

Animals & Wildlife unit study

A homeschool curriculum built around animals — zoology, habitats, and conservation woven through reading, math, science and geography for K-12.

GRADE BANDS K-2 · 3-5 · 6-8 · 9-12

FULL GUIDE <https://handsdowneducation.com/homeschool/animals>

How to use this planner

The six weeks below are the guide's authored scope and sequence: one focus, one key activity and one portfolio output per week. Run the activity at the level your child is at (the grade band notes tell you how), keep the output, and by week six you have a portfolio that shows the unit end to end.

Pace is yours. A week here is three to five working sessions; a topic that is going well can take two calendar weeks, and one that has run dry can be closed early. Tick the box when a week's output is in the portfolio.

Six-week scope and sequence

Wk	Focus	Key activity	Portfolio output	Done
1	Classification	Sort animals into major groups using a trait checklist; learn how scientists group living things and why a whale is not a fish.	A classification chart with the rule written for each group.	☐
2	Adaptation and habitat	Match body structures to their jobs; build a habitat model for one animal with every requirement labeled.	A labeled adaptation drawing or habitat diorama with a written explanation.	☐
3	Field observation	Start the field journal: feeder tallies, a local-animal watch or an ethogram, recorded on a schedule.	One week of dated observations with a graph or tally summary.	☐
4	Food webs and energy	Owl pellet dissection and a food web from the evidence; older students model energy loss between trophic levels.	A food-web diagram with the bone evidence attached, or a trophic pyramid with calculations.	☐
5	Populations and change	Graph a real population dataset (Yellowstone wolves, a bird count); mark-and-recapture simulation for older students.	A graph with a written interpretation of the trend and its causes.	☐
6	Conservation and action	Research one threatened species and its recovery plan; write an argument or policy brief; present the unit's work.	A conservation brief and a final presentation or portfolio.	☐

Running it at your child's level

Grades K-2: observe, sort and describe

Young children are natural field biologists: they watch closely and they ask why. A K-2 animal unit builds on that with careful looking, simple classification, and lots of drawing and describing. The best lab at this age is a window, a bird feeder and a notebook.

- Put up a feeder or a dish of seed and keep a tally chart for a week of every bird that visits, using a simple picture guide to name them. At the end, count which bird came most and draw it with its beak shape labeled.
- Sort animal picture cards into mammals, birds, reptiles, fish and insects using a checklist — fur or feathers, lays eggs or not, how many legs — and say the rule out loud for each pile.
- Play the adaptation game: pick one animal and list three body parts, then say what job each part does (a duck's webbed feet paddle; an owl's big eyes see at night). Draw the animal with the parts labeled.

- Follow one local animal for three days — a squirrel, a pigeon, an ant trail — and record what it was doing each time you looked. Where does it go, what does it eat, when is it busy?

Reading: *The Animal Book* by Steve Jenkins, a large illustrated survey organized around real biological ideas, and the National Geographic Kids Animal Encyclopedia for looking up whatever comes home from the walk.

Grades 3-5: habitats, food webs and real data

Upper elementary students can move from describing animals to explaining them: why an animal lives where it does, what eats what, and what the numbers say about whether a species is doing well. Citizen-science projects accept their observations as real contributions, which changes how seriously the work feels.

- Dissect an owl pellet (kits are inexpensive and come with a bone chart), sort the bones by prey species, and draw the food web the pellet documents — from grass to vole to owl.
- Join Project FeederWatch or record sightings on iNaturalist for a month. Then make a bar graph of species by week and write a paragraph about any change you saw and what might explain it.
- Map one migration: Arctic terns, monarch butterflies or gray whales. Mark the start and end and at least three stops, measure the total distance with the map scale, and list what each place provides the animal.
- Build a habitat diorama for one animal with every element it needs labeled — water, food, shelter, space — then write what would happen if one of those were removed.

Reading: *Animalium* by Jenny Broom and Katie Scott, a museum-in-a-book organized by animal group with detailed plates, and the Cornell Lab of Ornithology's free Merlin app for identifying what turns up.

Grades 6-8: ecology, populations and evidence-based argument

Middle schoolers can handle ecology as a quantitative science: resource limits, population growth, predator-prey cycles and the real conservation debates where evidence and values both matter. The writing shifts to argument from data, and the field journal becomes a research notebook.

- Graph the Yellowstone wolf population from its 1995 reintroduction using the published annual counts, then add the elk counts on a second axis and write an explanation of the relationship, including at least one factor other than wolves.
- Run a mark-and-recapture simulation with dried beans or beads to estimate a population, then compare your estimate to the true count and explain the sources of error. This is the method used for real wildlife surveys.
- Research one keystone species — sea otters, beavers, elephants, prairie dogs — and build a diagram of every other species and physical process that depends on it. Then write a page predicting what the ecosystem looks like without it.
- Take a position on a real conservation controversy (wolf hunting quotas, culling invasive species, captive breeding) and write a structured argument that cites population data and states the strongest point of the other side fairly.

Reading: *In the Shadow of Man* by Jane Goodall, the founding field study of chimpanzee behavior, read in full or in chapters, and the IUCN Red List website for current conservation status data.

Grades 9-12: zoology, behavior and conservation science

High schoolers can do the work of an introductory zoology or ecology course: comparative anatomy, animal behavior with real observation protocols, population modeling and the policy science of conservation. Kept in a portfolio with lab reports, this is credit-worthy biology.

