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What Is in Planet Earth?

One unit per episode. Each unit has a full Myanmar glossary of key words.

Five sections per unit, each with "Before you watch", "As you watch" and "After you watch" activities.

"Before you watch" activities include texts and diagrams to help learners understand the main ideas in that section.

"As you watch" activities are comprehension questions for students to answer while watching.

"After you watch" activities are additional texts, diagrams and questions, to check understanding, present additional information and expand on key ideas from the section.



A single thorn tree, growing in the Namib Desert, Namibia.

Unit 5 Deserts

Key words

antennae (n) - အင်ဆက်ပိုးမွှားများတွင်ရှိသော အပူခံအိတ်အပိုင်း
desert (n) - သဲကန္တာရ
dew (n) - နွေဇော် နွေခါက်
drought (n) - နွေခါက်သည့်
exoskeleton (n) - အနွယ်အမြွေ (ကျားရိုးသတ္တဝါများ၏ ဓာတ်ကိုင်ကိုင် အကာအရံအဖုံးအသားအရံ)
flood (n) - ရွက်တရားရေလွှမ်းခြင်း
food insecurity (n) - အဟာရမရှိစေသော အစားအစာများကို လုံလောက်စွာရရှိနိုင်သော အခွင့်အလမ်းမရှိခြင်း
fur (n) - သားမွေး၊ အမွှေး (ဥပမာ ခြင်္သေ့)
irrigation (n) - ဆည်မြောင်း
invertebrate (n) - မြွေမဲ့သတ္တဝါ
mammal (n) - မိတ်လိုက်ခြင်း
mate (nv) - မိတ်လိုက်ခြင်း
plague (n) - လူသိမ်းဆွဲခြင်း
rain shadow (n) - မိုးကွယ်ရောင်ခြည် (တောင်တန်းများကားရံထားရာတွင် မိုးမရွာစေရဘဲ နွေခါက်ခြင်း)
rainfall (n) - မိုးရေချိန်

rainstorm (n) - မိုးသက်လွန်တိုင်း
river bed (n) - မြစ်၊ မျောင်း များအတွင်း ရေခိုအောင်းသည့်နေရာ
root (n) - အမြစ်
sand dune (n) XX
swarm (n) - ပျံသန်းနိုင်သော ပိုးမွှားကောင်များ
warm-blooded (adj) - သွေးအေးသော (သွေးအပူသတ္တဝါ)

5.1 Rainshadow Deserts (00:00 - 6:00)

Before you watch

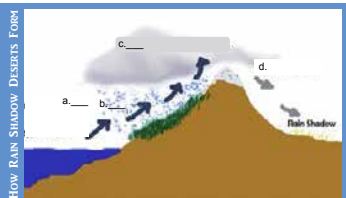
1. What do you know about **deserts**?
2. Find the Gobi Desert on the map on pages 138 and 139. In which countries is it?

As you watch

1. How much of the Earth's land is desert?
2. Which deserts do not have any life in them?
3. What surprising weather is there in the Gobi Desert?
4. What are the highest and lowest temperature in the Gobi Desert?
5. What is the Bactrian camels biggest problem?
6. How do they solve that problem?
7. When do Bactrian camels breed?

After you watch

1. The Gobi Desert is a **rainshadow** desert. Label the diagram which shows how rains shadow deserts form.
 - i. clouds forced upwards and rain falls on the mountains
 - ii. hardly any moisture remains when the wind gets over the mountains.
 - iii. clouds form over the sea
 - iv. wind blows clouds into the mountains



ANIMAL CLASS: A GUIDE TO ANIMAL CLASSIFICATIONS

2. MAMMALS

There are more than 4,000 different species of mammals. The smallest is the hog-nosed bat. It weighs 0.07 ounces (2 grams) and the largest is the blue whale, which weighs 132 tons (120 tonnes). Some live on land and some live in water, but all mammals share some common characteristics.

- All mammals:**
- are vertebrates (have a backbone).
 - are "warm-blooded" (create their own body heat).
 - give birth to live babies
 - feed milk to their young

- Most mammals:**
- have hair or fur on their bodies

Camels are mammals which have adapted to living in the desert.



IS IT A MAMMAL?

Are the following animals mammals? Why?

- a. a bumble bee
- b. a monkey
- c. a whale
- d. a human



"Animal Class" boxes, which explain the main scientific animal classifications, and help students understand the differences between classes.

Planet Earth: A Study Guide to the BBC Natural History Series is designed for classroom and self-study use. It features complete guides to all 11 episodes of the series, and additional components for reference purposes. A full answer key is at the back of the book.

Skills-building activities at the end of each unit, so that students can practice map-reading, reading and creating charts and graphs, and other useful skills.

Myanmar-related texts, to link students' learning to their own country and context.


UNIT 7: GREAT PLAINS -

ADDITIONAL ACTIVITIES

★ FOCUS ON MYANMAR | SKILLS WORK

MYANMAR RICE

The most important cereal in the country | Information from <http://ricepedia.org/myanmar>



Rice farmers working in the fields in Myanmar.

Myanmar is the world's sixth biggest rice producer. Rice is the staple food of everyone in Myanmar. The average person in Myanmar eats 310 pounds (141 kg, 86.5 vibs) of rice per year. Because rice is the staple food of Myanmar, it is necessary for the food security of the whole country.

It is also an important crop for Myanmar's economy: In colonial times Myanmar was the biggest exporter of rice in the world. In 2010, Myanmar produced 33 million tons of rice and exported 122,000 tons to other countries.

There are many different types of rice in the world and they have evolved to grow in their local climate. Therefore, different kinds of rice can grow in different parts of Myanmar and at different times. Some types are sown during the monsoon. Some types, such as deepwater rice only grow in the lowland of the Ayeyarwaddy Delta. Rainfed rice is sown in lower Myanmar, in Yangon and Bago Regions. In upper Myanmar, irrigation is needed to grow enough rice.

Since 2010, the Myanmar government has been trying to increase rice production and rice exports, but the country still faces problems. Many farmers are poor, and can't buy modern equipment. Transporting rice is difficult because of poor roads and railways.

To increase rice production, more money for farmers (such as microloans, where farmers borrow small amounts of money), improved roads and new storage buildings are necessary. Additionally, if the price of paddy increased, farmers would make more money from rice farming, and be able to grow more.



- Answer the questions.
 - Why does food security in Myanmar depend on rice?
 - How much rice did Myanmar sell abroad in 2010?
 - What kind of rice can only grow in the Ayeyarwaddy Delta region of Myanmar?
 - What needs to change to make Myanmar a bigger exporter of rice?
- Discuss the questions.
 - What do you think has happened to Myanmar's production since colonial times?
 - List the ways Myanmar could help farmers to improve rice production.
- Choose three areas of Myanmar on the map – one where you come from, one you have visited before, and one where you hope to go one day.
 - What is the highest number of hectares (ha) sown (farmed) with rice in these places?
 - How many tonnes of rice/cereal grains are produced in these places? Use the average amount (if the chart shows 300,000 - 400,000, use 350,000).
- Put your data about the number of hectares sown and amount of grain produced into a bar chart.
- Which of the three areas has the highest yield of rice and cereals? Why do you think that is? Use evidence from the data and graphs to form your conclusion.



An atlas section with full colour physical maps of all major continents and regions of the world. Students will refer to these maps in every unit.

Additional Components

BBC Planet Earth (essential)

You will need the complete BBC TV series *Planet Earth* to properly use this course. For copyright reasons, we are not able to supply legal copies of *Planet Earth* with this book. It should be available, however, in any good DVD store. Additionally, it may be available online, on sites such as [YouTube](#) or [Vimeo](#), for download or streaming.

Mote Oo Education has edited subtitle files for each episode, so that students can more easily understand the series.

Contact Mote Oo Education for more information about the TV series and the edited subtitles: info@moteoo.org or moteooeducation@gmail.com.



Wikipedia and Simple English Wikipedia (useful)

Wikipedia is an open-source, user-updated online encyclopedia. It is possibly the biggest free online encyclopedia in the world. Several units of this book have research questions, and it may be useful for students to have access to the Simple English Wikipedia (or another encyclopedia) for those questions.

The URLs for the sites are:

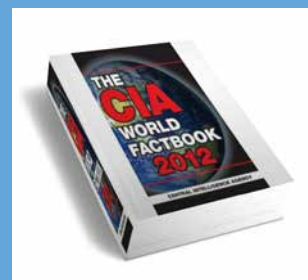
- English Wikipedia – en.wikipedia.org
- Simple English Wikipedia – simple.wikipedia.org

There are also several applications and pieces of software which can help you to download Wikipedia and use it offline (with no internet connection). You can contact Mote Oo Education staff if you need assistance with this.



An Atlas (useful)

This book comes complete with a basic atlas showing major continents, land masses and regions, and there are several thematic maps of Myanmar. However, for students who wish to learn more about the many countries featured in this course, a more complete atlas is recommended. There are free atlases online, including at the CIA World Factbook (cia.gov). The regional and continental maps in this book were also sourced from the CIA World Factbook.



Ideas for Using Planet Earth

For Students and Teachers:

This book is designed to be fun, friendly and flexible. There are many different situations where teachers and/or students could use this book. We encourage you to use this book in whichever way suits you.

Watch the series more than once to gain a better understanding. As you go through the book and series, you will learn more vocabulary and understand the ideas better. Many words and ideas are repeated, from the first episode to the last, but we have introduced them slowly, so that learning happens naturally.

For Students:

This book gives you real-world knowledge and skills. As well as the watching and reading activities, there are 11 *Additional Activities* sections. In each section are additional reading comprehension and skills activities, and many of these focus on Myanmar. These are essential life and study skills, which we hope you can apply to your study or work, and link to your understanding of your country.

