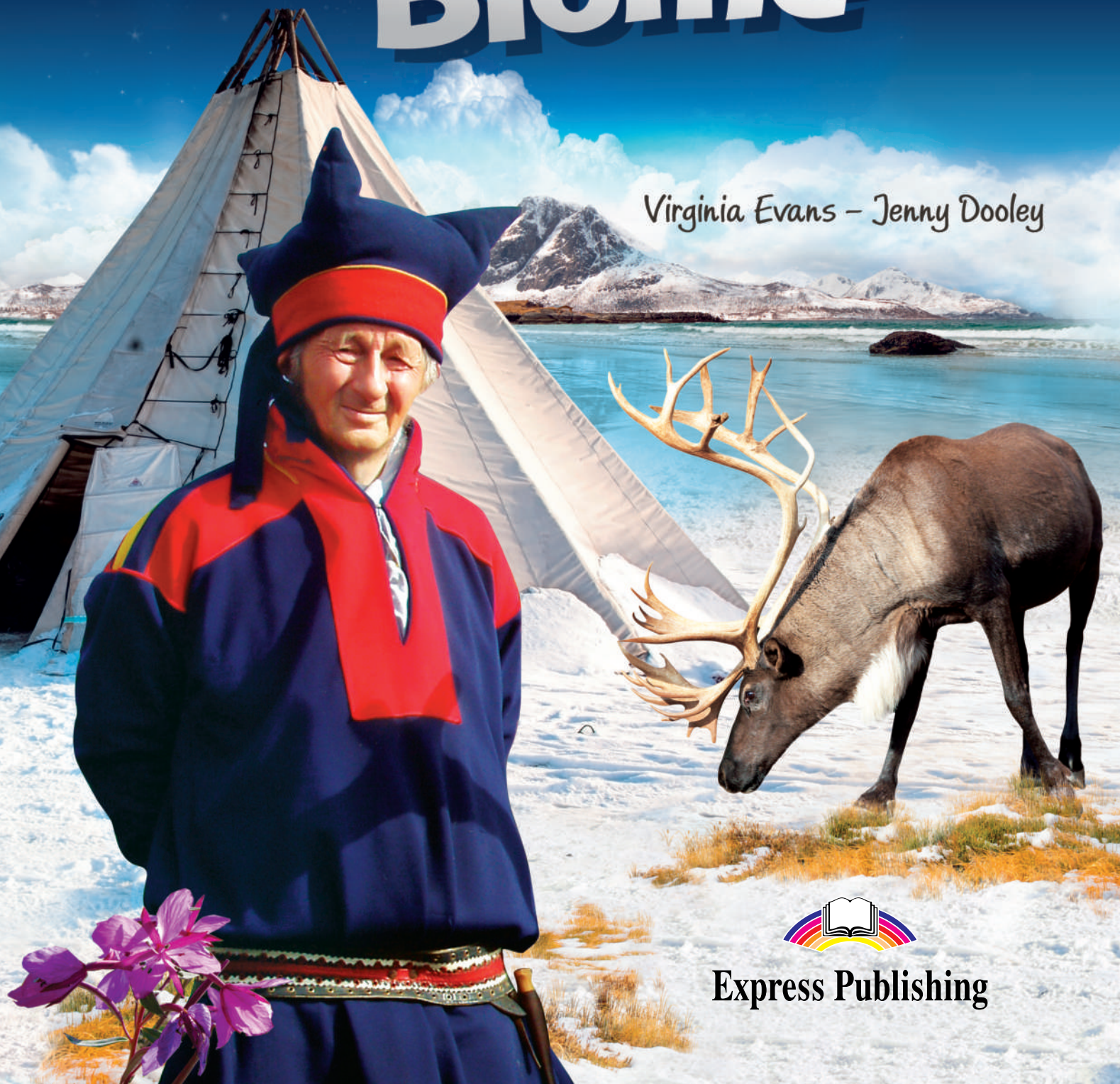




CLIL READERS

The Tundra Biome

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Introduction

Every living thing, whether large or small, simple or complex, depends on other plants and animals to survive. An example of this is the relationship between grass, rabbits, and foxes. The grass is eaten by the rabbits, which in turn are eaten by the foxes. The foxes depend on

the rabbits for food, and the rabbits need the grass to survive. A community of different animals and plants which all depend on each other is called an ecosystem, and a large group of ecosystems is contained in a biome. But a biome is not the same as an ecosystem.



