

# CBSE Class 6 Science Notes Chapter 9 – The Living Organisms and Their Surroundings PDF, Important Topics & Questions

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**CBSE Class 6 Science Notes Chapter 9:** The NCERT Solutions for Class 6 Science Chapter 9, titled "The Living Organisms Characteristics and Habitats," have been meticulously prepared in accordance with the latest CBSE syllabus.

These solutions offer detailed explanations to assist students in acquiring comprehensive knowledge of the diverse habitats inhabited by living organisms and their adaptations to these environments.

## CBSE Class 6 Science Notes Chapter 9 Overview

You can access free PDF downloads of Class 6 Science Chapter 9 – "The Living Organisms and Their Surroundings" Revision Notes & Short Key-notes. These resources have been meticulously prepared by expert Science teachers based on the latest edition of CBSE(NCERT) books.

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## CBSE Class 6 Science Notes Chapter 9 – The Living Organisms and Their Surroundings Notes

The chapter "The Living Organisms and Their Surroundings" explores the diverse habitats of living organisms and their adaptations to their environments. It covers various aspects such as the types of habitats, the interaction between living organisms and their surroundings, and the adaptations that enable organisms to thrive in different habitats.

### 1) Types of Habitats:

Habitats are the natural environments where living organisms reside. They can be broadly classified into terrestrial habitats (land habitats) and aquatic habitats (water habitats). Terrestrial habitats include forests, grasslands, deserts, and mountains, while aquatic

habitats encompass freshwater bodies like rivers, lakes, and ponds, as well as marine environments like oceans and seas.

## **2) Interaction Between Living Organisms and Their Surroundings:**

Living organisms interact with their surroundings in various ways. They obtain food, water, and shelter from their habitats, and their survival depends on these interactions. Organisms also play crucial roles in maintaining the balance of ecosystems through processes such as photosynthesis, decomposition, and predation. Additionally, human activities can significantly impact the environment, leading to habitat destruction and loss of biodiversity.

## **3) Adaptations of Living Organisms:**

Adaptations are special features or behaviors that help living organisms survive and thrive in their habitats. These adaptations can be structural, behavioral, or physiological. For example, camels have long eyelashes and nostrils that can close to protect them from sandstorms in desert habitats. Similarly, polar bears have thick fur and a layer of fat to insulate them from the cold temperatures of the Arctic.

## **4) Common Characteristics of Living Organisms:**

Despite the diversity of living organisms and their habitats, they share certain common characteristics. These include the ability to grow, reproduce, respond to stimuli, and adapt to their environments. Living organisms also require energy for survival, which they obtain through various processes such as photosynthesis, respiration, and consumption of food.

## **5) Adaptations in Different Habitats:**

Living organisms have evolved a wide range of adaptations to survive in their specific habitats. For instance, desert plants like cacti have shallow roots to quickly absorb water from sporadic rainfall, while their stems store water to sustain them during dry periods. In contrast, aquatic plants have specialized structures like air sacs and stomata to facilitate gas exchange underwater. Similarly, animals like fish have streamlined bodies and gills for efficient movement and oxygen uptake in aquatic environments.

## **6) Specialized Niches:**

Within each habitat, organisms occupy specialized ecological niches based on their adaptations and interactions with other species. For example, in a forest ecosystem, different species of birds may occupy distinct niches based on their feeding habits, nesting preferences, and interactions with other organisms. These specialized roles help maintain the balance and diversity of ecosystems by reducing competition for resources.

## **7) Human Impact on Habitats:**

Human activities such as deforestation, urbanization, pollution, and climate change have a significant impact on natural habitats and the organisms that inhabit them. Deforestation,

for instance, destroys the habitats of countless species, leading to loss of biodiversity and disruption of ecosystem functions. Pollution from industrial and agricultural sources contaminates air, water, and soil, posing threats to the health and survival of living organisms.

#### **8) Conservation Efforts:**

Recognizing the importance of preserving habitats and biodiversity, conservation efforts aim to protect and restore natural ecosystems. This includes establishing protected areas like national parks and wildlife sanctuaries, implementing sustainable land-use practices, and raising awareness about the importance of biodiversity conservation. Additionally, initiatives such as reforestation, habitat restoration, and captive breeding programs help mitigate the negative impacts of human activities on habitats and species.

