

Lesson Plan  
 Date : Jan 11, 2023  
 Teacher Name: Mr. Bari  
 Grade Level: High School  
 Topic:  $\pi$   
 Subject: Geometry



<p><b>Flipped Classroom</b>          Students will receive the link of the website at least 24 hours prior to the class meeting, so as to learn about the mathematician’s story and come to class with any questions. Link, <a href="http://www.muslimwomenmathematicians.org">www.muslimwomenmathematicians.org</a></p>	
<p><b>Learning Objectives:</b>          Just as detectives see what untrained eyes can’t, a student of mathematics who fully understands the concept of <math>\pi</math>—they can chip away at the mystery of the universe, just like Archimedes and Lubna of Cordoba. They defined pi as <math>\pi = \frac{\text{Circumference}}{\text{Diameter}}</math>.</p>	
<p><b>Learning Goals:</b></p> <ol style="list-style-type: none"> <li>1. SWBAT learn story of a Lubna of Cordoba--the Muslim girl who rose from slavery to the pinnacle of 10th Century mathematics</li> <li>2. SWBAT use the website to learn about the contributions of Lubna of Cordoba to mathematics in order to counter misconceptions and address stereotypes that students might carry about the abilities of Muslim female students in STEM classes.</li> </ol>	
<p><b>Equipment for Lab:</b> Meter stick, String, 5 different circular objects for 5 different trials.</p>	
<p><b>Teacher Activity</b>          The booklet that students receive is organized with enough space for students to take notes and appropriately show their thinking by solving the challenge.</p>	
<p>Lesson component</p> <p>Activity # 1 (0- 4 minutes)</p>	<p>Students will complete the Do Now in 5 minutes (See Page # 1 on the worksheet)          Booklet is divided in three components: (1) DN (2) BI and (3) ES</p>

Activity # 2 (20 minutes)	Main Task: Students will form in a group and will solve the problem. There are 4 students in a group and each one has a job assignment (Group Leader, Engineer, Scientist, Mathematician)
Activity # 3 (10 minutes)	Teacher will go over the Main Task on the whiteboard.
Activity # 4 (5 mins)	Student will complete the exit slip in 5 minutes
Activity # 5	Briefly overview discussed throughout the period

Every second matters!

Time	Teaching activities / Student activities	
Activity # 1 (5 mins)	Teacher distributes the booklet for students to work with groups Explain the “Do now” Listening the instructions Teacher is Circulating while students completing “Do Now” Solving the Do Now Going over the “Do Now” Students will check their answers to make sure they have full understanding.	
Activity # 2 (20 mins)	Group activity	(1) Students will measure pi by measuring the circumference and diameter of the five objects given.
Activity # 3 (10 mins)	Teacher in action	Teacher will go over main task
Activity # 4 (5 mins)	Assessment	Students complete Exit Slip in 5 Minutes
Activity # 5 (2 mins)	Recap I briefly overview what we discussed throughout the period in 5 minutes.	Ask student to summarize what they have learned