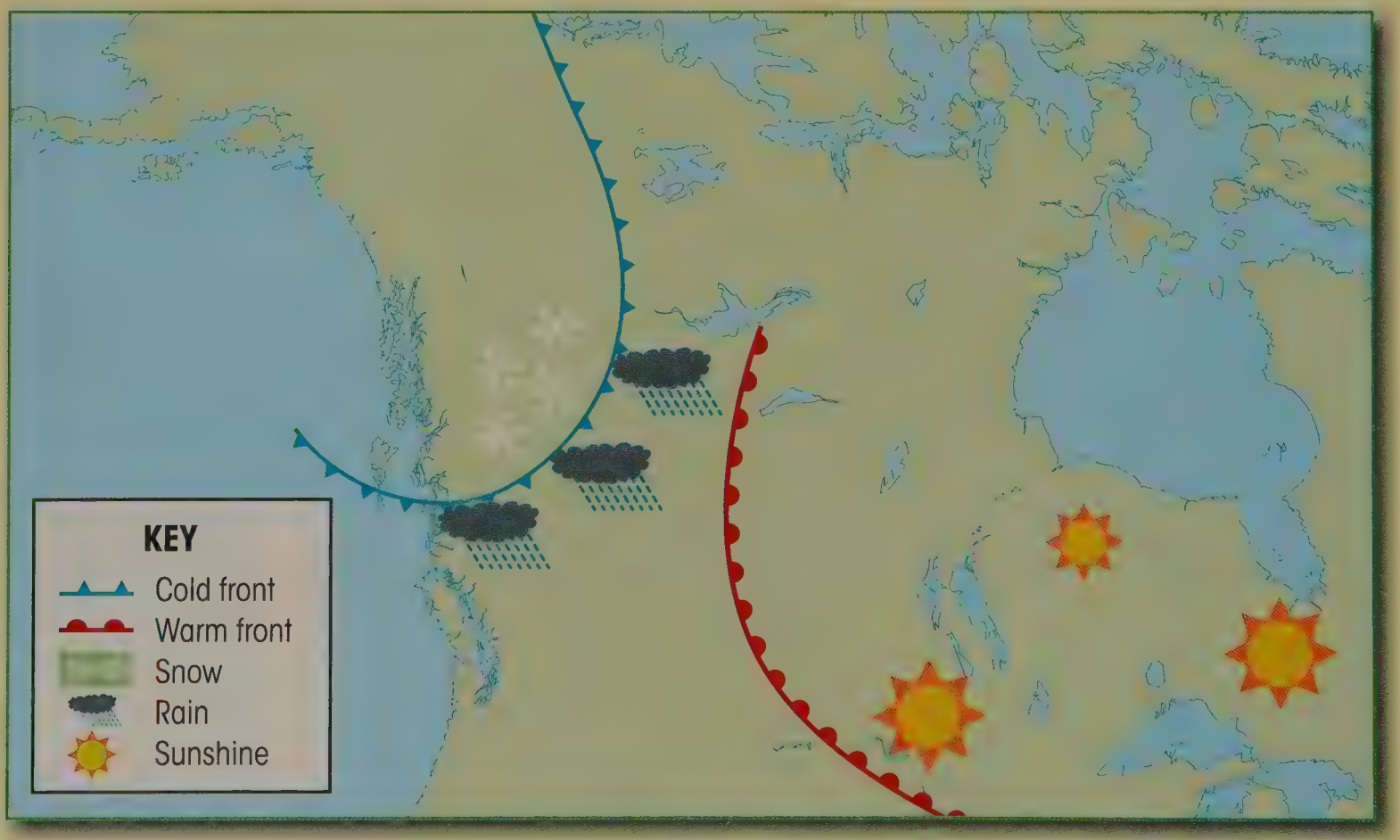
Some maps show where groups of plants and animals live. These are called **biome** maps. A biome is a group of plants and animals and the place where they live.

Some maps show only one type of plant or animal. These are called habitat maps.

