



# Nancy Larson<sup>®</sup> Science

*Science K, Science 1, Science 2, Science 3, and  
Science 4*

**Correlation for:**

## **Texas**

**Nancy Larson<sup>®</sup> Science is currently available for grades K, 1, 2, 3, and 4.**

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# Texas Essential Knowledge and Skills

## 112.11. Science,

### Kindergarten:

#### (b). Knowledge and skills.

#### **SCIENTIFIC PROCESSES:**

- (1) Scientific investigation and reasoning: The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. The student is expected to:
- (A) identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;  
*NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F\**
  - (B) discuss the importance of safe practices to keep self and others safe and healthy; and  
*NLS–KA, KB, KC, KD; 1B, 1C, 1E; 2A, 2D, 2E, 2F; 3B, 3C, 3E, 3G; 4A, 4E, 4F*
  - (C) demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal.  
*NLS–1B, 1C; 2D; 3D; 4E, 4F*
- (2) Scientific investigation and reasoning: The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:
- (A) ask questions about organisms, objects, and events observed in the natural world;  
*NLS–KA, KC, KD, KE, KF, KG, KH; 1A, 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*
  - (B) plan and conduct simple descriptive investigations such as ways objects move;  
*NLS–KA, KD, KE, KF, KG; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;  
*NLS–KD, KE, KF; 1B, 1C, 1E; 2A, 2B, 2C, 2E, 2F; 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4E, 4F*
- (D) record and organize data and observations using pictures, numbers, and words; and  
*NLS–KA, KB, KD, KE, KF, KG, KH; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2E, 2F; 3B, 3C, 3D, 3F; 4A, 4B, 4C, 4D, 4E, 4F*
- (E) communicate observations with others about simple descriptive investigations.  
*NLS–KA, KC, KD, KE, KF, KG; 1A, 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4B, 4C, 4E, 4F*
- (3) Scientific investigation and reasoning: The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:
- (A) identify and explain a problem such as the impact of littering on the playground and propose a solution in his/her own words;  
*NLS–1C; 2D; 3D; 4E*
- (B) make predictions based on observable patterns in nature such as the shapes of leaves; and  
*NLS–1B, 1C; 2A, 3A, 3C, 3F; 4D, 4E, 4F*
- (C) explore that scientists investigate different things in the natural world and use tools to help in their investigations.  
*NLS–KD, KE, KF; 1B, 1C, 1E; 2A, 2B, 2E, 2F; 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4E, 4F*
- (4) Scientific investigation and reasoning: The student uses age-appropriate tools and models investigate the natural world. The student is expected to:
- (A) collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums; and  
*NLS–KD, KE, KF; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (B) use senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.

*NLS–KA, KD, KF; 1B, 1C, 1E; 2A, 2B, 2C, 2E, 2F; 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

### **PHYSICAL SCIENCE:**

- (5) **Matter and energy:** The student knows that objects have properties and patterns. The student is expected to:

- (A) observe and record properties of objects, including relative size and mass, such as bigger and smaller and heavier or lighter, shape, color, and texture; and

*NLS–KD, KF; 2A, 2B, 2C; 3C, 3E; 4E, 4F*

- (B) observe, record, and discuss how materials can be changed by heating or cooling.

*NLS–KD; 1C; 2A; 3B, 3C; 4E, 4F*

- (6) **Force, motion, and energy:** The student knows that energy, force, and motion are related and are a part of their everyday life. The student is expected to:

- (A) use the five senses to explore different forms of energy such as light, heat, and sound;

*NLS–1C; 2A, 2C, 2E; 3B, 3C; 4D, 4E, 4F*

- (B) explore interactions between magnets and various materials;

*NLS–KE; 2A; 4F*

- (C) observe and describe the location of an object in relation to another such as above, below, behind, in front of, and beside; and

*NLS–KA, KB, KC, KD, KE, KF, KG; 1C; 2A, 2C, 2D; 3A, 3C, 3D, 3E; 4D, 4E, 4F*

- (D) observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.

