

Elements & the Periodic Table Learning Guide

Periodic Table of the Elements

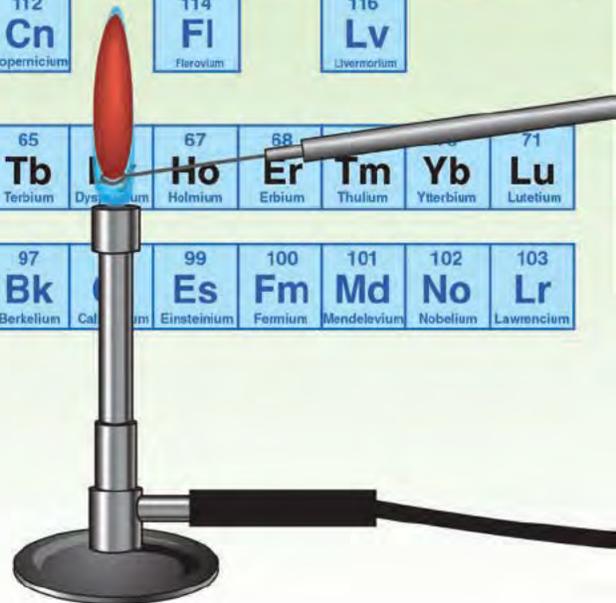
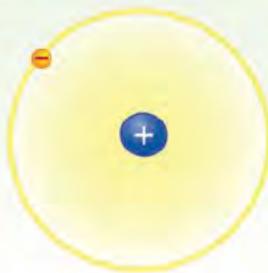
1 1 H Hydrogen																	18 2 He Helium		
Background Color																		Symbol Color	
 metal	 nonmetal																	 solid	 gas
 metalloid																	 liquid	 unknown	
2 3 Li Lithium	4 4 Be Beryllium											13 5 B Boron	14 6 C Carbon	15 7 N Nitrogen	16 8 O Oxygen	17 9 F Fluorine	18 10 Ne Neon		
3 11 Na Sodium	12 12 Mg Magnesium	3 21 Sc Scandium	4 22 Ti Titanium	5 23 V Vanadium	6 24 Cr Chromium	7 25 Mn Manganese	8 26 Fe Iron	9 27 Co Cobalt	10 28 Ni Nickel	11 29 Cu Copper	12 30 Zn Zinc	13 13 Al Aluminum	14 14 Si Silicon	15 15 P Phosphorus	16 16 S Sulfur	17 17 Cl Chlorine	18 18 Ar Argon		
4 19 K Potassium	20 20 Ca Calcium	21 39 Sc Scandium	22 40 Ti Titanium	23 41 V Vanadium	24 42 Cr Chromium	25 43 Mn Manganese	26 44 Fe Iron	27 45 Co Cobalt	28 46 Ni Nickel	29 47 Cu Copper	30 48 Zn Zinc	31 31 Ga Gallium	32 32 Ge Germanium	33 33 As Arsenic	34 34 Se Selenium	35 35 Br Bromine	36 36 Kr Krypton		
5 37 Rb Rubidium	38 38 Sr Strontium	39 87 Y Yttrium	40 90 Zr Zirconium	41 91 Nb Niobium	42 92 Mo Molybdenum	43 93 Tc Technetium	44 94 Ru Ruthenium	45 95 Rh Rhodium	46 96 Pd Palladium	47 97 Ag Silver	48 98 Cd Cadmium	49 49 In Indium	50 50 Sn Tin	51 51 Sb Antimony	52 52 Te Tellurium	53 53 I Iodine	54 54 Xe Xenon		
6 55 Cs Cesium	56 56 Ba Barium	57 88 La Lanthanum	72 104 Hf Hafnium	73 105 Ta Tantalum	74 106 W Tungsten	75 107 Re Rhenium	76 108 Os Osmium	77 109 Ir Iridium	78 110 Pt Platinum	79 111 Au Gold	80 112 Hg Mercury	81 81 Tl Thallium	82 82 Pb Lead	83 83 Bi Bismuth	84 84 Po Polonium	85 85 At Astatine	86 86 Rn Radon		
7 87 Fr Francium	88 88 Ra Radium	89 103 Ac Actinium	104 104 Rf Rutherfordium	105 105 Db Dubnium	106 106 Sg Seaborgium	107 107 Bh Bohrium	108 108 Hs Hassium	109 109 Mt Meitnerium	110 110 Ds Darmstadtium	111 111 Rg Roentgenium	112 112 Cn Copernicium	114 114 Fl Flerovium	116 116 Lv Livermorium						

Lanthanoids

58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Pm Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Ytterbium	71 Lu Lutetium
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Actinids

90 Th Thorium	91 Pa Protactinium	92 U Uranium	93 Np Neptunium	94 Pu Plutonium	95 Am Americium	96 Cm Curium	97 Bk Berkelium	99 Es Einsteinium	100 Fm Fermium	101 Md Mendelevium	102 No Nobelium	103 Lr Lawrencium
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TABLE OF CONTENTS

Lesson 1 - Introduction to Elements.....	2
Pause & Review - Parts of an Atom.....	7
Lesson 2 - Classes of Elements	8
Pause & Review - Classes of Elements.....	14
Lesson 3 - The Periodic Table of Elements	15
Pause & Review - The Periodic Table of Elements.....	19
Lesson 4 - Groups on the Periodic Table.....	20
Pause & Review - Groups on the Periodic Table.....	28
Lab Investigation - Flame Test	29
Key Vocabulary Terms.....	32
Vocabulary Review	34
Assessment Review	36
Assessment.....	39
Assessment Key.....	41
NGSS Correlations.....	42



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INTRODUCTION TO ELEMENTS

Elements

An **element** is a pure substance that cannot be separated into simpler substances. This means an **element** is a substance made entirely of one type of **atom**. For example, every **atom** in a piece of copper is the same.



Scientists have identified **90 elements** that occur naturally in our universe. Some **elements** you might recognize include oxygen, iron, and calcium.

Periodic Table of the Elements

state at room temperature

- solid
- gas
- liquid
- not found in nature

1 H Hydrogen																	2 He Helium																												
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There are also over 20 man-made elements, such as einsteinium.

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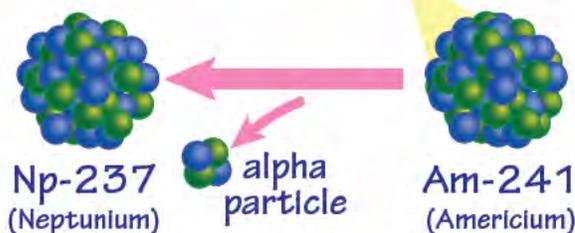
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Man-made **elements** are **radioactive** and unstable and decay over time into lighter elements.

Compounds

Most living and nonliving things are made up of a combination of **elements**. **Elements** chemically **combine** in a variety of ways to form **compounds**. A **compound** is made of two or more different **elements** bonded together in an exact ratio according to their masses.

