Achievement Level Descriptors for Science—Grade 8

Achievement Level I

Students performing at this level do not have sufficient mastery of knowledge and skills in this subject area to be successful at the next grade level.

Students performing at Achievement Level I demonstrate insufficient knowledge and skills in this subject area to be successful at the next grade level. Students demonstrate partial understanding of some basic principles of scientific inquiry and technological design; basic characteristics of water; chemical changes in matter; some factors affecting biological and geological evolution; some basic structures of an animal cell; micro-organisms that cause diseases.

Achievement Level II

Students performing at this level demonstrate inconsistent mastery of knowledge and skills in this subject area and are minimally prepared to be successful at the next grade level.

Students performing at Achievement Level II demonstrate emerging knowledge and skills in this subject area and are minimally prepared at grade level. Students demonstrate limited understanding of basic principles and methodologies of scientific inquiry and technological design; the distribution, use, and properties of water and the water cycle; some properties of pure substances and the recognition of chemical changes in matter; factors affecting biological and geological evolution which cause change over time; the basic structures and some functions of an animal cell and some single-celled organisms; simple relationships between micro-organisms and diseases, and basic applications of biotechnology.

Achievement Level III

Students performing at this level consistently demonstrate mastery of grade-level subject matter and skills and are well prepared for the next grade level.

Students performing at Achievement Level III demonstrate grade-level knowledge and skills. Students demonstrate a proficient level of understanding of principles and methodologies of scientific inquiry and technological design; the distribution, use, properties, quality and stewardship of water systems; the properties of pure substances, the recognition or measurement of chemical changes in matter, and impacts of chemicals on humans; processes that affect biological and geological evolution, and how technologies can be used to monitor changes over time; the structures, functions, and processes of an animal cell, and the variety of single-celled organisms; relationships between micro-organisms and disease, human impacts on disease control, and the applications of biotechnology.

Achievement Level IV

Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient at grade-level work.

Students performing at Achievement Level IV consistently demonstrate skills and knowledge at grade level. Students demonstrate a considerable understanding and evaluation of the application of principles and methodologies of scientific inquiry and technological design; relationships and unifying concepts of the distribution, use, properties, quality and stewardship of water systems; the application of the properties of pure substances, the recognition, measurement, and prediction of chemical changes in matter, and impacts of chemicals on humans; relationships and unifying concepts of the processes that affect biological and geological evolution, and how technologies can be used to monitor and predict changes over time; cellular structures, functions, and processes and explain how all three are interrelated and the variety of single-celled organisms; relationships between micro-organisms and disease, human impacts on disease control, biotechnology and apply them to real-world situations.

HSP-C-018
October 2, 2008