*NLS–KE; 2C; 3A, 3C; 4E, 4F*

### **EARTH SCIENCE:**

- (7) **Earth and space:** The student knows that the natural world includes earth materials. The student is expected to:

- (A) observe, describe, compare, and sort rocks by size, shape, color, and texture;

*NLS–KD; 2B; 3E*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

(B) observe and describe physical properties of natural sources of water, including color and clarity; and

(C) (B) give examples of ways rocks, soil, and water are useful.

*NLS-KF; 1B, 1C; 2B; 3D, 3E; 4B, 4D, 4E, 4F*

(8) Earth and space: The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

(A) observe and describe weather changes from day to day and over seasons;

*NLS-KA, KH; 3A, 3D; 4D*

(B) identify events that have repeating patterns, including seasons of the year and day and night; and

*NLS-KE, KH; 1B, 1C, 1F; 2A; 3A, 3C, 3D, 3F, 3G; 4B, 4C, 4D, 4E*

(C) observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.

*NLS-IC; 3A, 3D; 4B, 4D, 4E*

### **LIFE SCIENCE:**

(9) Organisms and environments: The student knows that plants and animals have basic needs and depend on the living and nonliving things around them for survival. The student is expected to:

(A) differentiate between living and nonliving things based upon whether they have basic needs and produce offspring; and

*NLS-KG; 2A; 3F, 3G; 4E*

(B) examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants.

*NLS-KC, KF, KG; 1A, 1B, 1D, 1E; 2A; 3A, 3B, 3F, 3G; 4A, 4B, 4C, 4D, 4E*

(10) Organisms and environments: The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(A) sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape;

*NLS-KC, KF; 1A, 1B, 1D, 1E, 1F; 2F; 3F, 3G; 4A, 4B, 4C*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

(B) identify parts of plants such as roots, stems, and leaves and parts of animals such as head, eyes, and limbs; and

*NLS–KC, KF; 1B, 1D, 1E, 1F; 2F; 3F, 3G; 4A, 4B, 4C, 4D*

(C) identify ways that young plants resemble the parent plant; and

*NLS–3F; 4B, 4D*

(D) observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.

*NLS–KF; 1B; 3F; 4B, 4D*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® *Science K* topics A, B, C, and D; *Science 1* topics B and C; *Science 2* topics A, D, E, and F; *Science 3* topics B, C, and G; and *Science 4* topics A, C, E, and F.

## 112.12. Science, Grade 1: (b). Knowledge and skills.

### **SCIENTIFIC PROCESSES:**

- (1) Scientific investigation and reasoning: The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. The student is expected to:
- (A) recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations including, wearing safety goggles, washing hands, and using materials appropriately;  
*NLS–KB, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C; 4A, 4B, 4C, 4E, 4F*
  - (B) recognize the importance of safe practices to keep self and others safe and healthy; and  
*NLS–KB; 1C; 2E; 3C; 4A, 4E, 4F*
  - (C) identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals.  
*NLS–1C; 2D; 3D; 4E, 4F*
- (2) Scientific investigation and reasoning: The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:
- (A) ask questions about organisms, objects, and events observed in the natural world;  
*NLS–KA, KB, KC, KD, KE, KF, KG, KH; 1A, 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*
  - (B) plan and conduct simple descriptive investigations such as ways objects move;  
*NLS–KD, KE; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3B, 3C, 3D, 3E, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*
  - (C) collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools;  
*NLS–KD, KE, KF; 1B, 1C, 1E; 2A, 2B, 2C, 2E, 2F; 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4E, 4F*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (D) record and organize data using pictures, numbers, and words; and  
*NLS–KA, KB, KE, KF, KG; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3B, 3C, 3D, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*
- (E) communicate observations and provide reasons for explanations using student generated data from simple descriptive investigations.  
*NLS–KD, KE, KF, KG; 1C; 2A, 2B, 2C, 2E; 3B, 3C, 3E, 3F; 4A, 4B, 4C, 4E, 4F*
- (3) Scientific investigation and reasoning: The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:
- (A) identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words;  
*NLS–1C; 2D; 3D; 4E*
- (B) make predictions based on observable patterns; and  
*NLS–2E; 3A, 3F; 4D, 4E*
- (C) describe what scientists do.  
*NLS–KA; 1A, 1B, 1C, 1D, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*
- (4) Scientific investigation and reasoning: The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:
- (A) collect information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and timers; non-standard measuring items such as paper clips and clothespins; weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as terrariums and aquariums; and  
*NLS–KD, KE, KF; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*
- (B) measure and compare organisms and objects using non-standard units.  
*NLS–4E, 4F*
- (5) Matter and energy: The student knows that objects have properties and patterns. The student is expected to:
- (A) classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture; and  
*NLS–KD; 2A, 2B; 3C, 3E; 4E, 4F*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.



