

Grade 5
Performance Level Descriptions – All Dimensions

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 they 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 they 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 they 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 use a model to describe that matter is made of particles too small to be seen, identify or observe properties of materials, take measurements of matter such as weight and temperature during changes in substance, and state whether the mixing of substances produces a new substance.	Students can develop a model to describe that matter is made of particles too small to be seen, use measurements to identify materials by their properties, provide evidence that matter is conserved during changes in substance, and investigate whether the mixing of substances produces a new substance.	Students can develop models to explain different types of matter made of particles too small to be seen, analyze measurement data to identify materials based upon their properties, argue using collected evidence that matter is conserved during changes in substance, and investigate and provide evidence for whether the mixing of substances produces a new substance.

Claim/Target	Level 2	Level 3	Level 4
Target B: Engineering Design in Physical Science	Students can identify design constraints and criteria, describe a possible solution to an engineering problem, and carry out tests to improve a model or prototype.	Students can define a simple design problem, including constraints and criteria; generate and compare multiple possible solutions to an engineering design problem; and carry out tests to improve a model or prototype by controlling variables or identifying failures.	Students can argue for a simple design problem, including constraints and criteria; use several sources to generate and compare multiple possible solutions to an engineering problem; and carry out tests and analyze data to 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 they 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 they 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 they 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 animal's food in terms of energy, identify evidence that plants primarily need air and water to grow, and describe how matter moves through organisms within an ecosystem.	Students can use a model to describe how energy in animal's food came from the Sun, use evidence to support an argument that plants primarily need air and water to grow, and develop a model to describe how matter moves through organisms within an ecosystem.	Students can develop a model to describe how energy in animal's food came from the Sun, use evidence and models to support the argument that plants primarily need air and water to grow, and develop a model to argue how matter moves through organisms within an ecosystem.

Claim/Target	Level 2	Level 3	Level 4
Target B: Engineering Design in Life Science	Students can identify design constraints and criteria, describe a possible solution to an engineering problem, and carry out tests to improve a model or prototype.	Students can define a simple design problem, including constraints and criteria; generate and compare multiple possible solutions to an engineering design problem; and carry out tests to improve a model or prototype by controlling variables or identifying failures.	Students can argue for a simple design problem, including constraints and criteria; use several sources to generate and compare multiple possible solutions to an engineering problem; and carry out tests and analyze data to 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 they 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 they 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 they 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 describe the ways in which the four Earth spheres interact, describe reservoirs of water on Earth, and identify a way to protect the environment.	Students can develop a model to describe the ways in which the four Earth spheres interact, describe and graph differences in water distribution on Earth, and combine information about ways to protect the environment.	Students can develop models to describe multiple ways in which the four Earth spheres interact, explain and graph differences in water distribution on Earth, and combine information about and argue for ways to protect the environment.
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Claim/Target	Level 2	Level 3	Level 4
Target B: Space Systems, Stars and the Solar System	Students can recognize that Earth's gravity pulls objects down, identify differences in brightness among stars in the sky and the Sun, and describe observable daily patterns of shadows and seasonal changes in the night sky.	Students can support an argument that Earth's gravity pulls objects down, argue that the difference in brightness of the Sun compared to other stars is due to distance, and graph data to reveal observable daily patterns of shadows and seasonal changes in the sky.	Students can support an argument using models that Earth's gravity pulls objects down, argue using a model that the difference in brightness of the Sun compared to other stars is due to distance, and graph data to explain observable daily patterns of shadows and seasonal changes in the sky.
Target C: Engineering Design in Earth and Space Systems	Students can identify design constraints and criteria, describe a possible solution to an engineering problem, and carry out tests to improve a model or prototype.	Students can define a simple design problem, including constraints and criteria; generate and compare multiple possible solutions to an engineering design problem; and carry out tests to improve a model or prototype by controlling variables or identifying failures.	Students can explain a simple design problem, including constraints and criteria; use several sources to generate and compare multiple possible solutions to an engineering problem; and carry out tests and analyze data to improve a model or prototype by controlling variables or identifying failures.

Note: All Engineering targets in each claim share similar PLD features but should not be compared.