

Next Generation Science Standards & Canadian Curricula

Comprehensive Alignment Guide for Elephanatics Educational Toolkits & Lesson Plans

The following Elephanatics lesson plans are designed to help educators address the **Next Generation Science Standards (NGSS)**, **Common Core State Standards**, and **Canadian Provincial Curricula** (including British Columbia and Ontario). This guide details where each lesson plan fits across grade levels. Performance Expectations, Science & Engineering Practices, and Disciplinary Core Ideas can be reviewed at www.nextgenscience.org.

NGSS STANDARDS OVERVIEW BY GRADE BAND

Grade Level	Addressed Next Generation Science Standards (NGSS)
Elementary (K–5th)	• 2nd Grade: Interdependent Relationships in Ecosystems • 3rd Grade: Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms; Inheritance and Variation of Traits: Life Cycles and Traits; Weather and Climate • 4th Grade: Structure, Function, and Information Processing • 3rd–5th Grade: Engineering Design
Middle School (6th–8th)	• Life Science: Interdependent Relationships in Ecosystems; Matter and Energy in Organisms and Ecosystems; Growth, Development, and Reproduction of Organisms; Natural Selection and Adaptations; Ecosystems: Interactions, Energy, and Dynamics • Earth & Space Sciences: Human Impacts
High School (9th–12th)	• Life Science: Matter and Energy in Organisms and Ecosystems; Interdependent Relationships in Ecosystems; Inheritance and Variation of Traits; Natural Selection and Evolution; Ecosystems: Interactions, Energy, and Dynamics • Earth & Space Sciences: Human Sustainability

PRIMARY / ELEMENTARY LESSON PLANS & NGSS (GRADES K–5)

Lesson Plan 1: Different Lives • 2nd Grade: Interdependent Relationships in Ecosystems • 3rd Grade: Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms; Inheritance and Variation of Traits: Life Cycles and Traits • 4th Grade: Structure, Function, and Information Processing
Lesson Plan 2: Elephants Matter Too • 2nd Grade: Interdependent Relationships in Ecosystems • 3rd Grade: Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms; Inheritance and Variation of Traits: Life Cycles and Traits • 4th Grade: Structure, Function, and Information Processing
Lesson Plan 3: Ivory Free Canada • Common Core State Standards for ELA & Literacy: Writing Standards K–5 • 4th Grade: Structure, Function, and Information Processing • Middle School: Human Impacts
Lesson Plan 4: Are Elephants Colorblind • 3rd Grade: Inheritance and Variation of Traits: Life Cycles and Traits • 4th Grade: Structure, Function, and Information Processing

Lesson Plan 5: Ivory Is For Elephants – PPT Presentation

- **2nd Grade:** Interdependent Relationships in Ecosystems
- **3rd Grade:** Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms

Lesson Plan 6: AI Digital 'Elephant Book' for Conservation

- **3rd Grade:** Inheritance and Variation of Traits: Life Cycles and Traits
- **4th Grade:** Structure, Function, and Information Processing
- **Common Core State Standards for ELA & Literacy:** Writing Standards K–5

Lesson Plan 7: Elephant Senses and Survival

- **2nd Grade:** Interdependent Relationships in Ecosystems
- **3rd Grade:** Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms; Inheritance and Variation of Traits: Life Cycles and Traits
- **4th Grade:** Structure, Function, and Information Processing (4-LS1-1, 4-LS1-2)

Lesson Plan 8: Trunks of Hope: T-shirt Design Mission for Elephant Conservation

- **MS-LS2:** Ecosystems: Interactions, Energy, and Dynamics
- **MS-ETS1:** Engineering Design
- **MS-LS4:** Biological Evolution: Unity and Diversity

Lesson Plan 9: The Gardeners of the Global Pharmacy (Elementary)

