

## Transcript – Vertical Learning Progression

Let's dig a little deeper. In the following videos, we'll explore the Revised TEKS (2012) to determine how conceptual understanding, computational fluency, automaticity, and mathematical proficiency are addressed.

It is important to note that we often associate computational fluency and mathematical proficiency with arithmetic. In this portion of the module, we are going to explore how computational fluency and mathematical proficiency also apply to other branches of mathematics, including symbolic manipulation.

After you've watched the video, take a moment to explore the revised TEKS, and then record your evidence into your Vertical Learning Progression page in your journal.

## Transcript – Instructions

Now let's use our knowledge of conceptual understanding, computational fluency, automaticity, and mathematical proficiency to examine the student expectations for rational number operations for grades 5 through 8.

Review the grade-specific student expectations in the revised TEKS found on the Vertical Learning Possible Progression page in your journal. Pay attention to the verbs used in the student expectations as you read through the chart. Record any observations or questions you may have in your journal.

## Transcript – Instructions (continued)

As you can see from the Vertical Learning Progression journal page, it is expected that students in grade 5 through grade 8 develop conceptual understanding, computational fluency, automaticity, and mathematical proficiency with rational number operations.

Now let's review course-specific TEKS for Algebra I, Geometry, or Algebra II. For this activity, select only **one** of the high school math courses to review. Record any of the revised TEKS that reflect fluency in Algebra I, Geometry, or Algebra II. Next, record any TEKS that would be impacted by students' conceptual understanding, computational fluency, automaticity, and mathematical proficiency with rational number operations. Finally, reflect on any connections you may find among the revised TEKS related to areas of fluency and those that are impacted by fluency with rational numbers.

## Transcript – Possible Responses

Did you consider some of the areas in which students are expected to become fluent, such as solving equations, multiplying polynomials, and factoring? Did you consider that these areas are extensions of conceptual understanding, computational fluency, automaticity, and mathematical proficiency with rational numbers and their operations?