- (B) predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating;  
*NLS-KD; 1C; 2A; 3B, 3C, 3D; 4E, 4F*
- (6) Force, motion, and energy: The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:
- (A) identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life;  
*NLS-2E; 4B, 4E, 4F*
- (B) predict and describe how a magnet can be used to push or pull an object;  
*NLS-KE; 2A; 4F*
- (C) describe the change in the location of an object such as closer to, nearer, and farther from; and  
*NLS-KE; 2C; 4E, 4F*
- (D) demonstrate and record the ways that objects can move such as in a straight line, zig-zag, up and down, back and forth, round and round, and fast and slow.  
*NLS-KE; 4E, 4F*

**EARTH SCIENCE:**

- (7) Earth and space: The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:
- (A) observe, compare, describe and sort components of soil by size, texture, and color;  
*NLS-1C; 3E*
- (B) identify and describe a variety of natural sources of water including streams, lakes, and oceans; and  
*NLS-1C*
- (C) gather evidence of how rocks, soil, and water help to make useful products.  
*NLS-2B; 3E; 4E, 4F*
- (8) Earth and space: The student knows that the natural world includes the air around us and objects in the sky. The student is expected to:
- (A) record weather information including relative temperature such as hot or cold, clear or cloudy, calm or windy, and rainy or icy;  
*NLS-KH; 3D*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

(B) observe and record changes in the appearance of objects in the sky such as clouds, the Moon, and stars including the Sun;

*NLS-3A, 3D; 4E*

(C) identify characteristics of the seasons of the year and day and night; and

*NLS-KH; 1C; 3A*

(D) demonstrate that air is all around us and observe that wind is moving air.

*NLS-KE; 2A; 3D*

### **LIFE SCIENCE:**

(9) Organisms and environments: The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:

(A) sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring;

*NLS-KG; 2A; 4A*

(B) analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver; and

*NLS-KC; 2F; 4C, 4E*

(C) gather evidence of interdependence among living organisms, such as energy transfer through food chains and animals using plants for shelter.

*NLS-1B, 1F; 3G; 4C*

(10) Organisms and environments: The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(A) investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats;

*NLS-KC; 1F; 2F; 3G; 4A, 4C, 4D*

(B) identify and compare the parts of plants;

*NLS-KF; 1B; 3F; 4A, 4B, 4D*

(C) compare ways that young animals resemble their parents; and

*NLS-KC; 2F; 3G; 4A, 4C, 4D*

(D) observe and record life cycles of animals such as a chicken, frog, or fish.

