

Biomes and climate graphs

Lesson Map: <http://esriaustralia.com.au/education/SpatialActivity25>

Engage

What is a biome?

- A biome is an environment that commonly contains the same flora and fauna, across different longitudes and latitudes.
- There are many different classifications and subclassifications of biomes, but today we are going to analyse six.



Download student worksheet [here](#).

Time
30 minutes

Activity

Explore the relationship between biomes and climate by analysing climate graphs.

Learning Outcome

Students will be able to:

- State the six major biome types
- Look at typical climate patterns in these biomes
- Locate biomes on a map

ACARA Curriculum Link

Year 9 Geography – Biomes and food security

[ACHGK060](#)

Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact education@esriaustralia.com.au

Explore

Why do different biomes occur?

- Different biomes occur at different locations due to climate.
- Climate refers to long term patterns of weather.
- Click on the lesson map URL. Under the details tab, turn on the layer 'Total Annual Precipitation.'
- ? What is the spatial distribution of precipitation? Where does it rain the most?
The areas with higher precipitation are located closer to the equator. Areas with little to no precipitation occur away from the equator.
- Turn off all the layers. Turn on 'Annual Temp'. What do you notice about the spatial patterns of temperature?
Again, areas closest to the equator receive the highest temperatures, whilst areas away from the equator receive lower temperatures. This is especially prevalent in the northern hemisphere.

Explain

Biomes and climate

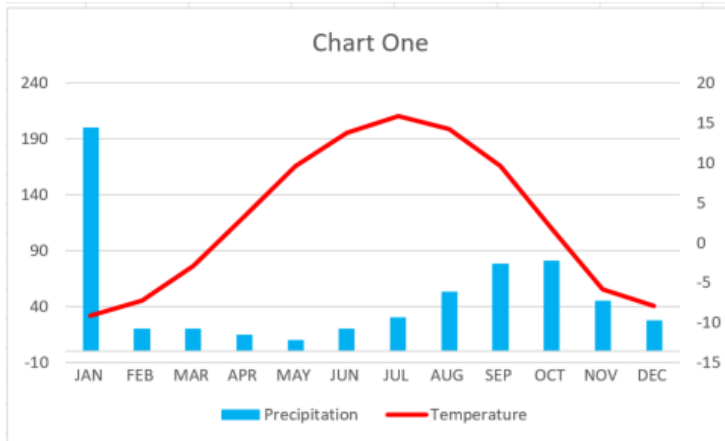
- Long term patterns of climate allow certain flora and fauna to flourish in specific temperatures and precipitations.
- Listed below is the typical climate for each biome. This can differ in individual cases as some climates are spread completely around the world and contain different landforms.

Biome	Climate	Precipitation	Vegetation
Desert	Warm to hot	Little rain	Spares grasses and shrubs
Tundra	Freezing to cool	Little rain	Small shrubs, mosses and lichen
Freshwater	Freezing to warm	Average rain	Reeds
Marine	Warm to hot	Average rain	Mangroves and sea grass
Grassland	Cool to warm	Seasonal rain	Grasses
Rainforest	Warm to hot	Wet season	Trees

- ? Analyse the below climate graphs and state what biome it belongs in. Hint: remember to look at the scales on the axis for clues.

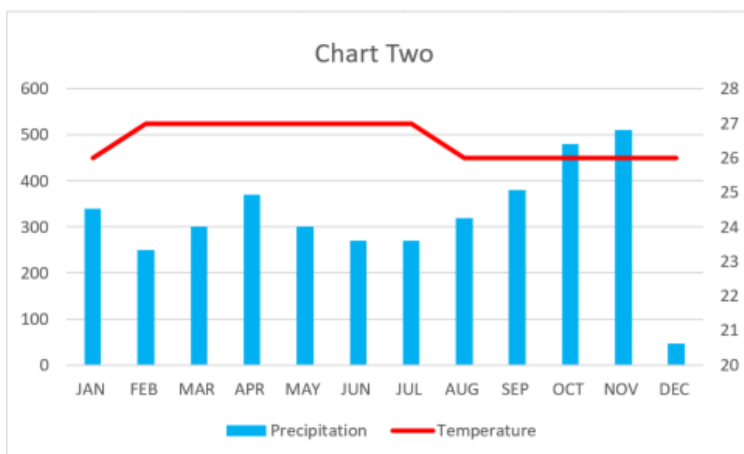
1. Chart One

Biome: _____ (Tundra)