People use the idea of biomes to help them understand Earth's diversity. Biomes divide the surface of the Earth into different groups, based on the climate and the kind of vegetation that occurs there. Tropical rainforest biomes in Africa and South America, for example, will have similar kinds of vegetation and climate, but they will each contain very different ecosystems. Not everyone agrees about how to divide up the earth into biomes, but nevertheless these categories are still helpful.



More than 2,000 species of butterflies live in the rainforests of South America.

The Tropical Rainforest Biome

Location: mainly in South America, Africa, and South Asia

Climate: warm and wet all year; very little variation from one month to the next in temperature or rainfall

Common Flora and Fauna: extremely diverse plant species; monkeys, parrots, panthers

Special Features: complex structure, as the biome is split into the emergent, canopy, understory, and forest floor layers



Myth I



The indigenous people of the Arctic tundra have always felt very close to nature, and many of their traditional stories are about spirits and gods who controlled nature and the elements. This is a legend from the Aleut people of Alaska, about where the winds came from. It is set at a time when the world was still new, and there were no winds blowing on Earth.



THE RELEASE OF THE WINDS

There was once a man and a woman who dreamed of having a child. One night, Igaluk, the Moon Spirit, visited the woman in a dream. In that dream, the spirit took her to a vast icy field with a tree growing in the middle of it. Igaluk told the woman that she had to make a doll from the tree's wood. The doll would bring her fortune and happiness.

She immediately woke up and told her husband about the dream. She tried to persuade him to go and find that special tree, but the man didn't believe the dream. His wife insisted, so he took his axe and went out to find the tree.

The sun had risen, and even though it was broad daylight, the man saw a brighter path of light leading away from the village. Immediately, the man understood that that was the way he had to follow. And he was right. After hours of walking, he saw a glowing tree standing alone in the middle of a huge field. He chopped down the tree and took it home to his wife. That evening, the man used some of the wood to make the figure of a little boy. His wife made the doll a suit out of animal hide. With the wood that was left over, the man made some small weapons and some toy dishes, which his wife filled with food.

The man and his wife went to bed, but were woken some time later when they heard some noises. They rushed to the kitchen, and to their amazement, the doll had come alive and had eaten all the food they had laid out for him. The excited couple played with the doll for some time, then let him rest on a bench and went back to sleep. When they woke up in the morning, however, the doll was gone.

The doll followed the same path the man had taken. He went east towards the sunrise, until he reached the eastern end of the world, where the sky met the Earth and formed

a wall around it. On this wall, the doll saw a big hole that was covered with a piece of hide. Curious to see what was behind the wall, the doll used the knife the man had carved for him to cut the ropes that held the hide in place. Immediately, a powerful wind blew in the Earth, bringing with it different birds and animals. The doll closed the hole again, and said to the wind, "Sometimes be strong, sometimes be soft, and sometimes be still."

The doll wanted to see more of the world, so he kept exploring. He reached the end of the Earth three more times: once in the south, once in the west, and once in the north. In each of these places he saw a hole in the sky wall covered with a piece of hide. As he had done the first time, the doll uncovered every hole, and let the winds into the Earth. The winds brought different animals, temperatures, and weathers with them. The doll closed every hole he opened, repeating the words he had spoken the first time: "Sometimes be strong, sometimes be soft, and sometimes be still."

The doll decided to go back to the village. When he arrived home, the man and woman were overjoyed. They finally had the child they wanted. All the villagers loved the doll, too, because he had let in the winds. The winds had brought the birds in the sky, the animals on land, and they caused the seas to bring the seals and walruses along the coast.

The doll had brought good fortune and happiness, as Igaluk had said. Since then, the doll is honored in festivals, and parents make dolls for their children because they bring such happiness.

