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## MTEL®-Flex General Curriculum Multi-Subject Subtest—Basic Concepts and Principles of Life Science (Objective 0010)

### Objective 0010: Understand and apply basic concepts and principles of life science to interpret and analyze phenomena.

Objective 0010 includes the following descriptive statements:

1. Identify the basic characteristics and needs of living things (e.g., growth, reproduction, life cycles of common organisms).
2. Demonstrate knowledge of the basic concepts and processes related to energy flow in ecosystems and how organisms use energy.
3. Demonstrate knowledge of plant structures, functions, and processes (e.g., photosynthesis).
4. Demonstrate knowledge of the systems of the human body.
5. Recognize the basic principles of genetics and heredity.
6. Recognize how species adapt and evolve over time by the process of natural selection.
7. Analyze how organisms interact with one another and their environments.

MTEL®-Flex enables you to demonstrate your functional content knowledge of the MTEL General Curriculum Multi-Subject Subtest test objectives through submitting materials on a topic that you select. Your submission will be evaluated on the extent to which you demonstrate the depth of your subject matter knowledge of the MTEL-Flex General Curriculum Multi-Subject Subtest test objective you selected during registration.

MTEL-Flex involves answering 4 prompts and writing an analysis in which you demonstrate your knowledge of the content assessed by the test objective and further elaborated by the descriptive statement(s) you have selected in relation to your stated topic.

Your responses to the first 4 prompts should be **no more than 1 single-spaced page** and your written analysis should be **no more than 3 single-spaced pages**. This instructions page does not count toward your page limits.

This template contains a [Prompt Section](#) and a [Written Analysis Section](#). Once both sections are completed, upload the template to the Pearson ePortfolio System.

For more information about the MTEL-Flex Assessment, preparing your materials for submission, and scoring of your submission, refer to the MTEL-Flex Assessment Handbook.

## Prompt Section

Respond to the prompts below (**no more than 1 page, including prompts**) by typing your responses in Arial 11-point, single-spaced font, within the brackets following each prompt. Do not delete or alter the prompts. Only the first page will be evaluated. The previous page of instructions and the written analysis that follows does not count toward your page limit. Your submission cannot contain hyperlinks to any materials.

1. Indicate the numbers of the descriptive statements for the test objective that you will address in your written submission.

[ The written submission will address descriptive statements 1, 2, and 3. ]

2. Indicate a Life Science topic applicable for pre-kindergarten through eighth grade found in the Massachusetts Science and Technology/Engineering Curriculum Framework – 2016 and/or from the Disciplinary Core Idea Progression Matrix (pp. 134-137) included in the Massachusetts Science and Technology/Engineering Curriculum Framework – 2016 to develop your topic and address the selected descriptive statements.

[ LS1. From Molecules to Organisms: Structures and Processes

4-LS1-1. Construct an argument that animals and plants have internal and external structures that support their survival, growth, behavior, and reproduction. ]

3. Describe the topic addressed.

[ The topic will be a description and analysis of how plants use internal and external structures to complete functions and processes conducive to surviving, growing, and reproducing. ]

4. List sources used to prepare submission.

[ Beck, C. B. (2010). *An Introduction to Plant Structure and Development: Plant Anatomy for the Twenty-First Century*. (n.p.): Cambridge University Press.

Burnie, D. (2011). *DK Eyewitness Books: Plant*. United Kingdom: DK Publishing.  
4-LS1-1 from molecules to organisms: Structures and processes. 4-LS1-1 From Molecules to Organisms: Structures and Processes | Next Generation Science Standards. (n.d.). Retrieved December 6, 2021, from <https://www.nextgenscience.org/pe/4-ls1-1-molecules-organisms-structures-and-processes>.

Wanjie, A. (2013). *The Basics of Plant Structures*. United States: Rosen Publishing Group. ]

## Written Analysis Section

Type your analysis (**no more than 3 pages, including the prompt**) in Arial 11-point, single-spaced font, within the brackets following the prompt. If appropriate, you may include tables, charts, graphs, or other diagrams that you have prepared by inserting them into your analysis. However, the total length of your analysis, including any graphic elements, may not exceed 3 pages. The previous pages of instructions and prompts do not count toward your page limit. Your submission cannot contain hyperlinks to any materials.

Prepare an organized, developed analysis on a topic related to Objective 0010.  
[ Analysis text here; can go up to page 3 of 3.... ]