We have also included an atlas (map collection) at the back of the book, and many sections of the book ask you to find places before or after you watch. This will help you to gain more knowledge of our planet, and where important places are.

For Teachers:

This book is adaptable. Every teacher has his or her own teaching style, but for teachers who are looking for tips on how to best teach this book, here are some simple ideas:

1. Introduce the section with some questions, a brainstorm, a quiz or some other way of generating interest in the topic. This will also help you to find out how much students already know.
2. Check each section for words in **bold**, these are keywords. Definitions are at the start of each unit.
3. Give students enough time to do the *Before you watch* activities. Clarify anything they don't understand, and explain concepts which they might find difficult.
4. As a class or in groups, encourage students to predict or guess the answers to *As you watch* activities, so that they are familiar with the questions before they begin watching the video clip.
5. After watching (more than once, if necessary), check students' answers together and discuss issues that might arise. Use *Simple English Wikipedia* if necessary and possible.
6. Give students time to do the *After you watch* activities (in pairs, groups or as a class, perhaps) and check and discuss the answers together.
7. Provide additional activities, practice or discussion where necessary.
8. Use the Additional Activities section to promote discussion of the concepts and encourage further research by students.

Planet Earth:

Note: This is not an exhaustive list of all the learning goals of the course. It focuses only on the key concepts, ideas and theories discussed in the course, and the key skills learned and practised. Below are some of the general aims

General Aims of This Course

This course aims principally to introduce a number of broadly connected subjects to the learner in a general yet interesting way. Throughout the series and the related units in this book, students will be introduced to some of the basic concepts and theories which are central to many different areas of study, such as Earth sciences, geography, biology, and paleontology. Although it is not meant to be an academic course, students who complete the book should have a broader understanding of:

- **the Earth** and elements of the natural environment such as rivers, seas and oceans, mountains and volcanoes, and forests and deserts.

Unit	1	2	3	4	5
Knowledge and Skills Goals To increase understanding of... To increase ability to...	<ul style="list-style-type: none"> • longitude and latitude • how the tilt and rotation of the Earth affects the seasons • climate and climate zones • how the oceans affect weather • the water cycle • communities, habitats and ecosystems • Myanmar's climate • <i>relate climate to latitude and elevation</i> • <i>locate places on maps using latitude and longitude</i> • <i>read topographic maps</i> 	<ul style="list-style-type: none"> • what the Earth is made of • how mountains and volcanoes are formed • predation and predator-prey relationships • what causes avalanches • glaciers • adaptation in animals • migration • how the Rakhine Yoma/Chin Hills were formed • <i>identify behavioural and physical adaptations in animals</i> • <i>map reading</i> • <i>research</i> 	<ul style="list-style-type: none"> • the parts of a river system • the water cycle • the features of a reptile • great rivers and lakes of the world • the importance of, and problems facing, Inle Lake • the importance of the Ayeyarwaddy River • <i>draw diagrams</i> • <i>read maps</i> • <i>research</i> 	<ul style="list-style-type: none"> • cave environments • the formation of limestone • why most caves are found in limestone • food chains • evolutionary theory • the chemistry of cave environments • caves in Myanmar • <i>sequence events logically</i> • <i>reason from cause to effect</i> • <i>interpret context clues</i> • <i>draw diagrams</i> 	<ul style="list-style-type: none"> • the location of deserts • the types of deserts • the formation of deserts • the features of mammals and insects • the role of competition in evolution • the causes and effects of flash floods • Myanmar's Dry Zone • annual rainfall in different areas of Myanmar • <i>read maps</i> • <i>find averages in groups of data or statistics</i> • <i>draw graphs and charts</i>

Learning Goals

of the course, and beneath that are the main knowledge and skills learning goals of each unit of the course. The key technical vocabulary used in the book and series is provided at the beginning of each unit.

- **ecology (study of the plant and animal world)**, including major classifications of both plants and animals; the ways in which plants and animals reproduce and interact with each other; plant and animal interdependency.
- **the natural history of Earth**, including evolutionary theory and the ways in which science can learn more about the Earth's past.
- **the geography and geology of Myanmar** in relation to the topics introduced in this course.
- **the world as it looks on a map**, and where countries, continents and oceans are in our world.
- **humanity's reliance on, and impact on, nature**, and the major issues facing the natural world

6	7	8	9	10	11
<ul style="list-style-type: none"> • the location of the Arctic and Antarctica • the differences between the Arctic and Antarctica • the features of birds • animal species found at the Arctic and Antarctica • the breeding cycle of penguins • climate change • the climate of Hkakabo Razi • the possible effects of climate change on food production • <i>infer using context clues</i> • <i>reason from cause to effect</i> • <i>read thematic maps</i> 	<ul style="list-style-type: none"> • different grasses and their uses • the structure of grass plants • food webs • trophic levels • how plants reproduce • food pyramids • the importance of rice to Myanmar • cereal production in Myanmar • <i>classify components of food charts</i> • <i>analyse food charts</i> • <i>draw diagrams</i> • <i>read maps</i> • <i>draw graphs and charts</i> 	<ul style="list-style-type: none"> • the layers of a rainforest • photosynthesis • reproduction in animals and plants • the role of reproduction in supporting life • the features of amphibians • the importance of decomposers • plant and animal specialisation • evolution • chimpanzees and humans • the Tanintharyi forest complex • <i>identify steps in the evolutionary process</i> • <i>draw diagrams</i> • <i>compare and contrast generalist and specialist species</i> 	<ul style="list-style-type: none"> • symbiosis and interspecies cooperation • the evolution of sea mammals • algae • the features of fish and invertebrates • sea winds in the southern hemisphere • the importance of krill to the food chain • coral reefs off the coast of Myanmar • <i>identify evolutionary process</i> • <i>infer reasons for changes to sea life</i> • <i>find averages</i> • <i>draw pie charts</i> 	<ul style="list-style-type: none"> • the types of trees which can grow at different latitudes • the food chain in taiga forests • the life cycle of the 17 year cicada • the seasons in temperate climates • herbivores, carnivores and omnivores • the relationship between herbivores and carnivores • forest coverage in Myanmar • <i>read maps</i> • <i>create column charts</i> 	<ul style="list-style-type: none"> • deep ocean food chains • deep ocean organisms • the role of scavengers in the food chain • submarine volcanoes and seamounts • the role and effects of plate tectonics • the life of the blue whale • tectonic activity in the Indian Ocean/Andaman Sea • <i>convert metric measures to imperial</i>



■ Sunrise over Osan, South Korea.

Unit 0 Introduction

Key Words

- aquatic (adj)** – ရေတွင် နေထိုင်သော
- biome (n)** – သဘာဝအတိုင်း ပေါ်ပေါက်လာသော အပင်များနှင့် သတ္တဝါများ စိုးမိုးထားသည့် နေရာဒေသ
- climate (n)** – ရာသီဥတု
- compass rose (n)** – အရပ်မျက်နှာများကို ညွှန်ပြသော သံလိုက်အိမ်မြှောင်
- continent (n)** – တိုက် (ဥပမာ - ဥရောပတိုက်၊ အာရှတိုက်၊ အမေရိကတိုက်)
- episode (n)** – ဖြစ်ရပ်များ (ဇာတ်လမ်းတွဲ)
- terrestrial (adj)** – ကုန်းပိုင်းတွင် နေထိုင်သော

0.1 Maps, Oceans and Continents

1. Look at the map of the bottom of the page. Answer the questions.
 - a. What is this map?
 - b. Identify north, south, east and west.
2. Use these words to label the map (i-viii).

a. title	e. Europe
b. compass rose	f. Africa
c. Australasia	g. South America
d. North America	h. Asia
3. What are the names of the five oceans?
 - i. P_c_f_c
 - j. _t_a_n_c
 - k. In_____
 - l. Sou_____rn
 - m. A_c_ic
4. Label them on the map (ix-xiii).
5. Read the text and check your answers to 1-4.
6. What continents are these countries on?
 - a. The United States of America
 - b. Brazil
 - c. France
 - d. Nepal
 - e. Ethiopia

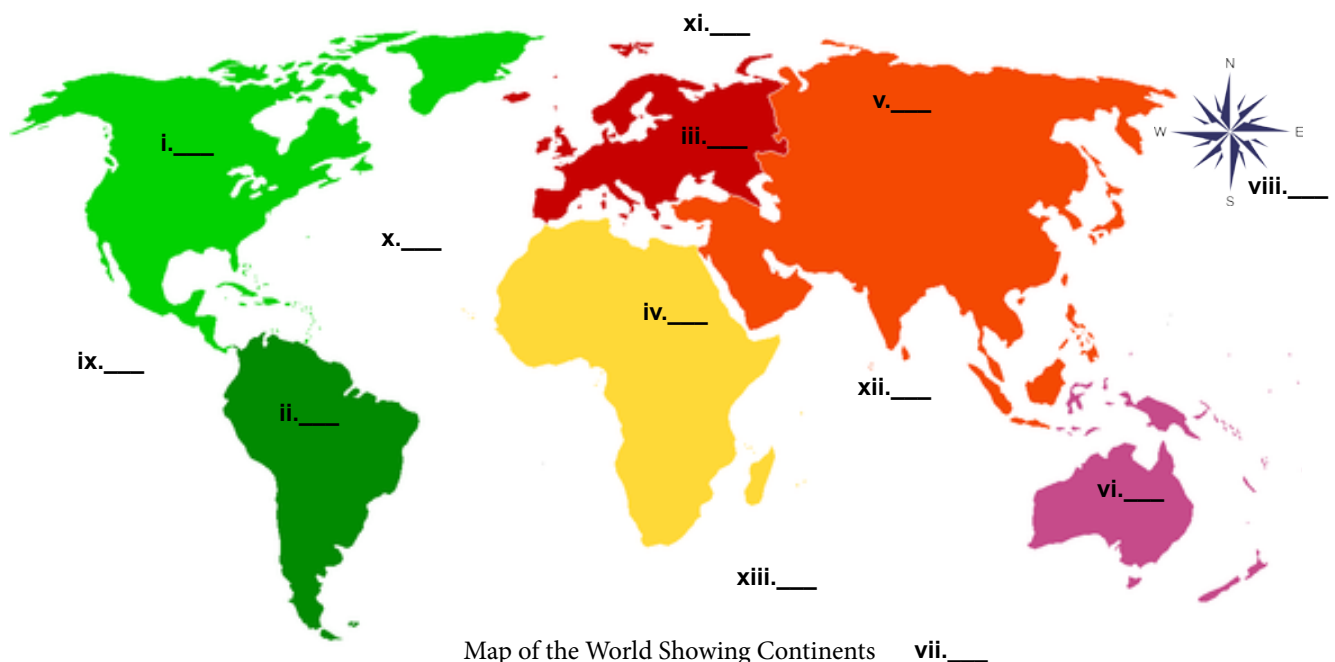


Maps are important and useful tools. They show us where in the world things are. Some maps show streets, some show countries and some show **continents**. Some, like the map below, show the whole planet.

