

Grade 6 Teacher Resource- Beringian Wildlife Vet Simulation

Curricular Outcome: Science 6 “Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment.

Core Concepts:

Body systems work together to keep an organism alive.

The structure of animals’ bodies are designed to allow them to survive in their environment.

Injury and disease can disrupt body systems and reduce chances of survival.

The environment and organisms within it are interconnected.

Adaptations allow organisms to survive changing and challenging conditions.

Big Questions:

How do body systems work together to keep an organism alive?

What happens to an animal’s survival chances when a body system becomes damaged?

How do an animal’s body structures help it survive?

Why is habitat important for recovery and survival?

What can studying ancient animals teach us about today’s wildlife?

Learning Outcomes:

Students will:

Identify major body systems and their functions

Explain how body systems support survival

Investigate adaptations of Ice Age animals

Develop understandings of relationships between organisms and environments

Main Activity:

Re-familiarize students with the different body systems using this 10-minute video:

<https://www.youtube.com/watch?v=0JDCViWGn-0>

Students in groups or as a class will become wildlife veterinarians working in an Ice Age Wildlife Rescue Centre. On a busy day, a variety of animals have arrived with different injuries, illnesses, and challenges. Students will:

1. Diagnose the problem
2. Identify which body system is affected
3. Explain how the problem impacts survival
4. Recommend treatment
5. Determine the habitat and resources needed for recovery.

The goal is for students to learn how body systems function while exploring real Beringian animals and their adaptations.

At the teacher's discretion, students can also conduct external research on the internet to find more information on each animal and which habitats best suit them.

Our recommendation is to either set up stations around the class for groups of students to rotate through each case, or for the instructor to read each case aloud for the collective class or groups to work together on.

Students will receive a worksheet. For each case, students must determine a diagnosis, which body system is affected, and why it matters. They must also come up with a treatment plan, as well as a habitat ideal for the animal's recovery.

Below is an outline of each case and a general answer key. The cases that students will receive will be in a separate file with pictures and other graphics, with fewer details so they can fill in the blanks.

Patient 1: Woolly Mammoth Calf

Symptoms: Heavily limping, swollen front leg, holding leg at awkward angle, difficulty keeping up

Diagnosis: Broken leg

Body System: Skeletal system

Why It Matters: A mammoth that cannot walk will struggle to find food, stay with herd, and escape predators.

Treatment Options: Rest, splint/leg support, protection from predators.

Recovery Habitat: Open grasslands with easy access to food and water.

Patient 2: Wolf

Symptoms: Shortness of breath, coughing, low energy, chest pain

Diagnosis: Lung infection

Body System: Respiratory system

Why It Matters: Without enough oxygen muscles work poorly, animals become tired quickly, making tasks like tracking and hunting difficult.

Treatment Options: Warm shelter, hydration, and time with minimal tasks to recover.

Recovery Habitat: Protected grassland area away from harsh weather.

Patient 3: Muskox

Symptoms: Extremely thin, weak muscles, low energy

Diagnosis: Improper nutrition

Body systems: Digestive and muscular

Why It Matters: Lack of proper nutrients weakens muscles, decreases energy, and makes reproduction/survival very difficult.

Treatment: Access to nutritious grasses, time to recover

Recovery Habitat: Grass-rich steppe environments

Patient 4: Giant Short-Faced Bear

Symptoms: Deep cut on paw, difficulties when scavenging

Diagnosis: Injury to muscles and skin

Body Systems: Muscular and integumentary

Why It Matters: Predators like the giant short-faced bear use their paws for movement and intimidating other carnivores.

Treatment: Clean wound, rest, protect from infection

Recovery Habitat: Area with shelter and nearby food sources.

Patient 5: Caribou

Symptoms: Parasites in fur, skin irritated, weight loss

Diagnosis: Parasite Infestation

Body Systems: Integumentary (hair, skin) and circulatory

Why It Matters: Parasites steal nutrients and can spread disease

Treatment: Grooming, parasite removal, improved nutrition

Recovery Habitat: Healthy tundra grazing grounds with plenty of lichen

Patient 6: Arctic Ground Squirrel (Challenge)

Symptoms: Unable to properly hibernate, low body fat reserves

Diagnosis: Insufficient energy stored for hibernation

Body Systems: Digestive and endocrine

Why It Matters: If an animal does not store enough energy, it may not survive winter.

Treatment: Increased feeding, safe burrowing habitat

Recovery Habitat: Dry grasslands with abundant seeds and plants