6-3 Students will demonstrate an understanding of structures, processes, and responses of animals that allow them to survive and reproduce. (Life Science)

Key Concepts:
Invertebrates: sponges, segmented worms, echinoderms, mollusks, arthropods
Vertebrates: fish, amphibians, reptiles, birds, mammals
Structures: for defense, movement, obtaining resources, camouflage, adaptations, mimicry
Internal temperature: Endothermic (warm-blooded), ectothermic (cold-blooded),
Behavioral responses to stimuli: migration, hibernation, defense mechanisms, courtship
Internal stimuli: hunger, thirst, sleep
Learned – Inherited Behaviors: instinct

Supporting Content Web Sites

Animal Characteristics
http://www.uhigh.lsu.edu/faculty/afont-wb/11-04/Animals/Animal_Groups.htm
This website compares the structures of vertebrate and invertebrate animals.
6-3.1

Animal Diversity Web
http://animaldiversity.ummz.umich.edu/site/index.html
This website provides information on animal history, classification, sounds, and pictures.
6-3.1

Blue Planet Biomes
http://www.blueplanetbiomes.org/animals.htm
This website features pictures and facts about animals living in various biomes.
6-3.2

What's It Like Where You Live?
http://www.mbgnet.net/
This website features pictures and facts about animals living in various biomes.
6-3.2

Warm and Cold-Blooded
http://coolcosmos.ipac.caltech.edu/image_galleries/ir_zoo/coldwarm.html
This website discusses how warm and cold-blooded animals respond to their environment. Infrared pictures are also displayed to show how the animals' body temperature responds to the environment.
6-3.3

Body Temperature
http://www.factmonster.com/ce6/sci/A0808083.html
This website provides information on how warm and cold-blooded animals respond to their environment.
6-3.3

Activity in a Changing Climate
http://www.saburchill.com/ans02/chapters/chap029.html
This website discusses how animals adapt to a changing climate.
6-3.4

Animals on Defense
http://oncampus.richmond.edu/academics/education/projects/webunits/adaptations/This website shows the different ways humans and animal survive.
6-3.2; 6-3.5

Backyard Animals
http://www.backyardnature.net/animals.htm
This website provides information about animals commonly found North America. Pictures are also included.
6-3.2; 6-3.5

Creature Feature
http://www.nationalgeographic.com/kids/creature_feature/archive/
This website provides information on a variety of animals. Photographs, video, audio, fun facts, and links to other animal resources are included as well.
6-3.2, 6-3.5; 6-3.6

Suggested Literature

Hickman, P. & Stephens, P. (2000). *Animals in motion: how animals swim, jump, slither, and glide.* New York: Kids Can Press Ltd.
ISBN 1-55074-573-5
This book describes the movements of several animals including the cheetah and the albatross.
6-3.2

Hickman, P. (2004). *Animals and their mates: how animals attract, fight for and protect each other.* New York: Kids Can Press Ltd.
ISBN 1553375459
This book provides several examples of the courtship and mating behaviors of animals.
6-3.5

Hickman, P. & Stephens, P. (2005). *Animals hibernating: how animals survive extreme conditions.* New York: Kids Can Press Ltd.
ISBN 1553376625
This book describes why animals hibernate and how they prepare to hibernate. Additional teacher resource materials such as experiments and activities for students are included in the book.
6-3.5

Kaner, E. (1999). *Animal defenses: how animals protect themselves*. New York:
Kids Can Press Ltd.
ISBN 1-55074-421-6
This book describes the defense skills of animals.
6-3.2

Kaner, E. & Stephens, P. (2002). *Animals at work: how animals build, dig, fish and trap.* New York: Kids Can Press Ltd.
ISBN 1-55074-673-1
This book describes how animals create places to live and obtain food.
6-3.2

