

ADMISSIONS STARTED

9TH/10TH

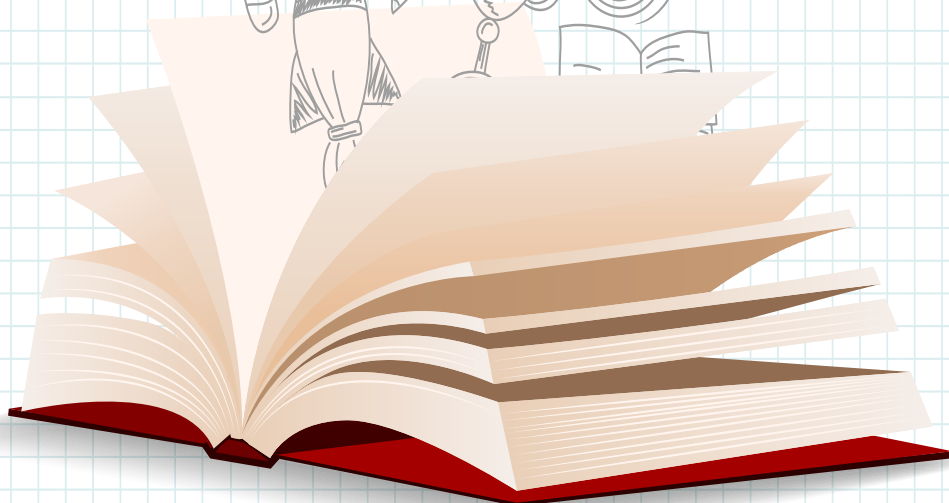
12TH COM/SCI

TYBCOM/BAF

Write your

Success story

with us



Science & Technology
Study of Elements by Sai Sir
Standard- 10th

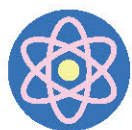
Students Academy



7718088017

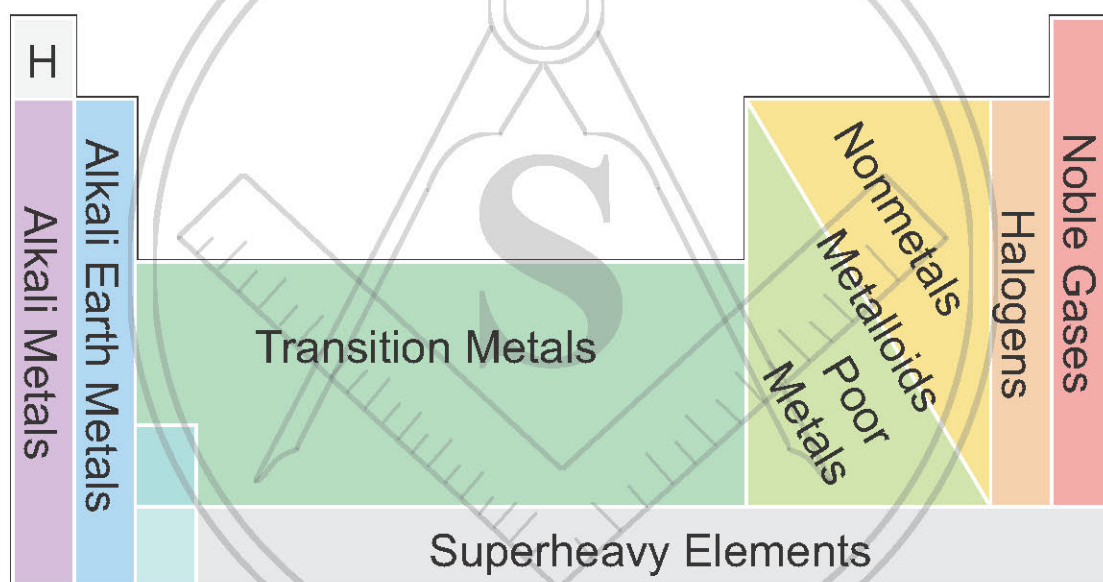
✉ Email : office.studentsacademy@gmail.com • Office Time : 9.00 am to 8.00 pm

📘 [StudentsAcademy.CoachingClasses](#) | 📷 [StudentsAcademy_LearningHome](#)



Sainath Sadulla

The Periodic Table of the Elements, in Pictures and Words



Solid

Liquid

Gas
at room temperature

Human Body
top ten elements by weight

Earth's Crust
top eight elements by weight

The color of the symbol is the color of the element in its most common pure form.

Examples metallic solid
 red liquid
 colorless gas

Magnetic
ferromagnetic at room temperature

Noble Metals
corrosion-resistant

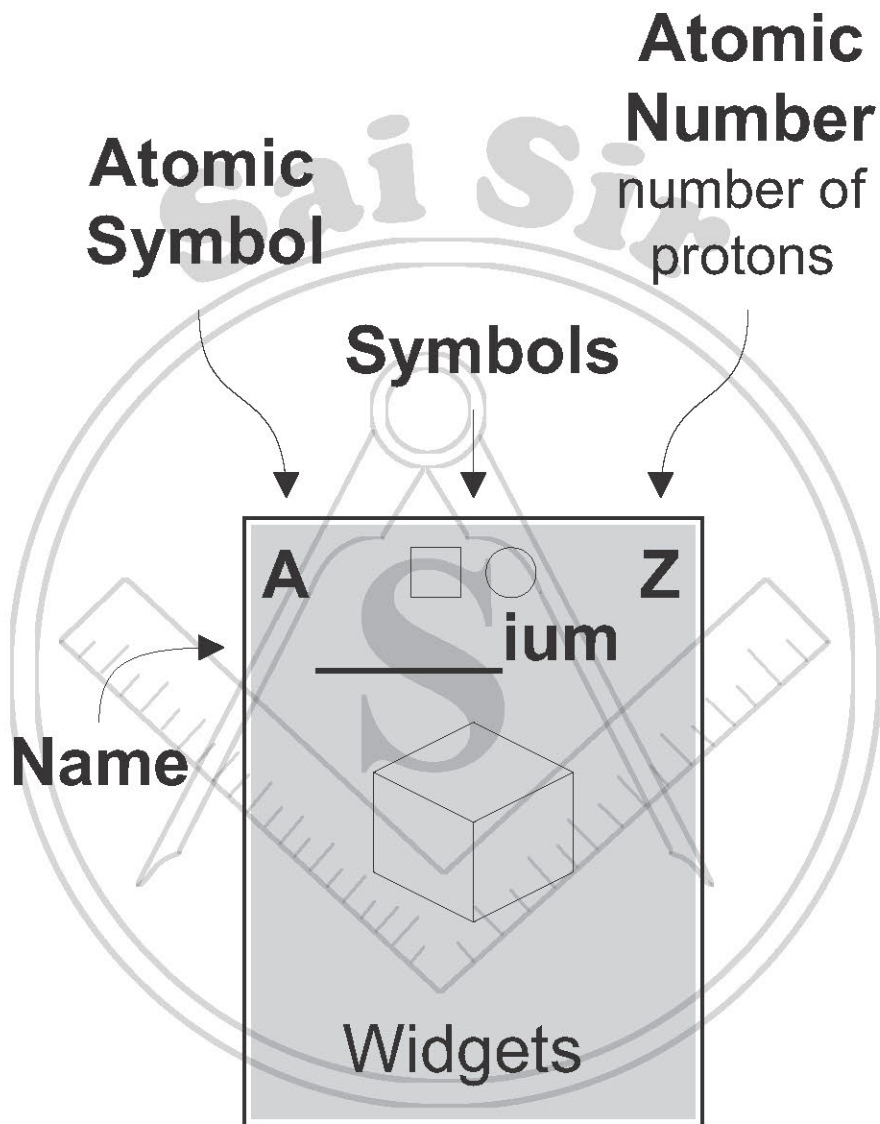
Radioactive
all isotopes are radioactive