#### **9) Interdependence in Habitats:**

One of the fundamental principles of ecology is the concept of interdependence among organisms within habitats. Organisms in a habitat are interconnected through various ecological relationships, such as predation, competition, and mutualism. For example, predators help control the population of prey species, while prey species provide food for predators. Similarly, plants and animals often engage in mutually beneficial relationships, such as pollination, seed dispersal, and symbiosis.

#### **10) Succession and Habitat Dynamics:**

Habitats are dynamic environments that undergo constant change over time. One of the key processes driving habitat dynamics is ecological succession, which refers to the gradual change in species composition and habitat structure over time. Primary succession occurs in barren environments, such as newly formed volcanic islands or sand dunes, where pioneer species colonize and gradually transform the landscape. Secondary succession occurs in habitats that have been disturbed, such as after a forest fire or clear-cutting, where existing soil and vegetation provide a foundation for new growth.

#### **11) Global Habitat Diversity:**

Habitats vary greatly in their characteristics and are found in diverse geographic regions around the world. From tropical rainforests to polar tundra, each habitat has unique physical and biological features shaped by factors such as climate, geology, and topography. The Earth's rich diversity of habitats supports a wide array of ecosystems and species, making it one of the most biodiverse planets in the solar system.

#### **12) Challenges and Conservation:**

Despite their importance, habitats face numerous threats from human activities and natural processes. Habitat destruction, fragmentation, pollution, invasive species, and climate change are among the major challenges affecting habitats and the organisms that

depend on them. Conservation efforts are crucial for protecting habitats and safeguarding biodiversity for future generations.

This requires collaborative action at local, national, and global levels to address the root causes of habitat loss and degradation and promote sustainable practices that balance human needs with environmental conservation.

## CBSE Class 6 Science Notes Chapter 9 Important Topics

Some important topics covered in CBSE Class 6 Science Chapter 9 – The Living Organisms and Their Surroundings are:

- **Habitats and Organisms:** This topic introduces students to the concept of habitats and the diverse environments where living organisms reside. It covers terrestrial, aquatic, and aerial habitats and the different types of organisms found in each.
- **Adaptations:** Students learn about how organisms adapt to their habitats to survive and thrive. This includes physical adaptations (e.g., camouflage, body shape) and behavioral adaptations (e.g., migration, hibernation).
- **Biotic and Abiotic Factors:** The chapter discusses the factors that influence habitats, including biotic factors (living organisms) and abiotic factors (non-living elements such as temperature, water, soil).
- **Interdependence:** Students explore the interconnectedness of organisms within habitats and how they rely on each other for resources and survival. This includes concepts such as food chains, food webs, and ecological relationships.
- **Changes in Habitats:** The chapter covers natural and human-induced changes in habitats, such as succession, deforestation, pollution, and climate change. Students learn about the impacts of these changes on ecosystems and biodiversity.
- **Conservation:** The importance of conserving habitats and biodiversity is emphasized, along with the role of individuals, communities, and governments in protecting natural environments and promoting sustainable practices.
- **Field Observations:** Students are encouraged to observe and explore local habitats to better understand the concepts discussed in the chapter. Field trips and practical activities may be included to facilitate hands-on learning.
- **Case Studies:** Real-world examples and case studies may be used to illustrate key concepts and highlight conservation efforts and challenges in different habitats around the world.

These topics provide students with a comprehensive understanding of the relationships between living organisms and their surroundings, as well as the importance of preserving natural habitats for the well-being of all species.

## CBSE Class 6 Science Notes Chapter 9 Important Questions

Some important questions from CBSE Class 6 Science Chapter 9 – The Living Organisms and Their Surroundings are:

**1) Define habitat. Give examples of terrestrial, aquatic, and aerial habitats.**

- Habitat refers to the natural environment or surroundings where an organism lives and thrives. Examples:
  - Terrestrial habitat: Forests, grasslands, deserts.
  - Aquatic habitat: Oceans, rivers, lakes.
- Aerial habitat: Sky, atmosphere.

