LOUISIANA DEPARTMENT OF EDUCATION

Office of Assessments, Accountability, and Analytics

LEAP Connect Achievement Level Descriptors for Science Grade 4, Grade 8, and High School

Contents

Achievement Level Definitions

Achievement Level Definitions briefly describe the expectations for student performance at each of Louisiana's four achievement levels. The achievement levels are part of Louisiana's cohesive assessment system and indicate a student's ability to demonstrate proficiency on the Louisiana Connectors for Students with Significant Cognitive Disabilities.

- **Below Goal:** A student who performs at **below goal** level demonstrates a **minimal** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low complexity texts or tasks** and **will need substantial academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **Near Goal:** A student who performs at **near goal** level demonstrates a **partial** understanding of key academic knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **low and moderate complexity texts or tasks** and **will need moderate academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.

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- **At Goal:** A student who performs **at goal** level demonstrates a **satisfactory** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **moderate and high complexity texts or tasks** and **may need minimal academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.
- **Above Goal:** A student who performs at **above goal** level demonstrates a **thorough** understanding of key knowledge and skills in the Louisiana Connectors for Students with Significant Cognitive Disabilities when presented with **high complexity texts or tasks** and **will need few academic scaffolds and supports** as the student transitions to the next grade/course and progresses toward inclusive college, career, and community opportunities.

Scale Score Ranges for LEAP Connect Science

Level	Grade 4	Grade 8	High School
Above Goal	1290 – 1244	1290 – 1244	1290 – 1245
At Goal	1243 – 1240	1243 – 1240	1244 – 1240
Near Goal	1239 – 1232		
Below Goal	1231 – 1200		

LEAP Connect Science Achievement Level Descriptors (ALDs)

LEAP Connect scale scores are used to assign a student's achievement in science in one of four levels. Achievement Level Descriptors (ALDs) for science further describe the knowledge, skills, and abilities that students generally demonstrate at each performance level. ALDs for science at grade 4, grade 8 and high school are provided in the following tables.

Task Complexity Descriptions

- **Low task complexity**: Brief scenario with simple relationships and concrete concepts using common scientific terms and practices when necessary
- **Moderate task complexity**: Clear scenario with multiple relationships and simple concepts using various scientific terms and practices when necessary
- **High task complexity**: Detailed scenario with complex relationships and abstract concepts using various scientific terms, practices, and relevant specific core ideas

Grade 4

Above Goal	At Goal	Near Goal	Below Goal
High task complexity:	**Moderate task complexity:**	**Low task complexity:**	**Low task complexity:**
The student is able to: • identify the questions that can be investigated about the transfer of energy from a moving object to another object that it collides with • identify major internal and external structures of organisms that are critical for survival • predict how living things will affect the shape of a landscape given a scenario • describe a change that occurred in an environment based on the patterns/evidence (e.g., fossils) found in the rock layers • use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation • choose the design that would lessen the impact of a given natural hazard	The student is able to: • identify a model which shows that energy can be converted from one form to another • identify the questions that can be investigated about the changes in energy that occur when objects collide • identify the initial and final forms of energy given a scenario related to energy conversion • identify the plant or animal structure that best meets the plant's or animal's needs in a given scenario • identify changes to the landscape caused by living things • identify a source of erosion or weathering that can cause changes to the landscape given a model • match a natural hazard to a solution that humans use to reduce the impact of natural hazards **High task complexity:** • use data to identify when energy is greatest or least for similar objects moving at different speeds • predict an object's motion based on the amplitude of the wave • use data to identify the cause and effect relationships between weathering or erosion and land with or without vegetation • identify patterns in the location of Earth features • identify a human solution to reduce the impact of a natural Earth process on humans	The student is able to: • identify the fastest or slowest moving object based on respective speeds • Identify what form of energy is produced by a device (e.g., sound, light, heat, motion, electricity) • identify the function of various external animal structures • recognize that rocks and soil can be moved by wind, water, and ice **Moderate task complexity:** • use data related to the speed of objects to compare the energy each possesses • recognize that moving objects contain energy • recognize that the faster an object moves, the more energy it has • identify amplitude and wavelength using a model • identify how animals use their senses to help them survive • choose a piece of evidence that supports an explanation of how animals use their senses to respond to their environment • identify the locations of different water features of Earth given a map • identify the locations of different land features of Earth given a map	The student is able to: • recognize forms of energy such as motion and light • identify factors that change the motion of an object • relate the force applied to a given object to the impact it will have on another object • recognize that waves can cause an object to move • match an animal's external structure to its function • identify the senses animals use to receive stimuli • identify ways humans change the shape of land

