

Grade 5
Performance Level Descriptions

Claim/Target	Level 2	Level 3	Level 4
Claim 1: Physical Science	Students typically comprehend and describe scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of low complexity and inconsistently to problems of moderate complexity in the physical sciences (targets A and B).	Students typically comprehend and explain scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of moderate complexity and inconsistently to problems of high complexity in the physical sciences (targets A and B).	Students typically comprehend and analyze scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of high complexity in the physical sciences (targets A and B).
Target A: Structure and Properties of Matter	Students can describe matter using particles too small to be seen, identify or observe properties of materials, take measurements of matter such as weight and temperature, and describe effects of mixing substances.	Students can explain changes to matter using particles too small to be seen, summarize and classify materials by their properties, relate recorded properties of matter to changes in substances, and predict or compare changes from mixing substances.	Students can construct a model of matter using particles too small to be seen, determine through observations a material based upon its properties, argue using evidence that matter is conserved during changes, and analyze experimental results for changes from mixing substances.
Target B: Engineering Design in Physical Science	Students can identify design criteria, match a solution to a design problem, and measure or record data from fair tests using a model or prototype.	Students can predict important constraints based upon a design, compare potential solutions to a design problem for an intended purpose, and describe variables or failures of a model or prototype.	Students can argue for or against a design using a problem's constraints and criteria, develop appropriate design solutions based upon constraints, and can improve a model or prototype by controlling variables or identifying failures.

Claim/Target	Level 2	Level 3	Level 4
Claim 2: Life Science	Students typically comprehend and describe scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of low complexity and inconsistently to problems of moderate complexity in the life sciences (targets A and B).	Students typically comprehend and explain scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of moderate complexity and inconsistently to problems of high complexity in the life sciences (targets A and B).	Students typically comprehend and analyze scientific ideas, connecting concepts, and procedures or practices (target A) and apply scientific and engineering knowledge consistently to problems of high complexity in the life sciences (targets A and B).
Target A: Matter and Energy in Organisms and Ecosystems	Students can describe food in terms of energy, identify requirements for plant growth, and identify different forms of matter within an ecosystem.	Students can relate energy in food for animals to energy used by plants, determine requirements of plant growth from observations, and summarize how matter is used by organisms within an ecosystem.	Students can model the energy from the Sun to energy found in food for animals, argue for requirements of plant growth using data as evidence, and explain the connections among organisms and matter within an ecosystem.
Target B: Engineering Design in Life Science	Students can identify design criteria, match a solution to a design problem, and measure or record data from fair tests using a model or prototype.	Students can predict important constraints based upon a design, compare potential solutions to a design problem for an intended purpose, and describe variables or failures of a model or prototype.	Students can argue for or against a design using a problem's constraints and criteria, develop appropriate design solutions based upon constraints, and can improve a model or prototype by controlling variables or identifying failures.

Claim/Target	Level 2	Level 3	Level 4
Claim 3: Earth and Space Science	Students typically comprehend and describe scientific ideas, connecting concepts, and procedures or practices (targets A and B) and apply scientific and engineering knowledge consistently to problems of low complexity and inconsistently to problems of moderate complexity in the earth and space sciences (targets A–C).	Students typically comprehend and explain scientific ideas, connecting concepts, and procedures or practices (targets A and B) and apply scientific and engineering knowledge consistently to problems of moderate complexity and inconsistently to problems of high complexity in the earth and space sciences (targets A–C).	Students typically comprehend and analyze scientific ideas, connecting concepts, and procedures or practices (targets A and B) and apply scientific and engineering knowledge consistently to problems of high complexity in the earth and space sciences (targets A–C).
Target A: Earth Systems	Students can identify connections between Earth systems, list reservoirs of water on Earth, and identify a human activity that affects the environment.	Students can describe at least one way two Earth systems interact, describe differences in water distribution on Earth, and summarize information about how humans negatively affect the environment .	Students can construct a model that illustrates Earth system interactions, use quantitative representations to describe water distribution on Earth, and summarize strategies about how humans can protect the environment.
Target B: Space Systems, Stars and the Solar System	Students can recognize the effects of gravity on falling objects, identify differences among stars in the sky and the Sun, and identify observable patterns in the sky over time.	Students can summarize the relationship between gravity and falling objects, describe the relative distances and brightness of stars and the Sun, and make predictions about observable patterns in the sky using data.	Students can explain why falling objects are directed towards Earth’s center, argue for the differences in brightness between stars and the Sun based upon distance, and relate the motion and position of the Earth to observable patterns in the sky over time.

Claim/Target	Level 2	Level 3	Level 4
Target C: Engineering Design in Earth and Space Systems	Students can identify design criteria, match a solution to a design problem, and measure or record data from fair tests using a model or prototype.	Students can predict important constraints based upon a design, compare potential solutions to a design problem for an intended purpose, and describe variables or failures of a model or prototype.	Students can argue for or against a design using a problem's constraints and criteria, develop appropriate design solutions based upon constraints, and can improve a model or prototype by controlling variables or identifying failures.

Note: All Engineering Targets share similar PLD features but should not be compared.

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