



Curriculum Links

Grade 1: Needs and Characteristics of Living Things

Overall Expectations

- Assess the role of humans in maintaining a healthy environment
- Investigate needs and characteristics of plants and animals, including humans
- Demonstrate an understanding of the basic needs and characteristics of plants and animals, including humans

Relating Science and Technology to Society and the Environment

 Describe changes or problems that could result from the loss of some kinds of living things that are part of everyday life

Black-footed ferrets are predators in a grassland ecosystem. They prey primarily on prairie dogs but also eat ground squirrels, other rodents, cottontail rabbits, and birds. With the decreasing populations of prairie dogs resulting from agriculture and human interactions, the population of black-footed ferrets was directly impacted.

Developing Investigation and Communication Skills

 Investigate and compare the basic needs of humans and other living things, including the need for air, water, food, warmth, and space, using a variety of methods and resources

Black-footed ferrets need:

- √ Prairie dogs as a main source of food
- √ Prairie grassland with pre-existing tunnels (dug by prairie dogs and other rodents) to raise young
 and stay throughout the year

Agriculture and urban development of the prairies have impacted the viability of the black-footed ferret by reducing food sources as well as habitat.

 Investigate and compare the physical characteristics of a variety of plants and animals, including humans





 Investigate characteristics of parts of the human body, including the five sensory organs, and explain how their characteristics help humans meet their needs and explore the world around them.

Understanding Basic Concepts

- Identify environment as the area in which something or someone exists or lives
 Black-footed ferrets live in burrows or tunnels underground in grassland prairies. Underground, the ferrets are protected from predators, keep warm during the cold weather and winters, and safely raise their young.
- Identify the physical characteristics of a variety of plants and animals
- Identify what living things provide for other living things

Grade 2: Growth and Change in Animals

Overall Expectation

- Assess ways in which animals have an impact on society and the environment, and ways in
 which humans have an impact upon animals and the places where they live;
- Investigate similarities and differences in the characteristics of various animals;
- Demonstrate an understanding that animals grow and change and have distinct characteristics.

Relating Science and Technology to Society and the Environment

• Identify positive and negative impacts that different kinds of human activity have on animals and where they live

Through the partnership of Parks Canada, Toronto Zoo and others, the black-footed ferrets were reintroduced into the Grasslands National Park on October 2, 2009. The black-footed ferrets were extirpated from Canada in the 1930s due to human activities impacting prairie dog populations and reduction of habitat.

Developing Investigation and Communication Skills

• Observe and compare the physical characteristics and the behavioural characteristics of a variety of animals, including insects





Black-footed ferrets are mammals that have brown-yellowish fur to help them camouflage in their grassland habitat. Their long slender body is the perfect shape for living in underground burrows. They are a nocturnal animal that hunts primarily in the dusk hours.

 Investigate the ways in which a variety of animals adapt to their environment, using various methods

Understanding Basic Concepts

- Identify and describe major physical characteristics of different types of animals
- Describe an adaptation as a characteristic body part, shape, or behaviour that helps a plant or animal survive in its environment

The long slender body shape and colouration of the black-footed ferret are adaptations for survival in the grassland habitat. The ability to burrow underground provides shelter from nocturnal predators such as owls and coyotes, which hunt when ferrets are most active

Grade 4: Habitats and Communities

Overall Expectations

- Analyze the effects of human activities on habitats and communities
- Investigate the interdependence of plants and animals within specific habitats and communities
- Demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them

Relating Science and Technology to Society and the Environment

• Identify reasons for the depletion or extinction of a plant or animal species

As the prairies became settled, populations of prairie dogs declined due to their eradication by humans and their habitat being altered by development and agricultural practices. The declining food source contributed to the extirpation of the black-footed ferret in Canada.

Developing Investigation and Communication Skills

• Build food chains consisting of different plants and animals, including humans







- Use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs.
- Use appropriate science and technology vocabulary, including habitat, population, community, adaptation and food chain, in oral and written communication.

Understanding Basic Concepts

- Identify factors that affect the ability of plants and animals to survive in a specific habitat
 Black-footed ferrets depend primarily on prairie dogs for food (see food chain above) as well as a
 specific grassland habitat (which has pre-existing tunnels dug by burrowing rodents), which ferrets
 depend on for shelter and protection.
- Classify organisms, including humans, according to their role in the food chain Black-footed ferrets are secondary consumers.
- Identify animals that are carnivores, herbivores, or omnivores
 Black-footed ferrets are secondary consumers and carnivores, eating primarily prairie dogs but will occasionally eat other rodents, ground squirrels, and birds.
- Describe structural adaptations that allow plants and animals to survive in specific habitats

 Black-footed ferrets have many physical adaptations that help it survive in the grassland habitat.
- Explain why changes in the environment have a greater impact on specialized species than on generalized species

The specialized diet of the black-footed ferret created a situation where its survivability was threatened with the decline of prairie dog populations. A carnivore that enjoys a more varied diet would potentially be able to withstand such changes to prey populations without such a drastic impact on its survival.

Grade 6: Biodiversity

Overall Expectations

- Assess human impacts on biodiversity, and identify ways of preserving biodiversity
- Investigate the characteristics of living things, and classify diverse organisms according to specific characteristics





• Demonstrate an understanding of biodiversity, its contributions to the stability of natural systems, and its benefit to humans

Relating Science and Technology to Society and the Environment

Assess the benefits that human societies derive from biodiversity and the problems that occur
when biodiversity is diminished

Developing Investigation and Communication Skills

• Use appropriate science and technology vocabulary, including *classification*, *biodiversity*, *natural community*, *interrelationships*, *vertebrate*, *invertebrate*, *stability*, *characteristics*, and *organism*, in oral and written communication

Understanding Basic Concepts

- Demonstrate an understanding of biodiversity as the variety of life on earth, including variety
 within each species of plant and animal, among species of plants and animals in
 communities, and among communities and the physical landscapes that support them
- Describe ways in which biodiversity within species is important for maintaining the resilience of those species
- Describe ways in which biodiversity within and among communities is important for maintaining the resilience of these communities
- Describe interrelationships within species, between species, and between species and their environment, and explain how these interrelationships sustain biodiversity