Grade: 5th	Subject: Math
Materials: Whiteboards, Paper, pencils	**Technology Needed:**

Instructional Strategies:		Guided Practices and Concrete Application:	
==Direct instruction==	Peer teaching/collaboration/	==Large group activity==	Hands-on
==Guided practice==	cooperative learning	==Independent activity==	Technology integration
Socratic Seminar	Visuals/Graphic organizers	==Pairing/collaboration==	Imitation/Repeat/Mimic
Learning Centers	PBL	Simulations/Scenarios	
Lecture	Discussion/Debate	Other (list)	
Other (list)	==Modeling==	Explain:	

Standard

5.NBT.5
Fluently multiply multi-digit whole numbers using strategies flexibly, including the standard algorithm.

Objective

By the end of the lesson, students will remember and apply the steps of the standard algorithm

Bloom's Taxonomy Cognitive Level: Remember, Understand, Apply

Universal Design for Learning
  Below Proficiency:
  Provide lots of modeling, guided practice, and individual help during independent work

  Above Proficiency:
  Opportunity to share thinking with class, will be given harder problems if they need to be challenged.

  Modalities/Learning Preferences:
  - **Visual: Board writing**
  - **Auditory: Discussion**
  - **Kinesthetic: Flexible seating**
  - **Tactile : Whiteboards and writing**

Classroom Management- (grouping(s), movement/transitions, etc.)

"I'm going to give you the privilege of choosing your partner for this activity. But, if you cannot work together or stay on task, you will lose that privilege. You may work alone or in groups of 2 or 3. No more than 3. You are allowed to"
- **During Transitions, voices should be at a level 0**
- **Use "I need your eyes open, listening ears on, and minds ready to think," to prepare for the conversation**
- **"If you can hear my voice, put your hand on your head"**
- **When conversations get too loud, go silent and wait for recognition, as last resort.**

Behavior Expectations- (procedures/expectations specific to the lesson, rules and expectations, etc.)

- **Voice level 0 when I am talking**
- **No Blurting**
- **Voice Level 2 discussion with pods**
- **Raise your hands to share your ideas**

Minutes	Procedures
	Set-up/Prep before lesson:

Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)

1. Begin by accessing prior knowledge of multiplication strategies. Ask students to recall all the strategies
   - Array
   - Area Method
   - Partial Product Method
➢ Do a practice problem with the students using the partial product method. Use 48 X453. Use a mixture of student responses and explicit instructions. Remind students that with this model, they are multiplying together the entire number represented in each place, not just the value.

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     453
   x  48
      24   8 x 3
     400   8 x 50
   3,200   8 x 400
     120   40 x 3
   2,000   40 x 50
  16,000   40 x 400
  21,744
```

Explain: (teacher-led)

1. After going through the example using partial products, highlight how this method takes a lot of time, and a lot of the space on our paper. So today, we're going to learn a new multiplication method called the standard algorithm. Say "you're going to be using the very same set up and skills as the partial product method, it's just going to be a lot quicker and more condensed. "
2. Begin the Problem. State that the first step is to multiply the one's place of the bottom problem by the value of each place in the top problem. Explain carrying, connect it to what they have already done with addition.
3. Work through each step with the students, Using a mix of student responses.
4. Put extra emphasis on adding a zero to the second line, explain why.
5. Work through 1-2 more problems with them emphasizing carrying and place value.

Elaborate: (concreate practice/application with relevant learning task -connections from content to real-life experiences)
1. Have students use their whiteboards to work on a few problems independently.
2. Walk around while the students work on these problems, checking in on where students need guidance and working through things together.
   At this point, students leave for specials, and come back for math block 2.
1. While students are gone, write 5 problems on the board, and pass out pater for each student.
2. When they return, tell students, "At this time boys and girls I want to give you a chance to practice together in pairs or small groups. I'm going to give you the privilege of choosing your partner for this activity. But, if you cannot work together or stay on task, you will lose that privilege. You may work alone or in groups of 2 or 3. No more than 3. You are allowed to move about the room, you can sit in any of the seating or on the floor. Just make sure you have a good surface to write on. I'm going to give you about 10 minutes to work on these problems on the board, just copy them onto your own sheet of paper. And once we're done, if we have time, I'll have some confident volunteers work through their problems on the board as a while group.
3. Throughout this process, check on groups, providing help and guidance where needed. Encourage connection to prior methods of multiplication, showing how similar this is to the other methods they have used.
4. Once students are just about done working in groups, invite students to work through their thinking on the board. Discuss the answers and where the students might have made mistakes.
5. Wrap up with a review on the important things to remember with the standard algorithm.

Closure (wrap up and transition to next activity):
1. Say "Alright students please put away your materials, clean off your spaces and be sitting in your seat quietly waiting for instruction.

Formative Assessment: (linked to objective, during learning)
- Progress monitoring throughout lesson (document of student learning, data collection)

- **Diagnostic Assessment:** A day before this lesson is taught, administer a short paper assessment, asking the student to solve one problem (45x 39) using ALL the strategies they know. This will give me an Idea of where the students are going into this, identifying students who may have already tried the standard algorithm, or students who are still only comfortable with one way. This will provide a middle ground for me to start from.

- **Practice problem sheet**
  Looking for correct products, understanding of carrying, and proper place values. This Assessment will provide data for how students are performing during this lesson and will aid in identifying trends in understandings and mistakes. Will use to plan tomorrows lesson to hit on points of confusion.

Summative Assessment (linked back to standard, END of learning)

1. Multiplication Quiz Administered next week
   1. Will evaluate their knowledge of the standard algorithm through 2 by 2, and 2 by 3 multiplication problems. Directions of the Quiz will also include checking their answer using another method of their choice. This will provide data of their performance of the standard algorithm, their ability to flexibly use different methods to solve a problem, and their understanding of the relationships between the methods. The Quiz will only be 5 problems long.

Directions: Solve Each Problem using the Standard Algorithm. Use one other multiplication method to check your answer.

56	72	65	84	54
X 34	x 14	x 27	x 65	x45
____	____	____	____	____

Lesson Plan Template
Date: October 14th

- **Monitor students' responses and work on the board.**
- **Look for understanding of place value and carrying with thumb signals indicating comfort level. Use this to decide what time type of problem to model and when to move on.**

Teacher Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

This lesson was the first math lesson I ever taught. Something as important and vital as the standard algorithm was an ambitious start I'll admit. But, overall it was majorly successful. I modeled how to do the standard algorithm on a familiar problem. However, after this problem I drastically altered me approach. I saw the need for boosting morale and confidence with this new material by showing them the connections between the standard algorithm and the methods they already know. I walked through the same problem 3 times, using all different methods. Each time I pointed out the similarities in processes and numbers left in the end to add up. By the time we got to the standard algorithm, the students were familiar with the math and were able to see the connections between this and other methods. I Told them that this proves that even though this is new and overwhelming, they already know it, and they proved it with the other methods.

After this, their confidence shot up and I was able to walk them through a bunch more examples with them. They go to the point where I was able to collect data through my formal assessment of them working on problems in groups. They really made the connection between the standard algorithm and partial product methods especially. I even overheard conversations between students pointing out connections and similarities between the different methods they used to each other.

I have this habit of relying on heavy engagement, bells and whistles, and cheesiness to hold their attention and get them excited. But in this lesson, I feel like I finally found my footing on getting and keeping them engaged just by myself, what I said, and how I said it. If I had to change anything I would offer more opportunity for collaborative learning. This group in particular really takes their thinking further on their own and I think they would've really done well given more opportunities to do it during this lesson.