Only Traces Found in Nature
less than a millionth percent of earth's crust

Never Found in Nature
only made by people

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)



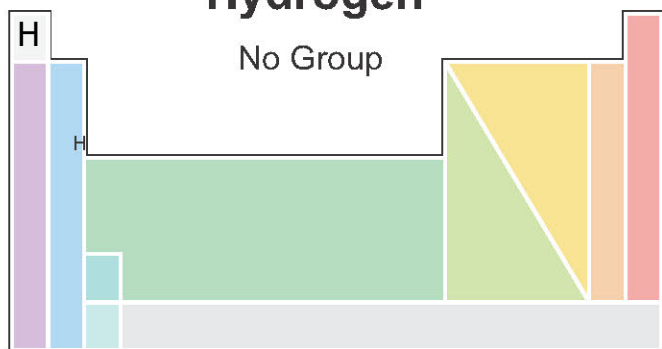
 9664080155

How it is (or was) used
or where it occurs in nature

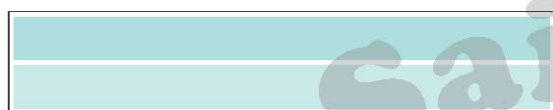
SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Hydrogen

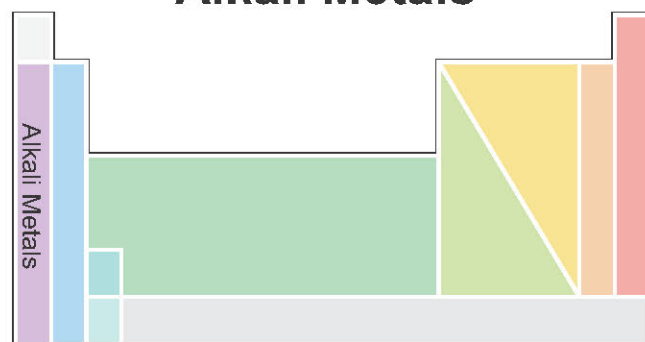


No Group

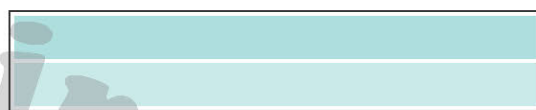


Hydrogen belongs to no definite group. It forms compounds by either donating an electron like an alkali metal or accepting an electron like a halogen.

Alkali Metals

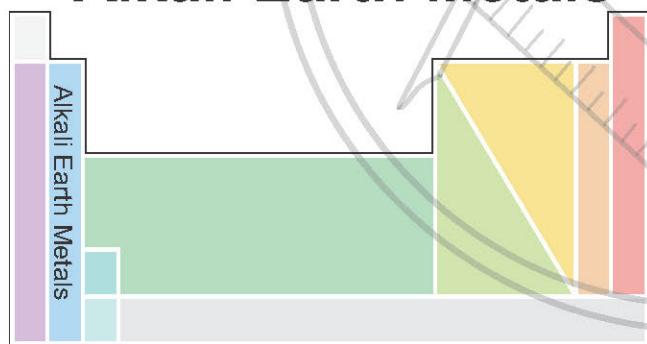


Alkali Metals



Alkali Metals are very reactive and readily form compounds but are not found free in nature. They form salts and alkali (acid-neutralizing) compounds such as baking soda. In pure form, they are very soft metals which catch fire on contact with water.

Alkali Earth Metals

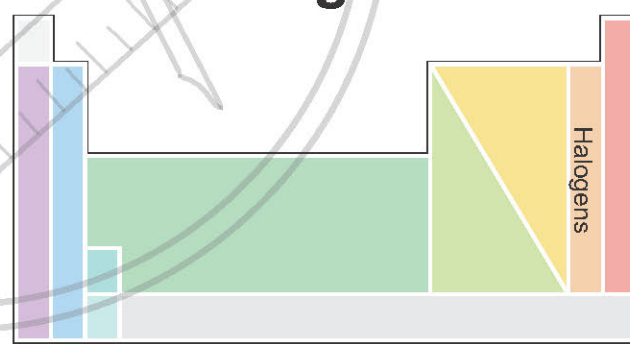


Alkali Earth Metals



Alkali Earth Metals are reactive and readily form compounds but are not found free in nature. Their oxides are called alkali earths. In pure form, they are soft and somewhat brittle metals.

Halogens



Halogens

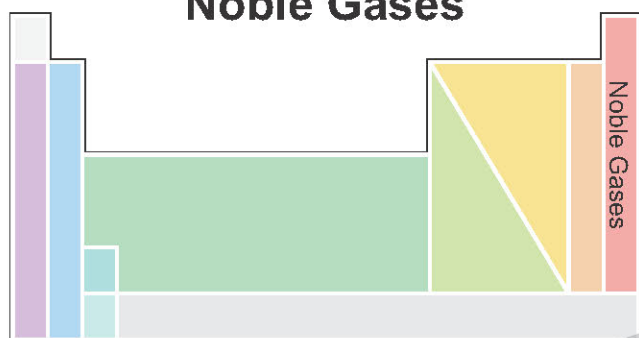


Halogens are reactive nonmetals and readily form compounds but are not found free in nature. They combine with alkali metals to form salts (halogen means salt-former).

