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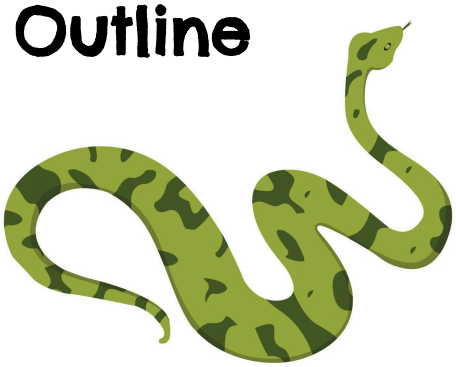
Grade 6 Science – Quiz Outline



Topic: BIODIVERSITY

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Introduction

This test will assess your understanding of biodiversity – the variety of life on Earth – and how living things interact within ecosystems. Use this outline to review key vocabulary, and concepts. Check each section to be sure you can explain the ideas in your own words.

SECTION 1 – Vocabulary and Definitions (5 marks)

Know the meaning of the following terms and be able to give examples:

- Biodiversity
- Habitat
- Community
- Species
- Genetic diversity
- Vertebrate / Invertebrate
- Endangered species
- Invasive species
- Ecosystem
- Sustainable agriculture

Try to describe each word using grade-level language and one example.

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SECTION 2 – Multiple Choice (5 marks)

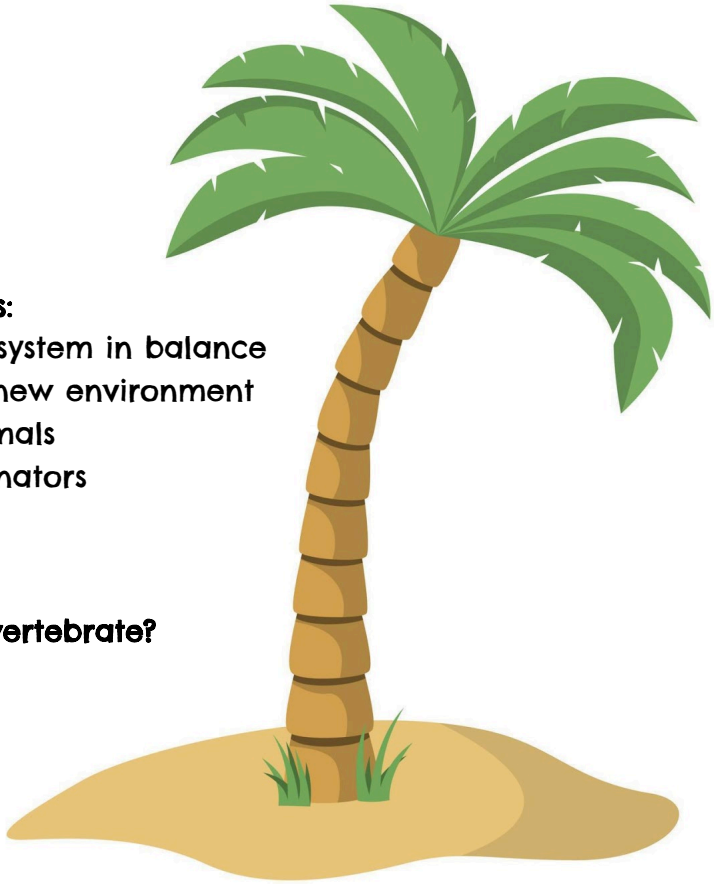
Be ready for questions like:

What is biodiversity?

a) The number of plants in a garden
b) The variety of living things in an area
c) The amount of sunlight in an ecosystem
d) The study of rocks and minerals

Which of the following is an example of an endangered species in Ontario?

a) Eastern wolf
b) Barn owl
c) House cat
d) Red fox



An invasive species is best described as:

a) A native animal that keeps the ecosystem in balance
b) A non-native species that harms a new environment
c) A species that eats many other animals
d) A plant that provides food for pollinators

Which of the following organisms is a vertebrate?

a) Spider
b) Jellyfish
c) Frog
d) Earthworm

Why is genetic diversity important?

a) It helps animals move faster
b) It allows species to adapt and survive changes in their environment
c) It increases the amount of pollution in an area
d) It reduces the number of different organisms in a community

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SECTION 3 – Diagram / Classification (5 marks)

You may be asked to:

- Label parts of a **food chain or food web** (producers, consumers, decomposers)
- Classify organisms as vertebrates or invertebrates
- Draw an animal, indicate its natural habitat, and label all of its adaptations behavioural or physical that allow it to survive in its habitat.

