

LESSON PLAN

Lesson Title	The finger multiplication algorithm – an exploration into ethnomathematics in education	Grade Level 10-11
Subject	Mathematics (With an integration of ethnic studies)	
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IDENTIFY DESIRED RESULTS

Objective in student-friendly language What will students understand/experience/appreciate as a result of this lesson?	Resources What materials/resources/technology will be required?
By the end of this lesson students will have a deeper understanding of ethnomathematics in the classroom.	Illustrated book on website. <i>“Intersections of Culture, Language, and Mathematics Education: Looking Back and Looking Ahead”</i> (Marta Civil, 2018) https://link.springer.com/chapter/10.1007/978-3-319-72170-5_3

LESSON PLAN SEQUENCE

Introduction How will you ACTIVATE prior knowledge and ENGAGE them in the lesson and how does this lesson connect to prior lessons?
<p>Review the discussions students had last class on the algorithm behind the finger multiplication method.</p> <p>Lead the discussion to specifically talk about how this might help students whose parents may teach them this method at home, even though it is not taught at school.</p>

Learning/Activity Sequence

How will students ENGAGE, EXPLORE, EXPLAIN, ELABORATE, and/OR EVALUATE their understandings of the outcomes.

What is the TEACHER doing? What is your plan for the body of the lesson? What steps are taken during the lesson?	What are the STUDENTS doing? How are they engaged while you are teaching the lesson?	Approx. time
<p>Let students look through the book. Ask them to take notes of what they notice in the book.</p> <p>Once they have finished writing, ask students to discuss what they found in small groups.</p>	<p>Students will look through the book and take notes.</p> <p>Leading questions for students to take notes on:</p> <ul style="list-style-type: none"> ● How does the difference of teaching methods affect each student? ● Is it right for the parents to be teaching their children a different method? ● Is it right for the teacher to only allow one method to be used? ● How might the child be interpreting the teachers anger at the different method? 	15 mins.
<p>Discuss with the class what the students each found in the book using leading questions like the following:</p> <ul style="list-style-type: none"> ● How did everyone interpret the story? <ul style="list-style-type: none"> ○ Lead this into the discussion of the students having immigrant parents. ● Is it wrong for the students to be using a different method? Why or why not? ● Who is to say which method is correct? ● Who holds the power in a math classroom? ● By the teacher insisting on using one method, is she oppressing or harming anyone in the classroom? If so, who? <ul style="list-style-type: none"> ○ Who does the oppression protect? ● How might the students being able to use other methods be helpful to their learning? 	<p>Students should be engaging in the discussion.</p>	15 mins.
<p>Recall with the students the way they were taught multiplication.</p>	<p>Students will be provided with links to websites that teach each of these methods as well as a link to a paper on ethnomathematics (paper is optional to use).</p>	

Show four other forms of multiplication from other countries:

1. Chinese (Lattice Multiplication)
2. Japanese
3. Russian (“Russian peasant”)
4. Greek

Conclusion

How will you ensure students walk away with a sense of understanding the PURPOSE of the lesson and its IMPORTANCE to their learning?

Assignment: Pick one of the four other forms of multiplication shown in class. In your own words (or through your own drawing) explain how this method works.

Write how you would compare the finger multiplication method to the one you were taught in school. Explain why you think it is or isn't important to teach other methods in class. (500 words)

Students can use the paper provided for reference.