MTEL®-Flex General Curriculum Mathematics Subtest—Algebra as Generalized Arithmetic (Objective 0020)

Objective 0020: Understand algebra as generalized arithmetic.

Objective 0020 includes the following descriptive statements:

1. Recognize and apply the concepts of variable, function, equality, and equation to express relationships algebraically.
2. Manipulate simple algebraic expressions and solve linear equations and inequalities.
3. Justify algebraic manipulations by application of the properties of equality, the order of operations, the number properties, and the order properties.
4. Use algebra to solve word problems involving fractions, ratios, proportions, and percents.
5. Identify variables and derive algebraic expressions that represent real-world situations.

MTEL®-Flex enables you to demonstrate your functional content knowledge of the MTEL General Curriculum Mathematics 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 Mathematics 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.

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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 3, 4, and 5.]

2. Indicate one or more of the below Critical Areas for instructional time found in the Massachusetts Mathematics Curriculum Framework – 2017 to develop your topic and address the selected descriptive statements:
   - Grade 6 Critical Area #3 (p. 54)
   - Grade 7 Critical Areas #1 and #2 (p. 61)
   - Grade 8 Critical Areas #1 and #2 (p. 67)

[Critical Area #1 for Grade 7]

3. Describe the topic addressed.

[The topic will be teaching percents using algebraic expressions in Grade 7 – specifically the transition from calculating percents using proportions to calculating percents using equations involving decimals.]

4. List sources used to prepare submission.

[A. National Council of Teachers of Mathematics (NCTM). “Principles and Standards for School Mathematics”
B. Progression documents for the Common Core State Standards for Mathematics: Expressions and Equations grades 6-8 and Ratios and Proportional Relationships grades 6-7
C. Martin-Gay, Elayn. (2018). *Prealgebra & Introductory Algebra*. Available from: Pearson Learning & Development (5th Edition). Pearson Education (US).]

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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 0020.

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

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