

NEXT GENERATION SCIENCE STANDARDS*

| Grades K-2 | |
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| K-LS1-1 From Molecules to Organisms: Structures and Processes | Use observations to describe patterns of what plants and animals (including humans) need to survive. |
| K-ESS2-2 Earth's Systems | Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. |
| K-ESS3-1 Earth and Human Activity | Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. |
| 1-LS1-2 From Molecules to Organisms: Structures and Processes | Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. |
| 2-LS4-1 Biological Evolution: Unity and Diversity | Make observations of plants and animals to compare the diversity of life in different habitats. |
| K-2-ETS1-2 Engineering Design | Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. |
| Grades 3-5 | |
| 3-LS3-1 Heredity: Inheritance and Variation of Traits | Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variations of these traits exist in a group of similar organisms. |
| 3-LS3-2 Heredity: Inheritance and Variation of Traits | Use evidence to support the explanation that traits can be influenced by the environment. |
| 3-LS4-2 Biological Evolution: Unity and Diversity | Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. |
| 3-LS4-3 Biological Evolution: Unity and Diversity | Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. |
| 3-LS4-4 Biological Evolution: Unity and Diversity | Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. |
| 4-LS1-1 From Molecules to Organisms: Structures and Processes | Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. |
| 4-LS1-2 From Molecules to Organisms: Structures and Processes | Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. |
| 3-5-ETS1-1 Engineering Design | Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. |
| Grades 6-8 | |
| MS-LS1-3 From Molecules to Organisms: Structures and Processes | Use an argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. |
| MS-LS1-4 From Molecules to Organisms: Structures and Processes | Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively. |
| MS-LS1-5 From Molecules to Organisms: Structures and Processes | Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms. |
| MS-LS1-8 From Molecules to Organisms: Structures and Processes | Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories. |
| MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics | Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem. |
| MS-LS2-2 Ecosystems: Interactions, Energy, and Dynamics | Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems. |
| MS-LS2-4 Ecosystems: Interactions, Energy, and Dynamics | Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations. |
| MS-LS4-2 Biological Evolution: Unity and Diversity | Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. |
| MS-LS4-4 Biological Evolution: Unity and Diversity | Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. |
| MS-ESS3-4 Earth and Human Activity | Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. |
| MS-ETS1-1 Engineering Design | Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. |
| MS-ETS1-2 Engineering Design | Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. |

NATIONAL SCIENCE STANDARDS**

| Grades K-4 | |
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| Science as Inquiry | <ul style="list-style-type: none"> Abilities necessary to do scientific inquiry Understanding about scientific inquiry |
| Life Science | <ul style="list-style-type: none"> Characteristics of organisms Life cycles of organisms Organisms and environments |
| Science and Technology | <ul style="list-style-type: none"> Abilities to distinguish between natural objects and objects made by humans Abilities of technological design |
| Science in Personal and Social Perspectives | <ul style="list-style-type: none"> Characteristics and changes in populations Types of resources Changes in environments |
| History and Nature of Science | <ul style="list-style-type: none"> Science as a human endeavor |

NATIONAL SCIENCE STANDARDS**

| Grades 5-8 | |
|---|---|
| Science as Inquiry | <ul style="list-style-type: none"> Abilities necessary to do scientific inquiry Understanding about scientific inquiry |
| Life Science | <ul style="list-style-type: none"> Structure and function in living systems Reproduction and heredity Regulation and behavior Populations and ecosystems Diversity and adaptation of organisms |
| Science and Technology | <ul style="list-style-type: none"> Abilities of technological design Understanding about science and technology |
| Science in Personal and Social Perspectives | <ul style="list-style-type: none"> Populations, resources, and environments Risks and benefits |
| History and Nature of Science | <ul style="list-style-type: none"> Science as a human endeavor Nature of science History of science |

COMMON CORE STATE STANDARDS – ENGLISH LANGUAGE ARTS***

| Grades K-2 | |
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| Grade K, Reading: Informational Text Key Ideas and Details CCSS.ELA-LITERACY.RI.K.1 | With prompting and support, ask and answer questions about key details in a text. |
| Grade K, Reading: Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.K.7 | With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts). |
| Grade K, Writing Text Types and Purposes CCSS.ELA-LITERACY.W.K.2 | Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. |
| Grade 1, Reading: Informational Text Key Ideas and Details CCSS.ELA-LITERACY.RI.1.1 | Ask and answer questions about key details in a text. |
| Grade 1, Reading: Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.1.7 | Use the illustrations and details in a text to describe its key ideas. |
| Grade 1, Writing Research to Build and Present Knowledge CCSS.ELA-LITERACY.W.1.8 | With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. |
| Grade 2, Reading: Informational Text Key Ideas and Details CCSS.ELA-LITERACY.RI.2.1 | Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. |
| Grade 2, Reading: Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.2.7 | Explain how specific images contribute to and clarify a text. |
| Grade 2, Writing Research to Build and Present Knowledge CCSS.ELA-LITERACY.W.2.7 | Recall information from experiences or gather information from provided sources to answer a question. |
| Grades 3-5 | |
| Grade 3, Reading: Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.3.7 | Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur). |
| Grade 3, Writing Production and Distribution of Writing CCSS.ELA-LITERACY.W.3.4 | With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. |
| Grade 3, Writing Research to Build and Present Knowledge CCSS.ELA-LITERACY.W.3.7 | Conduct short research projects that build knowledge about a topic. |
| Grade 4, Reading Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.4.7 | Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears. |
| Grade 4, Writing Text Types and Purposes CCSS.ELA-LITERACY.W.4.2 | Write informative/explanatory texts to examine a topic and convey ideas and information clearly. |
| Grade 4, Writing Production and Distribution of Writing CCSS.ELA-LITERACY.W.4.4 | Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. |
| Grade 4, Writing Research to Build and Present Knowledge CCSS.ELA-LITERACY.W.4.7 | Conduct short research projects that build knowledge through investigation of different aspects of a topic. |
| Grade 5, Reading Informational Text Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RI.5.7 | Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. |
| Grade 5, Writing Text Types and Purposes CCSS.ELA-LITERACY.W.5.2 | Write informative/explanatory texts to examine a topic and convey ideas and information clearly. |
| Grade 5, Writing Production and Distribution of Writing CCSS.ELA-LITERACY.W.5.4 | Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. |
| Grade 5, Writing Research to Build and Present Knowledge CCSS.ELA-LITERACY.W.5.7 | Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic. |
| Grades 6-8 | |
| Grades 6-8, Science and Technical Subjects Key Ideas and Details CCSS.ELA-LITERACY.RST.6-8.2 | Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. |
| Grades 6-8, Science and Technical Subjects Integration of Knowledge and Ideas CCSS.ELA-LITERACY.RST.6-8.9 | Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. |

*NGSS Lead States. (2013). *Next Generation Science Standards: For States, By States*. Washington, DC: The National Academies Press

**National Science Education Standards: *Observe, Interact, Change, Learn*. Washington, DC: National Academy Press, 1996.

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