



CURRICULUM REFERENCE

NGSS Alignment Guide

Next Generation Science Standards supported by each of our 42 Activity Kits, listed by kit number. Full standard language is available on each kit's individual Contents Sheet.

#101 Tree-mendous

K-LS1-1 K-ESS3-1 2-LS4-1
3-LS1-1 3-LS3-1 3-LS3-2
4-LS1-1 5-LS1-1 MS-LS1-5
MS-LS4-2 HS-LS1-2

#107 Star Seekers

5-ESS1-1 5-ESS1-2 MS-ESS1-2
MS-ESS1-3

#122 Bird Wheel

K-LS1-1 K-ESS2-2 2-LS4-1
3-LS4-3 4-LS1-1 MS-LS2-2
MS-LS1-4 MS-LS4-2

#123 Froggy Face

K-LS1-1 K-ESS3-1 K-ESS3-3
1-LS1-1 1-LS3-1 2-LS4-1
3-LS4-3 3-LS4-4 3-LS1-1
3-LS3-2 MS-LS1-5 MS-LS3-1

#125 Dino Bonz

3-LS4-1 4-LS1-1 MS-LS2-2
MS-LS4-1 MS-LS4-2

#126 Create-a-Bat

2-LS2-2 2-LS4-1 3-LS4-3
4-LS1-1 4-LS1-2 MS-LS1-4
MS-ESS3-3

#127 Flower Bookmark

2-LS2-1 2-LS2-2 2-ESS2-1
3-LS1-1 4-LS1-1 5-LS1-1
MS-LS1-6 MS-LS1-4 MS-LS1-5
MS-LS4-2

#128 Shark Teeth

2-LS4-1 3-LS1-1 3-LS4-2
MS-LS1-4 MS-LS4-1

#131 Rattlesnake

1-LS3-1 2-LS4-1 K-2-ETS1-2
3-LS4-3 3-LS1-1 4-LS1-1
MS-LS1-4

#132 Solar System

5-PS1-2 5-ESS1-1 MS-ESS1-2
MS-ESS1-3 HS-ESS1-4

#133 Honeycomb Candle

K-ESS2-2 2-PS1-1 2-LS2-2
3-LS2-1 MS-PS1-6 MS-LS2-2
HS-LS2-8

#136 Raptors: Birds of Prey

3-LS4-2 3-LS1-1 MS-LS2-2
MS-LS1-4 MS-LS4-2

#139 Pressed Leaf Coaster

K-LS1-1 2-LS2-1 2-LS4-1
4-LS1-1 5-LS1-1 5-LS2-1
MS-LS1-1 MS-LS1-2 MS-LS1-6
MS-LS1-4

#141 Magnificent Metamorphosis

1-LS3-1 3-LS1-1 3-LS3-1
4-LS1-1 MS-LS4-4

#142 Make Your Own Compass

K-2-ETS1-1 3-PS2-3 3-PS2-4
5-PS1-1 5-PS1-3 MS-PS2-3
MS-PS2-5

#143 Spider Web Frame

K-LS1-1 K-ESS2-2 K-ESS3-1
4-LS1-1 MS-LS2-2

#144 Forests Forever

K-LS1-1 1-LS1-1 1-LS3-1
2-LS2-1 2-LS2-2 2-ESS2-1
3-LS1-1 4-LS1-1 5-LS1-1
MS-LS1-6 MS-LS1-4 MS-LS1-5

#145 Rainbow Scope

1-PS4-3 4-PS4-2 MS-PS4-2
HS-PS4-5

#146 Food Chain

K-LS1-1 K-ESS3-1 2-LS2-2
3-LS4-4 5-PS3-1 5-LS2-1
MS-LS2-1 MS-LS2-3

#147 Seashell Bracelet

K-LS1-1 K-ESS3-1 2-LS4-1
3-LS4-3 3-LS1-1 4-LS1-1
MS-LS4-2

#148 Incredible Insects

2-LS4-1 3-LS3-1 4-LS1-1
4-PS4-2

#149 **Monocular**

1-PS4-3 4-PS4-1 4-PS4-2
MS-PS4-2

#150 **Weather Window**

K-ESS3-2 3-ESS2-1 5-ESS2-1
MS-ESS2-4

#151 **Protecting Endangered Animals**

K-ESS3-3 3-LS4-4 MS-LS2-5