UPDATED

- **3rd Grade:** 3-LS4-4 Biological Evolution: Unity and Diversity
- **4th Grade:** 4-LS1-1 & 4-LS1-2 Structure, Function, and Information Processing (Zoo-pharmacognosy and sensory adaptation)
- **5th Grade:** 5-ESS3-1 Earth and Human Activity

INTERMEDIATE & SECONDARY LESSON PLANS & NGSS (GRADES 6–12)

Lesson Plan 1: Drawing a Line

- **Middle School:** Interdependent Relationships in Ecosystems; Matter and Energy in Organisms and Ecosystems; Human Impacts
- **High School:** Human Sustainability

Lesson Plan 2: Elephants and Ivory

- **Middle School:** Human Impacts
- **High School:** Human Sustainability
- **Common Core ELA & Literacy:** Reading Informational Text 6–12

Lesson Plan 3: Letters for Life – Ivory-Free Canada

- **Middle School:** Human Impacts
- **High School:** Human Sustainability
- **Common Core ELA & Literacy:** Writing Standards K–5 & Writing Standards 6–12

Lesson Plan 4: One Mouthful At A Time: How Forest Elephants Fight Climate Change

- **Middle School:** Interdependent Relationships in Ecosystems; Matter and Energy in Organisms and Ecosystems; Human Impacts; Ecosystems: Interactions, Energy, and Dynamics
- **High School:** Ecosystems: Interactions, Energy, and Dynamics; Human Sustainability

Lesson Plan 5: Anthrozoology

- **Middle School:** Human Impacts
- **High School:** Interdependent Relationships in Ecosystems; Human Sustainability

Lesson Plan 6: Effects of Elephant Poaching

- **Middle School:** Human Impacts
- **High School:** Matter and Energy in Organisms and Ecosystems; Interdependent Relationships in Ecosystems; Inheritance and Variation of Traits; Human Sustainability

Lesson Plan 7: Rewilding

- **Middle School:** Interdependent Relationships in Ecosystems; Matter and Energy in Organisms and Ecosystems; Human Impacts
- **High School:** Matter and Energy in Organisms and Ecosystems; Interdependent Relationships in Ecosystems; Human Sustainability
- **Common Core ELA & Literacy:** Writing Standards 6–12

Lesson Plan 8: Biodiversity

- **Middle School:** Interdependent Relationships in Ecosystems; Human Impacts
- **High School:** Interdependent Relationships in Ecosystems; Human Sustainability

Lesson Plan 9: Increase of Online Ivory Sales during Covid-19

- **Middle School:** Human Impacts
- **High School:** Human Sustainability

Lesson Plan 10: Traditional Ecological Knowledge (TEK) for Conservation: Exploring Canadian Indigenous Peoples' and the Maasai Peoples of Eastern Africa Connection to Nature

- **Middle School:** Interdependent Relationships in Ecosystems; Human Impacts
- **High School:** Interdependent Relationships in Ecosystems; Human Sustainability

Lesson Plan 11: UNTOC Wildlife Crime Civic Action Student Toolkit UPDATED

- **Middle School:** MS-LS2 Ecosystems: Interactions, Energy, and Dynamics; MS-ESS3 Human Impacts
- **High School:** HS-LS2 Ecosystems: Interactions, Energy, and Dynamics; HS-ESS3 Human Sustainability
- **Common Core ELA & Literacy:** Writing Standards 6–12 (Policy advocacy letter-writing & civic engagement)

Lesson Plan 12: The Gardeners of the Global Pharmacy & Sustainable Healing UPDATED

- **Middle School:** MS-LS2-5 Ecosystems: Interactions, Energy, and Dynamics; MS-ESS3 Human Impacts
- **High School:** HS-LS2-7 Ecosystems: Interactions, Energy, and Dynamics; HS-ESS3-4 Human Sustainability (Preserving medicinal plant biodiversity and transitioning wildlife trade to sustainable alternatives)

Lesson Plan 13: Comparative Cultures & Environmental Factors (Grade 12) UPDATED

- **High School:** HS-LS2 Interdependent Relationships in Ecosystems; HS-ESS3 Human Sustainability
- **Common Core ELA & Literacy:** Reading Informational Text 6–12; Writing Standards 6–12

CANADIAN PROVINCIAL CURRICULA (BC & ONTARIO)

PLEASE NOTE: Lesson plans can be modified to suit Provincial Curriculum Standards across **ALL** Canadian provinces and territories.

