# Promotion Benchmarks: Science 7

| No. | Student Performance<br>(see Life Science Program of Studies for full description) | POS/SOL |
|---|---|---|
| 1 | Plan and conduct scientific investigations that fully develop the concepts and skills of scientific inquiry and experimental design and embrace the nature of science. | LS.1 a, c, e, f, g, h, i, j, k, l |
| 2 | Recognize the historical contributions that scientists have made to the concept that living things are composed of cells and understand that cells function to differentiate, sustain, and propagate the life of the cell itself. | LS.2 a-d |
| 3 | Investigate and understand that livings things show patterns of cellular organization that enable them to perform life functions and processes. | LS.3 a-b |
| 4 | Investigate and understand the basic needs of plants and animals and the factors that influence their life processes. | LS.4 a-d |
| 5 | Use characteristics to classify organisms within a hierarchical biological classification system. | LS.5 a-c |
| 6 | Investigate and understand the basic physical and chemical processes of photosynthesis and cellular respiration and their importance to plant and animal life. | LS.6 a-c |
| 7 | Investigate, observe, and analyze the flow of energy and matter within an ecosystem. | LS.7 a-d |
| 8 | Investigate and understand interactions between organisms within the same population. | LS.8 a-b |
| 9 | Investigate and understand interactions between populations of different species in biological communities. | LS.9 a-e |
| 10 | Recognize the difference between ecosystems and biomes and give examples of major biomes and the adaptations that enable organisms to survive in a given environment. | LS.10 a-c |
| 11 | Investigate and understand that organisms, populations, communities, and ecosystems are dynamic and change over time. | LS.11a-c |
| 12 | Investigate and understand the impact of human actions upon the environment. | LS.12 a-e |
| 13 | Understand the structure and function of DNA, genes, and chromosomes and how each functions in the transmission of genetic information from one generation to the next. | LS.13 a-g |
| 14 | Understand how environmental influences, as well as genetic variation, can lead to diversity of organisms over time; recognize that fossils are records of organisms and events in the Earth's history. | LS.14 a-c |
| 15 | Investigate and understand the location, structure, and major conservation, health, and safety issues related to Virginia's regional watershed systems and the importance of wetlands and estuaries to wildlife and humans. | LS.6.7 a-g |