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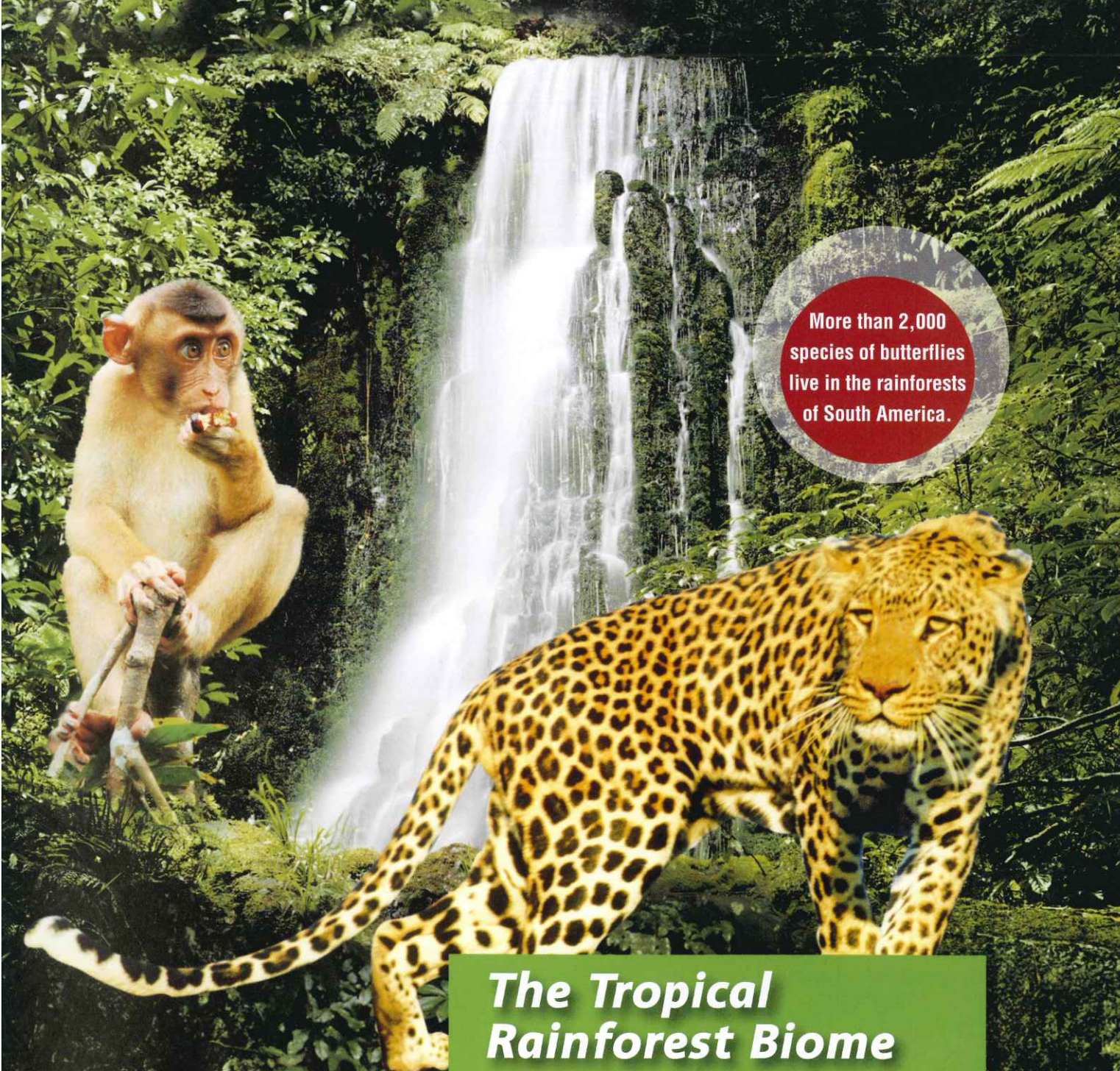
# Introduction

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



# Introduction / The Alpine Tundra Biome

## Word Bank

(pp. 4-5)

**community** (n) = a group of plants and animals living in an area

**ecosystem** (n) = the different animals and plants of an area, and the way they interact with each other and their environment

**biome** (n) = a region that is characterized by its climate, animals and plants

**diversity** (n) = a state when many different things exist together

**divide** (v) = to split

**occur** (v) = to exist

**vegetation** (n) = the plants that cover a particular area

**variation** (n) = change

**flora** (n) = all the plants in an area

**fauna** (n) = all the animals in an area

**diverse** (adj) = having variety

**species** (n) = a kind of plant or animal

**feature** (n) = a characteristic

**structure** (n) = arrangement

**split** (v) = to separate sth from sth else

**layer** (n) = a thickness of sth

**emergent layer** (phr) = the highest/top part of a forest

**canopy layer** (phr) = the part of a forest below the emergent layer

**understory layer** (phr) = the part of a forest below the canopy layer

**forest floor** (phr) = the bottom of a forest

(pp. 6-7)

**precipitation** (n) = the amount of rain, snow, sleet, or hail that falls on the ground over a period of time

**temperate** (adj) = having mild temperatures

**deciduous** (adj) = (of trees) having leaves that fall off in the fall

**broadleaf tree** (phr) = a tree that has wide leaves

**shed** (v) = (of plants) to lose leaves, usually in the fall

**shrub** (n) = a small bush

**drought** (n) = a long period of time with little or no rain

(pp. 8-9)

**grassland** (n) = area covered with grass

**moderate** (adj) = mild

**resistant** (adj) = not strongly affected by sth

**reptile** (n) = a cold-blooded animal that lays eggs; e.g. snake

**sand dune** (phr) = a hill of sand

**oasis** (n) = an area in the desert where water is found

(pp. 10-11)