**2) Explain the term adaptation with suitable examples.**

- Adaptation refers to the process by which organisms adjust to their environment over time to increase their chances of survival. Examples include:
  - Camouflage in animals to blend with their surroundings.
- Cacti having thick stems to store water in desert habitats.

**3) Differentiate between biotic and abiotic factors. Give examples of each.**

- Biotic factors are living components of an ecosystem, such as plants, animals, and microorganisms. Examples: Trees, birds, bacteria.
- Abiotic factors are non-living components, including temperature, water, sunlight, and soil. Examples: Sunlight, temperature, soil.

**4) How are food chains and food webs related to habitats?**

- Food chains and food webs depict the flow of energy and nutrients between different organisms in a habitat. They show how organisms depend on each other for food and survival within their respective habitats.

**5) Discuss the interdependence of organisms in a habitat. Give examples.**

- Organisms in a habitat depend on each other for food, shelter, and other resources. For example:
  - Bees depend on flowers for nectar and pollination, while flowers rely on bees for pollination.
- Predators depend on prey for food, and prey depend on predators to keep their populations in check.

**6) Explain how organisms are adapted to their habitats.**

- Organisms adapt to their habitats through various physical, behavioral, and physiological characteristics. For example:
  - Desert animals have adaptations like long eyelashes and water-conserving mechanisms to survive in arid conditions.

- Aquatic plants have adaptations like floating leaves and air sacs to obtain sunlight and nutrients in water habitats.

#### **7) Describe the characteristics of different types of habitats.**

- Terrestrial habitats: These include forests, grasslands, deserts, and mountains. They have diverse flora and fauna adapted to different climatic conditions.
- Aquatic habitats: These encompass oceans, rivers, lakes, and ponds. They support a wide range of aquatic organisms adapted to varying water conditions.
- Aerial habitats: These consist of the sky and atmosphere, where birds, insects, and some plants thrive.

#### **8) How do organisms interact with their habitats?**

- Organisms interact with their habitats by obtaining food, water, shelter, and mates for reproduction. They also contribute to ecosystem processes like nutrient cycling and energy flow.

#### **9) Discuss the role of abiotic factors in shaping habitats.**

- Abiotic factors such as temperature, water availability, sunlight, and soil type play a crucial role in determining the characteristics of habitats. They influence the distribution and abundance of organisms in an ecosystem.

#### **10) Explain the concept of niche in relation to habitats.**

- Niche refers to the role or function of an organism within its habitat, including its interactions with other species and the abiotic environment. It involves the organism's position in the food chain, its feeding habits, and its adaptations to the environment.

#### **11) Describe the role of decomposers in a habitat.**

Decomposers play a crucial role in breaking down organic matter, such as dead plants and animals, into simpler substances like nutrients and minerals. This process, known as decomposition, releases essential elements back into the soil, air, and water, making them available for uptake by plants. Decomposers include bacteria, fungi, and certain types of insects. By recycling nutrients, decomposers contribute to the fertility of soil and the overall health of the ecosystem.

#### **12) How do changes in temperature and precipitation affect habitats and the organisms living in them?**

Changes in temperature and precipitation can significantly affect habitats and the organisms living within them. For example, an increase in temperature can lead to the melting of polar ice caps, resulting in habitat loss for polar bears and other cold-adapted

species. Changes in precipitation patterns can affect the availability of water, influencing plant growth and the distribution of animals. Organisms may need to adapt to these changes by altering their behaviors, migration patterns, or physiological processes.

**13) Discuss the concept of biodiversity and its significance in maintaining healthy habitats.**

Biodiversity refers to the variety of living organisms present in a particular habitat or ecosystem. It includes genetic diversity, species diversity, and ecosystem diversity. Biodiversity is essential for maintaining healthy habitats because it contributes to ecosystem stability, resilience, and productivity. High biodiversity increases ecosystem resilience to disturbances, enhances ecosystem services such as pollination and pest control, and provides opportunities for scientific research and medical discoveries.