*NLS-1F; 3G; 4C*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

## 112.13. Science, Grade 2: (b). Knowledge and skills.

### **SCIENTIFIC PROCESSES:**

- (1) Scientific investigation and reasoning: The student conducts classroom and outdoors investigations following home and school safety procedures. The student is expected to:
- (A) identify and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately;  
*NLS–KB; KD; 1A, 1C; 2A, 2D, 2F; 3B, 3C, 3G; 4A, 4E, 4F*
  - (B) describe the importance of safe practices; and  
*NLS–KB, KD; 1B, 1C; 2A, 2E, 2F; 3C, 3D; 4A, 4E, 4F*
  - (C) identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal.  
*NLS–1C; 2D; 3D; 4E, 4F*
- (2) Scientific investigation and reasoning: The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:
- (A) ask questions about organisms, objects, and events during observations and investigations;  
*NLS–KA, KB, KC, KD, KE, KF, KG, KH; 1A, 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3B, 3C, 3D, 3E, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*
  - (B) plan and conduct descriptive investigations such as how organisms grow;  
*NLS–KF; 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3B, 3C, 3E, 3F; 4B, 4C, 4D*
  - (C) collect data from observations using simple equipment such as hand lenses, primary balances, thermometers and non-standard measurement tools;  
*NLS–KD, KE, KF; 1B, 1C, 1E; 2A, 2B, 2C, 2F; 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4E, 4F*
  - (D) record and organize data using pictures, numbers, and words;  
*NLS–KA, KB, KE, KF, KG; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3B, 3C, 3D, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

(E) communicate observations and justify explanations using student-generated data from simple descriptive investigations; and

*NLS–KD, KE, KF, KG; 1C; 2A, 2C, 2D, 2E; 3B, 3C, 3E, 3F; 4B, 4C, 4E, 4F*

(F) compare results of investigations with what students and scientists know about the world.

*NLS–2A, 2C, 2D; 3C; 4A, 4B, 4C, 4D, 4E, 4F*

(3) Scientific investigation and reasoning: The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

(A) identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat;

*NLS–1C; 2D; 3D; 4E*

(B) make predictions based on observable patterns; and

*NLS–2A, 2E; 3F; 4D, 4E, 4F*

(C) identify what a scientist is and explore what different scientists do.

*NLS–KA; 1A, 1B, 1C, 1D, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F, 3G; 4A, 4B, 4C, 4D, 4E, 4F*

(4) Scientific investigation and reasoning: The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:

(A) collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, and wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums; and

*NLS–KD, KE, KF; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

(B) measure and compare organisms and objects using non-standard units that approximate metric units.

*NLS–2A, 2C; 3C*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

**PHYSICAL SCIENCE:**

(5) Matter and energy: The student knows that matter has physical properties and those properties determine how it is described, classified, changed and used. The student is expected to:

(A) classify matter by physical properties including shape, relative mass, relative temperature, texture, flexibility, and whether material is a solid or liquid;

*NLS-KD; 2A, 2B; 3B, 3C, 3E; 4E*

(B) compare changes in materials caused by heating and cooling;

*NLS-KD; 1C; 2A; 3B, 3C; 4E, 4F*

(C) demonstrate that things can be done to materials to change their physical properties such as cutting, folding, sanding and melting; and

*NLS-3C; 4E, 4F*

(D) combine materials that when put together can do things that they cannot do by themselves such as building a tower or a bridge and justify the selection of those materials based on their physical properties.

*NLS-2C; 4F*

(6) Force, motion, and energy: The student knows that forces cause change and energy exists in many forms. The student is expected to:

(A) investigate the effects on an object by increasing or decreasing amounts of light, heat, and sound energy such as how the color of an object appears differently in dimmer light or how heat melts butter;

*NLS-2A; 3A, 3C; 4E, 4F*

(B) observe and identify how magnets are used in everyday life;

*NLS-2A; 4F*

(C) trace the changes in the position of an object over time such as a cup rolling on the floor and a car rolling down a ramp; and

*NLS-2C; 4E*

(D) compare patterns of movement of objects, such as sliding, rolling, and spinning.

*NLS-KE; 2C; 4E*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

**EARTH SCIENCE:**

- (7) Earth and space: The student knows that the natural world includes earth materials. The student is expected to:
- (A) observe and describe rocks by size, texture, and color;  
*NLS-KD; 2B; 3E*
  - (B) identify and compare the properties of natural sources of freshwater and saltwater; and
  - (C) distinguish between natural and manmade resources.  
*NLS-2A; 4E*
- (8) Earth and space: The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:
- (A) measure, record, and graph weather information including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data;  
*NLS-3D*
  - (B) identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation;  
*NLS-KH*
  - (C) explore the processes in the water cycle including evaporation, condensation, and precipitation as connected to weather conditions; and  
*NLS-3D*
  - (D) observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.  
*NLS-3A; 4E*

