

TEACHER'S MANUAL

This Suitcase Program provides the materials and lesson plans for teachers of grades K-2 with content and activities increasing in difficulty by grade level. Activities in this Suitcase Exhibit may assist in meeting the Tennessee State Standards.

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TENNESSEE STATE STANDARDS FOR K-2

- K.LS1.1 Use information from observations to identify differences between plants and animals (locomotion, obtainment of food, and take in air/gasses).
- K.LS1.2 Recognize differences between living and non-living materials and sort them into groups by observable physical attributes.
- K.LS1.3 Explain how humans use their five senses in making scientific findings.
- K.LS3.1 Make observations to describe that young plants and animals resemble their parents.
- K.ESS3.1 Use a model to represent the relationship between the basic needs (shelter, food, water) of different plants and animals (including humans) and the places they live.
- 2.LS1.1 Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air.
- 2.LS1.2 Obtain and communicate information to classify animals (vertebrates-mammals, birds, amphibians, reptiles, fish, invertebrates-insects) based on their physical characteristics.
- 2.LS1.3 Use simple graphical representations to show that species have unique and diverse life cycles.
- 2.LS2.1 Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.
- 2.LS2.2 Predict what happens to animals when the environment changes (temperature, cutting down trees, wildfires, pollution, salinity, drought, land preservation).
- 2.LS3.1 Use evidence to explain that living things have physical traits inherited from parents and that variations of these traits exist in groups of similar organisms.

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

ACTIVITY I: Get the Scoop on Skulls

DURATION OF ACTIVITY: 50 minutes

LESSON OBJECTIVES

Students will learn that almost all animals have a skeleton and that a skull is one part of the skeleton. Using diagrams and skull replicas, students will learn to identify major parts of an animal skull, including the eye socket, nasal area, upper and lower jaws and the brain case.

GUIDING QUESTIONS

What is a skull? What are some features of a skull? Are all skulls exactly the same?

TENNESSEE STATE STANDARDS

- K.LS1.1 Use information from observations to identify differences between plants and animals (locomotion, obtainment of food, and take in air/gasses).
- K.LS1.2 Recognize differences between living organisms and non-living materials and sort them into groups by observable physical attributes.
- K.LS3.1 Make observations to describe that young plants and animals resemble their parents.
- K.ETS1.1 Ask and answer questions about the scientific world and gather information using the senses.
- K.ETS1.2 Describe objects accurately by drawing and/or labeling pictures.
- 2.LS1.1 Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air.
- 2.LS1.2 Obtain and communicate information to classify animals (vertebrates-mammals, birds, amphibians, reptiles, fish, invertebrates-insects) based on their physical characteristics.
- 2. LS1.3 Use simple graphical representations to show that species have unique and diverse life cycles.

MATERIALS INCLUDED

Skulls: Human and Cat
Other skulls and skeletons selected by the teacher
Mat for display
Animal fact cards
Flip Chart of Animals and their Skulls, start with the image of the cat and cat skull
1 Animal x-ray showing an entire skeleton
See Supplementary Materials for:
 Transparency: Human skull drawing (K-2)
 Human skull worksheet
 Cat skull worksheet

MATERIALS PROVIDED BY TEACHER

Overhead or digital projector
Drawing and/or coloring materials
Five colors of erasable markers for transparency

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

ACTIVITY II: Types of Teeth

DURATION OF ACTIVITY: 60 minutes

LESSON OBJECTIVES

Students will generalize different types of teeth and how they are used.

GUIDING QUESTIONS

What are the four types of teeth? Why are there different types of teeth?

TENNESSEE STATE STANDARDS

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| K.ETS1.1 | Ask and answer questions about the scientific world and gather information using the senses. |
| K.ETS1.2 | Describe objects accurately by drawing and/or labeling pictures. |
| K.ETS2.1 | Use appropriate tools (magnifying glass, rain gauge, basic balance scale) to make observations and answer testable scientific questions. |
| 1.ETS2.1 | Use appropriate tools (magnifying glass, basic balance scale) to make observations and answer testable scientific questions. |
| 2.LS1.1 | Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. |
| 2.ETS2.1 | Use appropriate tools to make observations, record data, and refine design ideas. |

MATERIALS INCLUDED

Cat skull
Beaver skull
See supplementary Materials for:
Transparency: Teeth Map (K-2)
or use Teeth Types poster
Mechanics of Chewing Worksheet (K-2)

MATERIALS PROVIDED BY TEACHER

Snack bags with a baby carrot, piece of jerky,
popcorn, and a piece of granola bar
Overhead or digital projector

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

ACTIVITY III: Eyes, Teeth, and Snouts: Defining Predator and Prey

DURATION OF ACTIVITY: 50 minutes

LESSON OBJECTIVES

Students will learn that all animals need to eat and that some animals eat plants, some eat animals, and some eat both. Students will learn to define the concepts of predator and prey.

GUIDING QUESTION

What can we learn from looking at an animal's skull that indicates whether it is a Predator or Prey?

