How Small is Nano - Football Field Scale Lesson

Object	Actual size in meters	Best unit based on power of 10	Size on football field (1,000,000x magnification)
Human hair	1×10^{-4}	mm	
Diameter of a red blood cell	$6\text{-}8 \times 10^{-6}$		
Diameter of a virus	$1\text{-}400 \times 10^{-8}$		
Diameter of a buckyball	1×10^{-9}		
Diameter of a carbon nucleus	5.5×10^{-15}		
Diameter of a hydrogen atom	1×10^{-10}		
Distance across DNA	2×10^{-9}		
Diameter of a bacterium			
Benzene molecule			
Thickness of a penny	1×10^{-3}		
Length of a mouse	$1\text{-}2 \times 10^{-1}$		
Height of a human	1.8×10^{0}		

Question to answer in your notebooks:

-How tall was your mini-mini-me? At this level of magnification, how many football fields would it take to represent the height of your mini-mini-me?

-Compare the clothesline model with the football field model for representing scale. What are advantages/disadvantages of each for students?

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