



Nature-Watch Activity Kit

Raptors: Birds of Prey

(Nature Watch Kit #136)

Kit Contents

Kit Size

25 100

Item:

| | | |
|--------------------|----|-----|
| Golden Eagle Claws | 25 | 100 |
| Key Rings | 25 | 100 |
| Baggies | 25 | 100 |
| Instructor Manual | 1 | 1 |

This page includes the Next Generation Science Standards (NGSS) mapping for this kit and Science, Technology, Engineering, and Math (STEM) extensions (on back) to use in adapting and extending this activity to other subject areas.

Next Generation Science Standards Alignment

3-LS4-2. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS1-4. Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

MS-LS4-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

**See Back for
STEM Extensions**

This Nature Watch Activity Kit contains an Instructor Manual and materials to implement the curriculum. The kit was designed to be used with adult supervision only. Unsupervised use is not recommended.



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STEM Extensions

Science

Raptors are sometimes the victims of auto accidents because they may dive for prey that they see on the road. If found by people after the accident, they can be rehabilitated. By going to a wildlife refuge or looking for information online, find out what wildlife biologists do to nurse a raptor back to health so that it can be released into the wild again.

What does your neighborhood look like from a raptor's point of view? Imagine you are a raptor flying above your home or school. Create a scene – either on paper with markers or in 3-D with clay or other materials – that shows what a raptor would see. Be sure to include some prey animals for the raptor to spot!

Animals at the top of their food chain are sometimes more susceptible to toxins in the environment because of something called biomagnification. This concept means that top predators accumulate toxins from the animals they eat (who get toxins from what they eat). Read about how a chemical called DDT threatened raptor populations several decades ago. DDT has since been banned, but what are some other threats we should be concerned about for the raptors' sake?

Technology

Explore the raptors' ranges in North America by looking at Google Maps or Google Earth. What major landmarks, national parks, and other famous places are located in the ranges where the raptors live? Which raptors live near you? It will be helpful to go online to find a range map for each raptor first.

Go online to watch a raptor bird cam – a real-time video feed that gives you a close-up view of live raptors. Watch the raptors and take note of interesting behaviors. How do they interact with their surroundings? How active are they? Make observations, then discuss them with your classmates to compare notes.

Engineering

Make a model of a raptor's talon, as described on page 1 of the activity kit. Try out different materials (for example, pipe cleaners) and see what works best. Practice picking up various objects with the talons and imagine how a raptor would use its talons while swooping down on its prey from the sky.

Compare the flight of raptors to the flight of an airplane. What similarities do you see? Think about how the birds take off, soar, dive, and land. How could imitating these movements help the military to design better fighter jets or engineers to design better commercial airplanes?

Build a replica of a raptor's nest, either using natural materials you find outside or craft materials. Look online for descriptions and pictures of raptor nests. Test the strength of your nest by placing stuffed animals or toys into it at the weight equal to a few baby raptors.

Math

Do a simple demonstration to understand how well raptors can see. Make a cardboard fish that is one inch long and attach it to a pole or wall. Stand facing the fish and back up until you can't see it anymore. Mark the spot where you last were able to see the fish, and measure the distance. Multiply this distance by 8; this tells you from how far away a bald eagle would be able to see the fish. Walk to that point so you can get a sense of how much farther the bald eagle can see than we can. From how far could a bald eagle see a fish that is one foot long?

Choose 10 raptor species and find out their wingspan. Draw and cut out life-size pictures of their wings. (You may have to attach pieces of paper together for some wingspans.) Hang the wings on the wall or ceiling in a line, going from the biggest to the smallest wingspan.