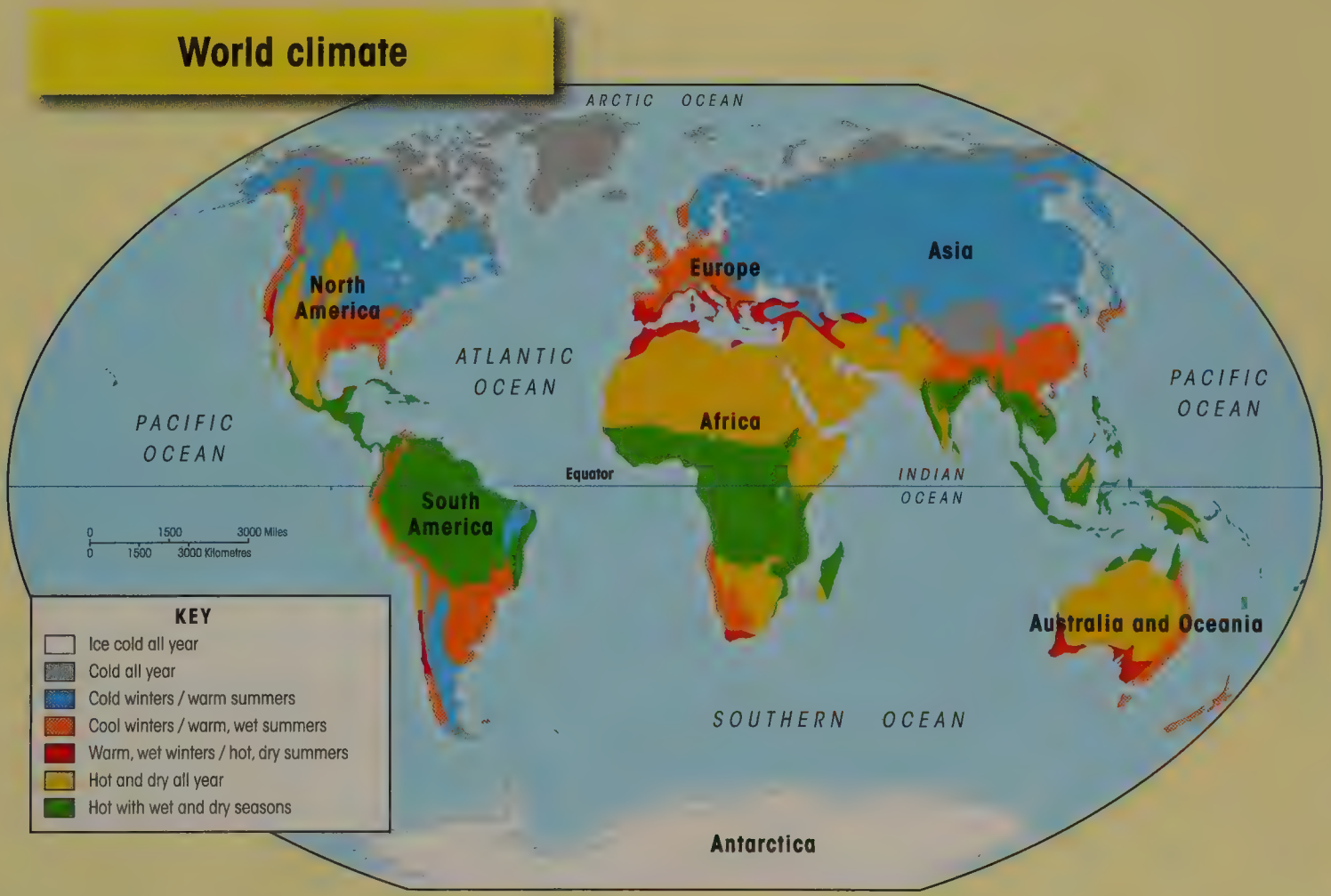
This map shows where polar bears live.

Mapping weather

Weather maps tell us what the temperature is going to be for the day. They also show where it may be sunny or cloudy, and where it may rain. These maps often have **symbols** that show if it is going to get colder or warmer soon.



The **climate** is what the weather is usually like in an area over a long period of time. Many climate maps use colour to show the different climates of an area. A place with a hot, dry climate may be shown in yellow. Warm, wet climates may be shown in green.

