RISE PLD Science Grade 6

	Below Proficient	Approaching Proficient	Proficient	Highly Proficient
	The Level 1 student is below proficient in applying all three dimensions as specified in the Utah SEEd standards. The student generally performs significantly below the standard for the grade-level, is able to partially access grade level content, and engages with the science and engineering practices and crosscutting concepts with extensive support.	The Level 2 student is approaching proficient in applying all three dimensions as specified in the Utah SEEd standards. The student performs slightly below the standard for the grade level, is able to access grade-level content, and engages with most of the science and engineering practices and crosscutting concepts with some independence and support.	The Level 3 student is proficient in applying all three dimensions as specified in the Utah SEEd standards. The student generally performs at the standard for the grade level, is able to access grade-level content, and engages with the science and engineering practices and crosscutting concepts independently.	The Level 4 student is highly proficient in applying all three dimensions as specified in the Utah SEEd standards. The student generally performs significantly above the standard for the grade level, is able to access above grade-level content, and engages with the science and engineering practices and crosscutting concepts independently.
Earth Science				
6.1	Identify components of a model to describe patterns of motions of the Sun-Earth-Moon system and the role of gravity in the motions of objects within the solar system.	Use a model to describe patterns of motions of the Sun-Earth-Moon system and the role of gravity in the motions of objects within the solar system. Use data to determine scale properties of objects in the solar system.	Develop and use a model to describe patterns of motions of the Sun-Earth-Moon system and the role of gravity in the motions of objects within the solar system. Analyze and interpret data to determine scale properties of objects in the solar system.	Evaluate and revise a model to describe patterns of motions of the Sun-Earth-Moon system and the role of gravity in the motions of objects within the solar system. Analyze, interpret, and compare multiple data sets to determine scale properties of objects in the solar system.
6.3	Identify the components of a model to explain Earth processes of energy flowing and matter cycling driving the water cycle, uneven heating, and the natural greenhouse effect; and identify evidence to explain how uneven heating across Earth's surface causes changes in weather patterns and climate.	Use models from investigations to explain Earth processes of energy flowing and matter cycling driving the water cycle, uneven heating, and the natural greenhouse effect. Use data to describe how uneven heating across Earth's surface causes changes in weather patterns and climate.	Develop models from investigations to explain Earth processes of energy flowing and matter cycling driving the water cycle, uneven heating, and the greenhouse effect. Analyze and interpret data to provide evidence to construct explanations of how uneven heating across Earth's surface causes changes in weather patterns and climate.	Evaluate, revise, and use models to describe Earth processes of energy flowing and matter cycling driving the water cycle, uneven heating, and the greenhouse effect. Use scientific reasoning to construct explanations of how uneven heating across Earth's surface causes changes in weather patterns and climate.
Physical Science				
6.2	Identify the components of a model or use a given investigation to show that molecules are made of different kinds, proportions, and quantities of atoms, and that particle motion changes when thermal energy is added to or removed from a system.	Use a model and/or investigation to show that molecules are made of different kinds, proportions, and quantities of atoms, and that particle motion changes when thermal energy is added to or removed from a system	Develop and use a model and/or plan and carry out an investigation to show molecules are made of different kinds, proportions and quantities of atoms, and to predict changes in arrangement and motion of particles when thermal energy is added to or removed.	Evaluate and revise a model and/or plan and carry out an investigation that describes how the motion and arrangement of particles change when thermal energy is added to or removed in various types or amounts of matter.
6.2	Identify an object, tool, or process that minimizes or maximizes heat energy transfer and analyze given data to determine how well the solution meets given criteria and constraints.	Given criteria and constraints, design an object, tool, or process that minimizes or maximizes heat energy transfer, and gather and analyze data to determine how well they meet the criteria and constraints of the problem.	Define the criteria and constraints to design an object, tool, or process that minimizes or maximizes heat energy transfer and construct an argument based on the data to determine how well they meet the criteria and constraints of the problem.	Define and use the criteria and constraints to design an object, tool, or process that minimizes or maximizes heat energy transfer, and evaluate and revise design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
Life Science				
6.4	Identify components of a model to explain the dynamic relationships among the diverse types of living and nonliving parts of an ecosystem, which includes the flow of energy and the cycling of matter. Identify questions whose answers would explain how changes in resource availability affect organisms in those ecosystems.	Use a model or data to identify the dynamic relationships among the diverse types of living and nonliving parts of an ecosystem, which includes the flow of energy and the cycling of matter. Ask questions about how changes in resource availability affect organisms in those ecosystems.	Develop and use a model to describe the dynamic relationships among the diverse types of living and nonliving parts of an ecosystem, which includes the flow of energy and the cycling of matter. Ask questions and/or analyze and interpret data to determine how changes in resource availability affect organisms in those ecosystems.	Evaluate strengths and limitations of a model to analyze the dynamic relationships among the diverse types of living and nonliving parts of an ecosystem which includes the flow of energy and the cycling of matter. Ask questions and/or analyze and interpret data to predict how changes in resource availability affect organisms in those ecosystems.
6.4	Organize information to support a solution to mitigate disruptions to any part of an ecosystem by human access to natural resources.	Given criteria and constraints, use a successful solution for preserving ecosystem services that protect resources and biodiversity, based on how well the solutions maintain stability within the ecosystem and how well they obtain and communicate information of differing design solutions.	Given criteria and constraints, develop and use a successful solution to preserve ecosystem services that protect resources and biodiversity, based on how well the solutions maintain stability within the ecosystem and how well they obtain, evaluate, and communicate information of differing design solutions.	Evaluate strengths and limitations of a successful solution model to analyze the preservation of ecosystem services that protect resources and biodiversity, based on how well the solutions maintain stability within the ecosystem and how well they obtain, evaluate, and communicate information of differing design solutions.