HANDS DOWN EDUCATION · 6-WEEK UNIT STUDY PLANNER

Rainforests unit study

A K-12 rainforest homeschool curriculum: forest layers, animal adaptations, food webs, rainfall math and the people of the Amazon, with a six-week plan.

GRADE BANDS K-2 · 3-5 · 6-8 · 9-12
FULL GUIDE https://handsdowneducation.com/homeschool/rainforests

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	**Where rainforests are**	The equator, climate, tropical and temperate rainforests, and the four layers; start the explorer's journal and the rain gauge.	A world map of rainforests and a layer mural.	☐
2	**Plants of the rainforest**	Buttress roots, epiphytes, drip tips and the race for light; build the jar terrarium.	A labeled plant diagram and terrarium observations.	☐
3	**Animal adaptations**	Camouflage, warning colors, climbing and gliding, and animals of each layer.	A set of adaptation cards.	☐
4	**Food webs and decomposers**	Producers, consumers, decomposers, thin soils and the leaf decomposition test.	A food web poster and a lab write-up.	☐
5	**Water and climate**	Rainfall, the water cycle, transpiration and rainfall graphs.	A rainfall graph and a water-cycle model.	☐
6	**People and rainforests**	Indigenous communities, foods and trade, deforestation and protection; final presentation.	A finished journal, mural tour or policy brief.	☐

Running it at your child's level

Grades K-2: layers, colors and hiding animals

Young children learn rainforests by sorting and noticing. They can learn that a rainforest is warm and very wet, that it has layers from the dark forest floor to the sunny treetops, that different animals live in each layer, and that some animals hide with camouflage while others wear bright colors as a warning. Hands-on sorting and a big mural make the ideas stick.

- Layer mural: paint the forest floor, understory, canopy and emergent layer on a wall of butcher paper and stick on pictures of jaguars, toucans, sloths, frogs and butterflies where they belong.
- Hide and seek: cut out paper moths and frogs in different colors, hide them on patterned fabric and plain paper, and count which ones are found first.
- Jar rainforest: plant a small terrarium, seal it and check each morning for drops on the glass, drawing what you see.
- Drip-tip leaves: pour water over a leaf cut with a pointed tip and one with a round end, and watch which sheds water faster, the way rainforest leaves do.

  Reading: The Great Kapok Tree by Lynne Cherry, in which rainforest animals each give a reason to save their tree, and Over in the Jungle: A Rainforest Rhyme by Marianne Berkes as a counting read-aloud.

Grades 3-5: adaptations, food webs and the water cycle

Upper elementary students can explain how rainforest plants and animals are built for their layer: prehensile tails and long arms for climbing, sticky toe pads, buttress roots, plants that live on other plants and leaves with drip tips. They can build food webs with decomposers, track the water cycle and compare rainfall with real measurements.

- Adaptation cards: make ten cards for rainforest species with their layer, food and one body feature that helps them survive, then sort them in different ways.
- Food web: connect sun, plants, leafcutter ants, fungi, frogs, snakes and a harpy eagle with arrows, then explain what happens if one link disappears.
- Rainfall graph: compare the yearly rainfall of Manaus, Brazil, with your town and a desert city in a bar graph, and calculate how many times wetter the rainforest is.
- Decomposer test: place leaves in a warm, damp container and a cool, dry one, check every few days, and explain why rainforest soil is thin when the forest is so rich.

  Reading: Here Is the Tropical Rain Forest by Madeleine Dunphy, a cumulative picture-book food web, and the DK Eyewitness book Jungle for photographs of rainforest species.

Grades 6-8: biodiversity, soils and land-use data

Middle schoolers can investigate why rainforests hold so many species and why that richness is fragile: fast decomposition and thin soils, specialized relationships between plants and their pollinators, and the way forests recycle water into rain. They can read real satellite data on tree-cover change and weigh the reasons people clear forest against the reasons to keep it.

- Biodiversity count: mark out one square meter of a yard, park or wood, count every kind of plant and animal you find, and compare with published counts from a rainforest plot.
- Flying rivers: research how the Amazon returns water to the air through transpiration, then model it with a plant in a sealed bag in the sun and measure the water collected.
- Satellite change: use Global Forest Watch to compare tree cover in one rainforest region over twenty years and graph the trend.
- Stakeholder chart: list the goals of a cattle rancher, a soy farmer, an Indigenous community, a national government and a conservation group, and find where they agree and conflict.

  Reading: Journey to the River Sea by Eva Ibbotson, a novel set in the Brazilian Amazon in 1910, alongside nonfiction on rainforest ecology.

Grades 9-12: ecology, climate and the economics of forests

High schoolers can treat rainforests as a case study in ecology, earth systems and policy: nutrient cycling, the role of forests in the carbon and water cycles, how scientists estimate the number of species, the history of rubber and other rainforest trades, and current approaches to forest protection, from protected areas to Indigenous land rights to certification schemes. With lab write-ups and a research paper, the unit supports a biology, environmental science or geography credit.

- Carbon estimate: use published biomass figures to estimate the carbon stored in a hectare of tropical rainforest and compare it with a hectare of farmland.
- Policy brief: choose one approach to reducing deforestation, gather evidence of its results from at least three perspectives, and write a balanced two-page brief.
- Rubber boom: research the Amazon rubber boom of the late 1800s, its effects on Indigenous peoples and why plantations in Southeast Asia ended it.
- Species estimate: read how scientists estimated insect diversity by fogging canopy trees, and critique the assumptions behind the numbers.

  Reading: The Lost City of Z by David Grann, a history of Amazon exploration and the civilizations that lived there, alongside a field ecology text.

