Division- Grade 4

I. This lesson addresses Ohio Learning Standard: 4.NBT.B.6, which is: Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.

II. The student will be able to use the phrase "Does McDonald's Sell Cheese Burgers" (Divide, Multiply, Subtract, Check, Bring down), as a reminder of long division steps to find whole number quotients and remainders with up to four-digit dividends and one-digit divisors. Students will already be familiar with place value strategies such as area model and partial quotients and will have had opportunities to practice and apply those strategies. The standard algorithm taught in this unit is the final strategy presented to the students. This unit needs to be differentiated. It reads as one lesson but should be broken up into several days depending on the progress of the students. The idea behind this is to scaffold the process by starting with a two-digit dividend, then progress to a three -digit dividend and end with a four- digit dividend. It is up to the teacher to decide, through formative assessments when the student is prepared to advance through the dividends. Formative assessments will be used frequently throughout this lesson/unit after teaching each advancement in dividends. It does not make sense for students to advance to dividing by a three-digit dividend until they have demonstrated mastery of two-digit dividends. Therefore, the teacher needs to monitor progress closely and differentiate instruction accordingly.

III. Formative assessments should include 5 problems in which students would need to get 4 out of 5 correct and have an additional writing component to assist in understanding how much the students have made sense of what they learned. These questions could be any of the following:

- Write one sentence explaining what you learned today
- How does what you learned today connect to something you already learned?
- How will what you learned today help you in the future?

A list of at 5 varied and engaging activities to help students of all abilities meet the goal(s) for the lesson.

1. Use the book, A Remainder of One by Elinor J. Pinczes as a lesson starter. The story can be used as a read aloud or read to self, depending on the students reading ability. It is about a squadron of bugs that are marching in a parade. There are 25 bugs and when they line up, all the lines are uneven. Poor Joe is always left out of the lines because they need to be even. Joe works and works the problem until he creates 5 lines of 5 bugs and he can march. This story is suitable for an introductory lesson or for students struggling

with the concept of division. To build on the story, students can manipulate foam tiles, or paper clips and recreate the story. Students who are advanced can create their own story.

2. Play the Pizza game. Students will be given a stack of Uno cards (digits 1-9 only) and a pizza drawing (see below). Working with their partner, students take turns drawing Uno cards and creating a division problem with those cards. If the quotient or remainder contains one of the digits on the pizza, that player can color that item. First one to color the entire pizza wins. The activity can be differentiated by partnering up kids with similar skill levels and adapting the number of digits in the dividend.

3. Use play money to teach division. First, print out play money in a variety of denominations. Second, present students with a situation such as: Grandma gives her 6 grandchildren $84 to split up evenly for a family vacation. How much does each child get? Next, help students solve the problem using the standard algorithm. In order for students to conceptualize the process, hand them $84 and walk them through the process of physically splitting the money. While doing this, work the problem on paper again so they can see the process repeated. Remember to explain that sometimes larger bills need to be exchanged for smaller ones so that they can be split. Advanced students can be given more challenging problems with larger dollar amounts and all students can write there own situational problem to be solved by their peers.

4. Create a division scavenger hunt by strategically placing division problems around the school with QR codes. Students move about the building solving problems and the first team to solve 10 problems wins. Making differentiated groups of students and setting up a worksheet for each students to complete will ensure accountability for each student.

5. Have students develop/write a word problem. Give students the opportunity to write a division word problem and set up poster paper for the kids to write their problem on the poster paper. After all the kids have written their problem on the poster paper, give them time to circulate around the room and solve the problems the other students have written. Kids enjoy writing and solving each other's word problems.