
NYSTCE Flex Teachers of Middle Childhood (Grade 5–Grade 9) Template

Template Contents

This template for NYSTCE Flex Multi-Subject: Teachers of Middle Childhood (Grade 5–Grade 9) Part Two: Mathematics (NYSTCE Flex Multi-Subject 5–9 Math) contains the following sections:

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Part Two: Mathematics Competency 0004: Analysis, Synthesis, and Application

Competency 0004 from the NYSTCE Multi-Subject: Teachers of Middle Childhood (Grade 5–Grade 9) Framework includes the following performance expectations and performance indicators:

Performance Expectations

The New York State Grade 5–Grade 9 Multi-Subject teacher accurately and effectively applies relevant content knowledge and pedagogical content knowledge in number and operations, operations and algebraic thinking, fractions, ratio and proportional reasoning, and measurement and data to analyze and synthesize assessment data about an individual student, identify conceptual or procedural errors, and provide a well-reasoned and accurate analysis of the student's mathematical knowledge and motivation. The teacher uses the assessment results and knowledge of how students learn to present an appropriate instructional approach that meets the needs of the student.

Performance Indicators

- a. analyzes and interprets samples of a student's work and other assessment data to monitor student progress and determine a student's strengths and areas of need in mathematics
- b. demonstrates knowledge of the content by identifying and analyzing any errors or misconceptions in work samples
- c. describes appropriate and effective content-specific instructional strategies, activities, or interventions to address a student's identified needs (e.g., skill deficits, lack of motivation)
- d. demonstrates the ability to generate real-world scenarios that illustrate specific mathematical concepts
- e. demonstrates the ability to justify the effectiveness of selected instructional strategies, activities, or interventions for promoting a student's mathematical understanding

Template Instructions

NYSTCE Flex Multi-Subject 5–9 Math enables you to demonstrate your functional content knowledge of NYSTCE Field 232 Multi-Subject: Teachers of Middle Childhood (Grade 5–Grade 9) Part Two: Mathematics Competency 0004 by submitting materials on the following scenario:

You will describe an assignment or class activity that aligns with a Grade 5–Grade 9 New York State Next Generation Mathematics Learning Standard. The assignment or class activity can be from a lesson you have delivered or from a planned lesson you may deliver in the future. It should include actual or simulated examples of student thinking that reflect the strengths and areas of need of a student who is learning information, concepts, and skills from the learning standard. The assignment or class activity should allow you to demonstrate depth in your understanding of content and instruction related to the learning standard. You will give evidence of your understanding by analyzing student thinking developed as a response to the assignment or class activity and then recommending an instructional intervention based on this response.

Your submission will be evaluated on the extent to which you demonstrate the **depth of your content knowledge** of NYSTCE Field 232 Multi-Subject: Teachers of Middle Childhood (Grade 5–Grade 9) Part Two: Mathematics Competency 0004.

NYSTCE Flex Multi-Subject 5–9 Math involves responding to 5 prompts and writing an analysis in which you demonstrate your knowledge of the content assessed by the test competency.

Your responses to the first 5 prompts should be **no more than 6 single-spaced pages of written text and graphics**. 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 6 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. 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:** Indicate a grade level, a domain, a cluster heading within the selected domain, and one or more content standards within the selected cluster for grades 5–8 or Algebra I from the [NYS Next Generation Mathematics Learning Standards](#) (pp. 67–124).

Grade Level: [7]

Domain: [The Number System (NS)]

Cluster: [NY-7.NS.2: Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.]

Standard: [NY-7.NS.2.a: Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.]

2. **Background Information about Student Learning:** Describe any skills or concepts that students have previously learned or have recently been studying that are related to the learning standard. If you are focusing on a planned lesson, describe related skills and concepts on which you would plan to provide instruction prior to the lesson. The purpose of this information is to describe concepts, skills, and knowledge students can use as they complete an assignment or class activity (to be introduced in the response to Prompt #3) and may be further developed as they progress toward its instructional goal. Refer to the study guide and the sample completed template for examples of appropriate background information tasks to include.

[Students have recently developed conceptual and procedural understanding of addition and subtraction with rational numbers both with and without using models. They have also applied these concepts to real-world contexts in problem-solving activities. Students will require fluency with multiplication of whole numbers for the learning activity, including in contexts involving distance, time, and speed. Students can be prepared for the upcoming lesson by activities focused on reviewing representations of integer addition and subtraction (such as 2-color counters, number lines, and algebraic expressions) to provide them with tools for exploring multiplication and division. Additional review of distance/time/speed word problems may also be beneficial to refresh students' memory leading up to the lesson.]

3. **Description of Assignment or Class Activity:** Describe an assignment or a class activity that aligns with the learning standard and supports a major instructional goal. The assignment or class activity can be part of a previously delivered lesson or part of a planned lesson, as noted above. Examples of assignments and class activities can include, but are not limited to, discussions, open-ended questions, word problems, numeric and algebraic representations, and the use of manipulatives. The assignment or class activity should be

effective in revealing students' strengths and areas for improvement in the selected standard, and it should also allow a teacher to use this information to develop academic intervention activities to support student learning. Your description of the assignment or class activity should primarily focus on instructional content; nonessential information related to its implementation (e.g., potential accommodations, grading criteria, expected implementation time) should not be included. The task should represent a substantial mathematics assignment or class activity, with opportunities for students to develop and describe a mathematical argument. Refer to the study guide and the sample completed template for examples of activity descriptions.