A sample week, subject by subject

Reading & Writing

Keep a rainforest explorer's journal: each day, one layer of the forest with a labeled sketch of two animals and one plant that live there, ending the week with a written tour from the forest floor to the emergent layer.

Math

Set out a rain gauge for the week, then compare your total with the Amazon's yearly rainfall of roughly 2,000 to 3,000 millimeters and make a bar graph of rainfall for your town, a desert city and a rainforest city.

Science

Build a rainforest in a jar with soil, small plants and a little water, seal the lid, and watch over several days as water evaporates, condenses on the glass and falls again.

Social Studies

On a world map, color the band of tropical rainforests around the equator, then trace where chocolate, bananas, vanilla and rubber first came from.

Art & Music

Paint a floor-to-ceiling mural of the four forest layers on butcher paper, and listen to recordings of rainforest dawn choruses to add the animals you hear.

Books, sites and kits

- The Great Kapok Tree by Lynne Cherry (Book (K-3)) — A picture book in which the animals of the Amazon explain why their tree matters.
- Over in the Jungle: A Rainforest Rhyme by Marianne Berkes (Book (K-2)) — A counting rhyme that introduces rainforest animals and their young.
- Here Is the Tropical Rain Forest by Madeleine Dunphy (Book (K-3)) — A cumulative verse that builds a rainforest food web page by page.
- DK Eyewitness: Jungle (Book (3-6)) — Photographs and short explanations of rainforest plants, animals and peoples.
- Journey to the River Sea by Eva Ibbotson (Book (5-8)) — An adventure novel set in the Amazon in 1910.
- The Lost City of Z by David Grann (Book (10-12)) — Narrative history of Amazon exploration and the evidence for its ancient societies.
- Global Forest Watch (Website) — Free interactive maps of tree cover and tree-cover change worldwide.
- NASA Earth Observatory (Website) — Free satellite images and articles on rainforests, rainfall and land use.

Standards this unit covers

- K-ESS3-1 (NGSS) — Use a model to represent the relationship between the needs of different plants and animals and the places they live — animals and the forest layers.
- 2-LS4-1 (NGSS) — Make observations of plants and animals to compare the diversity of life in different habitats — rainforest compared with your own backyard.
- 3-LS4-3 (NGSS) — Construct an argument with evidence that in a particular habitat some organisms can survive well, some less well and some not at all — specialists of each layer.
- 4-LS1-1 (NGSS) — Construct an argument that plants and animals have internal and external structures that support survival, growth, behavior and reproduction — drip tips, buttress roots and prehensile tails.
- 5-LS2-1 (NGSS) — Develop a model to describe the movement of matter among plants, animals, decomposers and the environment — the rainforest food web and thin soils.
- MS-LS2-5 (NGSS) — Evaluate competing design solutions for maintaining biodiversity and ecosystem services — the stakeholder chart and protection approaches.
- 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 rainfall comparison graph.

- CCSS.ELA-LITERACY.W.4.2 (CCSS ELA) — Write informative/explanatory texts to examine a topic and convey ideas and information clearly — the explorer's journal and layer tour.

Common questions

What should a rainforest unit study include?

Six strands: where rainforests are and why they form, the four layers of the forest, animal and plant adaptations, food webs and decomposers, water and climate, and people and rainforests, from Indigenous communities to chocolate to deforestation. The six-week scope and sequence above runs one strand a week.

How do I start a rainforest unit study?

Start with the layers. Tape four long sheets of paper up a wall and label them forest floor, understory, canopy and emergent, then read a rainforest picture book and add each animal to the layer where it lives. Set up a rain gauge and a jar terrarium the same day. By the end of the first week you will have a mural, a rainfall log and a list of questions, and the grade-band section above that fits your child gives the next steps.

What age is a rainforest unit study best for?

Every age, with a different depth. Preschool and early elementary children sort animals by layer and talk about camouflage and color; upper elementary students study adaptations, food chains and the water cycle; middle schoolers investigate biodiversity, soils and land-use data; high schoolers take on ecology, climate and the economics and ethics of conservation.

Can I run a rainforest unit study with several ages at once?

Yes, and the layer mural is the shared project. A five-year-old paints the animals, an eight-year-old writes a label for each one with where it lives and what it eats, a twelve-year-old draws the food web connecting them with arrows, and a fifteen-year-old adds the nutrient cycle running through the soil.

Do we need to visit a rainforest or a zoo?

No. A jar terrarium, a rain gauge, recordings of rainforest sounds and free satellite images carry most of the unit. A botanical garden conservatory, a zoo rainforest exhibit or a temperate rainforest such as the Hoh Rain Forest in Washington's Olympic National Park makes a memorable field trip if one is within reach, but it is a bonus.

Does this unit work for secular and faith-based homeschools alike?

Yes. The core is observation and measurement: layers, adaptations, food webs, rainfall and the geography and economics of rainforests, which are the same in any home. Questions about how people should care for forests are framed as evidence and perspectives for each family to weigh in its own way.

How much does a rainforest unit study cost?

Almost nothing. A clear jar with a lid, potting soil and small plants, a homemade rain gauge, a world map, butcher paper and a notebook cover the core activities. Global Forest Watch and NASA Earth Observatory are free, and most of the books in the resources list are in public libraries.

Are rainforests a good homeschool science topic?

They are one of the best. Rainforests map onto the life-science standards at every grade — what animals and plants need, how structures help them survive, habitats, biodiversity and food webs — and onto earth science through the water cycle and climate, with real graphing and measurement along the way. The skills list above names each with its strand and standard.

Turn this into a full, standards-aligned curriculum

Generate a complete plan around rainforests for your child's grade and pace — free to try, no account required.

https://handsdowneducation.com/curriculum/generate