

Notes: Sense of Scale

Name: _____

1 METER	= 1m	= 100 cm	= 1000 mm	= 1 million um	= 1 billion nm
1 CENTIMETER	= 1cm	= 0.01 m	= 10 mm		
1 MILLIMETER	= 1mm	= 0.001 m	= 0.1 cm	= 1000 um	
1 MICROMETER	= 1 um	= 1 millionth of a meter	= 0.001 mm		
1 NANOMETER	= 1 nm	= 1 billionth of a meter			

Structure	Actual Diameter (estimate)	Actual diameter (in meters)	Actual diameter (in sci-notation)	Size Relative to Eukaryotic Cell	Object used to model structure
Eukaryotic Cell	(up to) 100 um	0.0001 m	1×10^{-4} m	$\frac{0.0001 \text{ m}}{0.0001 \text{ m}} = 1$	Football field
Organelles	(up to) 10 um	0.00001 m	1×10^{-5} m	$\frac{0.00001 \text{ m}}{0.0001 \text{ m}} = 0.1$	
Bacterium	1 um	0.000001 m			
Virus	100 nm				
Cell membrane thickness	10 nm				
Glucose molecule	1 nm		1×10^{-9} m		
Water molecule	0.1 nm		1×10^{-10} m		

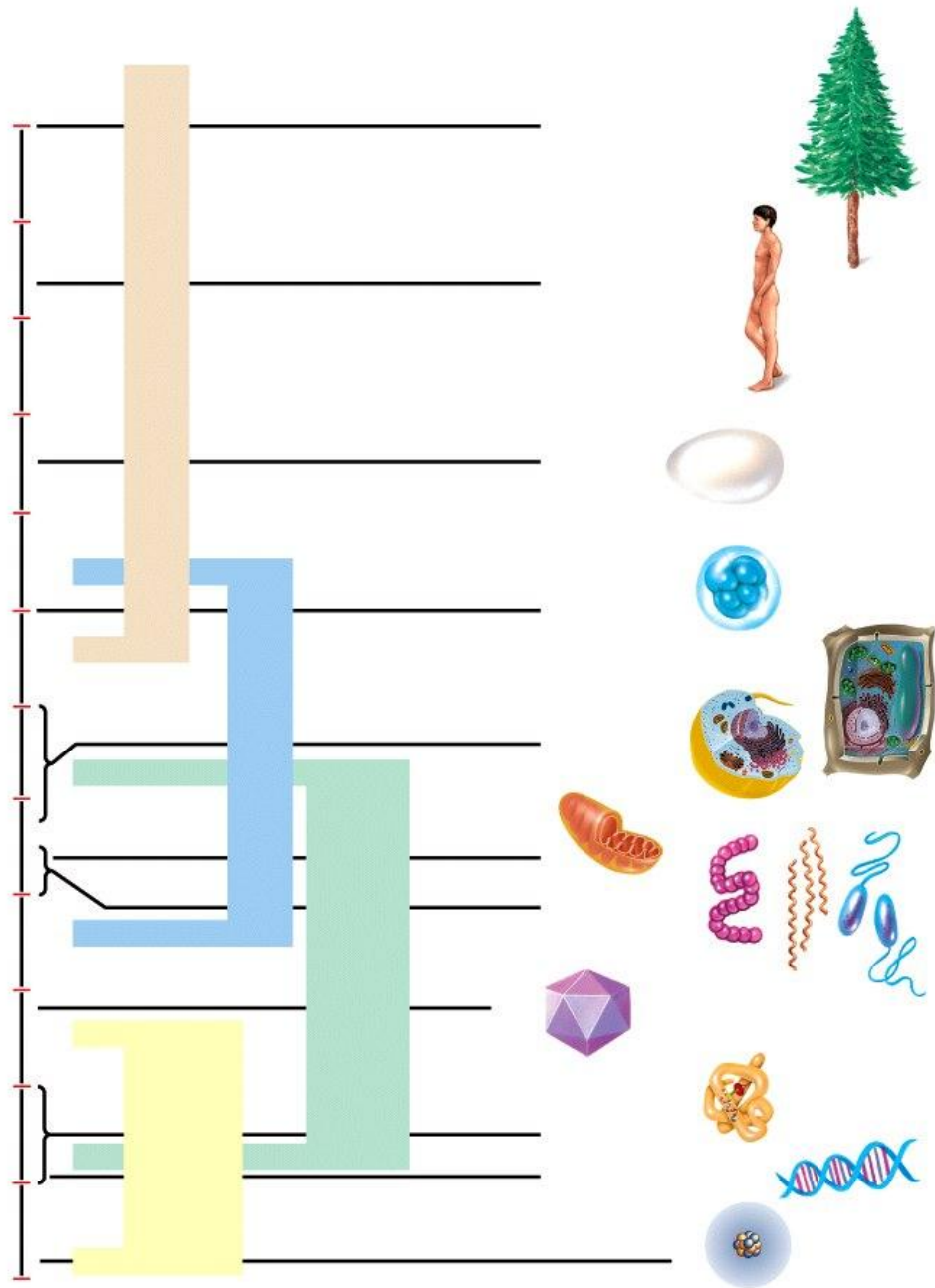


Figure 4-1 Biology: Life on Earth, 8/e
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