Grade 4 -Science Curriculum

PS = Physical Science LS = Life Science
ESS = Earth & Space Science ETS = Engineering, Technology, and Society

Standard PS2 - Motion and Stability: Forces and Interactions			
Forces and Motion		**Resource(s)**	**Assessments**
4.PS2.A.1	**Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheets	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
4.PS2.A.2	**Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.]		
Types of Interactions			
4PS2.B.1	**Plan and conduct a fair test to compare and contrast the forces (measured by a spring scale in Newtons) required to overcome friction when an object moves over different surfaces. (i.e., rough/smooth)**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters

		Resource(s)	Assessments
4.PS2.B.2	**Predict how changes in either the amount of force applied to an object or the mass of the object affects the motion (speed and direction) of the object**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
Standard PS3- Energy			
Definitions of Energy			
4.PS3.A.1	**Use evidence to construct an explanation relating the speed of an object to the energy of that object**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
Conservation of Energy and Energy Transfer			
4.PS3.B.1	**Provide evidence to construct an explanation of an energy transformation (e.g. temperature change, light, sound, motion, and magnetic effects)**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
4.PS3.B.2	**Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters

	[Clarification Statement: Examples of devices could include electric circuits that convert electrical energy into motion energy of a vehicle, light, or sound; and, a passive solar heater that converts light into heat. Examples of constraints could include the materials, cost, or time to design the device.]		
Relationship Between Energy and Forces		**Resource(s)**	**Assessments**
4.PS3.C.1	**Use models to explain that simple machines change the amount of effort force and/or direction of force.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Memorization of a simple machine is not the focus. This concept builds on the application of force and motion.]		
Standard PS4- Waves and Their Applications in technologies for Information Transfer			
Wave Properties			
4.PS4.A.1	**Develop a model of waves to describe patterns in terms of amplitude or wavelength and that waves can cause objects to move.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves.]		

Standard LS1 - From Molecules to Organisms: Structure and Processes			
Structure and Function		**Resource(s)**	**Assessments**
4.LS1.A.1	**Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and plant reproduction.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet Missouri Department of Conservation - *Nature Unleashed* and other resources	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin]		
Information Processing		**Resource(s)**	**Assessments**
4.LS1.D.1	**Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet Missouri Department of Conservation - *Nature Unleashed* and other resources	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Emphasis is on systems of information transfer..]		

Standard ESS1- Earth's Place in the Universe			
The History of Planet Earth		**Resource(s)**	**Assessments**
4.ESS1.C.1	**Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters

	[Clarification Statement: Examples of evidence from patterns could include rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; and, a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock.]		
Standard ESS2- Earth's Systems			
Earth Materials and Systems		**Resource(s)**	**Assessments**
4.ESS2.A.1	**Plan and conduct scientific investigations or simulations to provide evidence how natural processes (e.g. weathering and erosion) shape Earth's surfaces.**	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
Plate Tectonics and Large-Scale Systems		**Resource(s)**	**Assessments**
4.ESS2.B.1	**Analyze and interpret data from maps to describe patterns of Earth's features.** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet Google Earth	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Maps can include topographic maps of Earth's land and ocean floor, as well as maps of the locations of mountains, continental boundaries, volcanoes, and earthquakes.]		

Standard ESS3- Earth and Human Activity			
Natural Resources		**Resource(s)**	**Assessments**
4.ESS3.A.1	**Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans** (See Clarification Statement that follows.)	Discovery Education Generation Genius IXL Skills Super Teacher Worksheet	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
	[Clarification Statement: Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity.]		
Standard ETS1- Engineering Design			
Defining and Delimiting Engineering Problems		**Resource(s)**	**Assessments**
4.ETS1.A.1	**Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.**	Teacher provided resources on the engineering design process with examples used during class discussion and direction.	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters
Developing Possible Solutions			
4.ETS1.B.1	**Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**	Teacher provided resources on the engineering design process with examples used during class discussion and direction.	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters

Optimizing the Solution Process			
4.ETS1.C.1	**Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.**	Teacher provided resources on the engineering design process with examples used during class discussion and direction.	Exit Tickets IXL Skills Classroom Quizzes Laboratory Investigations Student Projects/Posters