SSC- Science (Uses of Elements)

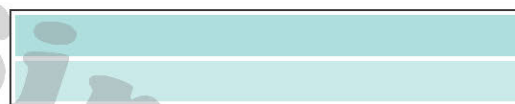
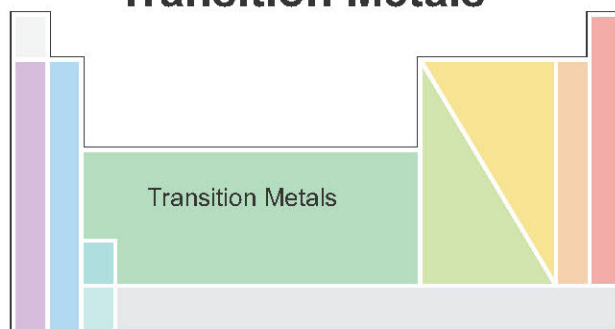
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Noble Gases



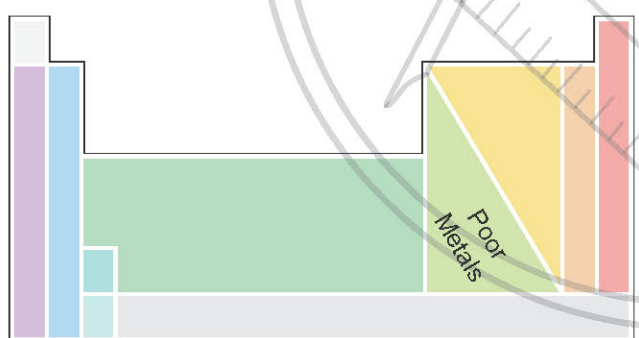
Noble Gases are inactive, or inert. Each atom has exactly the number of electrons it needs to have a full outer shell, so these atoms almost never bond with other atoms. That is why these are all gases.

Transition Metals



Transition Metals are typical metals: they are strong, shiny, malleable (they can be hammered into shape), flexible (in thin sheets or wires), and they conduct both heat and electricity.

Poor Metals



Poor Metals are usually soft and have low melting temperatures.

Metalloids



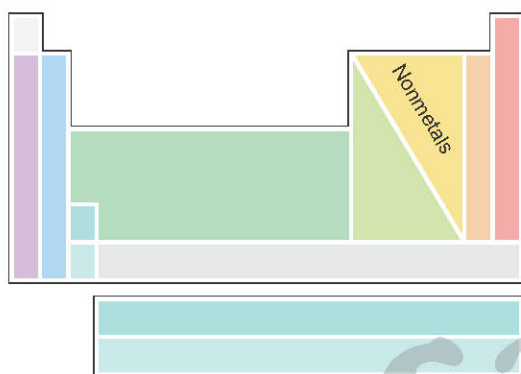
Metalloids are partly like metals and partly like nonmetals. For example, they are semiconductors, which means they conduct electricity in some conditions.
B, Si, Ge, As, Sb, and Te are metalloids.

9664080155

SSC- Science (Uses of Elements)

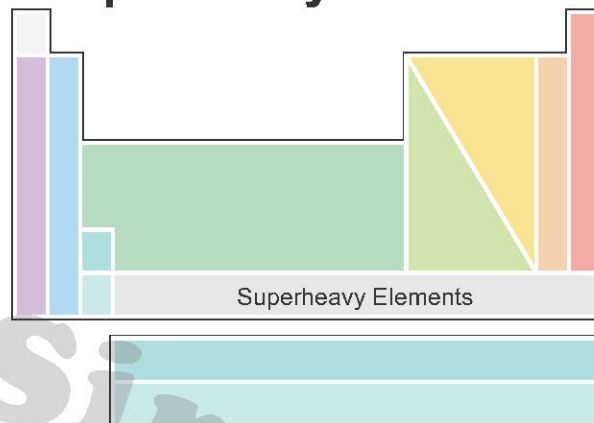
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Nonmetals



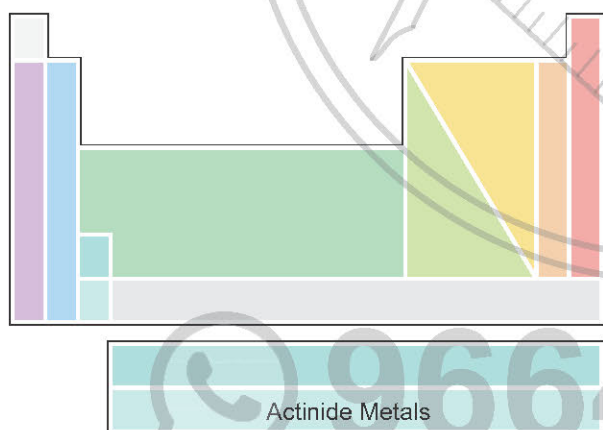
Nonmetals, in their solid state, are usually brittle (they break rather than bend) and they are insulators of both heat and electricity.

Superheavy Elements



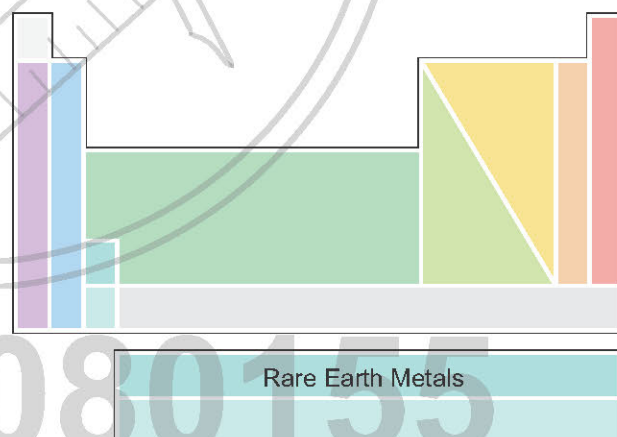
Superheavy Elements are all radioactive and short-lived. They are never found in nature and have no uses except atomic research.

Actinide Metals



Actinide Metals are all radioactive heavy metals. They are used mainly for their radioactive properties.

Rare Earth Metals Lanthanides

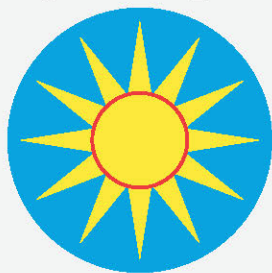


Rare Earth Metals are all soft metals. They are chemically similar to scandium and yttrium and are difficult to separate from each other.

