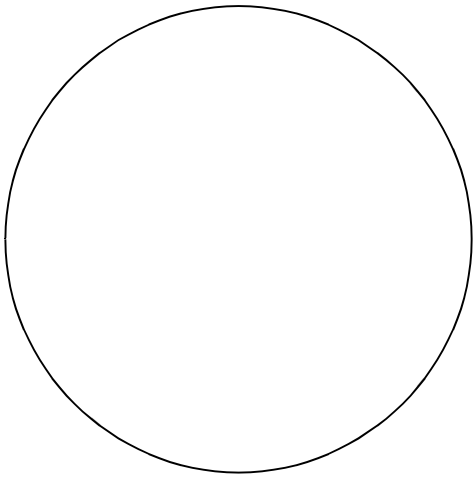
Name:_____

Microscope Power and Field of View (F.O.V.)

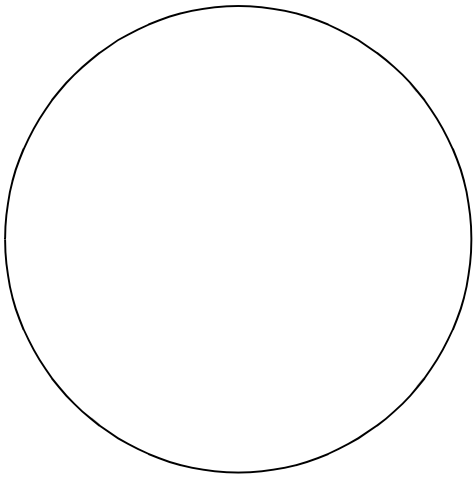
1. Using low power, sketch what you see when you view the ruler. Estimate the size of the field of view from the ruler in mm. Multiply this value by 1000 to get a value in μm.



Low Power

Estimate size = _____ mm x 1000 = _____ μm

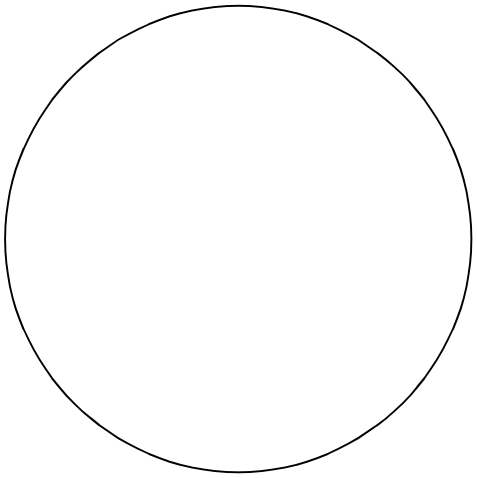
2. Repeat #1 using medium power



Medium Power

Estimate size = _____ mm x 1000 = _____ μm

3. Repeat #1 using high power



High Power

Estimate size = _____ mm x 1000 = _____ μm

4. Summarize your fields of view so far using this table:

Fields of View Using a Ruler	
Microscope Power	Field of View in μm
Low	
Medium	
High	

5. Using the piece of blue printing, calculate the distance between the center of two blue dots. Use your low power field of view measurement for this.

distance between dots = $\frac{\text{low power field of view in } \mu m}{\text{maximum number of dot across field}}$

distance between dots = _____

distance between dots = _____ μm

6. Using your answer from #5, determine the medium power field of view.

medium power field of view = (distance between dots) x (number of dots)

medium power field of view = (μm) x ( )

medium power field of view = _____ μm

7. Using your answer from #5, determine the high power field of view.

high power field of view = (distance between dots) x (number of dots)

high power field of view = (μm) x ( )

high power field of view = _____ μm

8. Summarize your fields of view using this second method:

Fields of View Using the Method of Dots	
Microscope Power	Field of View in μm
Low*	
Medium	
High	

*Please note the low power field of view is still taken from the ruler measurement

9. Which method of calculating the field of view for medium and high power gives a better answer? Why do you think this is the case? (Answer in complete sentences.)

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10. Calculate the total magnification of your microscope on all three powers using the formula

    Power = (Ocular Magnification) x (Objective Magnification)

    Use this table to help.

Microscope Power	Ocular Magnification	Objective Magnification	Total Magnification
Low			
Medium			
High			

11. Compare the magnification with the field of view for each power. What do you notice happens to the field of view as the magnification increases? Does this make sense to you and why? (Answer in complete sentences)

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