The map below shows each continent in a different colour. On this map, North America is light green, South America is dark green, Europe is red, Asia is orange, Africa is yellow and Australasia is purple. The seventh continent, Antarctica, is not shown.

Between the continents is water. This water is called the oceans. There are five oceans: between the Americas and Europe/Africa is the Atlantic Ocean; south of Asia is the Indian Ocean; between Asia and the Americas is the Pacific Ocean; in the north of our planet is the Arctic Ocean and in the south is the Southern Ocean

Like most maps, north is at the top of the map and south is at the bottom (and east is on the right and west is on the left). Some maps have a compass rose. A compass rose is the object on the right of the map, which looks like a clock. It shows north, east, south and west.



0.2 Earth's Biomes

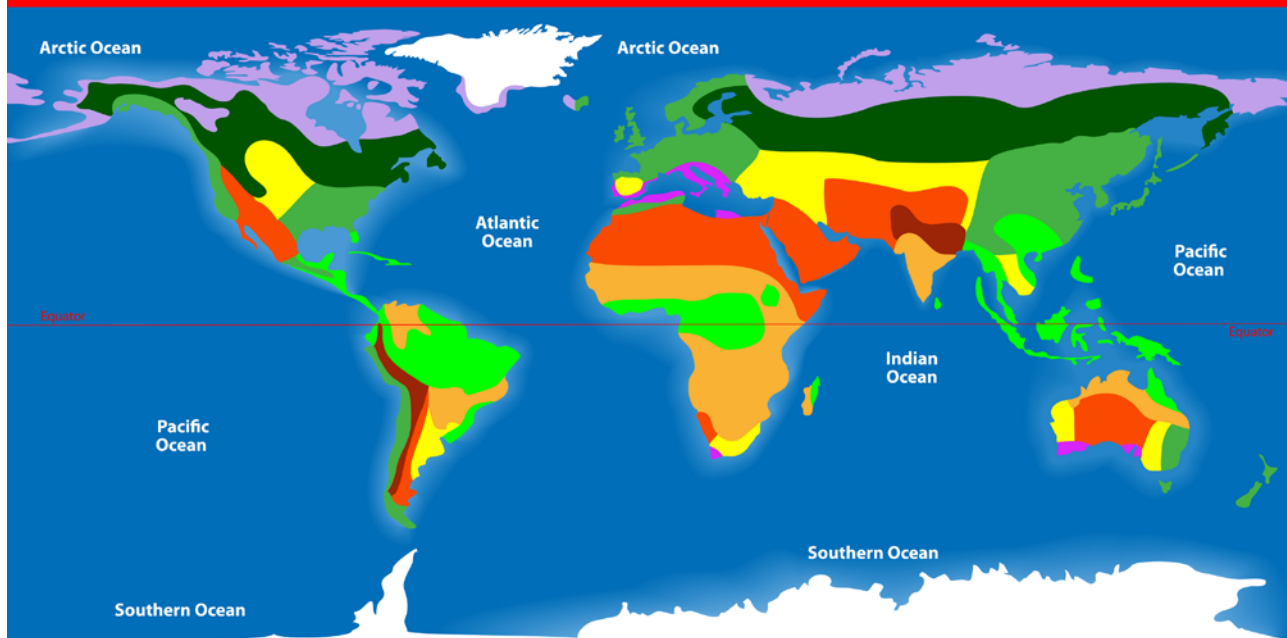
- 1. Discuss:** Look at the map below. What does the map show?
- 2.** Read the text and mark the statements true or false. If false, explain why.
 - a. There are 12 episodes of Planet Earth.
 - b. A biome is a place where there is mostly similar plant and animal life.
 - c. Some examples of biomes include desert and ice sheet.
 - d. There are only two types of biome, terrestrial and aquatic.
 - e. Terrestrial biomes are on the land.
- 3.** Look at the map of biomes below. Use your understanding of the world to predict what the weather and the plant and animal life are like in each biome. For each biome, say *why* you think this.

What Is a Biome?

Planet Earth has 11 **episodes**. Many of the episodes look at different **biomes** on our planet. A biome is a place where the plant and animal life is similar over a large area. For example, *forests, deserts or ice sheet*. There is a reason that different biomes exist on our planet, and that reason is **climate**. You will learn more about climate in Unit 1.

The map below shows ten **terrestrial** biomes. However, not all scientists agree that there are ten; some argue that there are more, some think that there are fewer. In this course you will watch and read texts about many terrestrial biomes, and several **aquatic** biomes – rivers, lakes, shallow seas and deep oceans. As you continue through the course, you may need to look at this section again, to remind yourself of the different biomes. You can also look on Wikipedia (or another encyclopedia) for additional information about this or any other topics in the book or TV series.

The main biomes in the world



Ice sheet and polar desert	Mixed and deciduous forest	Savanna
Tundra	Tropical rainforest	Desert
Taiga	Steppe	Mediterranean vegetation
Montane (alpine tundra and montane forest)		

0.3 Time-lapse and Slow-motion Photography

- 1. Discuss:** How long does it take for these things to happen?
 - a. the sun to rise
 - b. a person to cough
 - c. a caterpillar to become a butterfly
 - d. a football player to score a goal
- 2.** Read the text and match the two main ideas to the pictures below. There are two pictures to match each type of photography.
- 3.** Which type of photography would be the best for the four examples above?

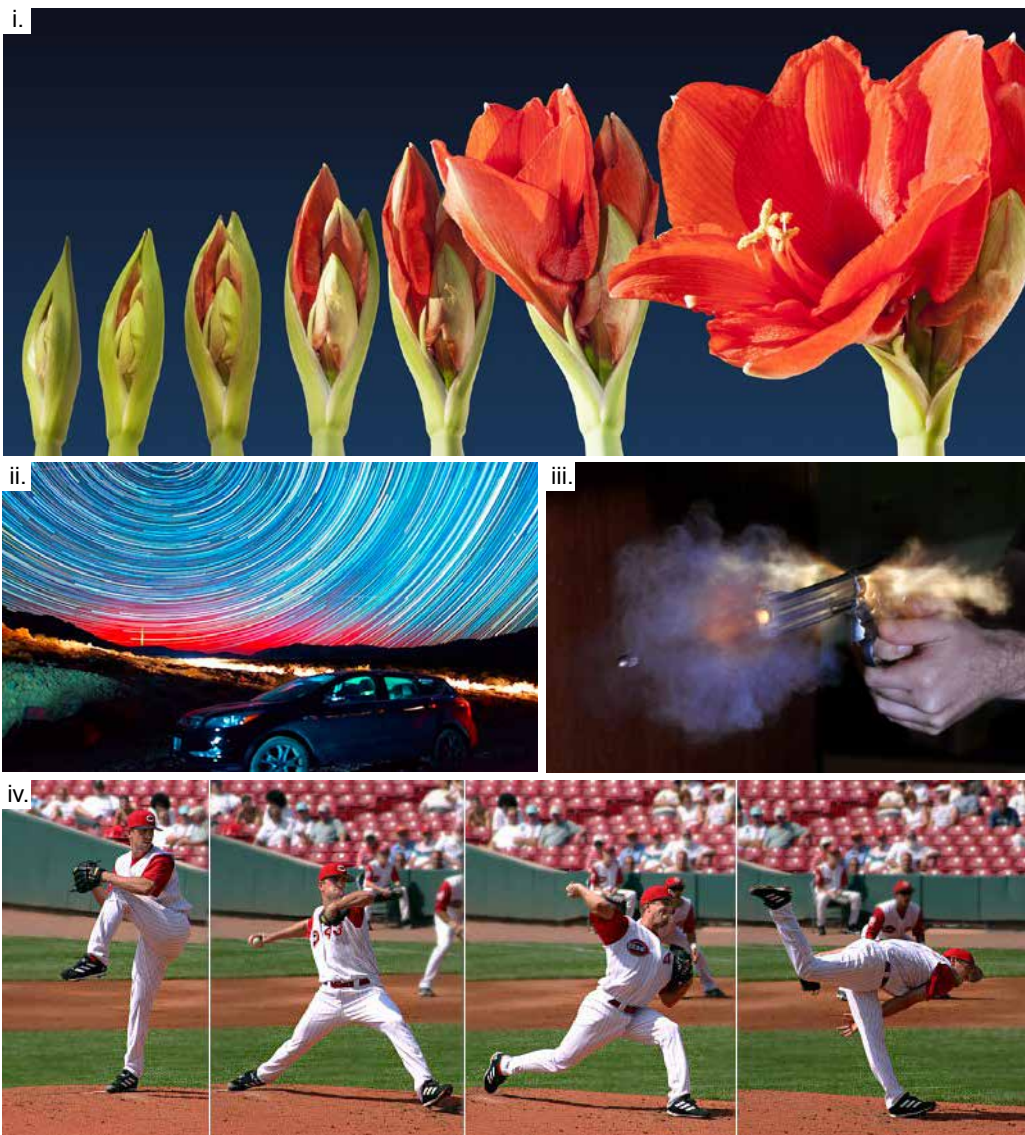
Time-lapse Photography

Time-lapse photography is used to photograph or record things which happen very slowly. It is often used in TV shows about nature or the environment, because many things in the natural world happen very slowly. For example, we know that the moon travels across the sky each night, but it moves too slowly to see. Time-lapse filming records events like this, then we can watch them much more quickly.