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

H   1
Hydrogen



Sun and Stars

He  2
Helium



Balloons

Li  3
Lithium



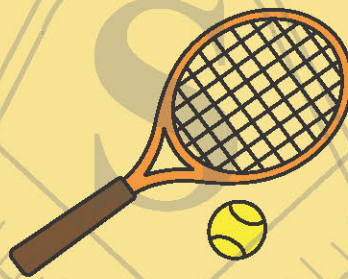
Batteries

Be  4
Beryllium



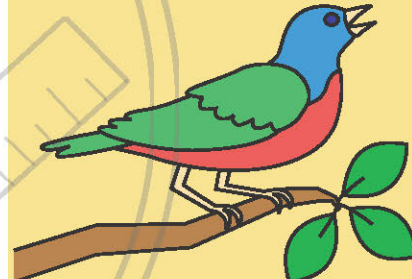
Emeralds

B  5
Boron



Sports Equipment

C   6
Carbon



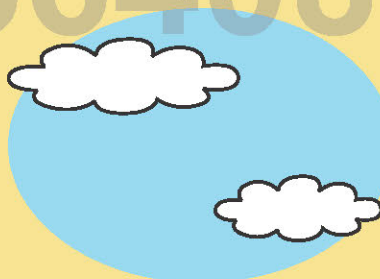
Basis of Life's Molecules

N   7
Nitrogen



Protein

O    8
Oxygen



Air

F  9
Fluorine



Toothpaste

SSC- Science (Uses of Elements)

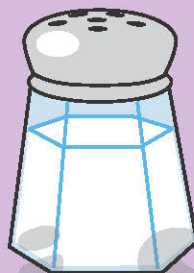
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Ne  10
Neon



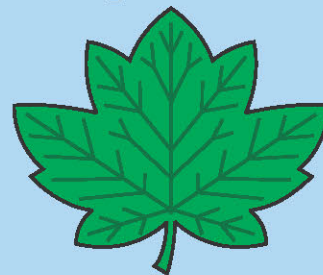
Advertising Signs

Na  11
Sodium



Salt

Mg  12
Magnesium



Chlorophyll

Al  13
Aluminum



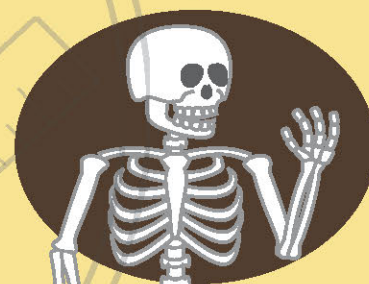
Airplanes

Si  14
Silicon



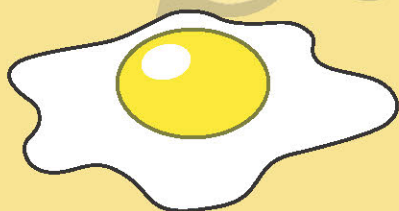
Stone, Sand,
and Soil

P  15
Phosphorus



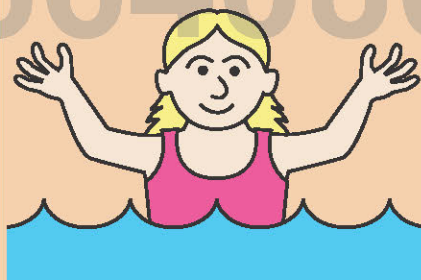
Bones

S  16
Sulfur



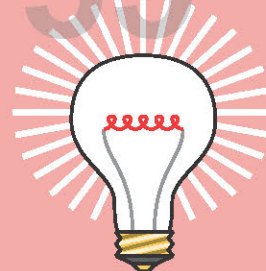
Eggs

Cl  17
Chlorine



Swimming
Pools

Ar  18
Argon



Light Bulbs

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

K    **19**
Potassium



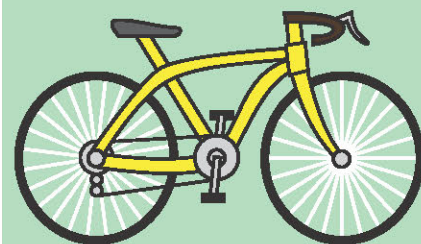
Fruits and
Vegetables

Ca    **20**
Calcium



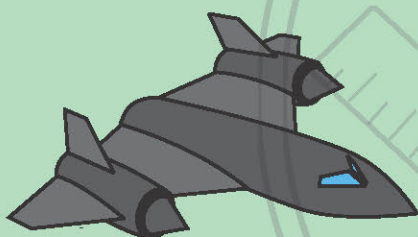
Shells and
Bones

Sc  **21**
Scandium



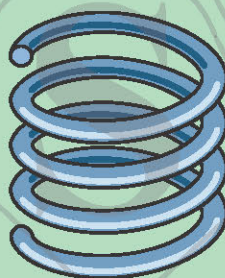
Bicycles

Ti  **22**
Titanium



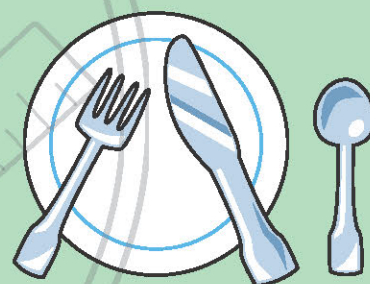
Aerospace

V  **23**
Vanadium



Springs

Cr  **24**
Chromium



Stainless
Steel

Mn  **25**
Manganese



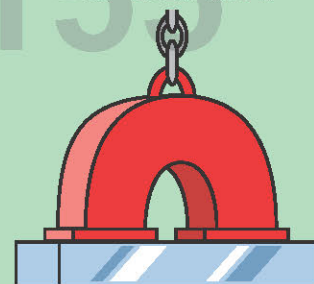
Earthmovers

Fe    **26**
Iron



Steel
Structures

Co   **27**
Cobalt

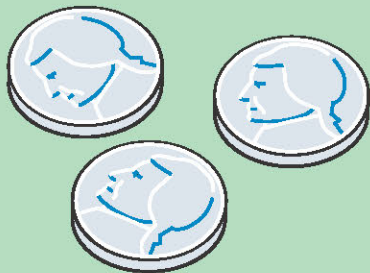


Magnets

SSC- Science (Uses of Elements)

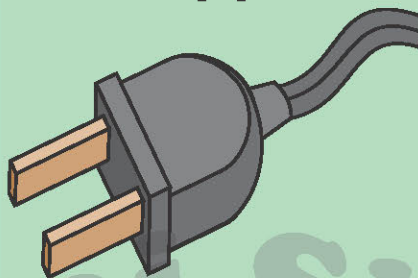
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Ni  28
Nickel



