STAAR GRADE 8 SCIENCE REFERENCE MATERIALS



FORMULAS

Density = $\frac{\text{mass}}{\text{volume}}$	$D = \frac{m}{V}$
Average speed = $\frac{\text{total distance}}{\text{total time}}$	$s = \frac{d}{t}$
Net force = (mass)(acceleration)	F = ma
Work = (force)(distance)	W = Fd

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PERIODIC TABLE OF THE ELEMENTS

18 10 10 10 10 10 10 10 10	18 Ar ^{39.948} ^{Argon} 36 83.798 Kr Krypton	54 54 Xenon 86 86 86 (222) R n	
7 1 7 9 9 18.998	17 CI 35.453 35.453 35 35 35 79.904 Br Bromine	53 1 126.904 10dine 85 85 85 (210) Astatine	69 70 T Tm Yb 68.934 173.055 Inulium 713.055 Md N0 (258) (259) ndelevium Nobelium
16 6 15 .999 O ^{2 yygen}	16 32.066 Suftur 34 78.96 78.96 Selenium	52 Te 127.60 84 PO (209) Polonium	69 Tm 168.934 101 101 (258) Mendelevium Updated S
15 5A 7 14.007 Nitrogen	15 Pnosphorus 33 AS Arsenic	51 Sb 121.760 Antimony 83 83 83 83 83 83 83 Bis muth Bis muth Bis muth	68 Erbium Erbium (257) Fermium
14 14 1 1 1 1 1 1 1 1 1 1	14 Si 28.086 Silicon 32 Ge 72.64 Germanium	50 Sn Tin Tin Tin Tin B2 B2 207.2 Lead	67 Ho 164.930 99 B (252) Einsteinium
13 3 A 10.812 Boron	13 Aluminum 31 69.723 69.723 Gallium	48 49 50 51 Cd In Sn Sb Cd In Sn Sn Sb 112.412 114.818 118.711 121.760 112.412 114.818 118.711 121.760 cadmium Indium Tin Antimom 80 81 82 83 Hg T1 Pb Bi 200.59 204.383 207.2 208.98 Mercury Tallium Lead Bismuth Mass numbers in parentheses are those of the most stable or most common isotope. 1	66 Dysprosium 98 98 (251) Californium
	28 23 285.38 285.38 Zinc Zinc	48 Cadmium 80 80 80 80 80 80 Mercury Mercury Mass num	65 Tb 158.925 97 97 (247) Berkelium
	11 29 23546 00 29	47 Ag 107.868 Silver 79 79 79 79 79 79 79 79 79 79 79 79 79	Roentgenium 64 157.25 96 96 (247) Curtum
٥	10 28.693 Nickel	46 Pd 106.42 78 78 78 78 78 78 78 78 78 78 78 78 78	Barmstadtium 63 Eu 151.964 95 95 87 (243) Americium
N Name	9 88 88 27 00 58.933 58.933 Cobalt	45 Rh 102.906 T7 T7 192.217 1192.217 1109 Mt (276)	Meitherium 62 Sam arium 94 Pu (244) Putonium
	26 55.845 Iron	44 Ru 101.07 76 OS 190.23 05mium 108 HS (270)	Hassium 61 Promethium 93 No (237) Neptunium
	7 7B 25 Manganese	43 Tc (98) 75 Re 186.207 ^{Rhenium} 107 (272)	Bohrium 60 Neodymium 92 0 238 029 Uranium
Atomic number Symbol Atomic mass	6 68 24 51.996 Chromium	42 Mo 95.96 95.96 174 V 183.84 183.84 106 50 (271)	Seaborgium 59 Praseodymium 91 Pa 231.036 Protactinium
Att	5 58 58 23 23 50.942 Vanadium	41 Nb 92.906 Niobium 73 73 73 73 73 73 73 73 73 73 73 73 73	58 58 Cerium 90 90 232.038 Thorium
	4 48 48 22 11 11 11 11 11 11 11 11 11 11 11 11	40 Zr 91.224 Hf 172 172 172 172 Hathium 104 (267)	Butherfordium 57 Lan 138.905 138.905 Lanthanum 89 AC (227) Actinium
	3 38 38 21 21 44.956 Sc	39 39 88.906 71 71 71 174.967 Lutetium 103 Lr 103 (262)	Lawrencium S
2 2 2 4 4 80.012 80.012 Beryllium	12 Mg 24.305 Magnesium 20 20 40.078 Ca	38 Strontium 56 56 137.328 Barium 88 88 (226)	Lanthanide Series Actinide Series
Hydrogen 6.941 Lithium	11 Na 22.990 Sodium 19 39.098 39.098	37 85.468 85.468 85.468 55 55 55 55 87 132.905 Cesium 87 87 (223)	
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