Slow-motion Photography

Slow motion photography is the opposite of time-lapse. We use it to film things which happen very quickly. It is often used in movies, for example in a fight or a car crash. Slow-motion filming allows us to slow down these quick events and watch exactly what happens.

Both of these types of filming are used often in Planet Earth, to help you clearly see what is happening.





■ View of the northern Antarctic Peninsula from the air.

Unit 1 From Pole to Pole

Key Words

air pressure (n) – လေထုသိပ်သည်းမှု
altitude (n) – ပင်လယ်ပြင်ထက်အမြင့်
axis (n) – စိတ်မှန်းဝင်ရိုး
breed (v) – (တိရစ္ဆာန်) သားပေါက်သည်။ သားဖောက်ရန် ဇွေးမြူသည်။
climate zone (n) – မတူညီသော ဥတု၊ ရာသီအခြေအနေ
condense (v) – ငွေ့ရည်ဖွဲ့သည်
current (n) – (ရေ၊ လေ) စီးကြောင်း
ecosystem (n) – အပင်နှင့် သတ္တဝါတို့ သဘာဝပတ်ဝန်းကျင်နှင့် လိုက်လျောညီစွာ ဖွဲ့တည်မှုစနစ်
elevation (n) – ပင်လယ်ရေမျက်နှာပြင်အထက်အမြင့်
equator (n) – အီကွေတာ
evaporate (v) – အငွေ့ပြန်သည်
habitat (n) – (သက်ရှိတို့) နေရာ၊ တည်နေရာ၊ ဘုံ
hatch (v) – သားပေါက်သည်
highland (n) – ကုန်းမြင့်ဒေသ၊ တောင်တန်းဒေသ
interact (v) – တုံ့ပြန်သည်။ အပြန်အလှန် အကျိုးပြုသည်
latitude (n) – လတ္တီတွဒ်၊ မျဉ်းပြိုင်
legend (n) – see "map key"
longitude (n) – လောင်ဂျီတွဒ်မျဉ်း၊ ဒေါင်လိုက်
map coordinates (n) – မြေပုံညွှန်း
map key (n) – မြေပုံညွှန်း

moisture (n) – ရေငွေ့၊ အစိုဓာတ်
monsoon (n) – မိုးရာသီ
northern hemisphere (n) – ကမ္ဘာမြောက်ဘက်ခြမ်း
organism (n) – ဇီဝရုပ်၊ သက်ရှိ
pole (n) – ကမ္ဘာ၊ ဂြိုဟ်တို့၏ ဝင်ရိုးစွန်း
precipitate (v) – နှင်းကျသည်။ မိုးရွာသည် (ကောင်းကင်မှ အရည်ဖြင့် ဖွဲ့စည်းထားသော အရာများ မြေပြင်သို့ ကျလာခြင်း)
ray [of sun] (n) – (နေ) ရောင်ခြည်
rotate (v) – လှည့်သည်
southern hemisphere (n) – ကမ္ဘာတောင်ဘက်ခြမ်း
species (n) – မျိုးစိတ်
swamp (n) – စိမ့်၊ ညွန်ပျောင်း၊ ရွံ့ညွန်
terrain (n) – မြေ၊ မြေအနေအထား
tilt (n) – တိမ်းခြင်း၊ စောင်းခြင်း
upland (n) – see "highland"
vegetation (n) – သဘာဝပေါက်ပင်
water cycle (n) – ရေများ၊ နှင်းများမှ တစ်ဆင့် မြစ်ထဲ၊ ချောင်းထဲသို့ ပျော်ဆင်းပြီးနောက် တိမ်များအဖြစ် အငွေ့ပျံတက်သွားခြင်း စက်ဝန်း

1.1 The Arctic and Antarctica (00:00 – 09:00)

A Before you watch

1. **Discuss:** What and where are the poles?
2. Read the text about the Earth's rotation and label the diagram.

a. North Pole	d. direction of Earth's rotation
b. South Pole	e. Earth's axis
c. the equator	

From Pole to Pole

What Are Poles?

The Earth **rotates** around an **axis**. An axis is a line through the middle of the Earth. The places at the north and south (where the line starts and ends) are the **poles**. They are called the North Pole and the South Pole.

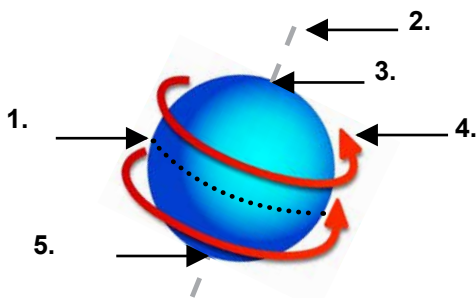
Why are they so cold?

The poles are cold because the energy from the Sun's **rays** is not as strong as at other places. The **equator** gets more energy from the sun, so it is hotter.

Arctic or Antarctic?

The region around the North Pole is called the Arctic (or Arctic Circle) and the area around the South Pole is Antarctica (or the Antarctic).

The Earth's rotation on its axis



B As you watch

1. How cold is winter in Antarctica?
2. How long is it dark for in Antarctica?
3. Where is the female polar bear trying to go to?
4. What animal is the female polar bear going to hunt for?
5. What percentage of polar bear cubs die in their first year?
6. How long are the days during the Arctic summer?

C After you watch

1. Which of the two animals lives in the Arctic and which lives in the Antarctic?
2. Read the text and answer the questions about **map coordinates** using the maps at the back of the book.
 - a. Is Australia north or south of the equator?
 - b. Is Russia north or south of China?
 - c. Which country is further west, Australia or New Zealand?
 - d. What are the map coordinates for Yangon, Myanmar?
 - e. What are the map coordinates for New York City?

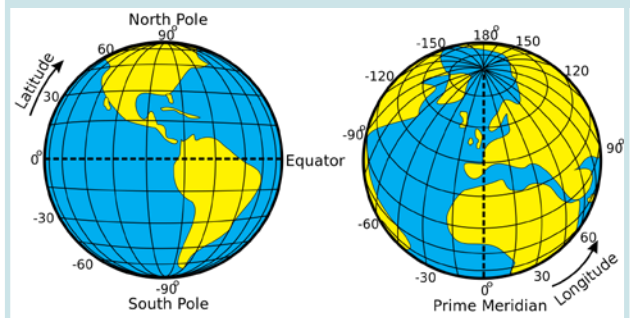
Latitude and Longitude

Our Earth is very big, so we need a way to describe location easily. We do this with map coordinates called **latitude** and **longitude**. Together, they are like an "address" for everywhere on Earth.

Latitude tells us how far north or south a place is. We measure north and south from the equator, which is 0°N . The North Pole is 90 degrees north of the equator (90°N) and the South Pole is 90 degrees south (90°S).

Longitude tells us how far east or west a place is. We measure east and west from the meridian line. This is called the prime meridian and is 0°E . It passes through a place called Greenwich, in London, England. If you want to find Ulaanbataar, Mongolia on a map, it is 47 degrees north (47°N) and 107 degrees west (107°W).

The diagram below shows latitude and longitude.



3. Look at the map on pages 132 and 133. Find London.
4. Look at the map on pages 136 and 137. Find Ulaanbataar.

1.2 Tundra, Taiga and Broadleaf (deciduous) Forests (09:00 – 18:55)

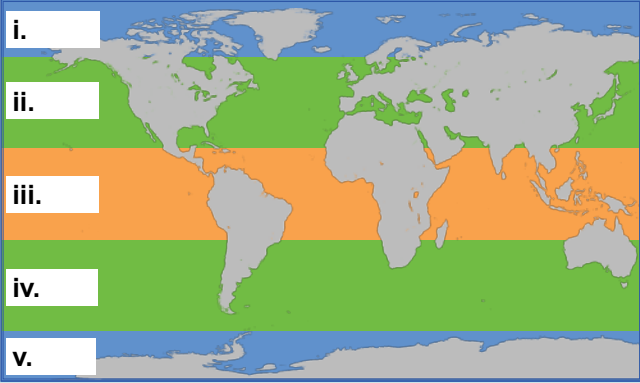
A Before you watch

1. Read the text and label the diagram. You can use each label more than once.
 - a. tropical zone
 - b. polar zone
 - c. temperate zone
2. Where are the subtropical zones? Draw two lines on the map.

Climate and Climate Zones

Climate is the weather in an area over a long period of time. There are many different things which affect the climate of a place, such as latitude, height and **terrain**.

There are four basic **climate zones** on Earth: polar zones, temperate zones, tropical zones and subtropical zones. The North and South Poles are in the polar zones of our planet. These are the coldest parts of Earth. Beyond the polar zones are the temperate zones. Temperate zones have four seasons – spring, summer, autumn and winter. They change between warm and cold throughout the year. Nearer the equator is the tropical zone. The tropical zone has no real seasons, only wet and dry periods. The tropical zone is the hottest part of our planet. The subtropical zones are not usually shown on climate zone maps. They lie approximately 30-45° north and south, between the tropical and temperate zones.



