

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> |
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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 |
|--|--|--|---|--|--|
| 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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