**LIFE SCIENCE:**

- (9) Organisms and environments: The student knows that living organisms have basic needs that must be met for them to survive within their environment. The student is expected to:
- (A) identify the basic needs of plants and animals;  
*NLS-KC, KF, KG; 1B, 1D; 3F, 3G; 4A, 4B, 4C, 4D*
  - (B) identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things; and  
*NLS-1D; 2F; 3G; 4B, 4D*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (C) compare and give examples of the ways living organisms depend on each other and on their environments, such as food chains within a garden, park, beach, lake, and wooded area.

*NLS-2F; 3G; 4B, 4C, 4D, 4E*

- (10) Organisms and environments: The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

- (A) observe, record and compare how the physical characteristics and behaviors of animals help them meet their basic needs such as fins help fish move and balance in the water;

*NLS-KC; 1D, 1F; 2F; 3G; 4A, 4C, 4D*

- (B) observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant; and

*NLS-KF; 1B; 3F; 4A, 4B, 4D*

- (C) investigate and record some of the unique stages that insects undergo during their life cycle.

*NLS-1F; 4C*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

## **112.14. Science, Grade 3: (b). Knowledge and skills.**

### ***SCIENTIFIC PROCESSES:***

- (1) Scientific investigation and reasoning: The student conducts classroom and outdoor investigations following school and home safety procedures and environmentally appropriate practices. The student is expected to:
- (A) demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including observing a schoolyard habitat; and  
*NLS-1A, 1C; 2A, 2D, 2F; 3B, 3C, 3G; 4A, 4E, 4F*
  - (B) make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics.  
*NLS-2D; 4D*
- (2) Scientific investigation and reasoning: The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to:
- (A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world;  
*NLS-3F; 4A, 4B, 4C, 4D, 4E, 4F*
  - (B) collect data by observing and measuring using the metric system and recognize differences between observed and measured data;  
*NLS-3C*
  - (C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data;  
*NLS-1F; 2A, 2B, 2C; 3C, 3D; 4A, 4B, 4F*
  - (D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations;  
*NLS-2C; 3C, 3F; 4A, 4B, 4D, 4E, 4F*
  - (E) demonstrate that repeated investigations may increase the reliability of results; and  
*NLS-3E; 4B, 4E, 4F*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.



(F) communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion.

*NLS-KE, KF; 2A, 2C, 2E; 3B, 3C, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

(3) Scientific investigation and reasoning: The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

*NLS-2A, 2C; 3C; 4B, 4D, 4E, 4F*

(B) draw inferences and evaluate accuracy of product claims found in advertisements and labels such as toys and food;

(C) represent the natural world using models such as volcanoes or Sun, Earth, and Moon system and identify their limitations, including size, properties, and materials; and

*NLS-3A; 4B, 4F*

(D) connect grade level appropriate science concepts with the history of science, science careers and contributions of scientists.

*NLS-KA; 2B, 2C, 2E; 3A, 3C, 3D, 3E; 4A, 4B, 4C, 4D, 4E, 4F*

(4) Scientific investigation and reasoning: The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to:

(A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observations of habitats of organisms such as terrariums and aquariums; and

*NLS-KD, KE, KF; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

(B) use safety equipment as appropriate, including safety goggles and gloves.

*NLS-2D; 4E*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

**PHYSICAL SCIENCE:**

(5) Matter and energy: The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed and used. The student is expected to:

- (A) measure, test, and record physical properties of matter including temperature, mass, magnetism, and the ability to sink or float;

*NLS-KD, KE; 2A, 2B; 3C*

- (B) describe and classify samples of matter as solids, liquids, and gases and demonstrate that solids have a definite shape and liquids and gases take the shape of their container;

*NLS-KD; 2A; 3B, 3C, 3D*

- (C) predict, observe, and record changes in the state of matter caused by heating or cooling; and

*NLS-KD; 1C; 2A; 3C; 4E*

- (D) explore and recognize that a mixture is created when two materials are combined such as gravel and sand and metal and plastic paper clips.