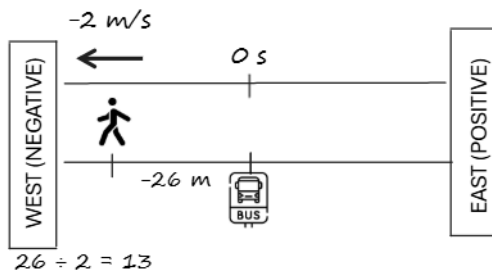
[During the planned learning activity, students will work in small groups to complete exercises involving units of time, distance, and speed in relation to pedestrians approaching or leaving a bus stop. At the beginning of the activity, the teacher will explain that an observer at the bus stop could define their own position as “0”, distance to their left as negative, and distance to their right as positive. The teacher will use visual aids to support this description and to provide students with a visual model to utilize when working. After the introductory explanation, students will form small groups and work together to form hypotheses about what a negative speed, time, or distance could represent in the context of observing people approaching or moving away from the bus stop. After sharing their groups' thoughts, students will use manipulatives and representations (e.g., number lines, drawings, acting out events) to model and solve problems involving negative quantities. At the end of the activity, students will work on a formative assessment that includes problems based on pedestrians walking to and from a bus stop. To complete the assessment, students will draw pictures representing the known quantities in each problem before computing a speed, distance, or time of interest. They will also explain and justify their reasoning in a brief written response to each item.]

4. **Sample Student Response:** Present a completed example of student work on the assignment or class activity that provides evidence of at least one mathematical strength and one area of need related to the lesson's topic. This can be an actual student work sample from a lesson you have delivered, or a sample created by you that represents anticipated student work for a planned lesson. The student response may include, but is not limited to, a summary or an excerpt of a student discussion; work performed for an exit ticket or a formative assessment; calculations, expressions, equations, drawings, and other student-created representations; and written text. The response may include images, and it should represent student thinking from a previously delivered or planned lesson. Refer to the study guide and the sample completed template for examples of work samples.

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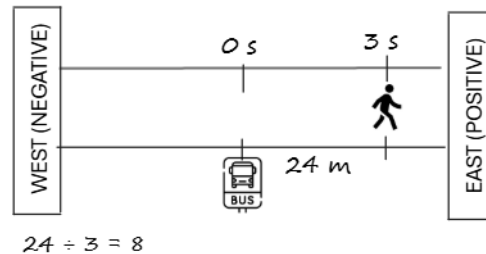
INSTRUCTIONS: For each situation, draw a picture with all of the information in the problem labeled. In each problem, the position of the observer will be represented by "0 meters" and the time the pedestrian passes the observer will be represented by "0 seconds". Write 2-3 sentences explaining how you know your answer is positive or negative.

Problem 1: What time is it when a pedestrian traveling westward at 2 m/s from the bus stop is 26 meters to the west of the bus stop?



The pedestrian is moving negative 10 meters every second and is negative compared to the observer so they passed the stop 13 seconds in the past. The time is positive 13 seconds.

Problem 2: A different pedestrian is 24 meters to the east of the bus stop. They will pass the bus stop in three seconds. What is the pedestrian's speed and direction when they pass the bus stop?



The pedestrian has to go 8 meters every second to go 24 meters in 3 seconds. They are east of the stop so they are moving positive 8 meters every second.

NOTE: In the Written Analysis section, you will analyze the strengths and areas of need in the above response and describe an instructional intervention that addresses the learning needs of the student(s) reflected in the response. Include a strategy for helping the student(s) build a viable argument (e.g., an explanation about why a solution is correct, a justification for a step in a solution process, a rationale for the validity of a result) that is related to the given learning standard.

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

["Grade 7, Unit 5, Lesson 8." *Open Up Resources 6–8 Math*, authored by Illustrative Mathematics, Open Up Resources, [access.openupresources.org/curricula/our6-8math/en/grade-7/unit-5/lesson-8/index.html](https://openupresources.org/curricula/our6-8math/en/grade-7/unit-5/lesson-8/index.html). Accessed 11 June 2026.]

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.

Using the sample student response developed for Prompt #4, prepare a response in which you:

1. identify a significant mathematical strength related to the standard you identified in Prompt #1 that is demonstrated in the sample student response, citing specific evidence from the response to support your assessment;
2. identify a significant area of need related to the standard you identified in Prompt #1 that is demonstrated in the sample student response, citing specific evidence from the response to support your assessment; and
3. describe an instructional intervention that you could use with the student(s) to build on student strengths and support student improvement in the identified area of need. The intervention should include a strategy for helping the student(s) build a viable argument related to the given standard.

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