OKLAHOMA SCHOOL TESTING PROGRAM
TEST BLUEPRINT SCIENCE GRADE 5

This blueprint describes the content and structure of the Grade 5 Science Content Assessment and defines the ideal range of test items by reporting category of the Oklahoma Academic Standards – Science (OAS-S).

REPORTING CATEGORIES

PHYSICAL SCIENCES 27–33%

5.PS1.1	Develop a model to describe that matter is made of particles too small to be seen.
5.PS1.2	Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.
5.PS1.3	Make observations and measurements to identify materials based on their properties.
5.PS1.4	Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

LIFE SCIENCES 27–33%

5.LS1.1	Support an argument that plants get the materials they need for growth chiefly from air and water.
5.LS2.1	Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
5.LS2.2	Use models to explain factors that upset the stability of local ecosystems.
5.PS3.1[a]	Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

EARTH AND SPACE SCIENCES 33–40%

5.ESS1.1	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.
5.ESS1.2	Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, in addition to different positions of the sun, moon, and stars at different times of the day, month, and year.
5.ESS2.1	Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
5.ESS2.2	Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.
5.ESS3.1	Obtain and combine information about ways individual communities use science ideas to protect Earth's resources and environments.
5.PS2.1[a]	Support an argument, with evidence, that Earth's gravitational force pulls objects downward toward the center of the earth.

Standards will be assessed using a cluster-based format: a set of three multiple-choice items linked with a common stimulus or a set of two multiple-choice items and a technology-enhanced item linked with a common stimulus. The Grade 5 test consists of some clusters containing only multiple-choice items and some clusters containing both multiple-choice and technology-enhanced items. Each cluster will align to a single standard with its associated Disciplinary Core Idea(s), Science and Engineering Practice, and Cross Cutting Concept.

The Grade 5 Science operational test will contain a total of 15 clusters.

[a]The physical science standards 5.PS3.1 and 5.PS2.1 are being reported in Life Sciences and Earth and Space Sciences, respectively. Their placement in these reporting categories reflects the way that these standards would typically be incorporated into units in classroom instruction.

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OKLAHOMA SCHOOL TESTING PROGRAM
TEST BLUEPRINT SCIENCE GRADE 8

This blueprint describes the content and structure of the Grade 8 Science Content Assessment and defines the ideal range of test items by reporting category of the Oklahoma Academic Standards – Science (OAS-S).

REPORTING CATEGORIES

PHYSICAL SCIENCES 33 - 40%

8.PS2.1	Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.
8.PS2.2	Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.
8.PS2.3	Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
8.PS2.4	Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
8.PS2.5	Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
8.PS4.1	Use mathematical representations to describe patterns in a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.
8.PS4.3	Integrate qualitative scientific and technical information to support the claim that digitized signals (sent as wave pulses) are a more reliable way to encode and transmit information.

LIFE SCIENCES 40 - 46%

8.LS1.4	Use arguments 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.
8.LS1.5	Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.
8.LS3.1	Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

8.LS3.2	Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.
8.LS4.1	Analyze and interpret data to identify patterns within the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth.
8.LS4.2	Apply scientific ideas to construct an explanation for the patterns of anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer ancestral relationships.
8.LS4.3	Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.
8.LS4.4	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.
8.LS4.5	Gather and synthesize information about the practices that have changed the way humans influence the inheritance of desired traits in organisms.
8.LS4.6	Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

EARTH AND SPACE SCIENCES 21 - 27%

8.ESS1.1	Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
8.ESS1.2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.
8.ESS1.3	Analyze and interpret data to determine scale properties of objects in the solar system.

Standards will be assessed using a cluster-based format: a set of three multiple-choice items linked with a common stimulus or a set of two multiple-choice items and a technology-enhanced item linked with a common stimulus. The Grade 8 test consists of some clusters containing only multiple-choice items and some clusters containing both multiple-choice and technology-enhanced items. Each cluster will align to a single standard with its associated Disciplinary Core Idea(s), Science and Engineering, Practice, and Cross Cutting Concept.

The Grade 8 Science operational test will contain a total of 15 clusters.

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