

Discover the Flyway
Next Generation Science Standards (NGSS) For California Public Schools, K-5
Correlation of Standards Arranged by Topic
Life Science
Fall 2016



Kindergarten
K Interdependent Relationships in Ecosystems: Animals, Plants, and Their Environment

| Grade Level | Disciplinary Core Idea | DTF Activity |
|--------------|---|---|
| Kindergarten | LS1.C: Organization for Matter and Energy Flow in Organisms <ul style="list-style-type: none"> ▪ All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1) | Leaf ID Wetland Pond Study How Do I Compare to an Egret? |
| Kindergarten | ESS2.E: Biogeology <ul style="list-style-type: none"> ▪ Plants and animals can change their environment. (K-ESS2-2) | Leaf ID |
| Kindergarten | ESS3.A: Natural Resources <ul style="list-style-type: none"> ▪ Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1) | Feathered Friends Leaf ID Wetland Pond Study How Do I Compare to an Egret? |
| Kindergarten | ESS3.C: Human Impacts on Earth Systems <ul style="list-style-type: none"> ▪ Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3) | Un Nature Trail |

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First Grade
1 Structure, Function, and Information Processing

| | Disciplinary Core Idea | DTF Activity |
|-----------------------------|--|--|
| 1st Grade | LS1.A: Structure and Function <ul style="list-style-type: none"> ▪ All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1) | Tracks, Scat & Signs Feathered Friends How Do I Compare to an Egret? Leaf ID Wetland Pond Study |
| 1st Grade | LS1.B: Growth and Development of Organisms <ul style="list-style-type: none"> ▪ Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2) | Feathered Friends Leaf ID Wetland Pond Study |
| 1st Grade | LS1.D: Information Processing <ul style="list-style-type: none"> ▪ Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1) | Feathered Friends How Do I Compare to an Egret? Leaf ID Wetland Pond Study |
| 1st Grade | LS3.A: Inheritance of Traits <ul style="list-style-type: none"> ▪ Young animals are very much, but not exactly, like their parents. Plants also are very much, but not exactly, like their parents. (1-LS3-1) | Feathered Friends How Do I Compare To An Egret? Leaf ID |
| 1st Grade | LS3.B: Variation of Traits Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (1-LS3-1) | How Do I Compare to an Egret? |

DTF NGSS Correlation

Summer 2016

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Second Grade
2 Ecosystems: Interactions, Energy, and Dynamics

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|--|--------------|
| 2nd Grade | LS2.A: Interdependent Relationships in Ecosystems <ul style="list-style-type: none">▪ Plants depend on water and light to grow. (2-LS2-1)▪ Plants depend on animals for pollination or to move their seeds around. (2-LS2-2) | Leaf ID |

2. Biological Evolution: Unity and Diversity

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|--|--|
| 2nd Grade | LS4.D: Biodiversity and Humans <p>There are many different kinds of living things in any area, and they exist in different places on land and in water. (2-LS4-1)</p> | Tracks, Scat & Signs Salmon Senses Feathered Friends How Do I Compare to an Egret? Leaf ID Wetland Pond Study |

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Second Grade
2 Earth's Systems: Processes that Shape the Earth

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|---|----------------------------|
| 2nd Grade | ESS1.C: The History of Planet Earth <ul style="list-style-type: none">▪ Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (2-ESS1-1) | The Great Percolation Race |
| 2nd Grade | ESS2.A: Earth Materials and Systems <ul style="list-style-type: none">▪ Wind and water can change the shape of the land. (2-ESS2-1) | The Great Percolation Race |
| 2nd Grade | ESS2.B: Plate Tectonics and Large-Scale System Interactions <ul style="list-style-type: none">▪ Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2-2) | |
| 2nd Grade | ESS2.C: The Roles of Water in Earth's Surface Processes <ul style="list-style-type: none">▪ Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3) | The Great Percolation Race |

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Third Grade

3 Inheritance and Variation of Traits: Life Cycles and Traits

| | Disciplinary Core Idea | DTF Activity |
|-----------------------------|--|--|
| 3rd Grade | LS1.B: Growth and Development of Organisms <ul style="list-style-type: none"> ▪ Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1) | Salmon Senses Wetland Pond Study Wetland Plant ID Migration Madness |
| 3rd Grade | LS3.A: Inheritance of Traits <ul style="list-style-type: none"> ▪ Many characteristics of organisms are inherited from their parents. (3-LS3-1) ▪ Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2) | Wetland Pond Study |
| 3rd Grade | LS3.B: Variation of Traits <ul style="list-style-type: none"> ▪ Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1) ▪ The environment also affects the traits that an organism develops. (3-LS3-2) | What Can I Eat with this Beak? |
| 3rd Grade | LS4.B: Natural Selection Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2) | |