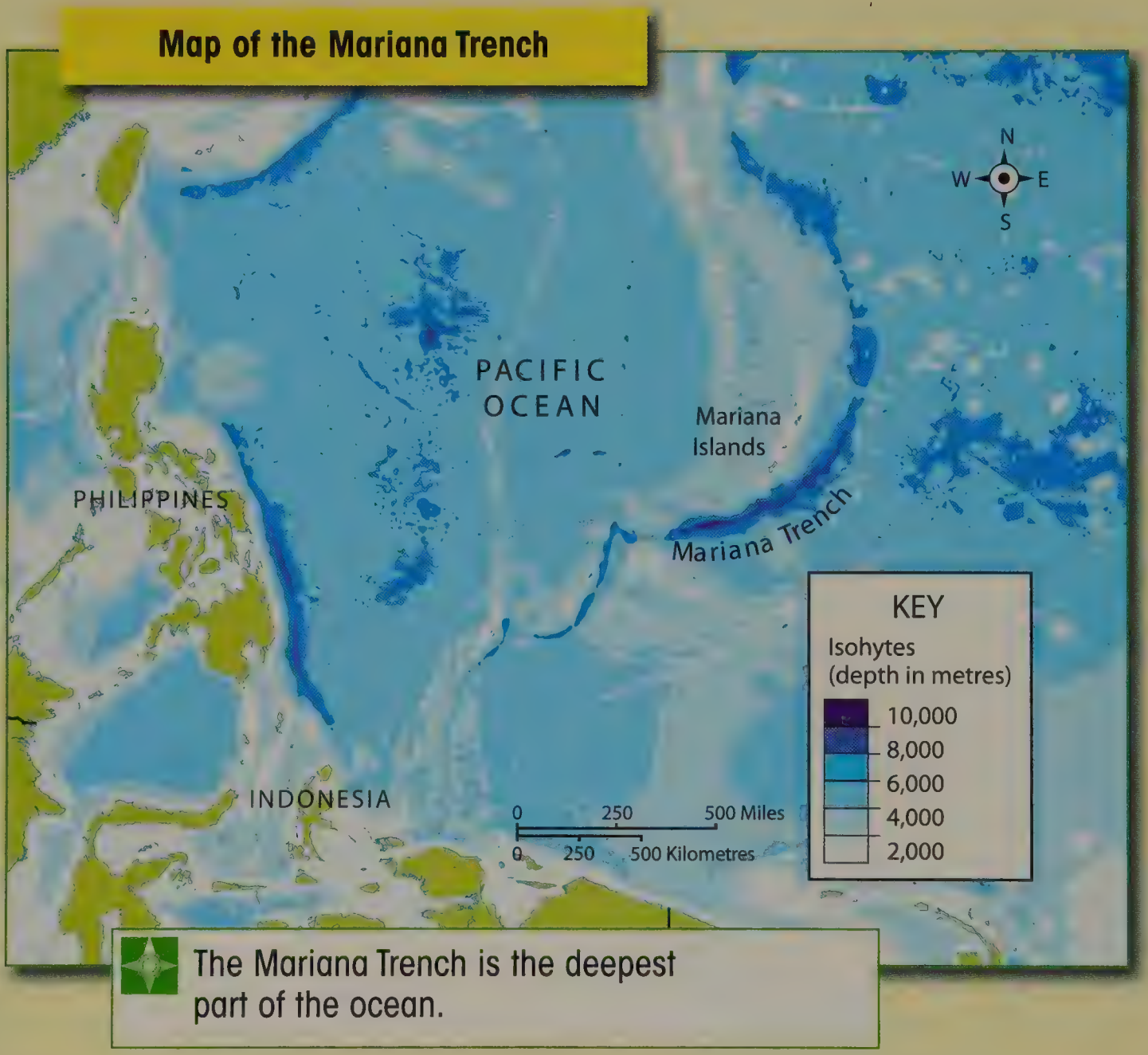


Mapping water

Many maps show the location of rivers, lakes, oceans, and seas. Water on maps is almost always shown in blue. Rivers are shown as blue lines.

