



BIOMES

INTRODUCTION



DID YOU KNOW?

The largest desert in the world is covered in ice. Moisture lost versus moisture gained is what makes a desert, not in fact temperature. This makes Antarctica the world's largest desert.

DID YOU KNOW?

Rainforests has the world's highest species diversity. Rainforests can support higher levels of species diversity, because of their high levels of rainfall and warmer year-round temperatures.

DID YOU KNOW?

An estimated 1/3 of the world's carbon is stored in the Arctic tundra. Tundra is characterised by permafrost, soil that remains frozen ground all year round. Permafrost is an efficient carbon bank. Worryingly, as our global temperatures rise permafrost is melting releasing more carbon dioxide into the atmosphere.

DID YOU KNOW?

Less than 2% of sunlight reaches the ground in a rainforest. The tree canopy and accompanying vegetation is very dense in tropical rainforests, blocking out sunlight from the forest floor below. The lack of sunlight makes the ground an ideal place for fungi to grow.

DID YOU KNOW?

The world's largest land animals are found in the grassland biome. The fertile soils can support large amounts of grasses that can provide food for large animals such as African Elephants (the world's largest land mammal).

Most of us have heard the term **biome**, as we all live in and are part of biomes, but do we understand what a biome is?

A **biome** is a large naturally occurring area and community of fauna and flora of the earth that has certain climate. Biomes are divided by climate, soil type, fauna, and flora.

There are five major biomes:

The aquatic biome (divided further into fresh and saltwater based on the salt levels). Freshwater biomes include ponds, lakes, rivers, and wetlands. Saltwater aquatic biomes include oceans, seas, and estuaries.

The forest biome (divided further into taiga forest, temperate forest, and rainforest). Forest biomes make up 30% of the earth's surface.

The tundra biome is one of the of the coldest biomes. It also receives very little rainfall. Plants and animals in this biome are exposed to incredibly harsh conditions.

The grassland biome (divided into temperate and savannah grassland). Grasslands and savannahs are composed of grasses and some tree species. Fire is a vital component of this ecosystem.

The desert biome is associated with very little rainfall. Deserts can be very hot or very cold. There is a general lack of vegetation in deserts.

Plants and animals are adapted to survive their biome. There are many ecosystems within each biome.

Biomes support life on planet earth, they influence weather patterns and help regulate temperature and carbon levels.

Any changes that occur within the ecosystems and biomes can lead to a cascading range of negative effects within the system.

LESSON PLANNING

Start your lesson by discussing with learners the basic of biomes. Maybe get them to describe the biome that they live in.

The following YouTube videos provide concise, clear introductions to biomes (the first video is a more visual spectacle, while the second provides explanations).

- <https://www.youtube.com/watch?v=hly0ZlyPPDg>
- <https://www.youtube.com/watch?v=0fb8143ndo8>

Through the class discussion, learners should be able to answer the following questions:

1. What are the major biomes?
2. What plants and animals live in the major biomes?
3. What is the climate like in the major biomes?
4. What landforms exist in the major biomes?

LESSON IDEAS

OUR BIOMES

GRADE	1-3
SUBJECTS	Life Skills
	In this activity, learners match various animals and plants to their correct biomes.
DURATION	30 - 45 minutes.
RESOURCES	Learner Worksheets, scissors and glue

BIOMES AND FOOD CHAINS

GRADE	4-5
SUBJECTS	Social Science (Geography), Natural Science & Technology
	In this activity, learners combine what they have learnt about biomes and food chains to create an illustrated and labelled food chain for a biome of their choosing.
DURATION	1 hour
RESOURCES	Learner Worksheets, magazine or printed pictures, internet or library access for research

BIOME TRAVEL BROCHURE

GRADE	6-8
SUBJECTS	Social Science (Geography), Natural Science & Technology
	In this activity learners will create travel brochures to market a biome of their choosing.
DURATION	1 hour
RESOURCES	Learner Worksheets (including brochure template), internet or library access for research, craft materials to decorate the brochures

BIOME POSTERS

GRADE	9-11
SUBJECTS	Social Science (Geography), Life Science
	In this activity learners will create and present posters on a biome of their choosing including the environmental challenges and human influences on the biome.
DURATION	1-2 lessons
RESOURCES	Learner Worksheets, poster materials, internet or library access for research

CROSS- CURRICULAR ACTIVITIES:

MATHEMATICS

Create pie charts using the percentage landcover associated with the different biomes.

ART

Draw the animals or plants that occur in a chosen biome. For the younger grades, you can make desert artworks using sand. Aquatic biomes can be created using watercolour.

<https://amslerartroom.wordpress.com/student-work/biome-illustrations/>

THEMATICS

Geography Mapwork – map the regions of the earth and related biomes

ENGLISH

Create a dictionary for the terminology associated with Biomes and ecosystems. Check out this idea for students to create their own VocAPPulary:

<https://www.teachstudentsavvy.com/2019/05/the-best-teaching-tools-for-learning-vocabulary.html>