HS-LS2-7 MS-ESS3-3

#152 **Bird Call**

1-PS4-1 1-PS4-4 2-PS1-2
K-2-ETS1-2 3-LS2-1 4-LS1-1
4-LS1-2 4-PS4-3 3-5-ETS1-3
MS-LS1-8 MS-LS2-2

#153 **Water Cycle Wheel**

K-PS3-1 K-ESS3-3 2-ESS1-1
2-ESS2-3 MS-ESS2-4 MS-ESS3-3
MS-ESS3-4 HS-ESS3-4

#154 **Root Observation Station**

K-LS1-1 1-LS1-1 1-LS3-1
2-LS2-1 2-ESS2-1 3-LS1-1
4-LS1-1 5-LS1-1 MS-LS1-6
MS-LS1-4 MS-LS1-5

#155 **Starry, Starry Day**

1-ESS1-1 5-ESS1-1 5-ESS1-2
MS-PS4-2

#156 **Eco-Bag**

K-ESS3-3 2-ESS1-1 4-ESS3-1
5-ESS2-1 MS-ESS3-3 MS-ESS3-4
HS-ESS2-2 HS-ESS3-2 HS-ESS3-4

#157 **Hummingbird Feeder**

K-LS1-1 1-LS1-1 2-LS2-2
MS-LS2-1

#158 **Here Comes the Sun Catcher**

3-PS2-2 4-PS3-4 4-ESS3-1
5-PS3-1 5-ESS1-1 MS-PS2-4
MS-ESS1-1 MS-ESS1-2 MS-ESS1-3
HS-ESS1-1

#159 **Beat the Heat Neck Cooler**

K-LS1-1 K-ESS3-1 2-LS4-1
3-LS4-3 3-LS3-1 3-LS4-2
MS-LS1-4 MS-LS4-4 MS-LS4-6
HS-LS4-4

#160 **Animal Track Game**

K-ESS2-2 3-LS3-1 4-LS1-1
MS-LS4-2

#161 **Moon Phase Memory Game**

3-PS2-2 5-PS2-1 MS-ESS1-1
MS-ESS1-2 HS-ESS1-4

#162 **Butterfly Feeder**

K-ESS3-3 2-LS2-2 2-LS4-1
3-LS4-3 MS-LS2-2 MS-LS1-4

#163 **Food Doesn't Grow in Supermarkets**

K-LS1-1 K-ESS2-2 K-ESS3-3
2-LS2-2 3-LS2-1 4-LS1-1
MS-LS2-5

#164 **Herb Garden Greenhouse**

K-LS1-1 K-ESS3-1 1-LS3-1
2-LS2-1 3-LS1-1 3-LS4-3
4-LS1-1 5-LS1-1 MS-LS1-5

#167 **Save the Bees Bracelet**

K-ESS2-2 K-ESS3-3 K-LS1-1
3-LS2-1 3-LS3-2 4-LS1-1

#170 **Mason Bee House**

K-ESS2-2 K-ESS3-3 K-LS1-1
3-LS3-2 4-LS1-1

#172 **Earth Day, EVERY Day Binoculars**

K-ESS3-3 2-ESS1-1 4-PS4-2
5-ESS2-1 MS-ESS3-3 MS-ESS3-4
HS-ESS3-4

#175 **Brilliant Butterflies**

2-LS2-2 2-LS4-1 3-LS4-3
4-LS1-1 MS-LS2-2 MS-LS1-4

#400 **Owl Pellet Dissection**

4-LS1-1 MS-LS2-2 MS-LS1-4
MS-LS4-2

Standards Alignment: STEAM Education — Science & Arts

Nature Watch STEM Kits for Afterschool • California Science Framework (TK-12) & California Arts Standards (2019)

PreK - Grade 12

Nature Watch STEM Kits align with both the **California Science Framework (TK-12)** and the **California Arts Standards (2019)** by integrating hands-on science exploration with creative, project-based artistic expression — delivering true **STEAM learning** in every kit.