*NLS-KD*

(6) Force, motion and energy: The student knows that forces cause change and that energy exists in many forms. The student is expected to:

- (A) explore different forms of energy including, mechanical, light, sound, and heat/thermal in everyday life;

*NLS-2A, 2C, 2D, 2E; 3B, 3C; 4E, 4F*

- (B) demonstrate and observe how position and motion can be changed by pushing and pulling objects to show work being done such as swings, balls, pulleys, and wagons; and

*NLS-KE; 2C, 2D; 4E, 4F*

- (C) observe forces such as magnetism and gravity acting on objects.

*NLS-KE; 2A, 2C; 4E, 4F*

**EARTH SCIENCE:**

(7) Earth and space: The student knows that the Earth consists of natural resources and its surface is constantly changing. The student is expected to:

- (A) explore and record how soils are formed by weathering of rock and the decomposition of plant and animal remains;

*NLS-3E*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (B) investigate rapid changes in the Earth’s surface such as volcanic eruptions, earthquakes, and landslides;

*NLS-3E*

- (C) identify and compare different landforms, including mountains, hills, valleys, and plains; and

- (D) explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture and how resources may be conserved.

*NLS-1B, 1C; 2B; 3E; 4E*

- (8) Earth and space: The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

- (A) observe, measure, record and compare day-to-day weather changes in different locations at the same time that include air temperature, wind direction and precipitation;

*NLS-3D*

- (B) describe and illustrate the Sun as a star composed of gases that provides light and heat energy for the water cycle;

*NLS-3A, 3D, 3E*

- (C) construct models that demonstrate the relationship of the Sun, Earth, and Moon, including orbits and positions; and

*NLS-3A*

- (D) identify the planets in Earth’s solar system and their position in relation to the Sun.

*NLS-3A*

### **LIFE SCIENCE:**

- (9) Organisms and environments: The student knows that organisms have characteristics that help them survive and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to:

- (A) observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem;

*NLS-1D; 3G; 4D*

- (B) identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field; and

*NLS-4D*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

- (C) describe environmental changes such as floods and droughts where some organisms thrive and others perish or move to new locations.

*NLS-4D*

- (10) Organisms and environments: The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to:

- (A) explore how structures and functions of plants and animals allow them to survive in a particular environment;

*NLS-1F; 2F; 3G; 4B, 4C, 4D*

- (B) explore that some characteristics of organisms are inherited such as the number of limbs on an animal or flower color and recognize some behaviors are learned in response to living in a certain environment such as animals using tools to get food; and

*NLS-1D; 3G; 4D*

- (C) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady bugs.

*NLS-KF; 1B, 1F; 3G; 4B, 4C*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

## **112.14. Science, Grade 4: (b). Knowledge and skills.**

### **SCIENTIFIC PROCESSES:**

- (1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:
- (A) demonstrate safe practices and the use of safety equipment as described in the Texas Safety Standards during classroom and outdoor investigations; and  
*NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F*
  - (B) make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic.  
*NLS-1C; 2D; 3D; 4E*
- (2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to:
- (A) plan and implement descriptive investigations, including asking well-defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions;  
*NLS-3F; 4A, 4B, 4C, 4D, 4E, 4F*
  - (B) collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps;  
*NLS-2A, 2C; 3C, 3D; 4B, 4C, 4D, 4E*
  - (C) construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data;  
*NLS-4A, 4B, 4F*
  - (D) analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured;  
*NLS-2C; 3C*
  - (E) perform repeated investigations to increase the reliability of results; and  
*NLS-2C; 4C, 4E, 4F*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

(F) communicate valid, oral, and written results supported by data.

