

# Eagle Cam Questions to Investigate

Challenge students to answer these questions using their observations of the eagles on the ETSU Eagle Cams or by conducting research. Students might generate and answer their own questions too. The questions are aligned to elementary science standards for Tennessee and the Next Generation Science Standards.

## Basic Needs of Animals - Kindergarten

TN - 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.

NGSS - K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

### Questions

- Before viewing the eagle cams, draw a picture of what you think an eagle's habitat looks like. After viewing the eagle cams, what surprised you about the eagle's nest? How is it different or similar to what you expected?
- What does the eagle's nest look like?
- What is the eagle's nest made of? How does the center of the nest look different from the rest of the nest? Do the materials in the nest change depending on the season?
- What food does the eagle bring to the nest?
- How do adult eagles get their food? How do baby eagles get their food?
- How often do the parent eagles feed the young?
- In what part of the tree is the eagle's nest?
- What does the eagle do to the eggs when it leaves the nest?
- What else can you see from the eagle's nest?
- What are some similarities and differences between the habitat of the Johnson City and Bluff City nest?
- How do eagles catch their food?
- How do eagles carry sticks and grasses to their nest?

## Models of Animal Survival – 2<sup>nd</sup> Grade

TN - 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.

NGSS - K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

## Questions

- Construct a prototype of an eagle nest using materials collected from outside.
- Explain how the proximity of water sources helps an eagle survive in its environment.
- Illustrate an eagle nest design. After observing eagles more, revise your nest illustration.
- Compare the size and design of an eagle's nest to a smaller bird's nest.
- Identify the importance of the eagle building its nest in a high location.
- Observe what the eagle eats and feeds its young.
- Inspect the materials the eagle uses daily and record that information.
- Determine what resources the eagle uses to keep the eggs warm in the nest.
- Using a map of your community, identify ideal places for an eagle to construct its nest.
- When do eagles nest in Tennessee? When do they nest in Florida? When do they nest in Alaska? (Geographical latitude plays the decisive role in nesting times.)
- Why do eagles stay in Tennessee all year long while eagles in the northern US and Canada migrate from their nesting grounds in their nesting grounds?

## Characteristics of Parents and Offspring – Kindergarten/3<sup>rd</sup> Grade

TN - K.LS3.1 Make observations to describe that young plants and animals resemble their parents.

NGSS - 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

## Questions

- Describe how you would think the baby eagle will look in comparison to its parents. Compare your predictions to the eagles on the eagle cam. How do your predictions compare to your observations?
- What types of feathers do you see on the adults and baby eagles? How are they the same and how are they different?
- Compare the baby and the parent eagle in size and length.
- Does the baby eagle look identical to the parent? What different features does the parent eagle have to the baby eagle?
- What kinds of feathers were the baby eagles born with? How do the feathers of the baby eagles change as they grow?
- What is the difference in beak size and color between the adult and baby?
- What is the difference in foot/claw size between the adult and baby?
- What is the difference in wingspan size between the adult and baby?

## Animal Adaptations – 2<sup>nd</sup>-4<sup>th</sup> Grade

TN - 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.

TN - 3.LS1.1 Analyze the internal and external structures that aquatic and land animals and plants have to support survival, growth, behavior, and reproduction.

NGSS - 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

NGSS - 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

### Questions

- How do eagles use their wings for protection?
- How do the eagles carry their food back to the nest?
- How does the shape of eagles' beaks help them eat?
- How do the eagles use their beaks in other ways besides eating?
- What body parts do the eagles use to break out of their eggs?
- How does the eagle keep itself warm in the winter time?
- How do eagles protect themselves from predators?
- Compare and Contrast how animals with wings and without wings behave in different circumstances.
- Illustrate what the eagle looks like. How do the features of the eagle compare to another type of bird?
- Describe the color and size of the Eagle's eggs.
- How large is an eagle? Are adult male and female eagles the same size? If not, which sex is the larger of the two?
- How much does an adult eagle weigh?
- What is the wingspan of an eagle?
- How do eagles find their food?
- How do eagles feed their chicks?
- How long does it take an eagle's egg to hatch? How long does a baby eagle stay in the nest before it can fly away?
- Construct a scale model of an eagle's egg and compare it to the size of a chicken's egg.
- Construct a model of an eagle's beak. Why is the shape of the beak important? Compare it to the beak of a heron, a chicken, and songbird like a cardinal.
- Construct a model of an eagle's feet. Why is the shape of the feet important to an eagle? Compare this foot to that of a woodpecker, a duck and a cardinal.

## Food Chains and Webs – 4<sup>th</sup>- 5<sup>th</sup> Grades

TN - 4.LS2.2 Develop models of terrestrial and aquatic food chains to describe the movement of energy among producers, herbivores, carnivores, omnivores, and decomposers.

NGSS - 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

### Questions

- What foods do the eagles eat? Classify eagles as omnivores, herbivores, or carnivores.
- What producers do you see while viewing the Eagle Cam?
- What consumers do you see while viewing the Eagle Cam?
- What is the source of energy used by the producers?
- Describe relationship between eagles and fish according to the concept of food chains.
- Compare and contrast the different ways a producer and consumer transfer their energy.
- By observing the Eagle Cams, illustrate a model of a food chain.
- Compare and contrast the food consumed by the baby eagles and adult eagles.