**chaparral** (n) = an area of land characterized by a low, thick growth of shrubs, bushes, and short trees

**coastal** (adj) = being near a coast

**seed** (n) = the small, hard part of a plant that grows into a new plant

**evergreen** (adj) = (of plants) having leaves all year

**growing season** (phr) = the period of time in the year when plants grow

(pp. 12-13)

**survive** (v) = to continue to live

**plankton** (n) = tiny plant and animal organisms living in the water

**iceberg** (n) = a large piece of ice which floats on the water, and which has broken off a much larger piece of ice

**glacier** (n) = a large, slow-moving mass of ice

**mountainous** (adj) = having many mountains

**sea level** (phr) = the average height of the sea in relation to the land

**lichen** (n) = a group of tiny plants that spread on stones and trees

**moss** (n) = a very small, soft, green plant with no flowers which grows on wet soil, wood, or stone

**permafrost** (n) = permanently frozen soil

**alpine** (adj) = relating to mountains

(pp. 14-15)

**define** (v) = to say what sb or sth is like

**latitude** (n) = distance north or south of the equator

**altitude** (n) = height above sea level

**timberline** (n) = the point on a mountain above which trees cannot grow

**terrain** (n) = ground; the natural features of land

**bare** (adj) = not covered by anything

**rocky** (adj) = covered in lots of rocks

**harsh** (adj) = severe; very difficult

**adapt** (v) = to change in order to better suit your environment

**ultraviolet radiation** (phr) = energy in the form of waves or particles which is dangerous in large amounts

**supercool** (v) = to cool or be cooled below the point of freezing

**cell** (n) = the smallest basic unit of a living organism

**adaptation** (n) = a change made in order for an organism to better survive in its environment

**elevation** (n) = the height of a place

**reach** (v) = to arrive

**filter** (v) = to split and separate different particles from each other and make them smaller

**growth** (n) = development

**challenging** (adj) = difficult

**develop** (v) = to start having sth

**unique** (adj) = special

**absorb** (v) = to soak up; to take in

**trap** (v) = to catch or hold sth or sb; to stop sth/sb from leaving somewhere

**migrate** (v) = to change location

**hibernate** (v) = (of animals) to sleep during the winter



## Pre-Reading activities

- 1 a) **Decide if the following sentences are T (true) or F (false).**
- A biome is the group of animals that live in a specific area. ....
  - The tropical rainforest biome has a wide variety of plant and animal species. ....
  - The boreal forest biome can only be found in the Southern Hemisphere. ....
  - The alpine tundra biome is defined by how high the land is. ....
  - The higher you are in the Earth's atmosphere, the thicker the air becomes. ....
- b) **Listen, read, and check if your answers were correct.**

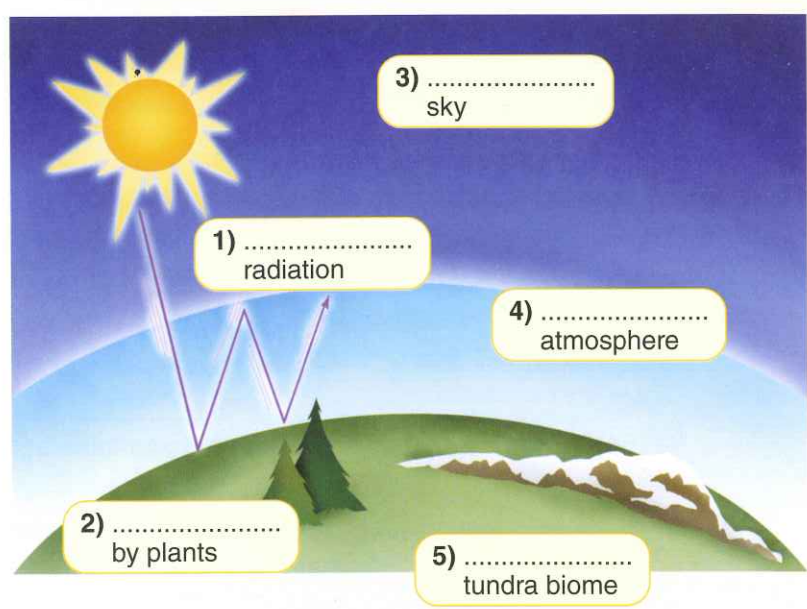
- 3 **SUBJECT-SPECIFIC VOCABULARY: Fill in:**  
*altitude, precipitation, ecosystem, drought, hibernation, vegetation.*
- A lot of ..... in the alpine tundra falls as snow.
  - ..... helps some animals in the alpine tundra to survive during the winter.
  - In a(n) ....., all the living things in an area depend on each other to survive.
  - The deciduous forest's ..... mainly consists of broadleaf trees.
  - The alpine tundra biome can be found at a(n) ..... of more than 10,000 feet above sea level.
  - As there is very little rainfall there, the savanna biome experiences long periods of .....

## While-Reading activities

2 **Read the text and for questions 1-3 choose the best answer A, B, C, or D.**

- Biomes are characterized by
  - the climate and plants that grow there.
  - the climate, precipitation, and temperature.
  - the area's physical characteristics.
  - the number of ecosystems they contain.
- A deciduous forest is
  - split into four layers.
  - not found in Asia.
  - cooler than a rainforest.
  - very similar to a boreal forest.
- Alpine tundra plants can supercool their cells
  - to avoid freezing.
  - to prevent being damaged by radiation.
  - to survive the short growing season.
  - to change their temperature very quickly.

4 **Fill in:** *absorbed, thin, ultraviolet, cloudless, alpine.*



## After-Reading activities

5 **Explain to the class why the alpine tundra receives high levels of radiation, and how the plants in the biome have developed in order to survive there. Use the picture above to help you.**