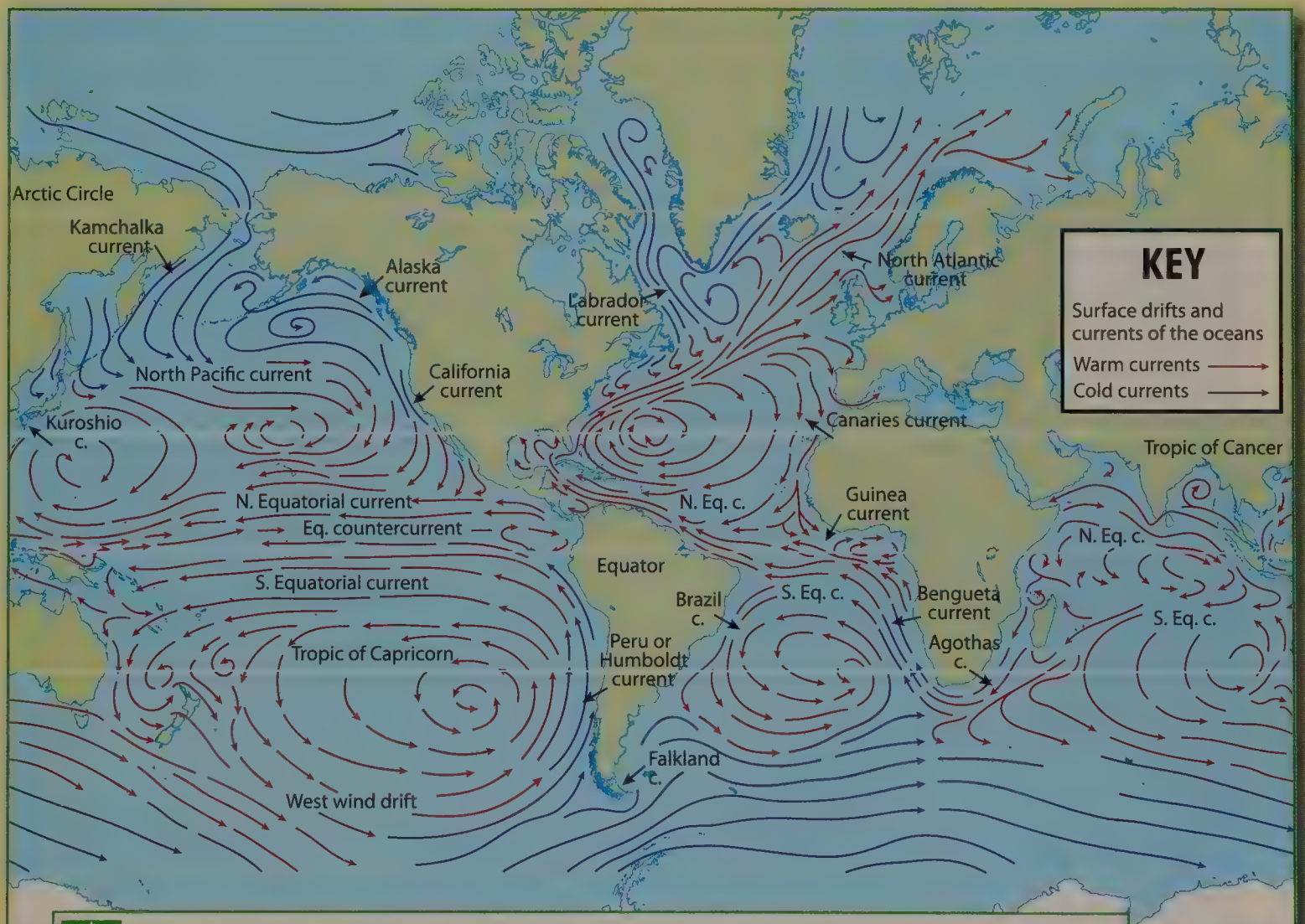
The map of the United Kingdom on page 23 shows many bodies of water. It shows the location of an ocean, channel, sea, rivers, and lakes.


Loch Ness
Scotland
Loch Tay
ATLANTIC OCEAN
Loch Lomond
UNITED KINGDOM
Northern Ireland
North Channel
Lough Neagh
England
Irish Sea
Lough Ree
REPUBLIC OF IRELAND
Wales



Some maps show how shallow or deep the water is. Scientists may use these maps to study the ocean floor.

Some maps show the direction of ocean **currents**. A current is the movement of water flowing in one direction. Sailors can use ocean current maps to find their way.



This map shows the ocean currents of the world.

Making maps

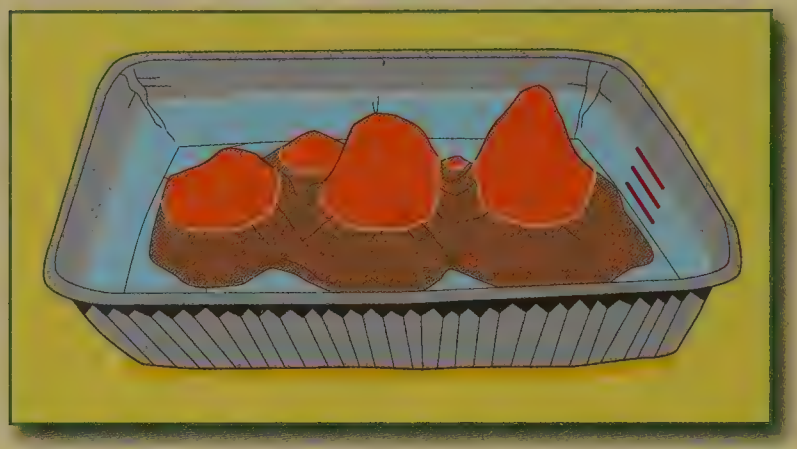
People have been making maps for as long as they have been travelling. Long ago, people made the first maps out of sticks and ropes. Later, sailors made maps of the shorelines. These maps showed pictures of the cities they could see from the boat.

