Grade 8 Science Performance Level Descriptors

Advanced: Students demonstrate superior performance on challenging subject matter. In addition to demonstrating a broad and in-depth understanding and application of all skills at the Proficient level, students scoring at the **Advanced** level typically evaluate, revise, or develop a model from evidence, or apply models to complex concepts involving conservation of matter in chemical reactions, patterns in the structure and function of waves, or stability and change at varying scales in Earth's systems. Students design, evaluate, or modify investigations about stability and change of forces and motion, or analyze and draw conclusions from patterns in data about common ancestry and diversity of organisms, the geologic history of Earth, or natural hazards. Students modify, synthesize, or apply a design solution, or evaluate evidence of relationships within a design solution in various systems involving energy transfer in chemical reactions or forces in collisions. Students analyze, infer, relate, or identify complex relationships within a system to construct or evaluate explanations for evidence of anatomy and common ancestry of organisms, or aspects of Earth systems including geologic history, materials and processes, natural resources, or human impacts on those systems using the concept of patterns in cause and effect relationships or the concept of scale and proportion.

Proficient: Students demonstrate mastery over appropriate grade-level subject matter and readiness for the next grade level. Students scoring at the **Proficient** level typically make predictions about, describe, develop, or use a given model involving conservation of matter in chemical reactions, patterns in the structure and function of waves, or stability and change at varying scales in Earth's systems. Students identify, describe, or explain how to plan or perform investigations about stability and change of forces and motion, or identify and apply patterns in data about common ancestry and diversity of organisms, the geologic history of Earth, or natural hazards. Students use, describe, or explain a design solution, or identify evidence of relationships within a design solution in various systems involving energy transfer in chemical reactions or forces in collisions. Students construct explanations by identifying, describing, or comparing evidence of anatomy and common ancestry of organisms, or aspects of Earth systems including geologic history, materials and processes, natural resources, or human impacts on those systems using the concept of patterns in cause and effect relationships or the concept of scale and proportion.

Basic: Students demonstrate partial mastery of the essential knowledge and skills appropriate to their grade level. Students scoring at the **Basic** level identify or describe basic components or concept(s) of a model involving conservation of matter in chemical reactions, patterns in the structure and function of waves, or stability and change at varying scales in Earth's systems. Students identify or describe basic steps or processes within investigations about stability and change of forces and motion, or identify and define patterns in data about common ancestry and diversity of organisms, the geologic history of Earth, or natural hazards. Students identify components of a design solution or describe simple relationships within a design solution in various systems involving energy transfer in chemical reactions or forces in collisions. Students identify or describe basic relationships shown in

evidence of anatomy and common ancestry of organisms, or aspects of Earth systems, including geologic history, materials and processes, natural resources, or human impacts on those systems using the concept of patterns in cause and effect relationships or the concept of scale and proportion.

Below Basic: Students have not performed at least at the Basic level. Students scoring at the **Below Basic** level should be given comprehensive science instruction.