Coins

Cu  29
Copper



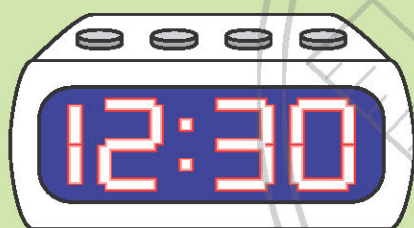
Electric
Wires

Zn  30
Zinc



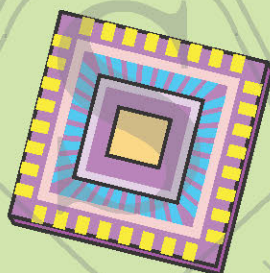
Brass
Instruments

Ga  31
Gallium



Light-Emitting
Diodes (LEDs)

Ge  32
Germanium



Semiconductor
Electronics

As  33
Arsenic



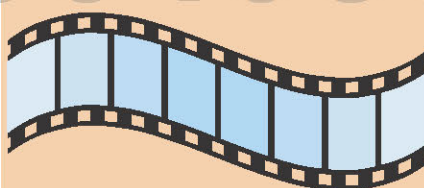
Poison

Se  34
Selenium



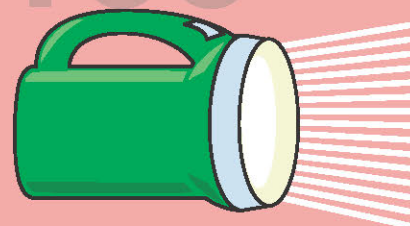
Copiers

Br  35
Bromine



Photography
Film

Kr  36
Krypton

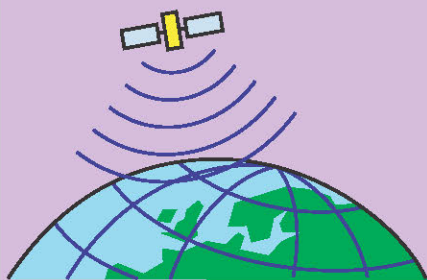


Flashlights

SSC- Science (Uses of Elements)

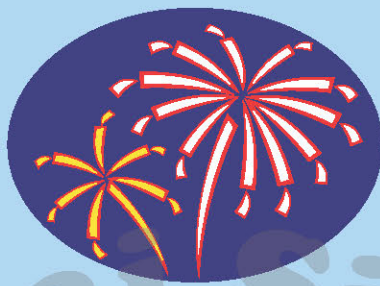
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Rb  37
Rubidium



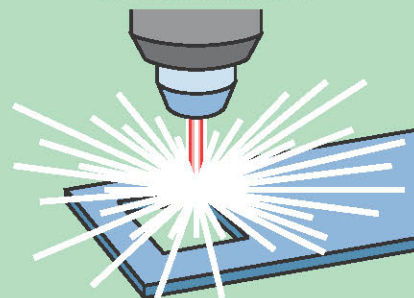
Global Navigation

Sr  38
Strontium



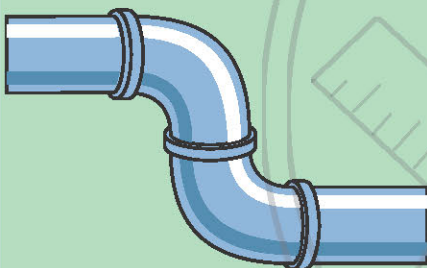
Fireworks

Y  39
Yttrium



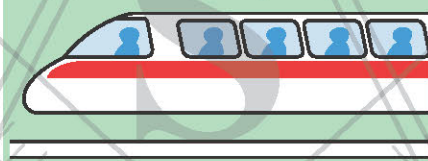
Lasers

Zr  40
Zirconium



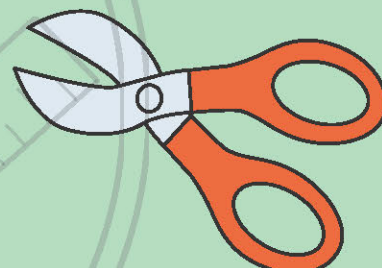
Chemical Pipelines

Nb  41
Niobium



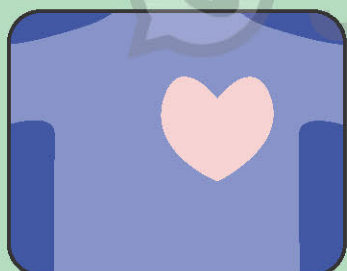
Mag Lev Trains

Mo  42
Molybdenum



Cutting Tools

Tc    43
Technetium



Radioactive Diagnosis

Ru   44
Ruthenium



Electric Switches

Rh   45
Rhodium



Searchlight Reflectors

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Pd   46
Palladium



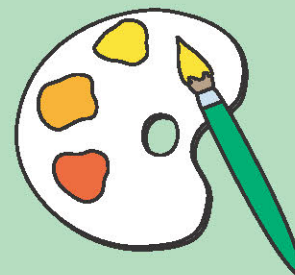
Pollution
Control

Ag   47
Silver



Jewelry

Cd  48
Cadmium



Paint

In  49
Indium



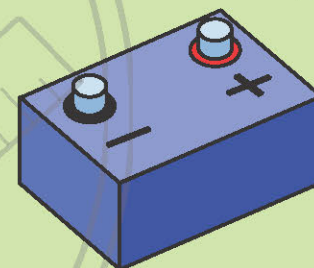
Liquid Crystal
Displays (LCDs)

Sn  50
Tin



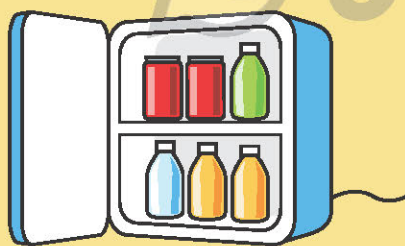
Plated
Food Cans

Sb  51
Antimony



Car
Batteries

Te  52
Tellurium



Thermoelectric
Coolers

I  53
Iodine



Disinfectant

Xe  54
Xenon



High-Intensity
Lamps

SSC- Science (Uses of Elements)

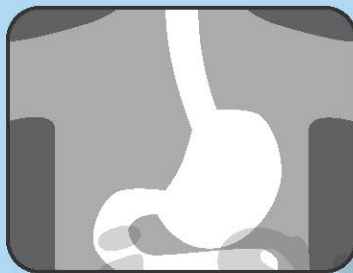
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Cs  55
Cesium