TENNESSEE STATE STANDARDS

- K.ETS1.1 Ask and answer questions about the scientific world and gather information using the senses.
- K.ETS1.2 Describe objects accurately by drawing and/or labeling pictures.
- 2.LS1.1 Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air.
- 2.LS2.1 Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.
- 2.LS3.1 Use evidence to explain that living things have physical traits inherited from parents and that variations of these traits exist in groups of similar organisms.

MATERIALS INCLUDED

Book - **A Bold Carnivore: An Alphabet of Predators**
Skulls – do not include the snake skulls or the owl skull in this activity
Flip Chart with pictures of animals and their skulls
Poster: Eyes Rhyme
See Supplementary Materials for: Predator or Prey Identification Lab (K-2) Worksheet (3 pages)

MATERIALS PROVIDED BY TEACHER

Magazines and/or books with pictures of animals (predators or prey)
Coloring and drawing materials
Paper to fold into thirds
Glue sticks
Scissors

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

ACTIVITY IV: What's for Lunch? Meat-eaters and Plant-eaters

DURATION OF ACTIVITY: 50 minutes

LESSON OBJECTIVES

Students will learn to identify different types of food processors as an animal who eats meat, an animal who eats plants, or an animal who eats both.

GUIDING QUESTION

What kinds of food do animals eat?

TENNESSEE STATE STANDARDS

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| K.ETS1.1 | Ask and answer questions about the scientific world and gather information using the senses. |
| K.ETS1.2 | Describe objects accurately by drawing and/or labeling pictures. |
| 2.LS1.1 | Use evidence and observations to explain that many animals use their body parts and senses in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. |

MATERIALS INCLUDED

Skulls – divided by carnivores, herbivores, omnivores
Animal Fact Cards
Food Image Cards
See Supplementary Materials for:
“What's For Lunch?” sheet (2 pages)

MATERIALS PROVIDED BY TEACHER

Scissors
Glue sticks
Crayons or other coloring materials
Paper with drawn circles or paper plates

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

ACTIVITY V: Predators & Prey: Part of the Food Chain

DURATION OF ACTIVITY: 50 minutes

LESSON OBJECTIVES

Students will learn that everything in an ecosystem is connected together through a food chain. Students will use what they learned from activities III and IV to construct a simple food chain.

GUIDING QUESTIONS

How can we tell what an animal eats? Can we determine an animal's place in the Food Chain by comparing their skulls and finding out what type of diet an animal has? How do Predator/Prey relationships affect the Food Chain?

TENNESSEE STATE STANDARDS

- K.ETS1.1 Ask and answer questions about the scientific world and gather information using the senses.
- K.ETS1.2 Describe objects accurately by drawing and/or labeling pictures.
- 2.LS2.1 Develop and use models to compare how animals depend on their surroundings and other living things to meet their needs in the places they live.

MATERIALS INCLUDED

Skulls
Food Chain cards

MATERIALS PROVIDED BY TEACHER

Area large enough for students to spread out, like a playground or gym
Drawing or coloring materials

For the entire activity and materials and to reserve a Suitcase Exhibit, please call 901.636.2362.

SUITCASE EXHIBIT INVENTORY CHECKLIST

School: _____

Check Out: _____

Return Date: _____

MoSH Check In:	Teacher Check In:	Item	Books/Videos/Posters	Teacher Return:
		A	Teacher's Manual	
		B	Binder: Teacher's Resource Materials	
		C	Poster: Investigating Food Webs with Owl Pellets	
		D	Poster: Diets of Animals	
		E	Poster: Eyes in Front	
		F	Poster: Teeth	
		G	Poster: Where Do You Fit In?	
		H	Folder: 13 Animal X-Rays	
		I	Binder: Zoobooks Magazines	
		J	Binder: Milliken Mammals, Birds, Fish, Amphibians & Reptiles	
		K	Book: Eyewitness Mammal	
		L	Book: Eyewitness Skeleton	
		M	Book: A Bold Carnivore	
		N	Chart: Laminated Flip Chart	

SUITCASE EXHIBIT INVENTORY CHECKLIST

MoSH Check In:	Teacher Check In:	Item	Materials	Teacher Return:
		1	Skull: Great Horned Owl	
		2	Skull: Jackrabbit	
		3	Skull: Human (reproduction)	
		4	Skull: Coyote	
		5	Skull: Shrew	
		6	Skull: Tree Squirrel	
		7	Skull: Little Brown Bat	
		8	Skull: Monkey	
		9	Skull: White-Tailed Deer	
		10	Skull: Beaver	
		11	Skull: Domestic Cat	
		12	Skull: Opossum	
		13	Skull: Non-Venomous Gopher Snake	
		14	Skull: Venomous Rattlesnake	
		15	Skeleton: Fish	
		16	Skeleton: Frog	
		17	Skeleton: Bat	
		18-18.3	4 magnifier boxes – #18 Owl pellet; #18.1, #18.2, #18.3 Owl prey remains	
		19	Vernier Calipers – 9	
		20	Tape measures-9	
		21	Grinders-2	
		22	Mat for table display	
		23	Information cards for display	