

Bell-Ringer:

Go to All in Learning and complete the assessment.

Learning Objective:

Students will be able to classify elements on the periodic table by their periods, group numbers and group names.

Review of sub-atomic particles.

We will now go over the Atomic Structure Worksheet from a few classes ago.

Metals, Nonmetals, and Metalloids

H																	He																												
Li	Be											B	C	N	O	F	Ne																												
Na	Mg											Al	Si	P	S	Cl	Ar	metals																											
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr																												
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	metalloids																											
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn																												
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	—	Uuq	—	—	—	—	nonmetals																											
<table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>Ce</td><td>Pr</td><td>Nd</td><td>Pm</td><td>Sm</td><td>Eu</td><td>Gd</td><td>Tb</td><td>Dy</td><td>Ho</td><td>Er</td><td>Tm</td><td>Yb</td><td>Lu</td> </tr> <tr> <td>Th</td><td>Pa</td><td>U</td><td>Np</td><td>Pu</td><td>Am</td><td>Cm</td><td>Bk</td><td>Cf</td><td>Es</td><td>Fm</td><td>Md</td><td>No</td><td>Lr</td> </tr> </tbody> </table>																		Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu																																
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Metals, Nonmetals, and Metalloids

The diagram shows a periodic table with the following color-coding:

- Metals (Red):** Elements from Li to Ra, including the lanthanide and actinide series.
- Nonmetals (Blue):** Elements from H to Ne, and from B to Ar.
- Metalloids (Black):** Elements Al, Si, Ge, As, Sb, Te, and Po.

The lanthanide series (La-Lu) and actinide series (Ac-Lr) are shown in red below the main table.

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Periodic Table of the Elements
Natural Form

<http://chemistry.about.com>
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About Chemistry

The table is color-coded by natural form:

- Solid (Yellow):** Most elements, including H, Li, Na, K, Rb, Cs, Fr, and the entire lanthanide and actinide series.
- Liquid (Blue):** Hg and Br.
- Gas (Green):** H₂, He, Ne, Ar, Kr, Xe, Rn, and the noble gases.

*** Elements > 104 exist only for very short half-lives and the data is unknown.***

Most stable crystalline structure of solids

CUBIC	Simple Cubic	FCC	Face Centered Cubic	ORTHO	Orthorhombic	TETRA	Tetragonal	UNK	Unknown
BCC	Body Centered Cubic	HEX	Hexagonal	RHOM	Rhombohedral	MONO	Monoclinic		

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How the periodic table is arranged:

Periods = rows = horizontal = left to right
numbered from top to bottom 1-7

Groups = columns = vertical = up to down
numbered from left to right

Group numbers:

"Tall groups"

1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A

"Short groups"

3B, 4B, 5B, 6B, 7B, 8B, 8B, 8B, 1B, 2B

Groups with special names:

1A = alkali metals (these are very reactive)

2A = alkaline earth metals (these are slightly less reactive)

7A = halogens

8A = noble gases (these are non-reactive)

1A through 7A = representative elements

2B through 10 = transition metals

Groups at the bottom = inner transition metals

Guided Practice (zoom poll):

For each of the following Elements, what group are they in?

Complete the assignment in Google Classroom.