

Life Sciences for Grades 7-12 (Ed 612.25) Self-Assessment Worksheet

Ed 612.25 Life Sciences for Grades 7-12.

Directions: This matrix worksheet should be completed by the program. It should contain information that serves as an index or guide for the reviewers as they review all evidence provided. Evidence referenced on this worksheet should be clearly marked according to the standards. The same piece of evidence may meet more than one standard. Please reference specific parts of evidence whenever possible, particularly for large pieces of evidence.

Ed 612.25 <u>Life Sciences for Grades 7-12</u> INSTITUTION NAME: _____ _____	DESCRIPTION OF HOW THE PROGRAM ADDRESS THE STANDARD. INDICATE THE RELATIONSHIP TO ED 610.02 PROFESSIONAL EDUCATION STANDARDS, IF ANY.	DESCRIPTION OF THE ASSESSMENT SYSTEM USED TO PROVIDE EVIDENCE AND DATA AND TO INFORM CONTINUOUS IMPROVEMENT.	COMPLETED BY: INITIALS AND DATE]
(a) A teacher preparation program in life sciences for grades 7-12 shall meet the science program general requirements of Ed 507.29(c).			
(b) The life sciences program for grades 7-12 shall provide the teaching candidate with the skills, competencies and knowledge gained through a combination of academic and supervised practical experience in the following areas:			
(1) In the area of fundamental content knowledge, the candidate shall have the ability to:			
a. Explain concepts, solve problems, use models, and perform both field and laboratory experiences in the following fundamental areas of life science: 1. Structure and functions, from molecules to organisms, as follows: (i) Evidence for structure of DNA determining structure of proteins; (ii) Hierarchical organization of interacting systems; and (iii) Feedback mechanisms that ensure homeostasis, including, but not limited to human systems;			

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<p>2. Inheritance and variation of traits as follows:</p> <p>(i) Role of mitosis to maintain complex organisms;</p> <p>(ii) Role of DNA and chromosomes in coding instructions that are passed through generations;</p> <p>(iii) New genetic combinations are a result of meiosis and mutations; and</p> <p>(iv) Statistics and probability to explain the variation and distribution of expressed traits;</p>			
<p>3. Matter and energy in organisms and ecosystems as follows:</p> <p>(i) Role of photosynthesis, respiration, and fermentation in the needs of organisms as well as in the cycling of carbon in the biosphere, atmosphere, hydrosphere and geosphere;</p> <p>(ii) Carbon based molecules form the basis for life;</p> <p>(iii) Explain the cycling of matter and flow of energy in aerobic and anaerobic conditions; and</p> <p>(iv) Cycling of matter and flow of energy among organisms and ecosystems;</p>			

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<p>4. Interdependent relationships in ecosystems; and</p>			
<p>5. Natural selection and evolution;</p>			
<p>b. Apply mathematical modeling, statistical concepts, and manipulation of variables as they apply to life science; and</p>			
<p>c. Explain and solve problems in life science, incorporating the fundamental concepts of chemistry, physics, and earth space science, including basic concepts and laboratory techniques.</p>			