McLeod, B. (2000). *Nature undercover series: growing up*. Woodbridge, CT:
Blackbirch Press.
I SBN 1-56711-501-2
This book provides answers to how animals survive the early part of their lives. Topics within this book include preparation for young, how life begins, the fight for life, getting fed, stages of life, learning, parental care, and families.
6-3.2; 6-3.5

McLeod, B. (2000). *Nature undercover series: staying alive*. Woodbridge, CT:
Blackbirch Press
ISBN 1-56711-502-0
This book illustrates the behaviors that help animals survive. Topics of discussion include animal homes, rest, food and water, cooperation, movement, and body temperature.
6-3.5; 6-3.6

Middleton, D. (2001). *Polar bears*. Chicago: Raintree Publishers.
ISBN 0-8172-4578-2
This book provides interesting facts about polar bears including information on about their habitats, food, and socializing activities.
6-3.5

Stonehouse, B. & Bertram, E. (2004*)*. *How animals live: the amazing world of animalsin the wild*. New York: Scholastic Inc.
ISBN 0439548349
This book contains many illustrations and facts about a variety of animals and how they are able to survive in the wild.
6-3.5

Swinburne, S. (2003). *Black bear: north america's bear*. Honesdale, PA:
Boyds Mills Press
ISBN 159078023X
This book describes the black bear's adaptation to survival in the wild.
6-3.5

Suggested Streamline Video Resources:

The Basics of Biology: The Kingdom of Animals: From Simple to Complicated
Starting with one-celled animal-like protists, this program examines a variety of animal phyla: sponges, sea anemones, spiny-skinned animals, flatworms, nemertine worms, segmented worms, mollusks, arthropods, and vertebrates.
ETV Streamline SC
21:23
6-3.1

Biology: The Science of life: The World of Animals
This program examines the major phyla of the kingdom Animalia from the simplest sponges to the most complex vertebrates. Special emphasis is placed on evolutionary relationships, bio-symmetry, and methods of animal reproduction.
ETV Streamline SC
20:00
6-3.1

Science of the Sea: Dolphins, Rays, and Other Adaptations
This program examines dolphins, rays, and sea birds, and tells how their various adaptations help them survive.
ETV Streamline SC
15:00
6-3.2

In Control: Our Brain and Nervous System
This program illustrates how the brain, spinal cord, and nerves control a response to a stimulus.
ETV Streamline SC
25:00 min
6-3.4

Animal Instincts
Marine Migration 7:19
Hibernation and Homing 7:39
The segments examines the migration of the humpback whale during the winter months, how bears use their homing instinct to return from far-away journeys for food, and what happens during hibernation.
ETV Streamline SC
0:05 to 14:30
6-3.5

Biomes: Adapting to Deserts and Other Ecosystems
This program allows students to learn about the adaptations that enable animals to live and to flourish in some of Earth's most challenging environments.
ETV Streamline SC
56:01
6-3.5

Concepts in Nature: Adapting to Changes in Nature
This program explains how animals cope with both routine and unpredictable changes in nature.
ETV Streamline SC
14:06
6-3.5

Animal Intelligence
This program explores the animal kingdom with a focus on intelligence.
ETV Streamline SC
18:41
6-3.7

Career Connections

Ethologist
Ethologists are scientists who study animal behavior. (6-3)

Neurobiologist
Neurobiologists commonly study animals that have exaggerated or specialized sensory, motor or behavioral capacities in order to learn about some aspect of neural function common to all complex animals including rats and humans. (6-3)

Invertebrate biologist
Invertebrate biologists study many aspects of the biology of animals without backbones. (6-3)

Vertebrate morphologist
Vertebrate morphologists focus on the biology of form and structure; their perspectives include evolutionary, functional and developmental aspects. Vertebrate morphologists can act as consultants for the entertainment industry, especially animators that need to know how animals really move or may combine their training with engineering to work in industries that range from movie-making to the design and production of prosthetic devices. (6-3)

Zoologist
Zoologists study animals and many aspects of animal life such as behavior, diet, evolution, classification, and distribution. (6-3)