The Arctic Tundra

Word Bank

(pp. 16-17)

fragile (adj) = sensitive

affect (v) = to influence

focus (n) = an area of great attention

the equator (n) = an imaginary line around the middle of the Earth which is at an equal distance from the North and South Poles

prevent (v) = to stop

soil (n) = the top part of the Earth, where plants grow

permafrost (n) = a thick layer of frozen soil

patch (n) = a small area of sth

native (adj) = originating from a geographic area

stretch (v) = to cover an area

separate (v) = to divide into different parts

lines of latitude (phr) = imaginary parallel lines on the Earth which show an area's distance from the equator

work out (phr v) = to understand sth

characterize (v) = to describe

pack ice (n) = a mass of ice that forms when floating pieces of sea ice join together

habitat (n) = the type of environment that an animal or a plant lives in

terrestrial (adj) = earthly

fast ice (n) = ice formed when sea water freezes around a coast

herbs (n) = aromatic plants

transition (n) = change

Sámi (n) = a tribe of people who live in the tundra

treeless (adj) = having no trees

plain (n) = a large, flat area of land

(pp. 18-19)

freezing point (phr) = the temperature at which water freezes

melt season (phr) = the time of the year when ice thaws and starts turning into water

rise (v) = to increase

thrive (v) = to grow well

essentially (adv) = basically

lack (n) = a deficient amount

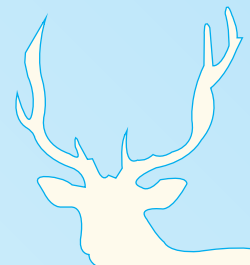
fertile (adj) = rich; able to support plant growth

melt (v) = to turn ice into water

pool (n) = a small area of water or other liquid on a surface

drain away (phr v) = to flow away from


root (n) = the part of a plant which holds it in place and takes nutrients from the soil



Pre-Reading activities

1 a) Choose the word or phrase that you think best completes the sentence.

- 1 The Arctic tundra biome is found around **the equator/the North Pole**.
- 2 There are **three/four** different areas of Arctic tundra.
- 3 The **low/middle** Arctic tundra is where the dwarf willow can grow.
- 4 The winter in the Arctic tundra can last for **six months/ten months**.
- 5 Precipitation in the Arctic tundra mostly falls as **rain/snow**.
- 6 Below the first few feet of soil, there is a **thick/thin** layer of frozen ground.

b)  Listen, read, and check if your answers were correct.

While-Reading activities

2 Read the text and check the part of the sentence which is true.

- One major difference between the alpine and the Arctic tundra is that
A the alpine tundra receives low levels of radiation in comparison to the Arctic.
B the Arctic tundra receives low levels of radiation in comparison to the alpine.
- Lines of latitude help scientists
A tell the difference between the alpine and the Arctic tundra.
B divide the Arctic tundra into different ecological zones.
- The high Arctic tundra is described as having
A very similar features to the polar ice biome.
B rocky ground filled with lichen and mosses.
- The low Arctic tundra is the habitat of
A just mosses and shrubs.
B some birds and mammals.
- The very cold temperatures of the Arctic tundra are combined with
A powerful winds.
B a lot of rain during the year.
- Water collects on the surface of the tundra because
A there is a thick layer of frozen soil underneath it.
B there are not enough trees and plants to use it.

3 Fill in: *altitudes, fragile, fertile, native, patches*.

- Unlike the alpine tundra, the Arctic tundra is not found at high
- The Arctic tundra biome is both and important, so it interests scientists.
- The alpine tundra has of frozen soil, rather than one continuous layer.
- There are not many animals in the high Arctic tundra, and most of them are also found in the polar ice biome.
- Even though the tundra receives some rainfall during the year, the soil is not enough for lots of plants to grow there.

4 Replace the words/phrases in bold with: *affect, rises, thrive, lack, habitat*.

- The middle Arctic tundra is the **environment** of the caribou.
- Damage to the Arctic tundra will **influence** life on the whole planet.
- The plants and animals of the Arctic tundra can **grow well** during the summer melt season, when the temperatures go up.
- There is a **shortage** of rain during much of the year in the Arctic tundra.
- The temperature in the Arctic tundra **increases** around early June.

After-Reading activities

5 a) SUBJECT-SPECIFIC VOCABULARY: Put the information below in the appropriate boxes.

- continuous permafrost • strong ultraviolet radiation
- high altitudes • low ultraviolet radiation
- three ecological areas • patches of permafrost

ALPINE TUNDRA



ARCTIC TUNDRA



b) Tell the class the differences between the alpine and Arctic tundra.

