	Biotechnology: In Living Color	Mysterious Mixtures	Exploring Enzymes	Kitchen DNA with a Twist of Inquiry	GenomeCache®
	Scientific and Engineering Practices				
Asking questions (for science) and defining problems (for engineering)		◉	◉	◉	
Developing and using models			◉		◉
Planning and carrying out investigations	◉	◉	◉	◉	
Analyzing and interpreting data	◉	◉	◉	◉	
Engaging in argument from evidence		◉		◉	
Obtaining, evaluating, and communicating information	◉	◉	◉	◉	◉
	Crosscutting Concepts				
Cause and Effect	◉	◉	◉	◉	
Scale, proportion, and quantity					◉
Structure and function		◉	◉	◉	

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	7th Grade Standards				
2. Gather and synthesize information to explain how prokaryotic and eukaryotic cells differ in structure and function, including the methods of asexual and sexual reproduction.				◉	
3. Construct an explanation of the function (e.g., mitochondria releasing energy during cellular respiration) of specific cell structures (i.e., nucleus, cell membrane, cell wall, ribosomes, mitochondria, chloroplasts, and vacuoles) for maintaining a stable environment.				◉	

5. Examine the cycling of matter between abiotic and biotic parts of ecosystems to explain the flow of energy and the conservation of matter. A. Obtain, evaluate, and communicate information about how food is broken down through chemical reactions to create new molecules that support growth and/or release energy as it moves through an organism.			◉		
13. Construct an explanation from evidence to describe how genetic mutations result in harmful, beneficial, or neutral effects to the structure and function of an organism.					◉
	8th Grade Standards				
3. Construct explanations based on evidence from investigations to differentiate among compounds, mixtures, and solutions. A. Collect and analyze information to illustrate how synthetic materials (e.g., medicine, food additives, alternative fuels, plastics) are derived from natural resources and how they impact society.		◉			
	Physical Science Standards				
4. Analyze and interpret data using acid-base indicators (e.g., color-changing markers, pH paper) to distinguish between acids and bases, including comparisons between strong and weak acids and bases.		◉			
	Biology Standards				
1. Use models to compare and contrast how the structural characteristics of carbohydrates, nucleic acids, proteins, and lipids define their function in organisms.				◉	
2. Obtain, evaluate, and communicate information to describe the function and diversity of organelles and structures in various types of cells (e.g., muscle cells having a large amount of mitochondria, plasmids in bacteria, chloroplasts in plant cells).				◉	
3. Formulate an evidence-based explanation regarding how the composition of deoxyribonucleic acid (DNA) determines the structural organization of proteins. B. Obtain, evaluate, and communicate information that explains how advancements in genetic technology (e.g., Human Genome Project, Encyclopedia of DNA Elements [ENCODE] project, 1000 Genomes Project) have contributed to the understanding as to how a genetic change at the DNA level may affect proteins, and in turn, influence the appearance of traits.					◉