

High School Chemistry

Proficiency Scale

HS.P1U1.1 [Develop and use models](#) to explain the relationship of the structure of atoms to patterns and properties observed within the Periodic Table and describe how these models are revised with new evidence.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will use models to explain the relationship of the structure of atoms to patterns and properties observed within the Periodic Table and describe how these models are revised with new evidence.
Partially Proficient 2	Students will develop models to explain the relationship of the structure of atoms to patterns and properties observed within the Periodic Table and describe how these models are revised with new evidence.
Proficient 3	Students will develop and use models to explain the relationship of the structure of atoms to patterns and properties observed within the Periodic Table and describe how these models are revised with new evidence.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Plus HS+C.P1U1.1 Develop and use models to demonstrate how changes in the number of subatomic particles (protons, neutrons, electrons) affect the identity, stability, and properties of the element.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will use models to demonstrate how changes in the number of subatomic particles (protons, neutrons, electrons) affect the identity, stability, and properties of the element.
Partially Proficient 2	Students will develop models to demonstrate how changes in the number of subatomic particles (protons, neutrons, electrons) affect the identity, stability, and properties of the element.
Proficient 3	Students will develop and use models to demonstrate how changes in the number of subatomic particles (protons, neutrons, electrons) affect the identity, stability, and properties of the element.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS+C.P1U1.2 [Obtain, evaluate, and communicate](#) the qualitative evidence supporting claims about how atoms absorb and emit energy in the form of electromagnetic radiation.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will obtain qualitative evidence supporting claims about how atoms absorb and emit energy in the form of electromagnetic radiation.
Partially Proficient 2	Students will obtain and evaluate the qualitative evidence supporting claims about how atoms absorb and emit energy in the form of electromagnetic radiation.
Proficient 3	Students will obtain, evaluate, and communicate the qualitative evidence supporting claims about how atoms absorb and emit energy in the form of electromagnetic radiation.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS+C.P1U1.4 [Develop and use models to predict and explain](#) forces within and between molecules.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will use models to predict and explain forces within and between molecules.
Partially Proficient 2	Students will develop models to predict and explain forces within and between molecules.
Proficient 3	Students will develop and use models to predict and explain forces within and between molecules.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

Plus HS+C.P1U3.8 [Engage in argument from evidence](#) regarding the ethical, social, economic, and/or political benefits and liabilities of fission, fusion, and radioactive decay.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will identify the ethical, social, economic, and/or political benefits and liabilities of fission, fusion, and radioactive decay.
Partially Proficient 2	Students will use evidence regarding the ethical, social, economic, and/or political benefits and liabilities of fission, fusion, and radioactive decay.
Proficient 3	Students will engage in argument from evidence regarding the ethical, social, economic, and/or political benefits and liabilities of fission, fusion, and radioactive decay.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS. E1.U3.14 [Engage in argument from evidence](#) about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how they influence each other.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can identify the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how they influence each other.
Partially Proficient 2	Students will identify the evidence about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how they influence each other.
Proficient 3	Students will engage in arguments from evidence about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how they influence each other.

Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught
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Proficiency Scale

HS.P1U3.4 [Obtain, evaluate, and communicate information](#) about how the use of chemistry related technologies have had positive and negative ethical, social, economic, and/or political implications.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will obtain information about how the use of chemistry related technologies have had positive and negative ethical, social, economic, and/or political implications.
Partially Proficient 2	Students will obtain and evaluate information about how the use of chemistry related technologies have had positive and negative ethical, social, economic, and/or political implications.
Proficient 3	Students will obtain, evaluate, and communicate information about how the use of chemistry related technologies have had positive and negative ethical, social, economic, and/or political implications.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS.P4U1.8 [Engage in argument from evidence](#) that the net change of energy in a system is always equal to the total energy exchanged between the system and the surroundings.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can identify that the net change of energy in a system is always equal to the total energy exchanged between the system and the surroundings.
Partially Proficient 2	Students will use evidence that the net change of energy in a system is always equal to the total energy exchanged between the system and the surroundings.