British Columbia (BC) Curriculum Alignment

Arts Education

- **Grade 4 – Core Competencies:** Trunks of Hope: T-Shirt Design Mission for Elephant Conservation

Social Studies

- **Grade 3 – Global Indigenous Peoples & Memory:** Traditional Ecological Knowledge (TEK) for Conservation
- **Grade 6 – Complex Global Problems:** Ivory-Free Canada; Biodiversity; One Mouthful At A Time – Climate Change; Rewilding; Increase of Online Ivory Sales During Covid-19; Trunks of Hope: T-Shirt Design; UNTOC Wildlife Crime Civic Action Student Toolkit
- **Grade 12 – Comparative Cultures:** Traditional Ecological Knowledge (TEK) for Conservation; Comparative Cultures & Environmental Factors

Science & Interdisciplinary

- **Grade 4 Science (Sense and respond to environment):** Elephant Senses and Survival; The Gardeners of the Global Pharmacy; Traditional Ecological Knowledge (TEK) for Conservation; Biodiversity; One Mouthful At A Time – Climate Change; Trunks of Hope: T-Shirt Design
- **Grades 4–6 Language Arts / Technology:** AI Digital 'Elephant Book' For Conservation
- **Grade 7 Science (Evolution & Ecosystem Diversity):** One Mouthful At A Time – Climate Change; Biodiversity; Rewilding; The Gardeners of the Global Pharmacy; Traditional Ecological Knowledge (TEK) for Conservation; Trunks of Hope: T-Shirt Design
- **Grades 6–12 Interdisciplinary (Science, Social Studies, ELA):** UNTOC Wildlife Crime Civic Action Student Toolkit
- **Grade 11 Environmental Science:** Biodiversity; One Mouthful At A Time – Climate Change; Rewilding; The Gardeners of the Global Pharmacy; Traditional Ecological Knowledge (TEK) for Conservation; Trunks of Hope: T-Shirt Design

Ontario Curriculum Alignment

Science & Technology

- **Grade 2 – Life Systems (Growth and changes in animals):** Elephants Matter Too; Different Lives; Trunks of Hope: T-Shirt Design
- **Grade 4 – Life Systems (Habitats and Communities):** Elephant Senses and Survival; The Gardeners of the Global Pharmacy; Rewilding; Biodiversity; Trunks of Hope: T-Shirt Design
- **Grade 6 – Life Systems (Biodiversity):** Biodiversity; The Gardeners of the Global Pharmacy; UNTOC Wildlife Crime Civic Action Student Toolkit; Trunks of Hope: T-Shirt Design

PROVINCIAL SCIENCE CURRICULUM RESOURCES ACROSS CANADA

Alberta: alberta.ca/curriculum-science

Saskatchewan: pearsoncanadaschool.com/science/saskatchewan.html

Manitoba: edu.gov.mb.ca/k12/cur/science/index.html

Ontario: dcp.edu.gov.on.ca/en/science-tech-overview/about

Quebec (Elementary): quebec.ca/elementary/science-technology

Quebec (Secondary): quebec.ca/secondary/science-environment

New Brunswick: curriculum.nbed.ca/learning-areas/elementary-block/science/

Nova Scotia: curriculum.novascotia.ca/english-programs/science

Newfoundland & Labrador: gov.nl.ca/education/k12/curriculum/guides/science/

Prince Edward Island: princeedwardisland.ca/science-curriculum