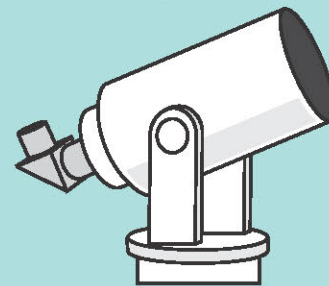
Atomic
Clocks

Ba  56
Barium



X-Ray
Diagnosis

La  57
Lanthanum



Telescope
Lenses

Ce  58
Cerium



Lighter
Flints

Pr  59
Praseodymium




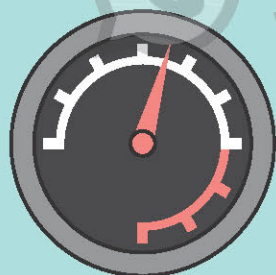
Torchworkers'
Eyeglasses

Nd  60
Neodymium



Electric Motor
Magnets

Pm    61
Promethium



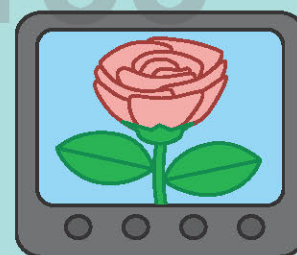
Luminous
Dials

Sm  62
Samarium



Electric Motor
Magnets

Eu  63
Europium

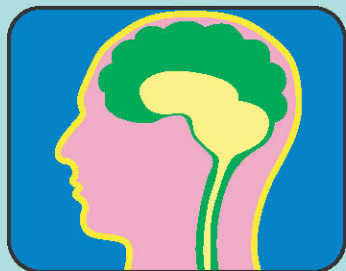


Color
Televisions

SSC- Science (Uses of Elements)

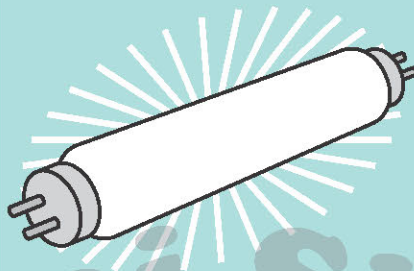
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Gd  **64**
Gadolinium



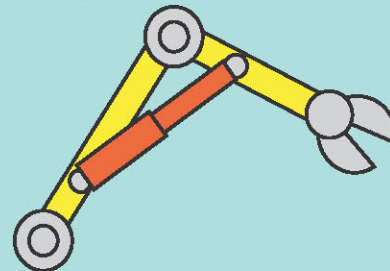
MRI
Diagnosis

Tb  **65**
Terbium



Fluorescent
Lamps

Dy  **66**
Dysprosium



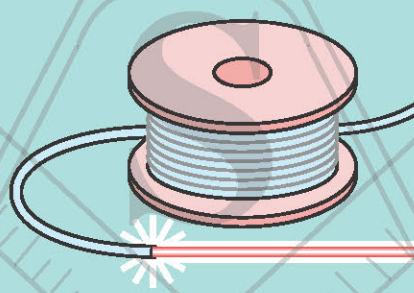
Smart Material
Actuators

Ho  **67**
Holmium



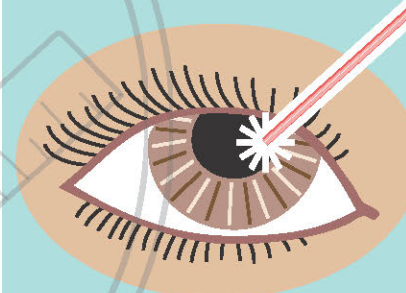
Laser
Surgery

Er  **68**
Erbium



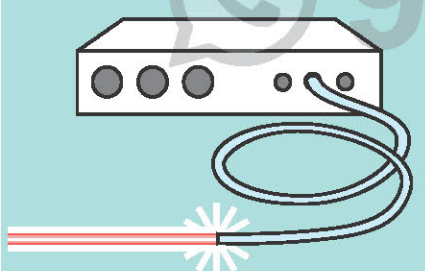
Optical Fiber
Communications

Tm  **69**
Thulium



Laser
Surgery

Yb  **70**
Ytterbium



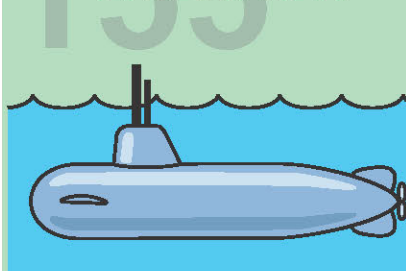
Scientific
Fiber Lasers

Lu  **71**
Lutetium



Photodynamic
Medicine

Hf  **72**
Hafnium

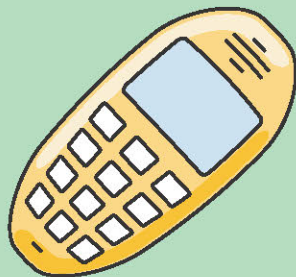


Nuclear
Submarines

SSC- Science (Uses of Elements)

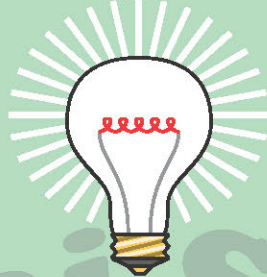
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Ta  73
Tantalum



