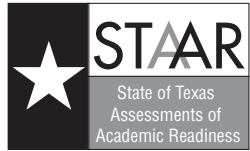


STAAR GRADE 8 SCIENCE REFERENCE MATERIALS



FORMULAS

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$D = \frac{m}{V}$$

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}}$$

$$s = \frac{d}{t}$$

$$\text{Net force} = (\text{mass})(\text{acceleration})$$

$$F = ma$$

STAAR GRADE 8 SCIENCE REFERENCE MATERIALS

PERIODIC TABLE OF THE ELEMENTS

	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Atomic number — 14 Symbol — Si Atomic mass — 28.085 Silicon — Name </div>																	
1	1 1A H 1.008 Hydrogen											2 2A He 4.0026 Helium						
2	3 Li 6.94 Lithium	4 2A Be 9.0122 Beryllium											5 3A B 10.81 Boron	6 4A C 12.011 Carbon	7 5A N 14.007 Nitrogen	8 6A O 15.999 Oxygen	9 7A F 18.998 Fluorine	10 Ne 20.180 Neon
3	11 Na 22.990 Sodium	12 Mg 24.305 Magnesium	3 3B Sc	4 4B Ti	5 5B V	6 6B Cr	7 7B Mn	8 8B Fe	9 8B Co	10 8B Ni	11 1B Cu	12 2B Zn	13 Al 26.982 Aluminum	14 Si 28.085 Silicon	15 P 30.974 Phosphorus	16 S 32.06 Sulfur	17 Cl 35.45 Chlorine	18 Ar 39.948 Argon
4	19 K 39.098 Potassium	20 Ca 40.078 Calcium	21 Sc 44.956 Scandium	22 Ti 47.867 Titanium	23 V 50.942 Vanadium	24 Cr 51.996 Chromium	25 Mn 54.938 Manganese	26 Fe 55.845 Iron	27 Co 58.933 Cobalt	28 Ni 58.693 Nickel	29 Cu 63.546 Copper	30 Zn 65.38 Zinc	31 Ga 69.723 Gallium	32 Ge 72.630 Germanium	33 As 74.922 Arsenic	34 Se 78.971 Selenium	35 Br 79.904 Bromine	36 Kr 83.798 Krypton
5	37 Rb 85.468 Rubidium	38 Sr 87.62 Strontium	39 Y 88.906 Yttrium	40 Zr 91.224 Zirconium	41 Nb 92.906 Niobium	42 Mo 95.95 Molybdenum	43 Tc 98.906 Technetium	44 Ru 101.07 Ruthenium	45 Rh 102.91 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.87 Silver	48 Cd 112.41 Cadmium	49 In 114.82 Indium	50 Sn 118.71 Tin	51 Sb 121.76 Antimony	52 Te 127.60 Tellurium	53 I 126.90 Iodine	54 Xe 131.29 Xenon
6	55 Cs 132.91 Cesium	56 Ba 137.33 Barium	71 Lu 174.97 Lutetium	72 Hf 178.49 Hafnium	73 Ta 180.95 Tantalum	74 W 183.84 Tungsten	75 Re 186.21 Rhenium	76 Os 190.23 Osmium	77 Ir 192.22 Iridium	78 Pt 195.08 Platinum	79 Au 196.97 Gold	80 Hg 200.59 Mercury	81 Tl 204.38 Thallium	82 Pb 207.2 Lead	83 Bi 208.98 Bismuth	84 Po 209 Polonium	85 At 210 Astatine	86 Rn 222 Radon
7	87 Fr 223 Francium	88 Ra 226 Radium	103 Lr 260 Lawrencium	104 Rf 261 Rutherfordium	105 Db 262 Dubnium	106 Sg 263 Seaborgium	107 Bh 264 Bohrium	108 Hs 265 Hassium	109 Mt 266 Meitnerium	110 Ds 267 Darmstadtium	111 Rg 268 Roentgenium	112 Cn 269 Copernicium	113 Nh 270 Nihonium	114 Fl 271 Flerovium	115 Mc 272 Moscovium	116 Lv 273 Livermorium	117 Ts 274 Tennessine	118 Og 276 Oganesson

Atomic masses are not listed for elements with no stable or common isotopes.

Lanthanide Series

57 La 138.91 Lanthanum	58 Ce 140.12 Cerium	59 Pr 140.91 Praseodymium	60 Nd 144.24 Neodymium	61 Pm 145 Promethium	62 Sm 150.36 Samarium	63 Eu 151.96 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.93 Terbium	66 Dy 162.50 Dysprosium	67 Ho 164.93 Holmium	68 Er 167.26 Erbium	69 Tm 168.93 Thulium	70 Yb 173.05 Ytterbium
--	-------------------------------------	---	--	--------------------------------------	---------------------------------------	---------------------------------------	---	--------------------------------------	---	--------------------------------------	-------------------------------------	--------------------------------------	--

Actinide Series

89 Ac 227 Actinium	90 Th 232.04 Thorium	91 Pa 231.04 Protactinium	92 U 238.03 Uranium	93 Np 237 Neptunium	94 Pu 244 Plutonium	95 Am 243 Americium	96 Cm 247 Curium	97 Bk 247 Berkelium	98 Cf 251 Californium	99 Es 252 Einsteinium	100 Fm 257 Fermium	101 Md 288 Mendelevium	102 No 289 Nobelium
------------------------------------	--------------------------------------	---	-------------------------------------	-------------------------------------	-------------------------------------	-------------------------------------	----------------------------------	-------------------------------------	---------------------------------------	---------------------------------------	------------------------------------	--	-------------------------------------

Updated 2017