**14) Give examples of different types of ecosystems and their characteristic features.**

Examples of ecosystems include:

- Forests: Characterized by dense vegetation, diverse tree species, and a wide variety of animal life.
- Grasslands: Dominated by grasses and herbaceous plants, with grazing mammals like bison and antelope.
- Coral reefs: Marine ecosystems built by coral polyps, supporting a rich diversity of marine life.
- Tundra: Cold, treeless ecosystems found in polar regions, with low-growing vegetation and adapted animals like Arctic foxes and reindeer.
- Deserts: Arid ecosystems with sparse vegetation, adapted plants like cacti, and animals like camels and desert rats.

**15) How do plants and animals adapt to extreme habitats such as deserts, polar regions, and deep-sea environments?**

Plants and animals adapt to extreme habitats in various ways. For example:

- Desert plants have shallow roots and thick waxy coatings to minimize water loss.
- Polar animals have thick fur or blubber layers for insulation against cold temperatures.
- Deep-sea organisms have bioluminescent features and pressure-resistant bodies to survive in the dark, high-pressure environment.

**16) Explain the process of photosynthesis and its importance in habitats.**

Photosynthesis is the process by which green plants and some bacteria convert light energy into chemical energy in the form of glucose. It occurs in chloroplasts and involves the absorption of sunlight, carbon dioxide, and water to produce glucose and oxygen. Photosynthesis is vital for habitats because it serves as the primary source of energy for most living organisms. Plants produce oxygen, which is essential for respiration by animals, and glucose, which serves as a source of food for both plants and animals.

### **17) Describe the role of producers, consumers, and decomposers in energy flow within habitats.**

Producers, such as plants and algae, are organisms that produce their food through photosynthesis. They form the base of the food chain and provide energy to consumers, including herbivores and carnivores. Consumers obtain energy by consuming producers or other consumers.

Decomposers break down dead organic matter and return nutrients to the soil, completing the nutrient cycle. Together, producers, consumers, and decomposers participate in the flow of energy and nutrients within habitats, maintaining the balance and functioning of ecosystems.

## **CBSE Class 6 Science Notes Chapter 9 PDF**

Looking for comprehensive study material to ace your CBSE Class 6 Science exam? Look no further! Accessing CBSE Class 6 Science Notes Chapter 9 in PDF format is now easier than ever.

Physics Wallah offers top-notch notes and solutions meticulously crafted by experienced educators to ensure a thorough understanding of the topics covered in Chapter 9: The Living Organisms and Their Surroundings.

Physics Wallah's notes are designed to simplify complex concepts and provide in-depth explanations, making learning enjoyable and effective. These notes cover important topics such as biodiversity, habitats, adaptation, and ecosystem dynamics, allowing students to grasp key concepts with ease.

In addition to detailed notes, Physics Wallah also provides solutions to textbook questions and additional practice exercises to reinforce learning. With Physics Wallah's comprehensive study material, students can enhance their understanding of Chapter 9 and excel in their CBSE Class 6 Science exam.

## **CBSE Class 6 Science Notes Chapter 9 FAQs**

### **1. What is biodiversity, and why is it important?**

Biodiversity refers to the variety of living organisms in a particular habitat or ecosystem. It includes genetic diversity, species diversity, and ecosystem diversity. Biodiversity is crucial because it contributes to ecosystem stability, resilience, and productivity.

### **2. How do changes in temperature affect habitats and organisms?**

Changes in temperature can significantly impact habitats and the organisms living within them. For example, an increase in temperature can lead to habitat loss, changes in



precipitation patterns, and alterations in plant and animal distributions. Organisms may need to adapt to these changes by altering their behaviors, migration patterns, or physiological processes.

**3. What are some examples of extreme habitats, and how do plants and animals adapt to them?**

Examples of extreme habitats include deserts, polar regions, and deep-sea environments. Plants and animals adapt to these harsh conditions in various ways, such as having specialized body structures, behaviors, or physiological processes. For example, desert plants have shallow roots and thick waxy coatings to minimize water loss, while polar animals have thick fur or blubber layers for insulation against cold temperatures.

**4. What is the process of photosynthesis, and why is it important in habitats?**

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**5. What is the role of decomposers in a habitat?**

Decomposers play a crucial role in breaking down organic matter, such as dead plants and animals, into simpler substances like nutrients and minerals.