This is a satellite image of the Earth.

Today, people do not have to travel across the land to make maps. Physical maps are made from photographs taken from aeroplanes, helicopters, and **satellites**. Computers can help find the exact location of landforms.

The Earth is always changing, and we will always need new maps. Maps can help us to make new discoveries about the land.

Map activities



Activity 1

Make a contour map

Ask an adult to help you with this activity.

For this activity you will need:

- deep tray that you are allowed to write on
- modelling clay
- waterproof marker
- ruler
- cup
- water

1. Put the tray on the floor. On the inside of the tray, make three marks. Make the marks at 2cm, 4cm, and 6cm.
2. Using the modelling clay, build at least two mountains.
3. Fill the tray with water to the third mark.
4. Stand over the tray and make a drawing of what you see.
5. Using a cup, empty the water to the second mark.
6. Make a new drawing. Make sure to label your drawings.
7. Empty the water to the first mark and make a third drawing.

What is different about each drawing?

Activity 2
Water and wind

If you live near a river or stream, you can do this activity outside. Do it on different days using the real wind to see how things change. You should always have an adult with you if you are going to be near water.

1. Fill a sink, large pan, or bathtub with water.
2. Find a toy boat, stick, or anything else that will float. Send it from one side of the water to the other.
3. Ask a friend to wave a piece of paper to create a wind.
4. Try to sail the boat down the same route.
5. Ask your friend to move so that the wind comes from a new direction.

How does the wind change the boat's route?

Glossary

biome group of plants and animals that live in an area

cartographer person who makes maps

climate usual weather in an area over a long period of time

compass rose symbol on a map that shows direction

contour map map that uses lines to show land height

crop plant that is grown by farmers

current direction of movement in the water or air

fault crack in the earth deep below the ground

geological having to do with the Earth and what it is made of

key table that shows what the symbols on a map mean

natural resource material from the Earth that can be used by people

plain flat area of land with few trees

relief map map that uses shadows to show the shape of the land

satellite object that travels above the Earth and sends information back to the Earth

scale tool on a map that can be used to measure distance

symbol picture that stands for something else

Find out more

Organizations and websites

The websites below may have some advertisements on them. Ask a trusted adult to look at them with you. You should never give out personal information, including your name and address, without talking to a trusted adult.

National Geographic
National Geographic provides free maps and photos of the Earth, as well as interesting articles about people and animals. Visit **www.nationalgeographic.com.**

Physical maps and satellite images
Look at physical maps and satellite images of places all over the world by visiting **geology.com/world/**.

Books to read

Heinemann First Atlas, Daniel Block and Marta Segal Block (Heinemann Library, 2007)

Maps and Symbols, Susan Lomas (Hodder Wayland, 2004)

My World of Geography: Mountains, Vicky Parker (Heinemann Library, 2005)

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First Guide to Maps

TITLES IN THE SERIES:

Mapping the Land

Mapping the World

Mapping Your Community

Reading Maps

Mapping the Land

- What do mountains look like on maps?
- What is a relief map?
- How are bodies of water mapped?

Read ***Mapping the Land*** to learn different ways that land can be shown on maps. In addition to showing cities and countries, maps can show natural resources, biomes, climates, and ocean currents.

Books in the **First Guide to Maps** series offer readers an easy-to-understand introduction to maps and their uses. Each book explains the basic elements of a map and how to read them, and teaches key concepts including scale, direction, grids, and types of symbols. The books include activities to further students' understanding of the material.

About the authors:
Daniel R. Block is a professor of Cartography and Geographic Information Studies. Marta Segal Block is a former teacher and editor of educational materials.

About the consultant:
James F. Marran is a contributing writer of *Geography for Life: National Geography Standards,* and a geography curriculum expert.

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