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Third Grade
3 Interdependent Relationships in Ecosystems

| Disciplinary Core Idea | DTF Activity |
|---|--|
| 3rd Grade LS2.C: Ecosystem Dynamics, Functioning, and Resilience <ul style="list-style-type: none"> ▪ When the environment changes in ways that affect a place’s physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (secondary to 3-LS4-4) | Salmon Senses What Can I Eat With This Beak? Migration Madness Wetland Pond Study |
| 3rd Grade LS2.D: Social Interactions and Group Behavior <ul style="list-style-type: none"> ▪ Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (Note: Moved from K–2) (3-LS2-1) | |
| 3rd Grade LS4.A: Evidence of Common Ancestry and Diversity <ul style="list-style-type: none"> ▪ Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (Note: Moved from K–2) (3-LS4-1) ▪ Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1) | |
| 3rd Grade LS4.C: Adaptation <ul style="list-style-type: none"> ▪ For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3) | Salmon Senses Wetland Pond Study |
| 3rd Grade LS4.D: Biodiversity and Humans Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4) | Salmon Senses Migration Madness What Can I Eat with this Beak? Wetland Plant ID Wetland Pond Study |

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Fourth Grade
4-LS1 From Molecules to Organisms: Structures and Processes

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|--|--|
| 4th Grade | LS1.A: Structure and Function Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (4-LS1-1) | Salmon Senses Owl Pellets What Can I Eat With This Beak? Wetland Plant ID Wetland Pond Study Tracks, Scat & Signs |
| 4th Grade | LS1.D: Information Processing Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (4-LS1-2) | Salmon Senses Owl Pellets |

4-ESS1 Earth's Place in the Universe

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|--|--------------|
| 4th Grade | ESS1.C: The History of Planet Earth Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (4-ESS1-1) | N/A |

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Fourth Grade
4-ESS2 Earth's Systems

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|---|---|
| 4th Grade | ESS2.A: Earth Materials and Systems <ul style="list-style-type: none"> ▪ Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (4-ESS2-1) | Migration Madness The Great Percolation Race |
| 4th Grade | ESS2.B: Plate Tectonics and Large-Scale System Interactions <ul style="list-style-type: none"> ▪ The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth. (4-ESS2-2) | N/A |
| 4th Grade | ESS2.E: Biogeology Living things affect the physical characteristics of their regions. (4-ESS2-1) | Wetland Plant ID |

4-ESS3 Earth and Human Activity

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|---|----------------------------------|
| 4th Grade | ESS3.A: Natural Resources <ul style="list-style-type: none"> ▪ Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. (4-ESS3-1) | Introduction: What Is A Wetland? |
| 4th Grade | ESS3.B: Natural Hazards A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts. (4-ESS3-2) | Introduction: Flooding |

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Fifth Grade
5 Matter and Energy in Organisms and Ecosystems

| Disciplinary Core Idea | | DTF Activity |
|-----------------------------|---|---|
| 5th Grade | LS1.C: Organization for Matter and Energy Flow in Organisms <ul style="list-style-type: none"> ▪ Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1) ▪ Plants acquire their material for growth chiefly from air and water. (5-LS1-1) | What Can I Eat with this Beak? Wetland Plant ID |
| 5th Grade | LS2.A: Interdependent Relationships in Ecosystems <ul style="list-style-type: none"> ▪ The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (5-LS2-1) | Animal Tracks, Scat & Signs Wetland Pond Study What Can I Eat With This Beak? |
| 5th Grade | LS2.B: Cycles of Matter and Energy Transfer in Ecosystems Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (5-LS2-1) | Owl Pellets Wetland Plant ID Animal Tracks, Scat & Signs |

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Fifth Grade
5 Space Systems: Stars and the Solar System

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|-----------------------------|---|--------------|
| 5th Grade | ESS1.A: The Universe and its Stars <ul style="list-style-type: none">▪ The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1) | N/A |
| 5th Grade | ESS1.B: Earth and the Solar System <p>The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)</p> | N/A |

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Fifth Grade
5 Earth's Systems

| 5 th Grade | Disciplinary Core Idea | DTF Activity |
|-----------------------|---|----------------------------------|
| 5 th Grade | ESS2.A: Earth Materials and Systems <ul style="list-style-type: none">▪ Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1) | The Great Percolation Race |
| 5 th Grade | ESS2.C: The Roles of Water in Earth's Surface Processes <ul style="list-style-type: none">▪ Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (5-ESS2-2) | |
| | ESS3.C: Human Impacts on Earth Systems <p>Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)</p> | Introduction: What Is A Wetland? |