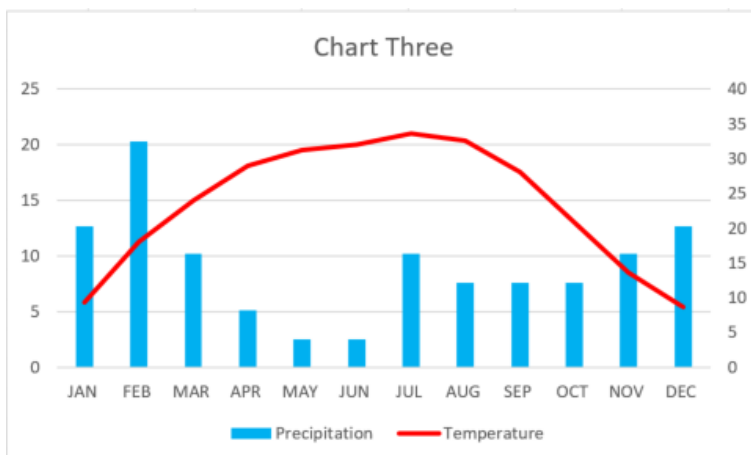
2. Chart Two

Biome: _____ (Rainforest)



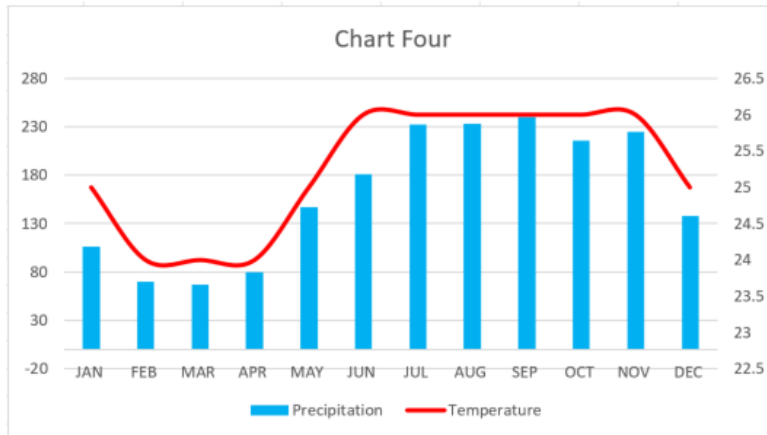
3. Chart Three

Biome: _____ (Desert)



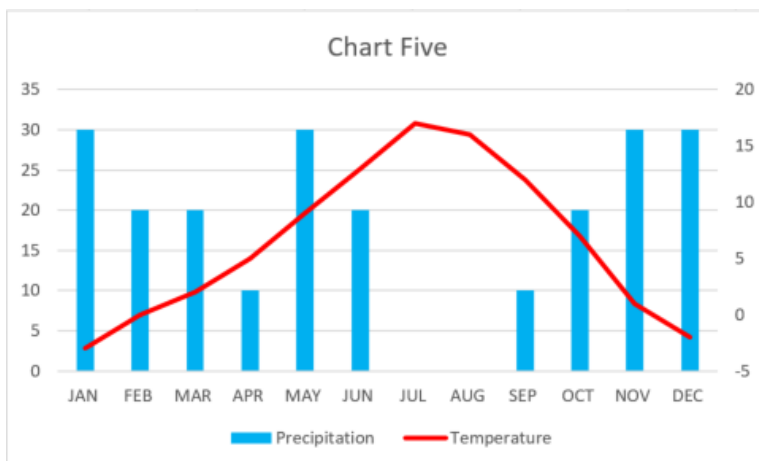
4. Chart Four

Biome: _____ (Marine)



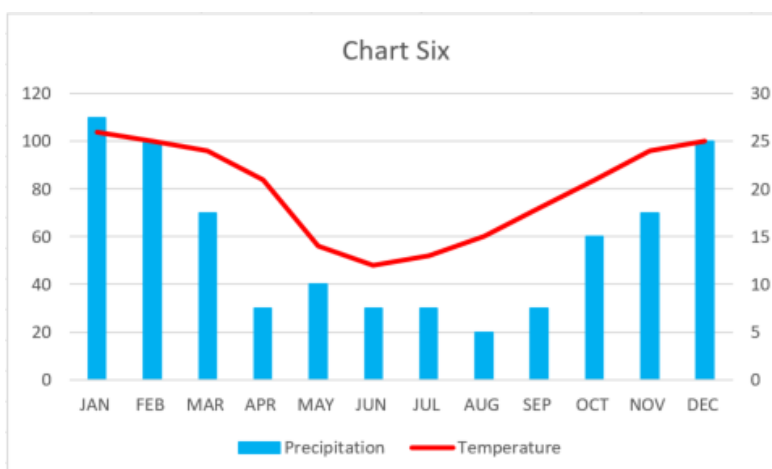
5. Chart Five

Biome: _____ (Freshwater)



6. Chart Six

Biome: _____ (Grassland)



Extend

Locating the biomes.

→ Turn on the layer 'climate graph locations.' Turn off all other layers.

→ Here are some examples of the locations of the six different biomes around the world. Write down the correct biome next to the number you can see on the map, based on the climate graphs in the previous activity.



Number + Location	Biome
1, Alaska	Tundra
2, Lassen	Freshwater
3, Las Vegas	Desert
4, Martinique	Marine
5, Padang	Rainforest
6, Gayndah	Grassland

Next Steps:

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Learn more about ArcGIS Online, and apply for your ArcGIS Online School subscription at <http://esriaustralia.com.au/education>