Science Grade 9
Physical Science: Atoms and Elements (AE)

Outcome	1 - Beginning The student is having difficulty demonstrating an understanding of the concept.	2 – Approaching The student is developing an understanding of the concept.	3 – Meeting The student consistently demonstrates an understanding of the concept or has achieved the concept.	4- Exemplary The student independently demonstrates an in-depth understanding of the concept, and consistently applies this knowledge to new situations.
AE9.1 **Distinguish between physical and chemical properties of common substances, including those found in household, commercial, industrial, and agricultural applications.**	• I can identify some physical and chemical properties of common substances that are typically used for **A FEW** of the following applications: household, commercial, industrial, and agricultural.	• I can **identify some physical and chemical properties** of common substances that are typically used for **MANY** of the following applications: household, commercial, industrial, and agricultural.	• I can **differentiate the physical and chemical properties** of common substances that are typically used for **ALL** of the following applications: household, commercial, industrial, and agricultural.	• I can **classify** common substances typically used for **ALL** of the following applications: household, commercial, industrial, and agricultural, according to their physical and/or chemical properties.
Comments				

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AE9.2 **Analyze historical explanations of the structure of matter up to and including:** ○ **Dalton model** ○ **Thomson model** ○ **Rutherford model** ○ **Bohr model of the atom.**	• With help, I can represent **some of the major historical atomic models** of the atom, including Dalton model, Thomson model, Rutherford model, **AND** Bohr model. • **With help**, I can **describe** historical explanations for the structure of matter up to and including: Dalton model, Thomson model, Rutherford model, **OR** Bohr model.	• I can represent **some of the major historical atomic models** of the atom, including Dalton model, Thomson model, Rutherford model, **AND** Bohr model. • I can **describe historical explanations** for the structure of matter up to and including: Dalton model, Thomson model, Rutherford model, **OR** Bohr model.	• I can **represent** the major historical atomic models of the atom, including Dalton model, Thomson model, Rutherford model, **AND** Bohr model. • I can **compare historical explanations** for the structure of matter up to and including: Dalton model, Thomson model, Rutherford model, **AND** Bohr model.	• I can **compare** the major historical atomic models of the atom, including Dalton model, Thomson model, Rutherford model, **AND** Bohr model. • I can **propose the strengths and limitations of models** in science using historical and contemporary examples of atomic models.
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AE9.3 **Demonstrate an understanding of the classification of pure substances (elements and compounds), including the development and nature of the Periodic Table.**	• **With help**, I can classify pure substances as being either elements or compounds.	• I can **classify** pure substances as either elements or compounds.	• I can **justify my reasons** for classifying pure substances as either elements or compounds.	• I can **develop methods** for classifying pure substances as either elements or compounds, and **explain my reasoning**.
	• **With help**, I can describe the different structures and patterns in the Periodic Table.	• I can **describe the different structures and patterns in the Periodic Table.**	• I can **describe the development of the Periodic Table**, including its structures and patterns.	• I can **compare the modern periodic table to alternative arrangements** that convey information about the classification of elements.
	• **With help**, I can use the Periodic Table to find information on an element.	• I can use the Periodic Table **to find information on an element**.	• I can use the Periodic Table to **differentiate information on the elements.**	• I can use the different structures and patterns in the Periodic Table to **predict the properties of an element or family of elements.**
Comments				