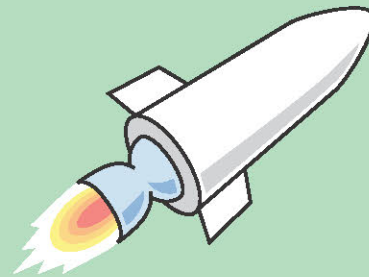
Mobile
Phones

W  74
Tungsten



Lamp
Filaments

Re  75
Rhenium



Rocket
Engines

Os   76
Osmium



Pen Points

Ir   77
Iridium



Spark Plugs

Pt   78
Platinum



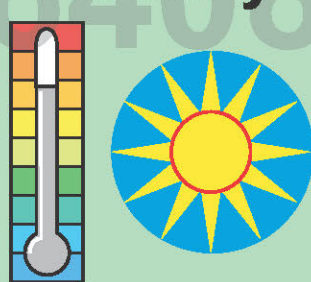
Labware

Au   79
Gold



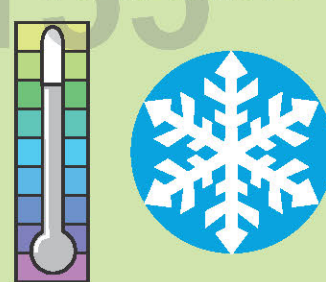
Jewelry

Hg  80
Mercury



Thermometers

Tl  81
Thallium

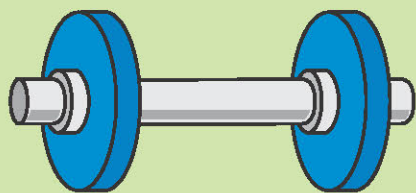


Low-Temperature
Thermometers

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Pb  **82**
Lead



Weights

Bi  **83**
Bismuth



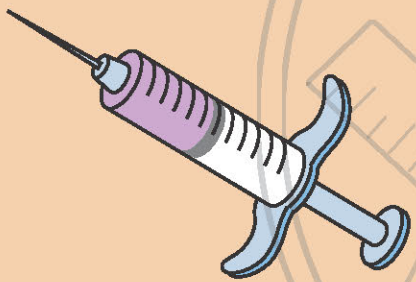
Fire
Sprinklers

Po  **84**
Polonium



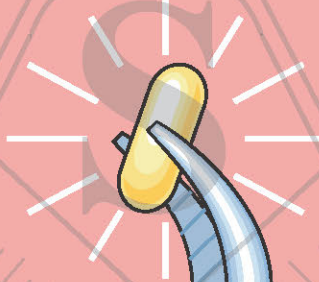
Anti-Static
Brushes

At  **85**
Astatine



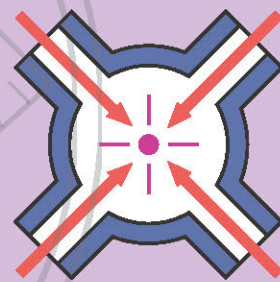
Radioactive
Medicine

Rn  **86**
Radon



Surgical
Implants

Fr  **87**
Francium



Laser
Atom Traps

Ra  **88**
Radium



Luminous
Watches

Ac  **89**
Actinium



Radioactive
Medicine

Th  **90**
Thorium

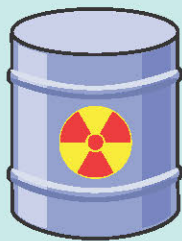


Gas Lamp
Mantles

SSC- Science (Uses of Elements)

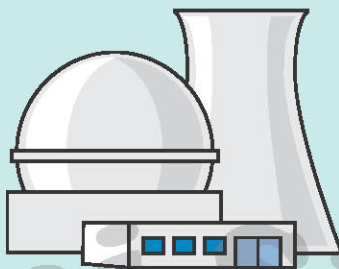
Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Pa   **91**
Protactinium



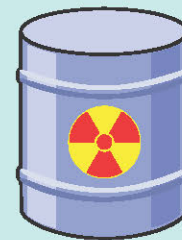
Radioactive
Waste

U  **92**
Uranium



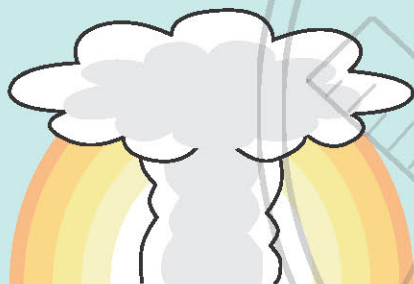
Nuclear
Power

Np   **93**
Neptunium



Radioactive
Waste

Pu   **94**
Plutonium



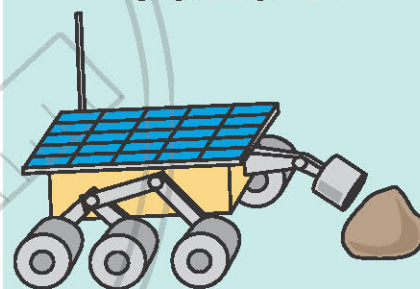
Nuclear
Weapons

Am   **95**
Americium



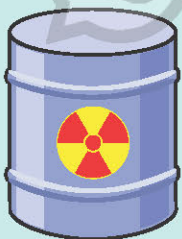
Smoke
Detectors

Cm   **96**
Curium



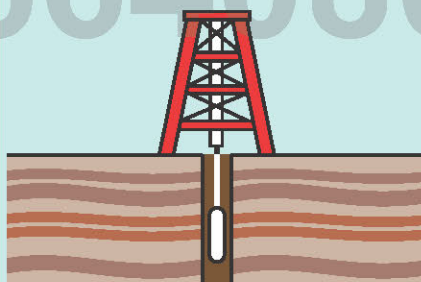
Mineral
Analyzers

Bk   **97**
Berkelium



Radioactive
Waste

Cf   **98**
Californium



Mineral
Analyzers

Es   **99**
Einsteinium

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Fm  X 100
Fermium

Md  X 101
Mendelevium

No  X 102
Nobelium

Lr  X 103
Lawrencium

Rf  X 104
Rutherfordium

Db  X 105
Dubnium

Sg  X 106
Seaborgium

Bh  X 107
Bohrium

Hs  X 108
Hassium

Sai Sir

S

9664080155

SSC- Science (Uses of Elements)

Prepared by Sainath Sadulla (M.Sc Physics - Electronics)

