

Grade 8 FCAT Science Reference Sheet

Equations

Acceleration (a)	=	$\frac{\text{change in velocity (m/s)}}{\text{time taken for this change (s)}}$	a	=	$\frac{v_f - v_i}{t_f - t_i}$
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Average speed (v)	=	$\frac{\text{distance}}{\text{time}}$	v	=	$\frac{d}{t}$
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Density (D)	=	$\frac{\text{mass (g)}}{\text{Volume (cm}^3\text{)}}$	D	=	$\frac{m}{V}$
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Percent Efficiency (e)	=	$\frac{\text{Work out (J)}}{\text{Work in (J)}} \times 100$	%e	=	$\frac{W_{\text{out}}}{W_{\text{in}}} \times 100$
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Force (F)	=	mass (kg) \times acceleration (m/s ²)	F	=	ma
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Frequency (f)	=	$\frac{\text{number of events (waves)}}{\text{time (s)}}$	f	=	$\frac{n \text{ of events}}{t}$
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Momentum (p)	=	mass (kg) \times velocity (m/s)	p	=	mv
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Wavelength (λ)	=	$\frac{\text{velocity (m/s)}}{\text{frequency (Hz)}}$	λ	=	$\frac{v}{f}$
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Work (W)	=	Force (N) \times distance (m)	W	=	Fd
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Units of Measure

m = meter

cm = centimeter

J = joule (newton-meter)

N = newton (kilogram-meter per second squared)

g = gram

kg = kilogram

s = second

Hz = hertz (waves per second)

Periodic Table of the Elements

(based on $^{12}_6\text{C} = 12.0000$)

Representative
Elements

Group		Transition Metals										Representative Elements									
1 1A		2 2A												13 3A	14 4A	15 5A	16 6A	17 7A	18 8A		
1	H Hydrogen 1.008																				He Helium 4.003
2	Li Lithium 6.941	Be Beryllium 9.012											B Boron 10.81	C Carbon 12.011	N Nitrogen 14.007	O Oxygen 15.999	F Fluorine 18.998	Ne Neon 20.180			
3	Na Sodium 22.990	Mg Magnesium 24.305	3B	4B	5B	6B	7B	8B		1B	2B	Al Aluminum 26.982	Si Silicon 28.086	P Phosphorus 30.974	S Sulfur 32.06	Cl Chlorine 35.453	Ar Argon 39.948				
4	K Potassium 39.098	Ca Calcium 40.078	Sc Scandium 44.956	Ti Titanium 47.88	V Vanadium 50.942	Cr Chromium 51.996	Mn Manganese 54.938	Fe Iron 55.847	Co Cobalt 58.933	Ni Nickel 58.693	Cu Copper 63.546	Zn Zinc 65.39	Ga Gallium 69.723	Ge Germanium 72.61	As Arsenic 74.922	Se Selenium 78.96	Br Bromine 79.904	Kr Krypton 83.80			
5	Rb Rubidium 85.468	Sr Strontium 87.62	Y Yttrium 88.906	Zr Zirconium 91.224	Nb Niobium 92.906	Mo Molybdenum 95.94	Tc Technetium 98	Ru Ruthenium 101.07	Rh Rhodium 102.906	Pd Palladium 106.42	Ag Silver 107.868	Cd Cadmium 112.411	In Indium 114.82	Sn Tin 118.710	Sb Antimony 121.757	Te Tellurium 127.60	I Iodine 126.905	Xe Xenon 131.29			
6	Cs Cesium 132.905	Ba Barium 137.327	La Lanthanum 138.905	Hf Hafnium 178.49	Ta Tantalum 180.948	W Tungsten 183.85	Re Rhenium 186.207	Os Osmium 190.2	Ir Iridium 192.22	Pt Platinum 195.08	Au Gold 196.967	Hg Mercury 200.59	Tl Thallium 204.383	Pb Lead 207.2	Bi Bismuth 208.980	Po Polonium 208.982	At Astatine 210	Rn Radon 222			
7	Fr Francium 223	Ra Radium 226.025	Ac Actinium 227.028	Rf Rutherfordium (261)	Db Dubnium (262)	Sg Seaborgium (263)	Bh Bohrium (264)	Hs Hassium (265)	Mt Meitnerium (268)												

← Metals Nonmetals →

Inner Transition Metals

Lanthanide series

58 Ce Cerium 140.12	59 Pr Praseodymium 140.908	60 Nd Neodymium 144.24	61 Pm Promethium 144.913	62 Sm Samarium 150.36	63 Eu Europium 151.96	64 Gd Gadolinium 157.25	65 Tb Terbium 158.925	66 Dy Dysprosium 162.50	67 Ho Holmium 164.930	68 Er Erbium 167.26	69 Tm Thulium 168.934	70 Yb Ytterbium 173.04	71 Lu Lutetium 174.967
90 Th Thorium 232.038	91 Pa Protactinium 231.036	92 U Uranium 238.029	93 Np Neptunium 237.048	94 Pu Plutonium 244.064	95 Am Americium 243.061	96 Cm Curium 247.070	97 Bk Berkelium 247.070	98 Cf Californium 251.080	99 Es Einsteinium 252.083	100 Fm Fermium 257.095	101 Md Mendelevium 258.099	102 No Nobelium 259.101	103 Lr Lawrencium 260.105

Actinide series