
NYSTCE Flex Mathematics Template

Template Contents

This template for NYSTCE Flex Mathematics contains the following sections:

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Competency 0007: Pedagogical Content Knowledge

Competency 0007 from the NYSTCE Mathematics Framework includes the following performance expectations and performance indicators:

Performance Expectations

The New York State Mathematics teacher effectively applies pedagogical content knowledge across multiple content domains to design instruction to help students achieve a specific learning goal. The teacher analyzes student understanding and identifies potential and apparent student difficulties. The teacher applies knowledge of how students learn to develop an effective instructional strategy that includes multiple ways of representing mathematical concepts and procedures that will facilitate development of students' skills and their achievement of the desired learning goal.

Performance Indicators

- identifies the skills and conceptual understanding necessary for students to achieve a specific new learning goal
- demonstrates knowledge of methods for assessing student readiness for a specific new learning goal
- demonstrates knowledge of ways to connect students' prior learning to the new learning goal
- promotes coherence by connecting learning across the mathematical domains
- describes an appropriate and effective instructional strategy that includes multiple representations of essential/difficult concepts
- demonstrates knowledge of methods for assessing students' progress during the lesson toward achieving the learning goal

Template Instructions

NYSTCE Flex Mathematics enables you to demonstrate your functional content knowledge of NYSTCE Field 004 Mathematics by submitting materials on the following scenario:

As a mathematics teacher, you are preparing to teach a lesson to address an aspect of a standard from the New York State Learning Standards for Mathematics taught in Grade 7, Grade 8, or High School mathematics courses.

Your submission will be evaluated on the extent to which you demonstrate the **depth of your content knowledge** of NYSTCE Field 004 Mathematics Competency 0007.

NYSTCE Flex Mathematics involves responding to 2 prompts and writing an analysis in which you demonstrate your knowledge of the content assessed by the test competency.

Your responses to the first 2 prompts should be **no more than 1 single-spaced page of written text**. Your written analysis should be **no more than 3 single-spaced pages**. The competency text and template instructions do not count toward your page limits.

After you complete both the [Prompt Section](#) and the [Written Analysis Section](#), you will upload this completed template to the Pearson ePortfolio System.

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

Prompt Section

Referring to the scenario on the previous page, 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. The previous pages of competency text and instructions as well as the written analysis that follows do not count toward your page limit. Your submission cannot contain hyperlinks to any materials. Responses to all prompts are required, but only your written analysis will be evaluated.

1. **Background Information about the Learning Standard:** Select one learning standard from the [NYS Next Generation Mathematics Learning Standards](#) that is taught in Grade 7, Grade 8, or High School mathematics courses (pp. 89–139). Indicate a domain, a cluster heading within the selected domain, and a standard within the selected cluster heading.

Domain: [A1-A.SSE]

Cluster: [Write expressions in equivalent forms to reveal their characteristics]

Standard: [3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. C. Use the properties of exponents to rewrite exponential expressions]

2. **References:** List any additional sources used to prepare your submission.

[New York State Education Department. *New York State Next Generation Mathematics Learning Standards*, 2017, www.nysed.gov/sites/default/files/programs/standards-instruction/nys-next-generation-mathematics-p-12-standards.pdf.

Weiler, Kirk. N-Gen Math Algebra I. eMathInstruction, 2019, www.emathinstruction.com/n-gen-math-algebra-i/.

Larson, Ron, and Laurie Boswell. Big Ideas Math: Algebra 2. Big Ideas Learning, 2015.

Charles, Randall I., et al. *Algebra 2: Common Core*. Pearson, 2015.]

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 competency text, instructions, and prompts do not count toward your page limit. Your submission cannot contain hyperlinks to any materials.

Referring to the scenario from the template instructions and using the Learning Standard you identified in Prompt #1, prepare a response in which you:

1. state student learning objectives for a lesson aligned to the Learning Standard;
2. describe the conceptual understanding, skills, and prerequisite knowledge that students need in order to understand the content described by this learning standard;
3. describe an effective instructional strategy that promotes student understanding of the content described by the learning standard;
4. describe a method for helping students build a viable argument related to the learning standard; and
5. describe a method for assessing students' progress toward the goal of understanding the content described by the learning standard.

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