

Russia's big biome map

This lesson takes a look at Russia's diverse ecosystems (biomes) and landscapes

Key questions

- What is a biome?
- How many different biomes are there in Russia?
- How does the environment and landscape vary between Russia's biomes?
- Why does vegetation change with latitude and altitude?
- What is the difference between hot deserts and polar deserts?
- What is permafrost?
- What is the tree line?
- Who lives in Russia's extreme environments?
- How might a changing climate bring change, opportunity and challenges?

Subject content areas

- Understanding the important **interconnected** ways in which the different **biomes** (vegetation and plants) found in different parts of Russia interact with other aspects of geography, such as the **climate**, under the influence of **latitude** and **altitude**.
- Understanding how a **changing climate** could have systemic effects for the vegetation and **landscape** in different parts of Russia, including the Arctic Ocean.
- Russia is an enormous country, resulting in a high level of ecological and landscape variation. This ranges from **hot deserts** to **polar desert**.

Downloads

- What is a biome? (PPT)
- Russia vegetation zones (PDF)
- Arctic ambition (PPT)
- Teacher notes PDF | MSWORD
- Images (maps) (PPT)
- Images (landscapes) (PPT)

Starter

What is a biome?

The aim of the 'What is a biome?' PowerPoint is for your class to either be provided with an entirely new concept, or to gain a reminder of previous study. The key aspects of the global climate-vegetation relationship are outlined by the PowerPoint. In addition, the presentation makes reference to other concepts and ideas that will be used in the lesson, including climate change. This may require 10 minutes.

For instance, students will learn that in Russia:

- Grasslands dominate at lower latitudes
- Coniferous forest is found further north
- Tundra is found even further north

Main

In the main activity, and for homework, students will be making use of a variety of maps, photographs and resources in order to describe the main features of the distribution of major biomes across Russia.

- They need to receive a printed copy of the five page colour document.
- Atlases should be provided.

Vegetation and landscape characteristics

Firstly, students will identify the different biomes found in Russia and should list them. Next, students will use their analytical skills to briefly describe the characteristics of each biome or landscape (there are eight images to work with). They can work in pairs or individually. The worksheets can be peer marked, self-marked or collected for teacher assessment. If this activity takes a long time, then the work can be spread over two lessons, as required.

Traversing Russia's biomes

If time is short, this part of the main activity should be used as a homework assignment. It is found on the fourth page of the printed booklet. Students are asked to work creatively to produce an account of a journey through Russia's varied physical environments. The photographs of indigenous people provide a possible human element to be included in the journey they describe.

Changing climate, changing biomes

In this final activity, students will briefly consider what the implications of climate change are for the tundra environment (there are predicted changes in the position of the tree line in northern Russia). This activity draws on page five of the booklet which shows the current tree line and an area of tundra immediately north. What will happen to this place if the climate becomes warmer? Tree growth is predicted at higher latitudes.

Plenary

Russia's Arctic aspirations

Russia's territory also includes its coastal waters in addition to its terrestrial biomes. A PowerPoint provides teachers with a brief, final presentation which describes how a Russian flag was recently planted on the sea floor of the Arctic. This prompts discussion of how marine environments and ecosystems also form part of Russia's territory, but these environments are changing and their ownership is contested.

This will take no more than a couple of minutes, unless students are required to make notes, in which case allow a little longer.