SECTION 4 – Short Answer (5 marks)

Answer in **1–3 complete sentences.**
Sample questions might include:

1. Explain why biodiversity is important to ecosystems and humans.

2. How does genetic diversity help species survive environmental changes?

3. What is the relationship between biodiversity and ecological resilience?

4. Give one example of how human activity can reduce biodiversity.

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5. How does sustainable agriculture support biodiversity?

SECTION 5 – Long Answer (5 marks)

Question Example:
You are a member of your town's environment committee. A company wants to clear part of a wetland to build houses. Using what you've learned about biodiversity, explain:

- How this could affect local biodiversity and ecosystem health
- One possible short-term and one long-term impact
- Two ways humans could reduce harm or restore biodiversity

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Answer Key – Grade 6 Science: Biodiversity Quiz

SECTION 1 – Vocabulary and Definitions

(Answers will vary slightly depending on how students phrase them, but these are model examples.)

Term	Definition / Example
Biodiversity	The variety of all living things on Earth, including plants, animals, fungi, and microorganisms. *Example:* The Amazon Rainforest has high biodiversity.
Habitat	The natural environment where a living thing lives and grows. *Example:* A pond is a frog's habitat.
Community	All the different species that live and interact in the same area. *Example:* Forest community with trees, birds, insects, and fungi.
Species	A group of living things that can reproduce with each other. *Example:* All polar bears belong to the same species.
Genetic diversity	The variety of genes within a species. *Example:* Dogs have many breeds with different traits.
Vertebrate / Invertebrate	*Vertebrate:* An animal with a backbone (e.g., fish). *Invertebrate:* An animal without a backbone (e.g., insect).
Endangered species	A species at risk of disappearing forever. *Example:* Sea turtles are endangered.

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Invasive species	A non-native species that spreads and harms the environment. *Example:* Zebra mussels in the Great Lakes.
Ecosystem	A community of living things and their non-living environment interacting together. *Example:* Coral reef ecosystem.
Sustainable agriculture	Farming that protects the environment and keeps soil, water, and wildlife healthy. *Example:* Crop rotation or using natural pest control.

SECTION 2 – Multiple Choice

Question	Correct Answer
What is biodiversity?	**b)** The variety of living things in an area
Endangered species in Ontario	**a)** Eastern wolf *(also acceptable: Barn owl in some regions)*
Invasive species best described as	**b)** A non-native species that harms a new environment
Which organism is a vertebrate?	**c)** Frog
Why is genetic diversity important?	**b)** It allows species to adapt and survive changes in their environment

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SECTION 3 – Diagram / Classification

Possible Elements to Include:

- **Food Chain Example:**
  Sun → Grass (Producer) → Grasshopper (Primary Consumer) → Frog (Secondary Consumer) → Snake (Tertiary Consumer) → Hawk (Top Predator) → Decomposer (Bacteria)
  Label: producers, consumers, decomposers.

- **Classification:**
  Vertebrates: Frog, fish, bird, snake, human.
  Invertebrates: Spider, worm, jellyfish, snail.

- **Animal with Adaptations Example:**
  Polar Bear – thick fur and fat layer (physical), hibernation/rest periods (behavioural).

SECTION 4 – Short Answer

1. **Why biodiversity is important:**
   Biodiversity helps ecosystems stay balanced and supports food, medicine, and clean air/water for humans.

2. **How genetic diversity helps survival:**
   It lets species adapt to diseases, climate change, or new predators by passing on traits that improve survival.

3. **Relationship between biodiversity and resilience:**
   Ecosystems with more species can recover faster from disasters like fires or droughts because different species play different roles.

4. **Human activity reducing biodiversity:**
   Deforestation, pollution, or overfishing destroy habitats and reduce the number of species in an area.

5. **Sustainable agriculture and biodiversity:**
   Practices like planting many crops, reducing pesticides, and protecting pollinators keep ecosystems healthy.

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SECTION 5 – Long Answer

Sample High-Level Response (5 marks total):

If part of a wetland is cleared for houses, local biodiversity would decrease because many plants and animals would lose their habitats. Wetlands filter water, control floods, and provide homes for frogs, birds, and insects.

Short-term impact: animals may die or move away; water may become polluted.

Long-term impact: species may become endangered and the ecosystem may collapse.

Ways to reduce harm: protect parts of the wetland, build around it carefully, replant native plants, or create wildlife corridors. Sustainable planning can balance development and environmental health.