



PERFORMANCE LEVEL DESCRIPTORS

Introduction to the DCAS-Alt1 Performance Level Descriptors in Science

The Science portion of the Delaware Comprehensive Assessment System – Alt1 (DCAS-Alt1) is designed to measure how well students meet the grade level–expectations as delineated in the Delaware Grade Level Extensions for science. The Standards articulate the expectations that students will need to meet by the end of the grade level in order to advance and accumulate more content specifics for the next grade level. The expectations of the Standards increase in complexity and require higher levels of thinking as students progress through the grade levels. The role of the DCAS-Alt1 Science test is to provide evidence that students can take what they have learned in the classroom and *demonstrate* their knowledge and understanding to a new context presented on the assessment.

The Science Performance Level Descriptors are aligned to the science Standards and the DCAS-Alt1. They are designed to identify and define what students know and can do at a specific grade level and to assist parents and educators in understanding the performance level scores that students receive on the DCAS-Alt1.



PERFORMANCE LEVEL DESCRIPTORS

SCIENCE – GRADE 5

Performance Level 4 – Advanced	Performance Level 3 – Meets Standard	Performance Level 2 – Below Standard	Performance Level 1 – Well Below Standard
Students at this level, when using grade level science content, consistently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, frequently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, partially use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, minimally use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.

Content Summary Expectations

- Collect, record, and compare data from observations and experiments in order to make and justify conclusions
- Communicate scientific findings using visual representatives and technology
- Understand the physical properties of solids, liquids, and gases, especially in water
- Explore changes of motion and how those changes relate to speed, distance, and kinetic energy
- Understand the various forms of energy, especially energy from the sun
- Understand the properties and motions of objects in the sky during the day and at night
- Examine the properties of Earth’s materials such as minerals, rocks, soil, and water
- Use tools to measure and describe weather and how it affects plants and animals
- Identify the three basic cloud types
- Study the water cycle and global weather patterns
- Demonstrate how weathering and erosion affect and create landforms
- Explore the life cycle of organisms and what is needed for organisms to survive
- Understand how organisms depend on and are affected by their environment
- Explore animals and their habitats
- Understand the factors that affect the health of an ecosystem
- Trace the path of energy in an ecosystem



PERFORMANCE LEVEL DESCRIPTORS

SCIENCE – GRADE 8

Performance Level 4 – Advanced	Performance Level 3 – Meets Standard	Performance Level 2 – Below Standard	Performance Level 1 – Well Below Standard
Students at this level, when using grade level science content, consistently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, frequently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, partially use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, minimally use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.

Content Summary Expectations

- Generate and test hypotheses by asking questions and conducting investigations
- Collect, record, analyze, and compare data in order to form and revise conclusions
- Understand how particles are arranged in solids, liquids, and gases
- Understand the difference between homogeneous and heterogeneous mixtures
- Discuss connections between materials and functions of objects
- Describe electromagnetic waves, particularly UV rays and energy from the sun, and investigate the properties of light
- Demonstrate the various ways in which mechanical energy can be transferred in a physical system
- Research different forms of alternative energy
- Observe the properties and patterns of Earth, the sun, the moon, and the planets
- Understand the sun's influence on the water cycle and how the uneven heating of Earth affects weather and climate
- Describe how organisms maintain a stable internal environment
- Compare and contrast living and nonliving things and understand the different reproductive strategies of living organisms
- Describe how DNA allows for similar traits in families
- Explain how a specific trait could increase an organism's chances of survival and how competition for basic needs affect survival
- Classify animals according to species
- Understand the factors that can affect population size and construct tables and graphs to show population changes
- Identify the relationships among producers, consumers, and decomposers and trace the energy flow in an ecosystem



PERFORMANCE LEVEL DESCRIPTORS

SCIENCE – GRADE 10

Performance Level 4 – Advanced	Performance Level 3 – Meets Standard	Performance Level 2 – Below Standard	Performance Level 1 – Well Below Standard
Students at this level, when using grade level science content, consistently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, frequently use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, partially use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.	Students at this level, when using grade level science content, minimally use the knowledge and skills articulated in the Delaware Grade Band Extensions for science.

Content Summary Expectations

- Conduct investigations and interpret the data to compare results, make conclusions, and support arguments
- Understand the parts of an atom and classify elements, compounds, and mixtures
- Understand how the Periodic Table sorts elements based on properties
- Research chemical properties and chemical changes
- Illustrate the properties of electromagnetic and mechanical waves
- Investigate how kinetic energy relates to mass, speed, and temperature
- Conduct investigations regarding potential energy
- Investigate forces such as gravity and friction and understand the relationships among force, energy, and work
- Describe the formation of Earth into layers
- Know the common elements, minerals, and rocks found on Earth
- Describe how the Theory of Plate Tectonics explains the formation of volcanoes and earthquakes and how technology is used to minimize hazards
- Study how photosynthesis allows plants to make food by using energy from the sun
- Understand why some species survive and others do not and discuss traits that are necessary for different environments
- Investigate common ancestry evidence such as embryological development and examine the shared traits within a species
- Investigate the roles of organisms in an ecosystem and graph population data of predators and their prey
- Discuss short term effects of a natural disaster on an ecosystem