SCIENCE ALIGNMENT

PRIMARY

Life Science — Hands-On Exploration

- LS Living vs. Nonliving Things**
Distinguish living from nonliving using natural materials and real-world examples.
- LS Habitats & Ecosystems**
Explore where living things live and how environments support survival.
- LS Needs of Plants & Animals**
Understand food, water, and shelter needs through real-world applied projects.
- LS Growth, Change & Life Cycles**
Investigate how living things grow and change through seasonal experiences.

Nature Watch: Students engage in hands-on projects (feeders, nature crafts, observation tools) connecting directly to life science concepts.

PRACTICES

Science & Engineering Practices

- SEP Ask questions & make observations**
- SEP Plan & carry out investigations**
- SEP Make predictions & test ideas**
- SEP Use tools & communicate findings**

Nature Watch: Each kit functions as a guided investigation with step-by-step video instruction modeling exactly what to say and do.

CONCEPTS

Crosscutting Concepts

- Cause & Effect
- Patterns in Nature
- Structure & Function
- Stability & Change

ARTS ALIGNMENT

PRIMARY — VISUAL ARTS

Four Anchor Processes — Visual Arts

Creating (AS 1-3)

Design & build original projects using natural materials

Presenting (AS 4-6)

Share & display work with peers and family

Responding (AS 7-9)

Observe nature details and reflect on artistic elements

Connecting (AS 10-11)

Link work to personal experiences and the natural world

Nature Watch: Each project integrates artistic creation with scientific exploration, reinforcing both disciplines simultaneously.

SUPPORTING

Artistic Processes — All Disciplines

- **Creating** → Hands-on project design and building
- **Responding** → Observation and artistic reflection
- **Connecting** → Nature + personal experience

SECONDARY

Secondary Arts Connections

- **Media Arts** → Video-guided instruction & visual modeling
- **Theatre / Communication** → Explaining ideas and creative processes
- **Pattern & Design** → Repetition, symmetry & natural structures

★ WHY STEAM WORKS WITH NATURE WATCH

STEAM Integration

- Explore science concepts through **creative expression**
- Apply observation skills to both **science and visual design**
- Build projects demonstrating **learning across disciplines**
- Connect classroom concepts to the **real world**

Program Benefits

- **No prep. No training. No stress.** — Ready to use immediately
- **Everything included** — All materials in every kit
- **Step-by-step video lessons** — Model instruction for any staff member
- **Consistent implementation** — Across all sites and classrooms
- **Aligned to Science & Arts** — Both standards in one activity

Summary: Nature Watch STEM Kits deliver true STEAM learning by combining **hands-on science investigation with creative artistic expression**, helping students explore, create, and connect their learning to the real world — while making implementation easy for staff and engaging for students.



Standards Alignment: California TK Learning Foundations - Science Domain

Nature Watch STEM Kits for Afterschool • Transitional Kindergarten, Ages 4–5.5

Ages 4–5.5 • TK

Nature Watch STEM Kits align with the **California Preschool/Transitional Kindergarten Learning Foundations - Science Domain** by providing hands-on, inquiry-based experiences that support how young children naturally explore and understand the world.

PRIMARY ALIGNMENT

Life Science — Strand 3.0

3.1 Characteristics of Living Things

Students observe and describe plants and animals in detail through hands-on exploration and nature-based projects.

3.3 Living and Nonliving Things

Students distinguish between living and nonliving things while working with natural materials and real-world examples.

3.5 Habitats

Students explore where living things live and how environments support survival through activities such as building feeders and observing wildlife.

3.6 Growth, Change, and Life Cycles

Students investigate how living things grow and change over time through seasonal and nature-based learning experiences.

3.7 Needs of Living Things

Students understand that living things need food, water, and shelter, reinforced through applied, real-world projects.

ADDITIONAL ALIGNMENT

Earth & Space Science (4.0) • Engineering & Technology (5.0)

4.0 Earth and Space Science

Students explore weather, seasons, and the natural environment through observation and outdoor activities.

5.0 Engineering, Technology & Applications

Students design, build, and improve simple solutions while engaging in hands-on STEM projects.

SUPPORTING ALIGNMENT

Science & Engineering Practices — Strand 1.0

1.1 Making Observations

Students use their senses to observe materials and describe what they notice in increasing detail.