B As you watch

1. Complete the table using information from the video.

	Arctic Tundra	The Taiga	Broadleaf Forest
1. Are there trees? (Y/N)	No		
2. Describe the trees.			
3. Are there many animals? (Y/N)			
4. Give examples of animals.			

C After you watch

1. Look at the map of biomes on page 10 and find the tundra, the taiga and the broadleaf (deciduous) forests. Which climate zone(s) is each in?
2. Which supports the most life? Why?

1.3 Seasons (18:55 – 26:16)

A Before you watch

1. **Discuss:** What causes the seasons on Earth?
2. Read the text and diagram about the seasons and answer the questions.
 - a. Why is it winter at the North Pole when it is summer at the South Pole?
 - b. What difference does latitude make to the climate?
 - c. What difference does elevation make to the climate?
 - d. Which parts of the Earth get more of the Sun's rays?

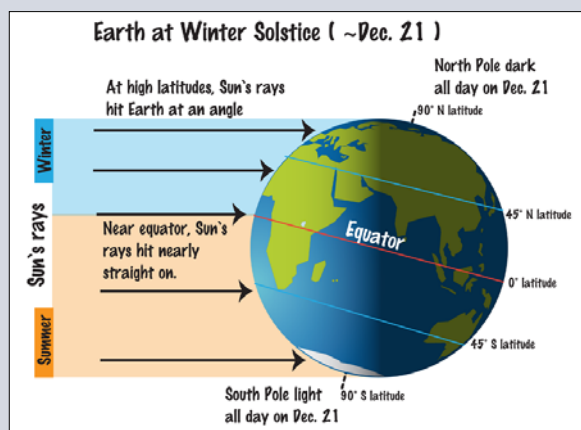
Seasons and Climate

The Earth travels around the Sun once every year. If the axis of the Earth was straight up and down, there would be no seasons. However, the axis of the Earth is not straight up and down, it has a **tilt** of 23°. Therefore, at some times of the year the Sun's rays hit the **northern hemisphere** more and at some times they hit the **southern hemisphere** more. This tilt gives us the seasons.

The Sun's rays always hit some parts of the Earth more directly than others. Land near the equator always gets more direct sun than land near the poles. This helps to create the climate zones.

Additionally, the **elevation** can also affect climate. Lowland usually has a warmer climate than upland. **Air pressure** is lower at higher **altitudes** (at the top of mountains, for example) and this reduces the temperature.

The diagram below shows how the tilt of the earth and latitude affect the seasons and the climate at different places on Earth.



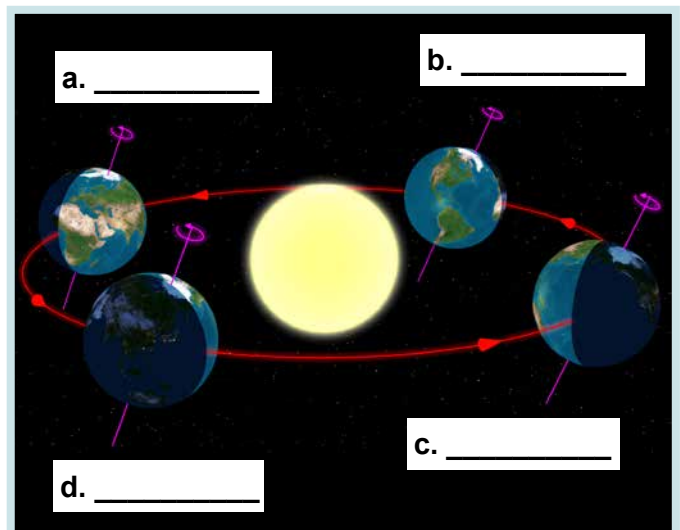
B As you watch

1. What happens in spring in Japan?
2. What happens to the deciduous trees in America at the end of the summer?
3. Match the numbers and percentages to the things they relate to.

a. 300,000	1. percentage of Earth covered by jungle
b. 3%	2. amount of sunlight reaching jungle floor
c. millions	3. insect species in the jungle
d. 2%	4. population of Baikal teal in the world

C After you watch

1. The diagram shows the seasons at the North Pole. Use the information in the video, text and previous section.
 - i. spring
 - ii. summer
 - iii. autumn
 - iv. winter



2. Why are there no seasons in the tropical zones (tropics)?

1.4 Oceans and Weather (23:31–33:23)

A Before you watch

1. Match the words below with the description or explanation.

- | | |
|---------------------------|-------------------------------------|
| a. condense (v) | 1. a small amount of a liquid |
| b. precipitate (v) | 2. to rain or snow |
| c. evaporate (v) | 3. to turn from a liquid into a gas |
| d. moisture (n) | 4. to turn from a gas into a liquid |

B As you watch

1. Answer the questions about the seal and the shark
- What season do the seals around South Africa start to **breed** in?
 - How long does a great white shark's strike last?
 - Which animal is faster, the shark or the seal?
 - Which animal can turn more quickly, the shark or the seal?



2. Listen and fill the gaps.

The Sun's Influence on the Oceans

"The sun, shining on the tropical waters, powers the weather systems of the globe. _____^a _____^b from the warming ocean and rises to create great storms.

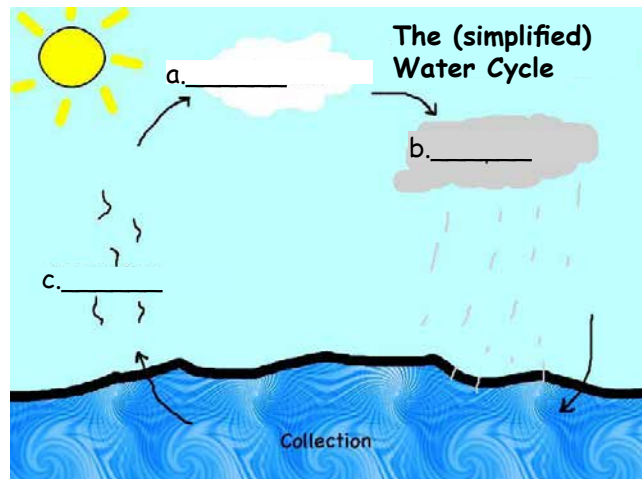
"The winds generated out at sea move inland across the continents. As they travel across the Sahara, they create the biggest of all sandstorms, blowing sand halfway round the world, to fertilise the Amazon jungle.

"Winds blowing across the Indian Ocean collect _____^c and move north towards the Himalayas.

"As the air rises, it cools. The water it carries _____^d into clouds and then falls as the life giving _____^e of the **monsoon**. So air **currents**, powered by the sun, carries wet air to the middle of continents."

C After you watch

1. Label the diagram of the **water cycle**. Use the information from the video and the text in B.



2. Find South Africa on the map on pages 130 and 131. What oceans are to the east and west of South Africa?

1.5 Habitats and Ecosystems (33:23 – End)

A Before you watch

1. Read the text and label the diagram with the words in the box.

[plant] community ecosystem habitat

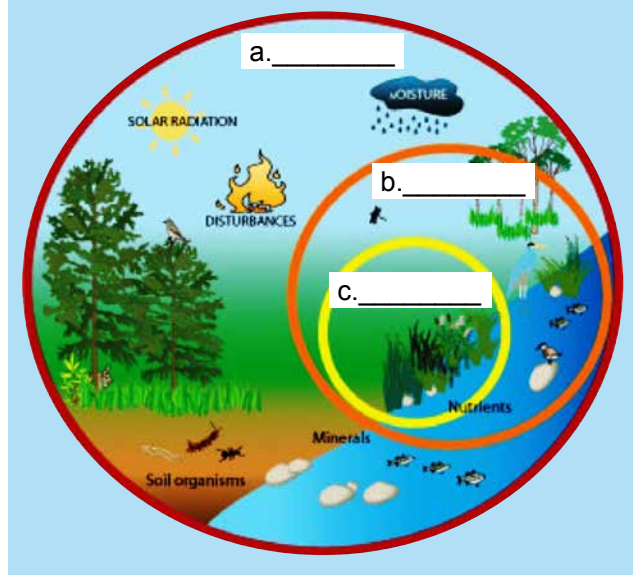
Habitats, Communities and Ecosystems

Habitat is the word we use for the natural home of an **organism**. Different animals and plants can have the same habitat. A habitat must allow an organism to find food, water and shelter. If animals cannot live in one habitat, they will move to a better one. If a habitat cannot provide the needs of an organism, it may die.

Different plants and animal species together in one habitat are called a **community**. The communities of living things **interact** with each other and the world around them – with the air, the water and the sunlight. These interactions form the **ecosystem**.

Riverbank Ecosystems

A riverbank is an example of an ecosystem. The water itself is the habitat of fish and birds. Near the water are other animals, and plants, such as grasses and trees. The animals together are the animal community and the plants are the plant community. They all interact with the water, the air and each other. This interaction of living and non-living things is a riverbank ecosystem.



2. Read the text again and answer the questions.
 - a. What is the difference between a habitat and an ecosystem?
 - b. If a fish lives in the sea, is the sea the fish's habitat or its ecosystem?
 - c. What is the habitat of a cow?

B As you watch

1. Circle the correct word in each sentence below.
 - a. Deserts cover one third / three quarters of the land's surface.
 - b. Many animals are moving to another habitat because they need water / food.
 - c. The Okavango is a desert / swamp.
 - d. Water comes to the Okavango in the rainy season / dry season.
 - e. Animals can get lost in the darkness / dust storms on the way to the Okavango.
 - f. Water in the Okavango comes from the Atlantic Ocean / highlands of Angola.
 - g. Hunting dogs hunt alone / in large packs.
 - h. Hunting dogs usually kill and eat an animal about once a day / once a week.
 - i. After many hundreds / thousands of miles, the elephants arrive at the Okavango.
 - j. Baby penguins **hatch** when the sun / snow returns to the Antarctic.

