

**New York State Testing Program**  
**P-12 Science Learning Standards**  
**Performance Level Descriptions**  
**Physical Science: Chemistry**  
**Fall 2024**



## How were the PLDs developed?

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## How can the PLDs be used in Instruction?

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Physical Science: Chemistry Performance Level Descriptions

Topic and PE	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
<p>Structure and Properties of Matter</p> <p>HS-PS2-6</p>	<p>Compare, integrate, and evaluate scientific and technical information about the structure and function of various designed materials at the particulate-level to optimize the functionality of a product.</p>	<p>Communicate scientific and technical information about why the particulate-level structure is important in the functioning of designed materials.</p>	<p>Use scientific or technical information to explain how the particulate-level structure is important to the functioning of designed material(s).</p>	<p>Use information to describe how the particulate-level structure of designed material(s) supports its function.</p>	<p>Use information to identify a particulate-level structure or-</p>



## Physical Science: Chemistry Performance Level Descriptions

Topic and PE	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
Chemical Reactions HS-PS1-6	Optimize the design of a chemical system by explaining how multiple changes to experimental conditions will increase the amounts of products in a system at equilibrium.	Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.	Explain how a change in the design of a chemical system and/or experimental conditions would affect the amount of products and/or reactants at equilibrium.	Identify a modification to the design or to the experimental conditions of a chemical system and/or describe the effect on the products and/or reactants at equilibrium.	Use information provided to identify a change in the experimental conditions that would modify the amount of products or reactants at equilibrium.
Chemical Reactions HS-PS1-7	Create and revise mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	Construct a mathematical representation and/or calculate a quantity (e.g. # of particles, volume of a gas, etc.), using the relationship that atoms and/or mass are conserved during a chemical reaction.	Use or complete a mathematical representation to demonstrate that atoms and/or mass are conserved during a chemical reaction.	Use information provided to identify mathematical representations that demonstrate atoms and/or mass are conserved during a chemical reaction.
Chemical Reactions HS-PS1-11 (NYSED)	Plan and conduct multiple investigations to compare, explain, and predict properties and behaviors of acids and bases.	Plan and conduct an investigation to compare properties and behaviors of acids and bases.	Given a plan, conduct an investigation <u>or</u> given the results of an investigation or provided information, compare the properties and/or behaviors of acids and/or bases.	Given the results of an investigation or provided information, calculate a quantity or make a claim to identify a property and/or behavior of an acid or base.	Given an investigation plan or provided information, select appropriate tools and/or materials that could be





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