

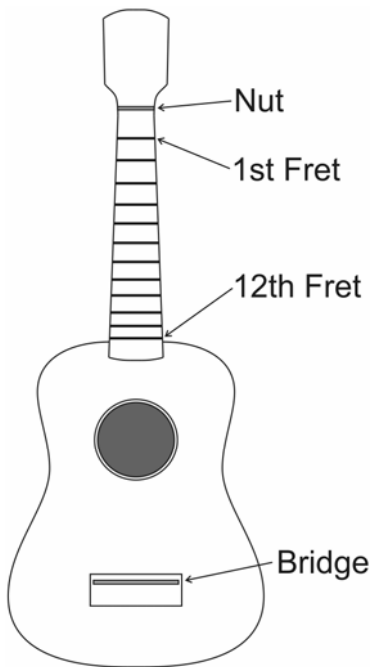
To Fret or...

NAME _____

1. The precision of a measuring tape is the smallest unit marked on the tape. The accuracy of the tape is equal to half the precision. Identify the precision and accuracy of your U.S. and metric measuring tapes and record the results in the table below.

	PRECISION	ACCURACY
Metric Measuring Tape		
U.S. Measuring Tape		

2. The most precise tool is the one that has the smallest unit (or partial unit) of measurement. Which measuring tape is more precise — the metric measuring tape or the U.S. measuring tape? Explain your answer.
3. The strings on a fretted instrument extend from the **nut** to the **bridge**, as shown below. Of the two tools considered above, choose the one that is more precise. Then, use it to measure the distance from the nut to the bridge on the instrument that your group has chosen.



4. Measure each of the lengths listed below. For each pair of consecutive lengths, calculate the ratio of the shorter length to the longer length. Express each ratio in decimal form to two places.

SEGMENT OF INSTRUMENT	LENGTH	RATIO OF CONSECUTIVE LENGTHS (RATIO OF SHORTER TO LONGER, ROUNDED TO TWO DECIMAL PLACES)
Nut to Bridge		
1st Fret to Bridge		
2nd Fret to Bridge		
3rd Fret to Bridge		
4th Fret to Bridge		
5th Fret to Bridge		
6th Fret to Bridge		
7th Fret to Bridge		
8th Fret to Bridge		
9th Fret to Bridge		
10th Fret to Bridge		
11th Fret to Bridge		
12th Fret to Bridge		

5. What do you notice about the ratios of consecutive measurements? How similar are they?

6. If you measured the same segments on other fretted instruments, do you think you would get similar results?

7. Did other groups get approximately the same measurements as your group? Why were the measurements similar or different?

8. Did other groups get approximately the same ratio as your group? Did the size of the instrument matter? Did it matter if metric or U.S. measurements were used?