Myth II

Word Bank

(pp. 44-45)

wizard (n) = a man who has magical powers

battle (n) = a fight

glow (v) = to give off light without flames

sparkling (adj) = shining very brightly

aurora (n) = a phenomenon which only happens near the poles where electrical particles from the sun meet atoms in Earth's upper atmosphere and create bright colors in the sky

Northern lights (phr) = the aurora phenomenon around the North Pole

creaking (adj) = making a long, high pitched sound

sway (v) = to move slowly from side to side

grin (v) = to smile

evil (adj) = very bad

wicked (adj) = bad; wanting to hurt others

rule (v) = to have control over sth

the underworld (phr) = a place under the Earth's surface where it is believed in some cultures that people go when they die

spell (n) = a group of words which, when spoken, are able to cause magical things to happen

challenge (v) = to invite sb to battle you

duel (n) = a battle between two people

spruce tree (n) = an evergreen tree found in the Northern Hemisphere

swing (v) = to move sth in a curved, sweeping movement

grind (v) = to break sth into very small pieces by hitting it repeatedly

dust (n) = very small, dry particles made up of soil or waste which lie on the ground or on surfaces

shoulder (n) = the part of your body between your neck and your upper arm

lightning storm (phr) = an extreme weather pattern which has strong winds, heavy rain, and flashes of bright light

charge (v) = to run at sb/sth to attack them

fierce (adj) = violent

thunder (n) = a loud, rumbling sound which you hear after a flash of lightning

deafen (v) = to make sb unable to hear

transform (v) = to change

enormous (adj) = huge

hissing (n) = a noise that sounds like a long 's'

venom (n) = poison

drip (v) = to fall in individual drops

fang (n) = a long, curved tooth

mighty (adj) = powerful

chase (v) = to follow sb/sth to try and catch them


claws (pl n) =



Pre-Reading activities

1 a) Choose the word/phrase that you think best completes each sentence.

- 1 *Noaidi* is the Sámi word for **the northern lights/wizards**.
- 2 The **ice and snow/rivers and lakes** in the Arctic tundra shine with a soft, white light.
- 3 The story begins on one wintry day, as **a magical animal/a man with magical powers** was wandering over the tundra.
- 4 Schlipme had been given the power of the **Ice Gods/Moon Spirits** to kill Nischergurgje.
- 5 When Schlipme stood up, he grew taller than all the **trees/mountains** in the land.
- 6 When the two wizards fought in the sky, they caused **lightning to hit the ground/heavy rain to fall on Earth**.
- 7 Nischergurgje turned himself into a powerful **dragon/eagle** in order to beat Schlipme.

b)  Listen, read, and check if your answers were correct.

While-Reading activities

2 Read the text and match the beginnings of the sentences to their endings.

- 1 The ruler of the underworld wanted
- 2 Schlipme first wanted
- 3 Schlipme used his magic
- 4 The two wizards then changed
- 5 They transformed into snakes
- 6 When Schlipme was defeated, he went

- A to become taller than any tree in the land.
- B whose hissing could be heard for miles around.
- C back to the underworld.
- D Nischergurgje to die.
- E into lightning storms.
- F to find out how strong Nischergurgje was.

3 Fill in: *duel, swing, transformed, spell, enormous, venom, charged, evil.*

- 1 Schlipme was a very man because he tried to kill Nischergurgje in his sleep.
- 2 Schlipme was so large that he could a huge spruce tree with his hands.
- 3 The wizards changed into snakes using a
- 4 When the wizards at each other, they clashed in the sky and deafened everyone.
- 5 Schlipme believed he could win the with Nischergurgje because he had the power of the Moon Spirits.
- 6 The two wizards changed themselves into huge snakes whose dripping burned the ground.
- 7 During their fight, the wizards into different animals.
- 8 Nischergurgje became so that his chin pushed the moon out of the way.


4 Choose the correct word to complete each sentence below.

- 1 The Moon Daughter **ruled/challenged** the underworld.
- 2 While Nischergurgje was preparing his meal, he heard a soft **sparkling/creaking** sound coming from the tree above.
- 3 When the two wizards changed into snakes, powerful poison dripped from their **knees/fangs**.
- 4 Nischergurgje was so fast that he **chased/deafened** after Schlipme and caught him.
- 5 He was so tall that his **shoulders/peaks** reached the clouds.

