

## Chapter - 6 Interactive Online Periodic Table – PTable

### Objectives:

- Familiarise interactive online periodic table using “ptable”
- Identify symbols and recalls basic information of it
- Comprehend the classification of elements into blocks
- Finds the effect of temperature on various elements using temperature bar in interface
- Classifies elements into metals, non-metals and metalloids

### Skills to be attained:

Navigating and practising the functionalities of Ptable interface

Tools/website/Resources: ptable , Web link: <https://ptable.com/?lang=en#>

### Teacher led instruction:

Step1: Search ptable in any browser or type the above link to open the periodic table.

Ptable

Properties

Electrons

Isotopes

Compounds

Wide

Temperature

-

+

0 °C

32 °F

273 K

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

1

H

Hydrogen

1.008

3

Li

Lithium

6.94

11

Na

Sodium

22.990

19

K

Potassium

39.098

37

Rb

Rubidium

85.468

55

Cs

Caesium

132.91

87

Fr

Francium

(223)

2

He

Helium

4.0026

4

Be

Beryllium

9.0122

12

Mg

Magnesium

24.305

20

Ca

Calcium

40.078

38

Sr

Strontium

87.62

56

Ba

Barium

137.33

88

Ra

Radium

(226)

21

Sc

Scandium

44.956

39

Y

Yttrium

88.906

57-71

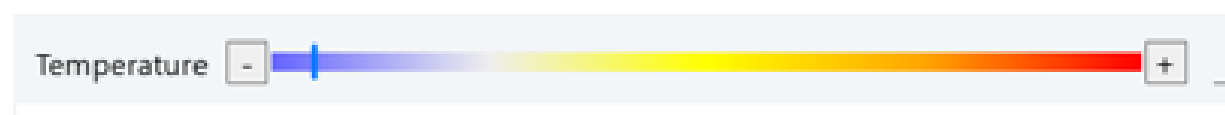
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Step 2: Click the menu bar and know the options

1. Click the **Ptable** option in menu bar



**Effect of temperature on elements:**



Move the

cursor in specific box to identify how many elements are in solid , liquid gaseous state at specific temperature.

- ☐ Solid
- ☐ Liquid
- ☐ Gas
- ☐ Unknown

Classifies elements into metals, non metals and metalloids.

Move the cursor in specific box to identify the position of metals , nonmetals and metalloids in the periodic table.

Metals					Metalloids	Nonmetals	
Alkali metals	Alkaline earth metals	Lanthanoids	Transition metals	Post-transition metals		Reactive nonmetals	Noble gases
		Actinoids					

Click on specific box to obtain in-depth information

2. Click **properties** option in menu bar

95	2
Am	8
Americium	18
(243)	32
	25
	8
	2

Energy levels	2, 8, 18, 32, 25, 8, 2
Electronegativity	1.3
Melting point	1,176 °C
Boiling point	2,011 °C
Electron affinity	N/A kJ/mol
Ionization, 1st	578 kJ/mol
Radius, calculated	N/A pm
Hardness, Brinell	N/A MPa
Modulus, bulk	N/A GPa
Density, STP	13,670 kg/m³
Conductivity, thermal	10 W/mK
Heat, specific	N/A J/kgK
Abundance, universe	0 %
Discovered	1944 AD

click on the required property in left window to know about that particular property of all elements in a single click.

3. Click the **electrons** option

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	H	He																He
2	Li	Be																Ne
3	Na	Mg																Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og

s block

p block

d block

f block

1 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 || 1 | H | He |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | He |
2	Li	Be																Ne
3	Na	Mg																Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og

Move the cursor on s/p/d/f box to recognize s,p,d,f block elements.

Click a specific element in the periodic table to know its electronic configuration

### 3. Click the **compounds** option

The screenshot shows the Ptable website interface. The 'Compounds' tab is selected. A red oval highlights a box in the periodic table where elements Mg and Cl are placed to form a compound. The left sidebar shows a list of compounds for Mg, including magnesium arsenide, bromide, chloride, fluoride, hydride, iodide, and hexaboride.

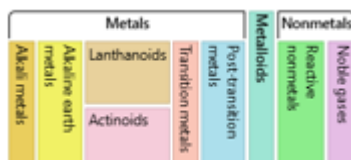
Drag and drop any two or more elements inside the box to create compounds.

### Student's Activity:

Instruct students to find out elements that are in solid, liquid and gaseous state at 30°C.

The screenshot shows the Ptable website interface with the 'Properties' tab selected. A temperature slider is set to 30°C. The periodic table is color-coded to show the state of elements at 30°C: Solid (black), Liquid (orange), and Gas (green).

Select the metals, nonmetals, metalloids, Rare gas (noble gases) in the table.



### Conclusion:

Recap the functionalities of ptable

Encourage the students to explore ptable to identify s,p,d and f block elements.