C After you watch

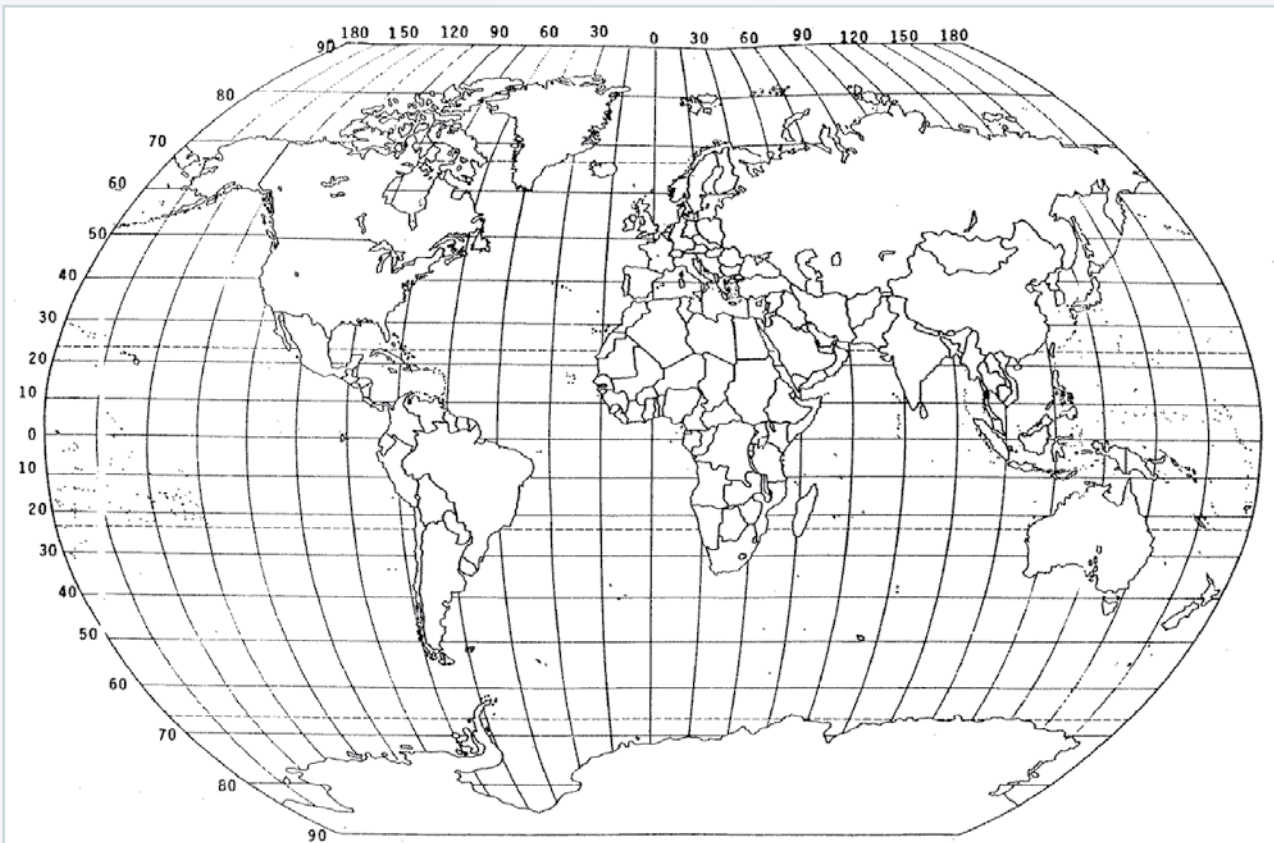
1. What do these animals (from the video) need in their habitats to be comfortable? Why?
 - a. elephant
 - b. catfish
 - c. impala
 - d. hunting dog
2. What would make each of the animals leave their habitat to find a new one?
3. Find the Kalahari Desert on the map on pages 130 and 131. Where is Angola in relation to the Kalahari Desert?

UNIT 1: FROM POLE TO POLE -



SKILLS WORK

1. Colour in the countries or continents that match the coordinates and give their names below:
 - a. 20°N , 105°W : _____
 - b. 30°S , 135°E : _____
 - c. 30°S , 30°E : _____
 - d. Between 40°N and 35°S : _____
 - e. Between 80°N and 10°S : _____
2. Are these countries in the northern hemisphere or southern hemisphere? Colour them on the map.
 - a. Greenland
 - b. Australia
 - c. India
 - d. Myanmar
 - e. Madagascar
3. Which climate zone (or climate zones) do these countries lie in? Colour them on the map.
 - a. Russia
 - b. Brazil
 - c. Alaska
 - d. China
 - e. New Zealand

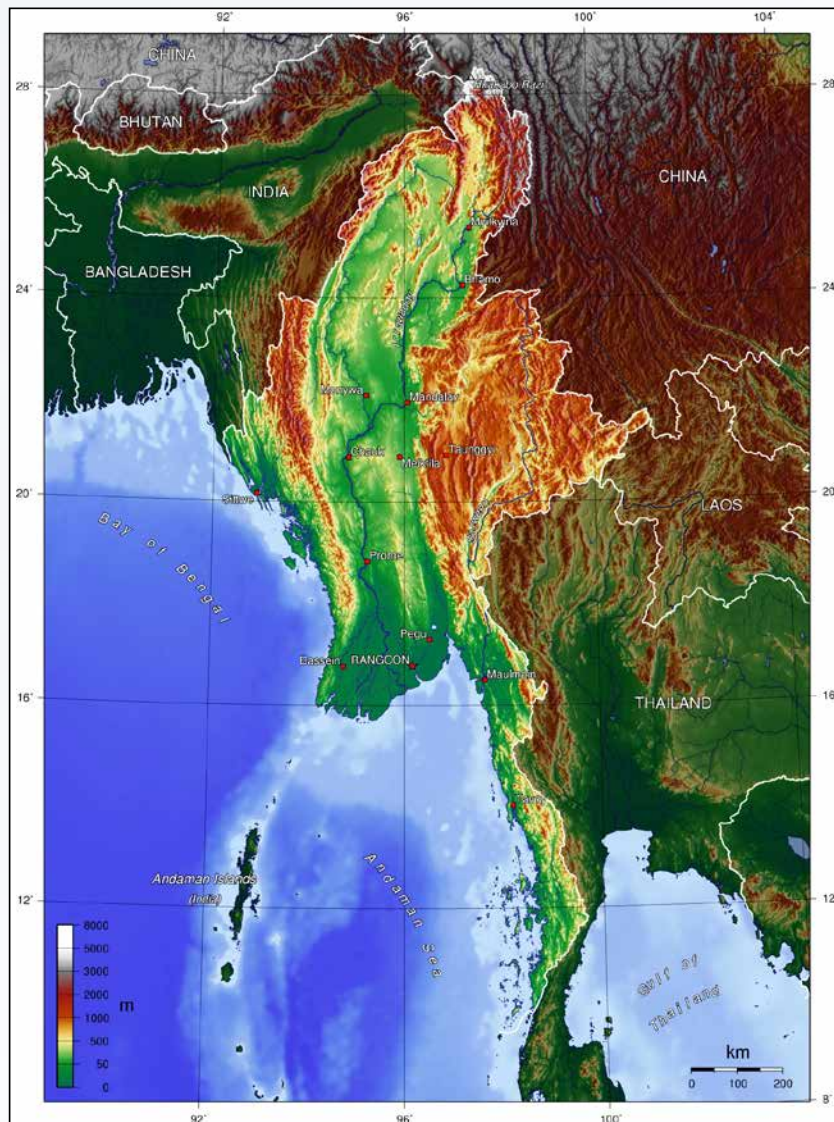


ADDITIONAL ACTIVITIES



FOCUS ON MYANMAR

1. Look at the map, read the text box below it and answer the questions.
2. Read the text about climate in Myanmar and answer the questions.



The map above is a *topographic* map. It shows the elevation of different areas of Myanmar. At the bottom, on the left, is a **legend (map key)**, which shows how to read the map. The green area is the lowest land, the yellow is higher, the brown is even higher, and finally the white is the highest-lying land in Myanmar.

- a. Find Yangon on the map. About how high above sea level is it?
- b. Find the city which is 21°N, 97°E. What is its name, and how high above sea level is it?
- c. Where is your home town. What is its elevation?

THE CLIMATE OF MYANMAR

Many people think that Myanmar is a “tropical” country, but really its climate is more complicated. The climate of Myanmar is different in different parts of the country. In the lowlands of Myanmar, the climate is mostly tropical. There are “hot” and “wet” seasons. Further north, the land becomes higher and the climate changes, because of both the elevation and the latitude. In some places, there is a subtropical climate. This is usually where the land is 8,202 ft (2,500 m) above the sea level. In higher places – 9,843 ft (3,000 m) – there is a temperate climate. Hkakabo Razi, in northern Kachin State, is the highest place in Myanmar at 19,294 feet (5,881 metres). It is also the furthest north. The climate in this part of Myanmar is temperate in the hot season but polar in the cold season.

- a. What two things affect the climate of Myanmar?
- b. What kinds of climate are there in Myanmar?
- c. Is the temperature usually hotter or colder further north?
- d. Which area of Myanmar has the coldest climate?
- e. Which area of Myanmar has the warmest climate?



