

Name _____

Date _____

Nano Metrics Conversions

Part 1. You will complete a series of metric conversions by providing answers to the questions and prompts below. Be prepared to discuss your responses in small groups or as a class.

1. Match the metric length units below with their correct abbreviations. Then order the unit abbreviations from largest to smallest.

- kilometer
- decimeter
- nanometer
- meter
- micrometer
- centimeter
- millimeter

- cm
- km
- nm
- μm
- mm
- m
- dm

Largest Unit _____ Smallest Unit _____

2. Using your teacher's guidance and a meter stick for visual reference, fill in the following blanks:

- 1 kilometer = _____ meters
- 1 meter = _____ millimeters
- 1 millimeter = _____ micrometers
- 1 micrometer = _____ nanometers

3. You should notice a pattern in your responses to Questions 1 and 2. Explain the pattern you see.

4. In the space provided, use a ruler to draw 3 squares and indicate next to each how you write the size of the square using unit abbreviations.

- Square 1: 1 decimeter wide by 1 decimeter tall
- Square 2: 1 centimeter wide by 1 centimeter tall
- Square 3: 1 millimeter wide by 1 millimeter tall.

Nano Metrics, continued

Part 2. Nanoscale Ruler Conversions

5. Use the Nano Ruler to measure the objects listed below. Then fill in the chart by converting your nano measurements to macro and micro scales.

Object	Nano Scale (nm)	Micro Scale (μm)	Macro Scale (mm)
Diameter of a penny			
Diameter of your pinky fingernail			
Diameter of a crayon			
Length of your pen/pencil			
Object of your choice			

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