Mt  X 109
Meitnerium

Ds  X 110
Darmstadtium

Rg  X 111
Roentgenium

Cn  X 112
Copernicium

Nh  X 113
Nihonium

Fl  X 114
Flerovium

Mc  X 115
Moscovium

Lv  X 116
Livermorium

Ts  X 117
Tennessine

Og  X 118
Oganesson

Sai Sir

S

9664080155

The Periodic Table of the Elements, in Pictures

Periods

<p>Alkali Metals Group 1</p> <p>H Hydrogen Sun and Stars</p> <p>Li Lithium Batteries</p> <p>Na Sodium Salt</p> <p>K Potassium Fruits and Vegetables</p> <p>Rb Rubidium Global Navigation</p> <p>Cs Cesium Atomic Clocks</p> <p>Fr Francium Laser Atom Traps</p>	<p>Alkali Earth Metals 2</p> <p>Be Beryllium</p> <p>Mg Magnesium Chlorophyll</p> <p>Ca Calcium Shells and Bones</p> <p>Sr Strontium Fireworks</p> <p>Ba Barium X-Ray Diagnosis</p> <p>Ra Radium Luminous Watches</p>	<p>Transition Metals</p> <p>Sc Scandium Bicycles</p> <p>Ti Titanium Aerospace</p> <p>V Vanadium Springs</p> <p>Cr Chromium Stainless Steel</p> <p>Mn Manganese Earthmovers</p> <p>Fe Iron Steel Structures</p> <p>Co Cobalt Magnets</p> <p>Ni Nickel Coins</p> <p>Cu Copper Electric Wires</p> <p>Zn Zinc Brass Instruments</p> <p>Ga Gallium Light-Emitting Diodes (LEDs)</p> <p>Ge Germanium Semiconductor Electronics</p> <p>As Arsenic Poison</p> <p>Se Selenium Copiers</p> <p>Br Bromine Photography Film</p> <p>Kr Krypton Flashlights</p>	<p>Color Key</p> <p>Metals</p> <p>Alkali Earth Metals</p> <p>Transition Metals</p> <p>Superheavy Elements</p> <p>Rare Earth Metals</p> <p>Actinide Metals</p> <p>Nonmetals</p> <p>Metals Poor</p> <p>Halogens</p> <p>Noble Gases</p> <p>Normetals</p>	<p>Atomic Number number of protons</p> <p>Atomic Symbol</p> <p>Name</p> <p>Widgets</p> <p>How it is (or was) used or where it occurs in nature</p>	<p>Color of the symbol is the color of the element in its most common pure form.</p> <p>Examples: metallic solid, red liquid, colorless gas</p> <p><input type="checkbox"/> Solid</p> <p><input type="checkbox"/> Liquid</p> <p><input type="checkbox"/> Gas</p> <p><input type="checkbox"/> at room temperature</p> <p>Human Body top ten elements by weight</p> <p>Earth's Crust top eight elements by weight</p> <p>Magnetic ferromagnetic at room temperature</p> <p>Noble Metals corrosion-resistant</p> <p>Radioactive all isotopes are radioactive</p> <p>Only Traces Found in Nature less than a millionth percent of earth's crust</p> <p>Never Found in Nature only made by people</p>	<p>Boron Group 13</p> <p>B Boron Sports Equipment</p> <p>Al Aluminum Aircraft</p> <p>Si Silicon Stone, Sand, and Soil</p> <p>P Phosphorus Bones</p> <p>S Sulfur Eggs</p> <p>Cl Chlorine Toothpaste</p> <p>Ar Argon Light Bulbs</p> <p>Ne Neon Advertising Signs</p> <p>He Helium Balloons</p>	<p>Carbon Group 14</p> <p>C Carbon Basis of Life's Molecules</p> <p>N Nitrogen Protein</p> <p>O Oxygen Air</p> <p>F Fluorine Toothpaste</p> <p>Ne Neon Advertising Signs</p>	<p>Nitrogen Group 15</p> <p>N Nitrogen Protein</p> <p>P Phosphorus Bones</p> <p>S Sulfur Eggs</p> <p>Cl Chlorine Toothpaste</p> <p>Ar Argon Light Bulbs</p>	<p>Oxygen Group 16</p> <p>O Oxygen Air</p> <p>S Sulfur Eggs</p> <p>Cl Chlorine Toothpaste</p> <p>Ar Argon Light Bulbs</p>	<p>Halogens Group 17</p> <p>F Fluorine Toothpaste</p> <p>Cl Chlorine Toothpaste</p> <p>Br Bromine Photography Film</p> <p>I Iodine Disinfectant</p> <p>At Astatine Radioactive Medicine</p>	<p>Noble Gases Group 18</p> <p>He Helium Balloons</p> <p>Ne Neon Advertising Signs</p> <p>Ar Argon Light Bulbs</p> <p>Kr Krypton Flashlights</p> <p>Xe Xenon High-intensity Lamps</p> <p>Rn Radon Surgical Implants</p> <p>Og Oganesson Surgical Implants</p>
<p>Rare Earth Metals</p> <p>La Lanthanum Telescope Lenses</p> <p>Ce Cerium Lighter Flint</p> <p>Pr Praseodymium Telescopes Eyepieces</p> <p>Nd Neodymium Electric Motor Magnets</p> <p>Pm Promethium Luminous Dials</p> <p>Sm Samarium Electric Motor Magnets</p> <p>Eu Europium Color Television</p> <p>Gd Gadolinium MRI Diagnosis</p> <p>Tb Terbium Fluorescent Lamps</p> <p>Dy Dysprosium Smart Material Actuators</p> <p>Ho Holmium Laser Surgery</p> <p>Er Erbium Optical Fiber Communications</p> <p>Tm Thulium Laser Surgery</p> <p>Yb Ytterbium Scientific Fiber Lasers</p> <p>Lu Lutetium Photodynamic Medicine</p>	<p>Actinide Metals</p> <p>Th Thorium Gas Lamp Mantles</p> <p>Pa Protactinium Radioactive Waste</p> <p>U Uranium Nuclear Power</p> <p>Np Neptunium Radioactive Waste</p> <p>Pu Plutonium Nuclear Weapons</p> <p>Am Americium Smoke Detectors</p> <p>Cm Curium Mineral Analyzers</p> <p>Bk Berkelium Radioactive Waste</p> <p>Cf Californium Mineral Analyzers</p> <p>Es Einsteinium radioactive, never found in nature, no uses except atomic research</p> <p>Fm Fermium radioactive, never found in nature, no uses except atomic research</p> <p>Md Mendelevium radioactive, never found in nature, no uses except atomic research</p> <p>No Nobelium radioactive, never found in nature, no uses except atomic research</p> <p>Lr Lawrencium radioactive, never found in nature, no uses except atomic research</p>	<p>Superheavy Elements radioactive, never found in nature, no uses except atomic research</p>	<p>Actinide Metals</p> <p>Ac Actinium Radioactive Medicine</p> <p>Th Thorium Gas Lamp Mantles</p> <p>Pa Protactinium Radioactive Waste</p> <p>U Uranium Nuclear Power</p> <p>Np Neptunium Radioactive Waste</p> <p>Pu Plutonium Nuclear Weapons</p> <p>Am Americium Smoke Detectors</p> <p>Cm Curium Mineral Analyzers</p> <p>Bk Berkelium Radioactive Waste</p> <p>Cf Californium Mineral Analyzers</p> <p>Es Einsteinium radioactive, never found in nature, no uses except atomic research</p> <p>Fm Fermium radioactive, never found in nature, no uses except atomic research</p> <p>Md Mendelevium radioactive, never found in nature, no uses except atomic research</p> <p>No Nobelium radioactive, never found in nature, no uses except atomic research</p> <p>Lr Lawrencium radioactive, never found in nature, no uses except atomic research</p>								

Designed & Developed by: Sai Sir (Students Academy)