■ A view of Mount Saint Helens, an active volcano in Washington, USA

Unit 2 Mountains

Key Words

adaptation (n) – ပတ်ဝန်းကျင်နှင့် သဟဇာတ ဖြစ်အောင်နေထိုင်ခြင်း
agriculture (n) – စိုက်ပျိုးရေး
avalanche (n) – တောင်ပေါ်မှ နှင်းထု၊ ရေခဲထုနှင့် ကျောက်တုံးများ တစ်ဟုန်ထိုး လျှောက်ကျခြင်း
camouflage (n) – ပတ်ဝန်းကျင်နှင့် တစ်သားတည်းထင်စေရန် ကိုယ်ယောင်ဖျောက်ခြင်း
collide (v) – အပြင်းအထန် တိုက်မိသည်၊ ဆောင့်မိသည်
den (n) – သားရဲတွင်း
erosive (adj) – တိုက်စားတတ်သော
erupt (v) – (မီးတောင်) ပေါက်ကွဲသည်
flock (n) – တိရစ္ဆာန်အုပ်
fur (n) – သားမွေး၊ အမွေး (ဥပမာ - ငှက်မွေး)
glacier (n) – ရေခဲမြစ်
grazers (n) – အရွက်စားသတ္တဝါ
herd (n) – တိရစ္ဆာန်အုပ်စု
hibernate (v) – သားငှက်တိရစ္ဆာန်များ ဆောင်းခိုသည်
land mass (n) – မြေထု၊ ကုန်းမြေစိုင်
lava (n) – ချော်ရည်၊ ချော်ခဲ
magma (n) – ကမ္ဘာ့မြေလွှာအောက်တွင်ရှိသော ကျောက်ရည်ပူ
migration (n) – ပြောင်းရွှေ့ နေထိုင်ခြင်း

molten (adj) – ချော်ရည်ကဲ့သို့ အရည်ပူဖြစ်သော
mountain range (n) – တောင်စွယ်၊ တောင်တန်း
nesting ground (n) – ငှက်များ ဥရန် နေရာ
peak (n) – အထွတ်အထိပ်
predator (n) – သားရဲ၊ ငှက်ရဲစသည် သားရဲတိရစ္ဆာန်
prey (n) – သားကောင်
rift (n) – ငလျင်လှုပ်ခတ်မှုကြောင့် ဖြစ်ပေါ်လာသော မြေကြီးအက်ကွဲရာ နေရာ
summit (n) – အထွတ်အထိပ်
sphere (n) – စက်လုံး
tectonic plate (n) – ကမ္ဘာ့ကျောက်လွှာထုကြီး၊ ကမ္ဘာ့ဆန့်ကျင်ဘက် မြေလွှာကြီးများ
volcano (n) – မီးတောင်

2.1 Rift Valleys and Mountains (00:00 – 03:26)

A Before you watch

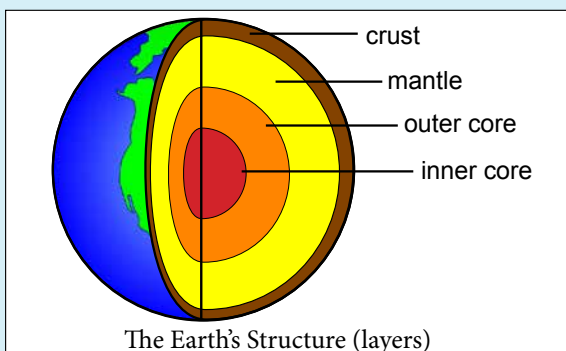
1. Match the words and their definitions.

- | | |
|--------------------|-----------------------------------|
| a. molten (adj) | 1. melted rock |
| b. volcano (n) | 2. large pieces of land |
| c. lava (n) | 3. to explode upwards |
| d. land masses (n) | 4. a mountain with lava inside it |
| e. erupt (v) | 5. hot and liquid |

2. Complete the text about the structure of the Earth using the diagram.

The Structure of the Earth

The Earth is a **sphere**, but it is not solid. It consists of four layers, inside each other. The outer layer is called the _____^a and all the land and sea on Earth sits on it. Under this is the _____^b. It is made of hot, liquid rock called **magma***. The third layer is the _____^c, which is made from molten iron and other metals. Finally, at the centre of the Earth is the _____^d. This is made of super-hot, solid metal.



* Magma and lava are the same thing: hot, liquid rock. However it is called *magma* when it is under the ground and *lava* when it comes out of the ground.

3. Read the text and mark the statements true or false. If false, explain why.

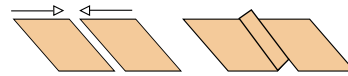
- The Earth's crust is made from pieces of rock called tectonic plates.
- Some move towards each other and some move away from each other.
- Volcanoes can form where plates push together.
- Magma cannot come out of the Earth's mantle.

Mountains and Volcanoes

How mountains are made

Mountains are formed when pieces of the Earth's crust – called **tectonic plates** – push together. One of the plates pushes up and creates mountains. Most of the great **mountain ranges**, such as the Himalayas and the Rockies were made in this way. (You will see these mountain ranges later in the video.)

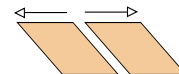
When plates push together, mountains form. Often, volcanoes are created in these places because magma can push through the crust.



What are volcanoes?

Volcanoes exist all over the world. They are places where the Earth's crust is open and the magma from the mantle can come to the surface. When magma comes out of a volcano, we call it lava. Most volcanoes are mountains, but some, like Erta Ale, in Ethiopia, are not. They form at **rifts** – places where the Earth's plates pull apart. In these places, lava comes out from between the plates.

When plates pull apart, magma can come up to the surface.



B As you watch

1. Fill the gaps with words from A.

In Ethiopia, giant _____^a are pulling away from each other. _____^b rises to the surface from a crack in the crust. It creates a chain of young _____^c. Erta Ale is the longest continually _____^d volcano in the world. It is a lake of lava that has been _____^e for over 100 years.

C After you watch

1. Find Ethiopia on the map on pages 130 and 131. What additional information can you see?

2.2 Predators and Prey (03:30 – 13:30)

A Before you watch

1. **Discuss** the questions
 - a. What kinds of animals usually eat plants?
 - b. What kinds of animals usually eat other animals?
2. Read the text about predation. Can you think of some more example of predators and prey?

Predation

Predation is the relationship between a predator and its prey. A **predator** hunts and kills other animals (the **prey**) for food.

Some examples of predators are big cats (such as lions, pumas and jaguars), wolves, sharks and some birds (such as eagles). Land predators often hunt alone or in small packs, and many hunt their prey at night.

Prey animals are usually, but not always, **grazers** (animals which eat plants) such as deer, small monkeys or caribou. These animals often live in large **herds** and graze together. When predators attack they will try and kill young, weak or slower animals.

■ A leopard catching and killing a deer.



B As you watch

1. What do the Gelada baboons eat?
2. Why do the Walia Ibexes and the Gelada baboons graze together?
3. When will Ethiopian wolves not attack their prey?
4. Is it usual to see a group of pumas together?
5. How long does the mother puma have to teach her cubs their survival skills?
6. What is the relationship between the guanacos and the pumas?

C After you watch

1. Compare the features of the predators and the prey animals and complete the table using the phrases in the box. You can use phrases more than once.

- very fast runners
- live in large groups
- defences (horns, etc) on their bodies
- sharp teeth and claws
- **camouflage**
- eyes on the side of their head so that they can see all around
- eyes at the front of their head see what is in front of them

a. What makes wolves and pumas good predators?

b. What helps Ibexes and Huanacos to stay alive?

2.3 Creation and Destruction (13:30 – 26:18)

A Before you watch

1. **Discuss:** What do you remember about the formation of mountains from 2.1?
2. Read parts A and B of the text and find the following on the map below:
 - a. North America
 - b. the North American Plate
 - c. the Pacific Plate

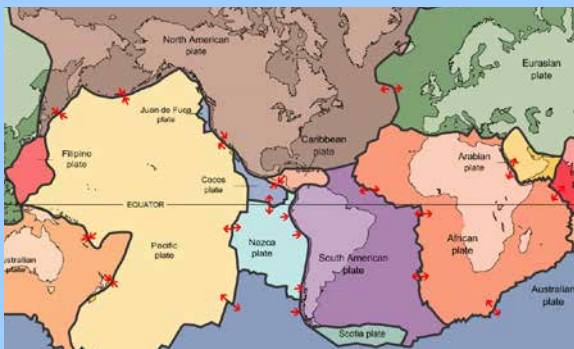
The Rocky Mountains

A. Location and Length

The Rockies are a mountain range in the west of North America. They run from Canada down to Southwestern USA. They run for over 3,000 miles (4,830 km).

B. Formation and Height

The Rockies formed between 80 and 55 million years ago. The Pacific Plate was moving north and the North American Plate was moving west. They collided and the Pacific Plate began to slide under the North American Plate. This pushed up the North American Plate and began to raise the Rockies. The highest **peak** (or **summit**) in the Rockies is Mount Elbert. It is 14,400 ft (4,400 m) above sea level.



C. Avalanches

One danger in the Rockies is **avalanches**. An avalanche is a large amount of loose snow and rock which falls down a mountainside. As it falls, it makes more snow loose, and gets heavier and faster. Avalanches can move at more than 200 miles (320 km) per hour.

3. Read part C of the text and answer the questions.
 - a. What is an avalanche made up of?
 - b. Why are they dangerous?

B As you watch

1. How many avalanches are there in the Rocky Mountains each winter?
2. What animal would kill and eat a baby grizzly bear if it found one?
3. Why does the adult grizzly bear want to eat moths?
4. What three things wear down mountains over time?
5. When were the Alps formed?
6. Which two continents **collided** to form the Alps?

C After you watch

1. Complete the text by filling the gaps with the numbers and words in the box.

Glaciers

"**Glaciers** are moving rivers of _____^a. and _____^b. They move down mountains, creating deep _____^c. They're the most powerful **erosive** force on _____^d.

