Grade 8 Math Metric Prefixes for SI Units

		Pre	fixes		
Purpose	Prefix Name	Preferred Pronunciation	Prefix Symbol	Value	
	yotta	Yä-tuh	Υ	1024	Septillion
larger quantities or whole units	zetta	ZETT-uh	Z	1021	Sextillion
	exa	EX-uh	E	1018	Quintillion
	peta	PET-uh	P	1015	Quadrillion
	tera	TAIR-uh Example: <u>terahertz</u>	Т	1012	Trillion
	giga	JIG-uh Example: gigawatt	G	10°	Billion
	mega	MEG-uh	М	10 ⁶	Million
	kilo	KILL-oh Example: <u>kiloliter</u>	k	10³	Thousand
	hecto	HECK-toe Example: <u>hectare</u>	h	102	Hundred
	deka	DECK-uh Example: <u>dekameter</u>	da	10¹	Ten
				10°	One
smaller quantities or sub units	deci	DESS-ih Example: <u>decimeter</u>	d	10-1	Tenth
	centi	SENT-ih Example: <u>centigram</u>	С	10-2	Hundredth
	milli	MILL-ih Example: milliliter	m	10-3	Thousandth
	micro	MI-crow Example: microgram	μ	10-6	Millionth
	nano	NAN-oh Example: <u>nanometer</u>	n	10-9	Billionth
	pico	PEEK-oh Example: <u>picogram</u>	p	10-12	Trillionth
	femto	FEM-toe Example: femtosecond	f	10-15	Quadrillionth
	atto	AT-toe	а	10-18	Quintillionth
	zepto	ZEP-toe Example: <u>zeptosecond</u>	Z	10-21	Sextillionth
	yocto	YOCK-toe Example: <u>voctosecond</u>	у	10-24	Septillionth

Questions on the Metric Prefixes and Why Prefixes are Used

Why do you think that there are so many prefixes?

Try to represent all very large numbers in specialized fields of science and math – number of stars or particles in matter to the size of atoms.

Why do you think they are all named?

We need an international system the can include all scientists from all nations.

Which ones did you already know? – list them.

Usually the ones we use a lot – milli, centi, kilo and mega (some may know micro, giga and tera due to computer specs).

Instead of using scientific notation, most people use prefixes to represent large or small numbers. Using your understanding of the prefixes, change the units to see what would be a better prefix to use to describe the given length. convert the number into the new units.

553300000 micrometers	CN Tower		
Better unit number <u>553.3m</u>			
0.0018288 kilometers	Mr. R-S's height		
Better unit number <u>1.8288m</u>			
66500000000000000000000 picometers	Nile River		
Better unit number <u>6650 km</u>			
0.00000000000019 terameter	length of standard pencil		
Better unit number			

Can you think on a distance that might be converted to silly units? Search it.

Answers will vary – Walking to school is 1.2 km – student might say they walked 120000000 micrometers to school.