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	Level 2	Level 3	Level 4
Physical Science			
Revision to PLD HS -1	1. Use the periodic table as model that is based on the patterns of atomic substructure to identify properties of matter and to describe the change of reaction rates as well as resultant energy changes due to conditions applied.	Use the periodic table as model that is based on the patterns of atomic substructure to describe properties of matter and refer to that model to explain the change of reaction rates as well as resultant energy changes due to conditions applied.	Use the periodic table as model that is based on the patterns of atomic substructure to predict properties of matter and use that model to dtermine evidence to support and/or revise an explanation of the change of reaction rates and resultant energy changes due to conditions applied.
Revision to PLD HS -2	2. Conduct an investigation using basic algebraic thinking to collect data that describes the relationship among the net force acting on an object, its mass, and its acceleration.	Plan an investigation using mathematical and computational thinking, to collect data providing evidence of the relationship among the net force acting on an object, its mass, and its acceleration.	Evaluate and revise an investigation using mathematical and computational thinking, to collect data providing evidence of the relationship among the net force acting on an object, its mass, and its acceleration.
Revision to PLD HS -3	3. Use a model to describe how energy changes in, or forces acting on, one part of a system affect other parts of the system.	Develop a model to quantitatively describe how energy changes in, or forces acting on, one part of a system affect other parts of the system.	Evaluate and revise a model which quantitatively describes how energy changes in, or forces acting on, one part of a system affect other parts of the system.
Revision to PLD HS -4	4. Use mathematical representations as a model to describe how various media will affect the relationships among amplitude, frequency and wave speed.	Develop and use mathematical representations as a model to qualitatively predict how various media will affect amplitude, frequency and wave speed.	Evaluate mathematical or algorithmic representations as a model that quantitatively predicts how various media will affect amplitude, frequency and wave speed.
Life Science			
Revision to PLD HS -5	5. Conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis and make a claim for how DNA determines the structure of proteins.	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis and construct an explanation that supports the claim for how DNA determines the structure of proteins.	Plan, conduct, and revise an investigation to provide evidence that feedback mechanisms maintain homeostasis and construct and revise an explanation that supports the claim for how DNA determines the structure of proteins.

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Revision to PLD HS -6	6. Use mathematical and computational thinking to support a claim about the cycling of matter and flow of energy among organisms in an ecosystem; and describe how interactions in ecosystems maintain population and diversity of organisms but changes in conditions may result in a new ecosystem.	Use mathematical and computational thinking to make and support a claim about the cycling of matter and flow of energy among organisms in an ecosystem; and describe, using evidence, how interactions in ecosystems maintain population and diversity of organisms but changes in conditions may result in a new ecosystem.	Use mathematical and computational thinking to evaluate and revise claims about the cycling of matter and flow of energy among organisms in an ecosystem; and use evidence and reasoning to argue that interactions in ecosystems maintain population and diversity of organisms but changes in conditions may result in a new ecosystem
Revision to PLD HS -7	7. Ask questions based on observations of models that help to identify relationships among DNA, chromosones, and traits; use evidence to make a claim about the causes of inheritable genetic variations; and apply concepts of statistics and probability to identify the variation and distribution of expressed traits in a population.	Ask questions based on observations of models that describe relationships among DNA, chromosones, and traits; construct an argument using evidence to support and evaluate the claim about the causes of inheritable genetic variations; and apply concepts of statistics and probability to describe the variation and distribution of expressed traits in a population.	Ask questions based on observations of models that use scientific reasoning to explain relationships among DNA, chromosones, and traits; use evidence to evaluate and revise an argument about the causes of inheritable genetic variations; and apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
Revision to PLD HS -8	8. Describe how environmental conditions lead to adaptations within populations, which may result in evolution of said population.	Make a claim using evidence as to how environmental conditions lead to adaptations within populations, which may result in evolution of said population.	Construct and revise an argument that supports the claim and uses student-generated evidence as to how environmental conditions lead to adaptations within populations, which may result in evolution of said population.
Earth and Space Science			
Revision to PLD HS -9	9. Use mathematical and computational thinking to describe the motion of single objects in the solar system, and use information to make a claim about the processes within stars that produce elements based upon the mass and age of the star.	Use mathematical and computational thinking to predict the motion between objects in the solar system due to simple changes in their interactions, and obtain and evaluate information to describe how the processes to produce elements within stars depends on the mass and age of the star.	Use mathematical and computational thinking to predict the motion among numerous objects in the solar system due to changes in their interactions, and to obtain, evaluate, and communicate information to describe how the processes to produce elements within stars depends on the mass and age of the star.
Revision to PLD HS -10	10. Use a model to identify how variations in energy flow within each of Earth's systems change the climate and analyze data to provide evidence that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	Develop a model to describe how variations in energy flow between Earth's systems cause changes in climate and analyze data to make a claim based upon evidence that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	Evaluate and revise a model to describe how variations in energy flow among all of Earth's systems result in changes in climate and analyze data to evaluate a claim based upon evidence that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

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Revision to PLD HS -11	11. Construct an explanation for the relationship between human activity and the availability of either natural resources, natural hazards or climate change; and identify data from climate models that describes the rate of change in climate and its impacts on Earth's systems.	Construct an explanation for the relationship between human activity and the availability of natural resources, natural hazards and climate change; and analyze data from climate models to predict the rate of change in climate and its impacts on Earth's systems.	Construct an explanation for how future human activity will positively or negatively influence the availability of natural resources, natural hazards and climate change and analyze data from climate models to identify how limitations in the models affect the predicted the rate of change in climate and its impacts on Earth's systems.
Engineering and Design			
Revision to PLD HS -12	12. Identify a solution to a complex real-world problem based on specific criteria, trade-offs and constraints that accounts for societal needs and wants.	Design a solution to a complex real-world problem based on specific criteria, trade-offs and constraints that accounts for consideration of societal needs and wants.	Evaluate and revise a solution to a complex real-world problem based on specific criteria, trade-offs and constraints that accounts for societal needs and wants.