The Baltoro glacier (below), in the mountains of Pakistan, is the biggest mountain glacier on Earth. It is _____^e miles long and _____^f miles wide, and it can be seen from space."

valleys 43 rock Earth three ice



2. Find the Alps on the map on pages 132 and 133. What countries are the Alps in?

2.4 Surviving in the Mountains (26:18 – 42:26)

A Before you watch

- You saw in 2.2 that predators and prey have different bodies, skills and lifestyles, to help them survive. This is called *adaptation*.
 - Read the text about adaptation. Which example is about *behavioural* adaptations and which is about *physical* adaptations? Complete the titles.
 - What kind of adaptations do you think would help animals in the mountains?

B As you watch

- Are these animals predators or grazers?
 - markhor
 - snow leopard
 - golden eagle
 - wolf
 - giant panda
 - golden snub-nosed monkey
 - musk deer

Adaptation

“**Adaptation**” describes one or more useful features of an animal. Animals' bodies change over millions of years (“evolve”, see Unit 4). Their bodies adapt so that they can live more easily in their habitat. Many species of animals have adapted to only live in one specific habitat. There are two main kinds of adaptations:

- Behavioural: changes in the behaviour, diet, lifestyle, etc, of the animal.
- Physical: changes in the body – size and shape of feet, body shape, kind of eyes etc.

i. Examples of _____ adaptation in grizzly bears

- They have long, sharp claws to attack animals and to dig animals out of their homes to eat them.
- They have thick **fur** to keep them warm in the winter.
- They have a good sense of smell, and can smell a dead body two miles away.
- They have strong legs for running and chasing prey.

ii. Examples of _____ adaptation in grizzly bears

- They dig **dens** in autumn to keep them warm during the cold season.
- They **hibernate** for 5-7 months of the year, in cold climates.
- They travel long distance, to hunt for different prey animals.

C After you watch

- Complete the table of animals' adaptations. The grizzly bear is done as an example.
- Research an animal (from the table or another) and write a paragraph about its adaptations.

Animal	Adaptation(s)	Behavioural /Physical?	Purpose
Grizzly bear	thick fur	P	to keep them warm in the cold
	hibernates 5-7 months of year	B	because not enough food to eat
	climbs mountains	B	to find food in new habitat
	strong sense of smell	P	so they can smell food far away
a. Markhor	large horns on their heads		to protect them
b. Snow leopard		P	to help them climb mountains
c. Golden snub-nosed monkey		P	to keep them warm
	stay very close together		to keep them warm
d. Giant panda	stays for three weeks in a cave	B	

2.5 Migration over the Mountains

(42:26 – End)

A Before you watch

1. Read the text and mark the statements true or false. If false, explain why.
 - a. A migration is a yearly journey.
 - b. All birds migrate.
 - c. Flocks of migrating birds can be very large.
 - d. Birds usually migrate because they want to die in a warmer place.

Bird Migration

Bird **migration** is a behavioural adaptation that can be seen in many species of birds. A migration is a long flight, usually from north to south, every year. During a migration, large **flocks** of many hundreds or thousands of birds fly together to another region or to another continent. The reason for the flight is often to find food, but some birds breed in the warmer climates of the Earth's southern hemisphere. Migrations are often dangerous and many birds die before they reach their destination.



B As you watch

1. How many demoiselle cranes cross the Himalayas each year?
2. Where are they going?
3. What dangers do they face on the way?

C After you watch

1. Read the text about demoiselle cranes and fill the gaps with the numbers and words in the box.

Demoiselle Cranes

Demoiselle cranes have one of the most difficult _____^a in the world. In August and September, they meet in flocks of _____^b and prepare for their flight south. They migrate to escape from the cold winters in the north. During their flight, demoiselles fly with their head and neck straight forward and their feet and legs straight behind.

On their journey they have to cross the Himalayas. They reach _____^c of 16,000-26,000 feet (4,875-7,925 m). Many die from _____^d and hunger. Others are killed by golden eagles.

At their destination, demoiselles have been seen with common cranes, in giant flocks of up to _____^e individuals.

In March and April, they begin their long spring journey back to their northern **nesting grounds**.

20,000 tiredness 300-400
heights migrations

2. What is the predator/prey relationship between the demoiselle cranes and the golden eagles?
3. What other migrations happen in the world? Look back at 1.5. What migrations were happening in that video?
4. Find the Himalayas on the map on pages 136 and 137. Which countries are the Himalayas in?



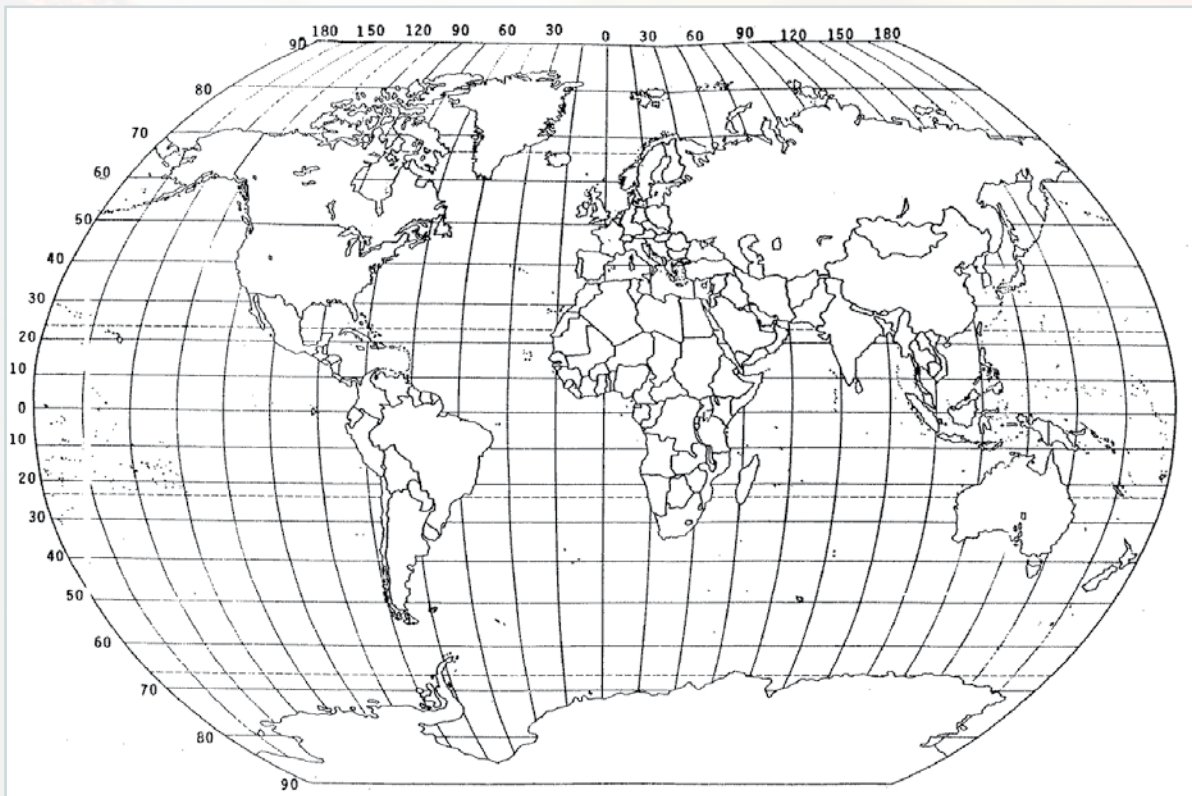
■ Migratory demoiselle cranes at Chhapar, India

UNIT 2: MOUNTAINS -



SKILLS WORK

1. Research the locations of the mountains and mountain ranges in the documentary and add them to the blank map.
2. What other mountain ranges are there in the world? Research them and add them to the map.
3. Research the mountain ranges (listed in the table below) in Myanmar, label them on the map and complete the information in the table.
4. Choose one of the mountain ranges and write a short essay about its location, how it was formed, its climate, etc.



Name	Location	Highest Peak	Height
a. Chin Hills	Rakhine and Chin States	Mount Victoria	3,053 m
b. Bilaukaung			
c. Daen Lao Range			
d. Dawna Range			
e. Karen Hills			
f. Pegu Range			
g. Shan Hills			

ADDITIONAL ACTIVITIES



FOCUS ON MYANMAR

1. Read the text about the Chin Hills and answer the questions.
2. Read the text about tectonic plates and fill the gaps using the diagram.

THE RAKHINE YOMA/CHIN HILLS

The mountains in the west of the country

In the picture of Myanmar on the right, the Ayeyarwaddy Valley is the light brown area in the middle. The Ayeyarwaddy Valley is mostly lowland, and most of the population of Myanmar live in this area.

There is also a large green area to the west. This is the Rakhine Yoma/Chin Hills range of mountains. They run from the Himalayas to the south of Myanmar. Altogether they are 600 miles (950 km) long. The highest peak in the range is Mount Victoria, which reaches 10,500 feet (3,053 metres). Their height decreases in the south and the range continues under the Bay of Bengal. The Andaman Islands are actually the peaks of underwater mountains in the Rakhine Yoma range.

The climate in the Rakhine Yoma/Chin Hills changes with the elevation. There are tropical, subtropical and temperate climates, and different types of forest at different elevations (see Unit 10, Seasonal Forests).



- a. Are the Chin Hills east or west of the Ayeyarwaddy Valley?
- b. Where do the Chin Hills begin and end?
- c. Are they higher or lower in the north of Myanmar?
- d. Why are some parts of the mountain range tropical and some temperate?

Tectonic Plates and Myanmar

The diagram shows the tectonic plates, which form the crust of the Earth. We can see that Myanmar sits on or near three of these plates: _____^a, the _____^b and the _____^c. This is why many parts of Myanmar have lots of mountains.

The Chin Hills were formed between 70 and 50 million years ago. Two of the Earth's tectonic plates – the Indian Plate and the Eurasian Plate collided. The Indian plate was – and still is – moving north. This collision also formed the Himalayas and the Andaman islands.