Grade 8

Above Goal	At Goal	Near Goal	Below Goal
High task complexity:	**Moderate task complexity:**	**Low task complexity:**	**Low task complexity:**
The student is able to: • identify a component(s) that energy will be transferred to or from to solve a problem • identify environmental factors that can influence an organism's growth • demonstrate an understanding that genetic variations in specific traits may occur as a result of small changes to genetic material • select an appropriate representation as embryological evidence of relationships among species • identify the relative age of fossils based on their locations in a column of rock layers • use data to explain why specific resources are limited	The student is able to: • contrast characteristics of natural and synthetic materials • identify a device that maximizes or minimizes thermal energy transfer using data • recognize that similarities in patterns of appearance in embryos at the same stage of development across species is evidence of relationships • explain relationships among species by organizing displays of pictorial data of embryos **High task complexity:** • identify the natural resources used to make a synthetic product • use presented evidence to determine if a reaction has released or absorbed thermal energy • identify that thermal energy is transferred from hotter objects to colder objects • support an explanation of evolutionary relationships between living and fossil organisms with evidence describe how heat from Earth's core powers the rock cycle	The student is able to: • identify examples of chemical changes compared to physical changes • use a model to identify that parents and offspring may have different traits • use a map of natural resources to recognize that natural resources are distributed throughout Earth **Moderate task complexity:** • identify examples of chemical reactions that release energy (e.g., heat or light) • use a model of energy movement through the Earth's systems to identify the role of the Sun (i.e., heat source) use a model of energy movement with the Sun as the primary energy source to identify relationships between components of Earth's systems	The student is able to: • identify objects or materials used to keep something hot or cold • identify a material as a natural material or as a synthetic/man-made material • identify environmental factors that can influence a plant's growth and survival • use a model to identify that inherited traits passed from parents to offspring lead to differences in offspring (e.g., eye color) • match extinct organisms with present-day organisms with similar characteristics • use graphics of embryo development to recognize how related organisms have similar developmental stages • identify types of Earth materials that can be located at the Earth's surface (exterior) and/or its interior

High School

Above Goal	At Goal	Near Goal	Below Goal
High task complexity:	**Moderate task complexity:**	**Low task complexity:**	**Low task complexity:**
The student is able to: • given a scenario, determine a way to design an investigation related to how an organism responds to changes in its environment • modify (e.g., improve) a solution which helps protect Earth's environment • identify examples of phenotypes shown in a family pedigree • explain why there is an increased probability of individual organisms exhibiting an advantageous trait over time • determine which factor(s) resulted in a specific adaptation within a species • explain how gradual change in the environment can cause changes in organisms • predict what will happen to specific species over time based on an environmental change	The student is able to: • identify the function of a body system and how it helps an animal to survive • predict what will happen to specific species over time based on an environmental change • use data to identify how a change affects the populations in an ecosystem • use a Punnett square to identify the probability (i.e., two out of four) of a particular trait in an offspring • recognize the cause and effect relationship between a naturally occurring change in the environment and the expression of a trait in a species **High task complexity:** • identify the best plan to gather information about how an organism responds to changes in its external environment • identify human activities that can have a negative effect on the Earth and then identify a solution that reduces its impact on the environment • describe how people can help protect the Earth's environment and biodiversity • identify a reason why two siblings can have different characteristics even though they have the same parents • complete a Punnett square	The student is able to: • match a part in a body system to its function • identify the function of an animal's response to external stimuli • identify data related to the number of species in a stable ecosystem • identify that siblings can have different characteristics even though they have the same parent • use a model to identify the likelihood of a particular trait in an offspring • recognize that gradual change in the environment can cause changes in organisms **Moderate task complexity:** • identify the correct sequence of steps necessary to prevent an infection • identify how biological or physical changes affect stability and change (i.e., numbers and/or types of organisms living in the ecosystem) in ecosystems • classify human activities on the Earth's environment as having either a negative or positive effect	The student is able to: • match an organ to its function • match a body part to its function • identify how organisms react to changes in their external environment • identify various causes of infectious human diseases • recognize ways to protect against infectious diseases to maintain a body's health • identify treatments of viral and bacterial infections • identify the need for the protection of habitats (e.g., organisms depend on having specific needs met by a particular habitat) • identify that a trait can be passed from parent to offspring • identify the dominant trait in a given allele pair • recognize different traits associated with individual members in a species