1.2 Comparing and Contrasting

Students identify similarities and differences between objects, materials, and outcomes.

1.3 Asking Questions

Students develop curiosity and ask meaningful questions about the natural world.

1.5 Making Predictions

Students make predictions and test their ideas through guided activities.

1.6 Planning & Carrying Out Investigations

Students engage in hands-on investigations to explore scientific ideas and solve problems.

1.7 Using Tools

Students use simple tools and materials to explore, build, and investigate.

1.8 Communicating Findings

Students represent their learning through discussion, drawings, and completed take-home projects.

CROSSCUTTING CONCEPTS

Embedded Throughout All Activities

Cause & Effect

Patterns

Structure & Function

Stability & Change

Students naturally develop foundational scientific thinking skills through every Nature Watch activity, building the habits of mind that support lifelong learning.

Why It Works for TK

- Hands-on, play-based exploration
- Guided investigation with step-by-step video support
- Developmentally appropriate for ages 4–5.5
- Encourages curiosity, observation, and discovery
- Builds early science confidence for students and staff

Program Benefits

- **Easy to implement** — No prep or training required
- **Consistent instruction** — Guided video lessons model exactly what to say and do
- **Everything included** — All materials provided in each kit
- **Engaging for students** — Fun, project-based learning with take-home results
- **Supports school goals** — Aligns with early science standards and inquiry-based learning



Nature Watch STEM Kits for Afterschool
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The Research Behind *Nature Watch STEM Kits*

How *Nature Watch STEM Kits* use research-informed design to build student curiosity and science understanding in afterschool programs.

How *Nature Watch* delivers research-based STEM learning in every kit.

Hands-on, project-based science for TK-8 students in afterschool programs — guided instruction, real-world topics, and engagement strategies supported by research.



Spark curiosity and deepen understanding with hands-on science investigation.

Students learn science most effectively through active investigation and direct interaction with phenomena. Nature Watch kits place hands-on project construction at the center of every lesson, building engagement and conceptual understanding. (NRC, 2012)



Connect students to real-world science topics including wildlife, ecosystems, and environmental science.

Out-of-school STEM experiences increase students' interest in science and their likelihood of pursuing STEM learning. Nature Watch connects lessons to authentic real-world contexts like hummingbird biology and pollination. (National Academies of Sciences, 2015)



Advance science understanding through project-based instruction and hands-on construction.

Project-based instruction improves student engagement and understanding of complex ideas. Every Nature Watch lesson culminates in students building a take-home project directly tied to the science concepts explored. (Condliffe et al., 2017)



Engage diverse learners with multi-modal, structured instruction including video, discussion, and reflection.

Nature Watch integrates guided video, vocabulary discussion, and student reflection — providing multiple engagement pathways that support diverse learning styles. Research shows structured, multi-modal approaches yield stronger outcomes for afterschool participants. (Durlak et al., 2010)



Promote consistent delivery with complete, ready-to-use kits and instructor materials.

Afterschool programs rely on staff with varying science backgrounds. Nature Watch kits include all materials, an instructor manual, and guided video presentations — ensuring consistent, high-quality delivery across multiple sites with minimal preparation. (Durlak et al., 2010)



Empower student voice and participation through guided discussion and creative expression.

Students share observations, ask questions, and make choices in how they build and use their projects. Guided questions and reflection activities allow instructors to informally assess student understanding throughout the lesson.



Build foundational science vocabulary and inquiry skills aligned to K-8 science education goals.

Each lesson includes structured science vocabulary exposure and observation skill development. Activities are designed to introduce Next Generation Science Standards-aligned concepts through age-appropriate, interest-driven science that is accessible to every learner. (NRC, 2012)

T4

ESSA ALIGNED

Aligned with ESSA Tier 4 Evidence Requirements

Nature Watch STEM Kits meet ESSA Tier 4 (“Demonstrates a Rationale”) through research-supported instructional strategies, a clear logic model, and defined student learning outcomes.

For more information about Nature Watch STEM Kits or to bring them to your program, contact info@nature-watch.com | (800) 228-5816 | www.nature-watch.com