*NLS–KA, KC, KD, KE, KF, KG; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

(3) Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;

*NLS–2A, 2C; 3C; 4B, 4D, 4E, 4F*

(B) draw inferences and evaluate accuracy of services and product claims found in advertisements and labels such as for toys, food, and sunscreen;

*NLS–3B*

(C) represent the natural world using models such as rivers, stream tables, or fossils and identify their limitations, including accuracy and size; and

*NLS–1A, 1C, 1F; 3A, 3D, 3E, 3G; 4B*

(D) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

*NLS–KA; 2B, 2C, 2E; 3A, 3C, 3D, 3E; 4A, 4B, 4C, 4D, 4E, 4F*

(4) Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to:

(A) collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, pan balances, triple beam balances, graduated cylinders, beakers, hot plates, meter sticks, compasses, magnets, collecting nets, and notebooks; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and

*NLS–KD, KE, KF; 1B, 1C, 1E, 1F; 2A, 2B, 2C, 2D, 2E, 2F; 3A, 3B, 3C, 3D, 3E, 3F; 4A, 4B, 4C, 4D, 4E, 4F*

(B) use safety equipment as appropriate, including safety goggles and gloves.

*NLS–4E*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.

**PHYSICAL SCIENCE:**

(5) Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:

(A) measure, compare, and contrast physical properties of matter, including size, mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float;

*NLS-KD, KE; 2A, 2B; 3C, 3E; 4E, 4F*

(B) predict the changes caused by heating and cooling such as ice becoming liquid water and condensation forming on the outside of a glass of ice water; and

*NLS-KD; 1C; 2A; 3C; 4E*

(C) compare and contrast a variety of mixtures and solutions such as rocks in sand, sand in water, or sugar in water.

*NLS-KD; 3E*

(6) Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:

(A) differentiate among forms of energy, including mechanical, sound, electrical, light, and heat/thermal;

*NLS-2A, 2C, 2D, 2E; 3B, 3C; 4E, 4F*

(B) differentiate between conductors and insulators;

*NLS-4E, 4F*

(C) demonstrate that electricity travels in a closed path, creating an electrical circuit, and explore an electromagnetic field; and

*NLS-4F*

(D) design an experiment to test the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.

*NLS-2C; 4F*

**EARTH & SPACE:**

(7) Earth and space. The students know that Earth consists of useful resources and its surface is constantly changing. The student is expected to:

(A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.



- (B) observe and identify slow changes to Earth’s surface caused by weathering, erosion, and deposition from water, wind, and ice; and

*NLS–3D, 3E*

- (C) identify and classify Earth’s renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.

*NLS–1C; 3D; 4E*

- (8) Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:

- (A) measure and record changes in weather and make predictions using weather maps, weather symbols, and a map key;
- (B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and
- (C) collect and analyze data to identify sequences and predict patterns of change in shadows, tides, seasons, and the observable appearance of the Moon over time.

*NLS–3A; 4E*

### **LIFE SCIENCE:**

- (9) Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to:

- (A) investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and

*NLS–3F, 3G; 4B, 4C, 4D*

- (B) describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web such as a fire in a forest.

*NLS–4C, 4D*

\*Key: NLS–KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science K topics A, B, C, and D; Science 1 topics B and C; Science 2 topics A, D, E, and F; Science 3 topics B, C, and G; and Science 4 topics A, C, E, and F.



(10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environment. The student is expected to:

(A) explore how adaptations enable organisms to survive in their environment such as comparing birds' beaks and leaves on plants;

*NLS-KC; 1B, 1D, 1F; 2F; 3G; 4C, 4D*

(B) demonstrate that some likenesses between parents and offspring are inherited, passed from generation to generation such as eye color in humans or shapes of leaves in plants. Other likenesses are learned such as table manners or reading a book and seals balancing balls on their noses; and

*NLS-4D*

(C) explore, illustrate, and compare life cycles in living organisms such as butterflies, beetles, radishes, or lima beans.

*NLS-1A, 1B, 1F; 3G; 4B, 4C*

\*Key: NLS-KA, KB, KC, KD; 1B, 1C; 2A, 2D, 2E, 2F; 3B, 3C, 3G; 4A, 4C, 4E, 4F refers to lessons associated with Nancy Larson® Science *K* topics A, B, C, and D; *Science 1* topics B and C; *Science 2* topics A, D, E, and F; *Science 3* topics B, C, and G; and *Science 4* topics A, C, E, and F.