- Design and run an ethogram study: define six behaviors for one animal (a pet, a zoo animal on a webcam, backyard birds), observe in timed intervals for a week, calculate the percentage of time in each behavior, and write it up as a methods-results-discussion report.
- Complete a comparative dissection — a preserved frog or fish from a biological supply company, or a fish from a seafood counter — and produce labeled diagrams comparing organ systems to those of a mammal.
- Model exponential and logistic population growth in a spreadsheet using a real starting population and growth rate, then vary carrying capacity and explain how the curve changes and what would move that limit in the wild.
- Write a policy brief on one endangered species: current population, primary threats with sources, what

recovery plans exist, and a reasoned recommendation on where the next dollar should go.

Reading: *Silent Spring* by Rachel Carson for the history and science of conservation, and *Last Chance to See* by Douglas Adams and Mark Carwardine for a humane, funny field account of endangered species.

A sample week, subject by subject

Reading & Writing

Read a naturalist's field notes (Jane Goodall's early Gombe writing works well), then keep a three-day field journal on one local animal — even a squirrel.

Math

Use a real wolf-population dataset from Yellowstone to graph recovery since 1995, then predict next year's count and defend the estimate.

Science

Dissect an owl pellet (kits are inexpensive) and reconstruct the food web it documents, identifying prey species from bones.

Social Studies

Map one migration route — Arctic terns or monarchs — across every country it crosses, and list what each country does or doesn't protect along the way.

Art

Draw one animal three ways: scientific illustration, habitat scene, and motion study. Each teaches a different way of seeing.

Books, sites and kits

- The Animal Book by Steve Jenkins (Book (K-3)) — Hundreds of animals organized by real biological themes, with cut-paper illustrations children pore over.
- Animalium by Jenny Broom and Katie Scott (Book (3-8)) — A museum-in-a-book tour of the animal kingdom by group, with detailed plates and readable captions.
- In the Shadow of Man by Jane Goodall (Book (6-12)) — The founding field study of wild chimpanzees, and a model for how to keep a field journal.
- *Silent Spring* by Rachel Carson (Book (9-12)) — The book that started modern conservation science; essential context for the policy strand.
- iNaturalist and Seek (Website / app) — Photograph any organism, get an identification, and contribute observations to a real research database.
- Cornell Lab of Ornithology: Merlin, eBird and Project FeederWatch (Website / app) — Free bird identification and citizen-science counts that accept a child's data as genuine contributions.
- Explore.org live nature cams (Website) — Live cameras on bears, eagles, puffins and more — the behavior-study source for families far from the wild.
- Owl pellet dissection kit (Carolina Biological or similar) (Kit) — Sterilized pellets with a bone identification chart; the classic week-four food-web lab.

Standards this unit covers

- 1-LS1-1 (NGSS) — Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive — the adaptation strand.
- 3-LS4-3 (NGSS) — Construct an argument with evidence that in a particular habitat some organisms can survive well, some less well, and some cannot survive at all.
- 5-LS2-1 (NGSS) — Develop a model to describe the movement of matter among plants, animals, decomposers and the environment — the owl-pellet food web.
- MS-LS2-1 (NGSS) — Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

- HS-LS2-2 (NGSS) — Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
- CCSS.MATH.CONTENT.3.MD.B.3 (CCSS Math) — Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories — the feeder tallies and species counts.
- CCSS.ELA-LITERACY.W.8.1 (CCSS ELA) — Write arguments to support claims with clear reasons and relevant evidence — the conservation-controversy essay.

Common questions

We live in a city — can this still work hands-on?

Cities are full of wildlife study: pigeons display measurable behavior, parks host surprising species counts, and zoo memberships plus webcams fill the rest. Urban ecology is a real field.

My child fixates on one animal only. Problem?

An asset. One animal studied deeply — anatomy, habitat, evolution, threats — teaches the full method of zoology better than a shallow tour of fifty species.

Is this science-heavy at the expense of other subjects?

No — animal narratives carry reading and writing naturally, population data carries math, and habitats and conservation policy carry geography and civics.

What goes into an animal unit study for homeschool?

A complete animal unit study has a classification strand (what makes a mammal a mammal, how scientists group living things), an adaptation and habitat strand (why an animal looks and behaves the way it does, and where it can and cannot live), an ecology strand (food webs, populations, what happens when one piece changes), a conservation strand with real numbers, and a running field journal. The six-week scope and sequence above arranges those so that each week produces something you can keep.

How do I turn a zoo or aquarium trip into a lesson?

Give the trip a question before you leave. A K-2 child can find and draw three animals that eat plants; a fourth grader can time how long a big cat rests versus moves and graph it; a middle schooler can read the conservation status signs and rank the species by threat; a high schooler can compare the enclosure to the animal's natural range and evaluate the welfare tradeoffs. The trip becomes data collection, and the write-up afterward is the lesson.

Can an animal curriculum count as high-school biology?

A zoology-focused course can cover a substantial share of a biology credit — classification, anatomy and physiology, ecology, evolution and behavior are all standard biology content. To make it a full credit, add the cellular and genetics units from a standard biology text and keep lab reports from dissections, population studies and field surveys. The 9-12 activities above are written at that lab-report level.

Turn this into a full, standards-aligned curriculum

Generate a complete plan around animals & wildlife for your child's grade and pace — free to try, no account required
<https://handsdowneducation.com/curriculum/generate>