Proficient 3	Students will engage in arguments from evidence that the net change of energy in a system is always equal to the total energy exchanged between the system and the surroundings.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS. E1.U3.14 [Engage in argument from evidence](#) about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how they influence each other

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can identify the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how
Partially Proficient 2	Students will use evidence about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how
Proficient 3	Students will engage in arguments from evidence about the availability of natural resources, occurrence of natural hazards, changes in climate, and human activity and how
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS. E2.U1.15 [Construct an explanation based on evidence](#) to illustrate the role of nuclear fusion in the life cycle of a star

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can identify the role of nuclear fusion in the life cycle of a star

Partially Proficient 2	Students will construct an explanation to illustrate the role of nuclear fusion in the life cycle of a star
Proficient 3	Students will construct an explanation based on evidence to illustrate the role of nuclear fusion in the life cycle of a star
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS.P1U1.2 [Develop and use models](#) for the transfer or sharing of electrons to predict the formation of ions, molecules, and compounds in both natural and synthetic processes.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will use models for the transfer or sharing of electrons to predict the formation of ions, molecules, and compounds in both natural and synthetic processes.
Partially Proficient 2	Students will develop models for the transfer or sharing of electrons to predict the formation of ions, molecules, and compounds in both natural and synthetic processes.
Proficient 3	Students will develop and use models for the transfer or sharing of electrons to predict the formation of ions, molecules, and compounds in both natural and synthetic processes.

Proficiency Scale

HS+C.P1U1.5 [Plan and carry out investigations](#) to test predictions of the outcomes of various reactions, based on patterns of physical and chemical properties.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students will carry out investigations of various reactions, based on patterns of physical and chemical properties

Partially Proficient 2	Students will plan and carry out investigations to test outcomes of various reactions, based on patterns of physical and chemical properties
Proficient 3	Students will plan and carry out investigations to test predictions of the outcomes of various reactions, based on patterns of physical and chemical properties
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS.P1U1.3 [Ask questions, plan, and carry out investigations](#) to explore the cause and effect relationship between reaction rate factors.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can identify the cause and effect relationship between reaction rate factors.
Partially Proficient 2	Students will carry out investigations to explore the cause and effect relationship between reaction rate factors.
Proficient 3	Students will ask questions, plan, and carry out investigations to explore the cause and effect relationship between reaction rate factors.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS+C.P1U1.7 [Use mathematics and computational thinking](#) to determine stoichiometric relationships between reactants and products in chemical reactions.

No Attempt Made 0	No evidence
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Minimally Proficient 1	Students will use mathematics and computational thinking to determine stoichiometric relationships between reactants and products in chemical reactions.
Partially Proficient 2	Students will use mathematics and computational thinking to determine stoichiometric relationships between reactants and products in chemical reactions.
Proficient 3	Students will use mathematics and computational thinking to determine stoichiometric relationships between reactants and products in chemical reactions.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS+C.P1U1.3 [Analyze and interpret data](#) to develop and support an explanation for the relationships between kinetic molecular theory and gas laws.

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can utilize data to develop and support an explanation for the relationships between kinetic molecular theory and gas laws.
Partially Proficient 2	Students will analyze data to develop and support an explanation for the relationships between kinetic molecular theory and gas laws.
Proficient 3	Students will analyze and interpret data to develop and support an explanation for the relationships between kinetic molecular theory and gas laws.
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught

Proficiency Scale

HS+C.P1U1.6 [Construct an explanation, design a solution, or refine the design](#) of a chemical system in equilibrium to maximize production

No Attempt Made 0	No evidence
Minimally Proficient 1	Students can model a chemical system in equilibrium to maximize production
Partially Proficient 2	Students can construct an explanation or design a solution of a chemical system in equilibrium to maximize production
Proficient 3	Students can construct an explanation, design a solution, or refine the design of a chemical system in equilibrium to maximize production
Highly Proficient 4	In addition to proficient, 3, the student demonstrates in depth inferences and applications that go beyond what was taught