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# MTEL®-Flex Middle School Mathematics— Mathematics Curriculum Framework Grades 5–8 (Objective 0014)

## Objective 0014: Prepare an organized, developed analysis on a topic cited from the Massachusetts Mathematics Curriculum Framework grades 5–8.

Objective 0014 includes the following descriptive statements:

1. Identify related prerequisite skills and explain their relevance to the provided standard.
2. Create appropriate representations to model and describe the standard.
3. Critique whether a given situation aligns to the standard.

MTEL®-Flex enables you to demonstrate your functional content knowledge of the MTEL Middle School Mathematics test objectives through submitting materials on a topic that you select. **You must select a content standard from the Mathematics Curriculum Framework appropriate for grades 5–8 and develop an analysis on a mathematical problem aligned to the content standard. Your analysis must address the three descriptive statements listed above.**

Your submission will be evaluated on the extent to which you demonstrate the **depth of your subject matter knowledge** of the MTEL-Flex Middle School Mathematics test objective you selected during registration.

MTEL-Flex involves answering 5 prompts and writing an analysis in which you demonstrate your knowledge of the content assessed by the test objective and further elaborated by the required descriptive statements in relation to your stated topic.

Your responses to the first 5 prompts should be **no more than 2 single-spaced pages** 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 2 pages, 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 do not count toward your page limit. Your submission cannot contain hyperlinks to any materials.

1. Indicate one mathematics topic that you have selected from within the domains identified below. Please refer to the Massachusetts Mathematics Curriculum Framework – 2017 (pp. 50–71) for details.

- Ratios and Proportional Relationships (6.RP) – p. 57
- Expressions and Equations (6.EE) – pp. 58–59
- Statistics and Probability (6.SP) – p. 60
- Ratios and Proportional Relationships (7.RP) – p. 63
- Expressions and Equations (7.EE) – p. 64
- Statistics and Probability (7.SP) – pp. 65–66
- Expressions and Equations (8.EE) – pp. 69–70
- Functions (8.F) – p. 70
- Statistics and Probability (8.SP) – p. 71

[ Functions (8.F) ]

2. Indicate one content standard from within the domain selected in Prompt #1. For example, you may select content standard 7.RP.A.3—Use proportional relationships to solve multi-step ratio, rate, and percent problems, from the “Ratios and Proportional Relationships” domain included in the Grade 7 Content Standards.

[ 8.F.B.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two ( $x$ ,  $y$ ) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. ]

3. Indicate at least two prerequisite skills related to the standard selected.

[ 1. Solving multi-step problems that involve rational numbers.  
2. Applying properties of operations to linear expressions.  
3. Describing and extending patterns using tables, graphs, word, and expressions. ]

4. Write a 1- to 3-sentence scenario describing a mathematical problem that aligns with the content standard you selected. The scenario you describe should be one that permits you to demonstrate the depth of your mathematics subject matter knowledge. The descriptive statements explain what information you must include to support your analysis of this scenario.

[ Increasing the height of a square prism increases its surface area. A function can model how the surface area of a square prism changes when its height increases from a value of 1 to  $h$ . ]

5. List sources used to prepare your submission.

[Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2022). *Elementary and middle school mathematics* (11th ed.). Pearson Education (US).]

Miles, R. H., & Williams, L. A. (2016). *The common core mathematics companion: The standards decoded, grades 6–8: What they say, what they mean, how to teach them.* Corwin. ]

## 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 of the scenario that you described in Prompt #4 in the Prompt Section to demonstrate the depth of your mathematics subject matter knowledge. In your analysis, make sure to do the following:

1. Identify related prerequisite skills and explain their relevance to the provided standard.
2. Create appropriate representations to model and describe the standard.
3. Critique how the mathematical problem described in your scenario aligns to the standard.

[ Analysis text here; can go up to page 3 of 3... ]