

Microscope resolution = _____

Calculate the theoretical resolution for each of the following:

	λ	Numerical aperture*	Theoretical resolution	Actual resolution
White light	0.530 μm			
Red light	0.700 μm			
Blue light	0.400 μm			
Electrons	0.004 μm			
Human eye				
*Written on the lens.				

Organism	Can be seen with:			
	Diameter	High-dry lens	Oil immersion	EM
Eukaryotic cell	10 μm			
<i>Escherichia coli</i> [†]	2 μm			
<i>Chlamydia</i> [†]	1 μm			
<i>Epulopiscium</i> [†]	1 mm			
Mitochondrion	0.5 μm			
Influenzavirus	0.2 μm			
Ebola virus (1 \times w)	1 \times 0.09 μm			
Ribosome	0.2 μm			
DNA (width)	2 nm			
[†] What are these organisms?				

Why do microscopes have scanning, low-power, and high-dry objectives?

Why are our microscopes fitted with blue filters?