For this lesson, it is important that students are already confident multiplying using the area model method. Models help students to understand multiplication conceptually and to visualize the idea in a meaningful way. Students should also feel confident with place-value concepts. They will learn the standard algorithm beginning with multiplying a single-digit number by a small multi-digit number, and they will finish by multiplying any two-digit number by any three-digit number.

5.NBT.B.5  Fluently multiply multi-digit whole numbers using the standard algorithm.

Two 45-minute classroom periods
Engage and Explore, Explain, Elaborate page 1—one 45-minute classroom period
Elaborate page 2, Evaluate—second 45-minute classroom period

To succeed in this lesson, students need to recall known concepts of multiplication and to only rely on the standard algorithm as a method for efficiency. For the warm-up, students recall the area model method and brainstorm other ways of solving. Remind students that there is not only one correct way to solve a problem, and that we should try to understand math from many possible angles.

Problem: Lei makes $149 for each day she works. How much money does she make in 8 days?

Ask students to solve the problem using an area model. Then, ask them to brainstorm another way to solve the problem. Ask them to use any knowledge they have of how multiplication and other operations work. They may skip-count 149 8 times. They may multiply 150 x 8 and subtract 8. They may find partial products and add. Summarize students’ solutions on the board and emphasize that many different solution methods lead to the same answer.
Tell students that today they will learn one more method that can help them to multiply large numbers in a faster way. This method is called the standard algorithm. Have students brainstorm what the word algorithm means and connect it to computer science. Have the class discuss other algorithms that they may follow in their everyday life (such as tying their shoes or brushing their teeth).

While working through the discussion questions, be sure to spend time reviewing place value, which is critical to understanding why the algorithm works.

**EXPLAIN**

**WATCH THE GENERATION GENIUS MULTIPLICATION USING THE STANDARD ALGORITHM VIDEO AS A GROUP**
Facilitate a conversation using the Discussion Questions.

**ELABORATE**

Direct students to use their new understanding to complete the practice problem worksheets. Page 1 contains bare mathematical problems to solidify understanding of the process. Page 2 contains application problems for students to apply the process to solve real-world problems.

**EVALUATE**

Have students gather in groups of 2 or 4 to compare and discuss their answers to the problems. Allow students enough time to communicate with their peers about their process and their thinking. Encourage students to use correct mathematical language when discussing their process. Have each group choose two questions they want more information about, or they want to discuss as a class.

When groups are ready, take questions from students. Encourage groups to answer questions brought up by other groups.

Students can play the online Kahoot! quiz game located below the video. It provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz, or the exit ticket questions. All these resources are located below the video in the assessment section.