After-Reading activities

5 Complete the summary with these words: *thunder, claws, dripped, at war, enormous, defeat, spells, battle.*

The Sámi myth is about two wizards who were 1), the good wizard Nischergurgje, and the wicked wizard Schlipme. Their 2) started when Schlipme was sent by the ruler of the underworld to kill Nischergurgje. It began with the two wizards casting 3) which made them grow extremely tall. They turned into powerful storms, whose loud 4) deafened those who heard them. They fought until Nischergurgje used his magic to make Schlipme fall to the ground. Next, they turned themselves into two 5) snakes whose venom 6) and burned the ground. Nischergurgje and Schlipme continued using their magic to take different forms and fight each other. Finally, the good wizard Nischergurgje managed to 7) Schlipme by becoming an eagle and sinking his 8) into him. The story ends with the wicked wizard returning to the underworld and the good wizard enjoying his meal.

6  Which parts of the story did you enjoy the most? Why? Tell the class.

Review

Listening activities

1 Listen to two people talking about the Arctic tundra. For questions 1-4 choose the correct answer, A, B, C, or D.

- 1 What are the speakers mainly discussing?
A a walking trip to the Russian tundra
B recent discoveries in the Russian tundra
C a creature similar to the Loch Ness monster
D alien species of lemmings in the Arctic tundra
- 2 How does the woman react when the man tells her what he heard?
A She is surprised by the information.
B She is not interested in what the man heard.
C She wants to know more.
D She says she has read the same information on the Internet.
- 3 According to the man, what does the creature the walkers found look like?
A It has a huge, hairy body, and fangs.
B It has a long neck, and looks like a dinosaur.
C It looks like a human with a very long neck.
D It has a thin body, and a big head.
- 4 Why do scientists believe that they have found evidence of the yeti?
A They have found footprints, hairs, and even a bed.
B They have found hundreds of yetis on the tundra.
C A yeti was frozen in the ice of the Arctic tundra.
D People said that they have seen a yeti.

2 Listen to the teacher talking to her class. For question 1-4 choose the correct answer, A, B, C, or D.

- 1 What is the teacher mainly talking about?
A The alpine tundra.
B The Arctic tundra.
C The Antarctic tundra.
D The tundra biome in general.
- 2 Why are there fewer animals and plants in the Antarctic tundra than in the Arctic?
A Most of Antarctica is covered by ice sheets.
B There is only rocky soil in the Antarctic tundra.
C Only insects are able to survive there.
D The soil is not very fertile.
- 3 Which is NOT true about the Antarctic tundra?
A It has rocky soil.
B It can support many species of plants.
C Not everyone agrees that it is actually a type of tundra.
D It has many native animals.
- 4 What makes *Belgica antarctica* so unusual?
A It is extremely small.
B It only lives for ten days.
C It can live for up to four weeks without air.
D It only eats a certain type of moss.



Amazing Facts

Did you know?

In order to lose less heat in the cold, many animals in the Arctic tundra have small ears as well as small

1)

Some plant species in the Arctic tundra grow in low, tight groups, and are in this way able to trap pockets of warm air to protect themselves from the cold. These are called 2)



Every year, lemmings in the tundra almost completely 3) This is because they are eaten by predators or die during their mass migrations. Luckily, they reproduce in such enormous numbers that their 4) grows again.



The Arctic tern, a bird species which is 5) to the Arctic tundra, flies over 40,000 miles when it migrates. This means that it sees two summers every year, and more 6) than any other animal on the Earth.



Scientists have managed to grow plants from 7) which were frozen in the Arctic tundra nearly 30,000 years ago.

The Inuit word for musk ox is *oomingmak*, and it means "someone who has a 8)"

1 a) Complete the sentences using the words below.

- native • salt • disappear • beard
- cushion • crystals • tails • population
- seeds • daylight

b) Listen and check.

2 **ICT** In groups, collect more information about the tundra biome and prepare a Yes/No quiz for your classmates.

The low temperatures in the Arctic tundra biome can cause sea water to freeze. When this happens, 9) rises to the surface of the sea and forms 10), which are called frost flowers because of their interesting shapes.



The Tundra Biome

Take a trip to the Arctic tundra, a land of ice and snow. A land so fragile and yet so important that if it is damaged in any way all life on Earth will be greatly affected. Learn about the plants, animals, people, and unique features of this beautiful place through stunning images, interesting facts and engaging stories.

Components

- Reader
- Multi-ROM
Teacher's

DIGI MATERIAL

cross-platform application
(iOS, Android, Windows, MacOSX)



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