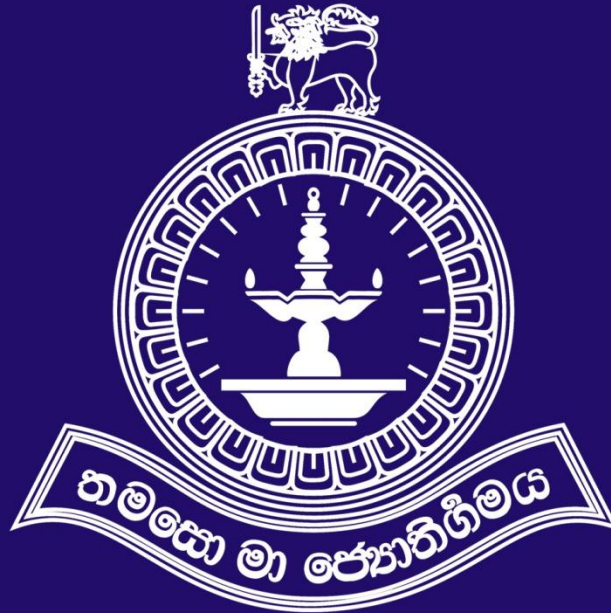


“Thurstan College, being unshaken amidst the COVID 19 challenges”

Series of Supportive Activities



Grade 10 - Science

THURSTAN COLLEGE
COLOMBO 07

Thurstan College, being unshaken amidst the COVID 19 challenges

Series of Supportive Activities

Concept, Guidance & Supervision - Principal Mr. Pramuditha Wickramasinghe

Implementation

- Deputy Principal (Education Development)

Mrs. N.G.H. Samanthini

-Assistant Principal (Grade6-13)

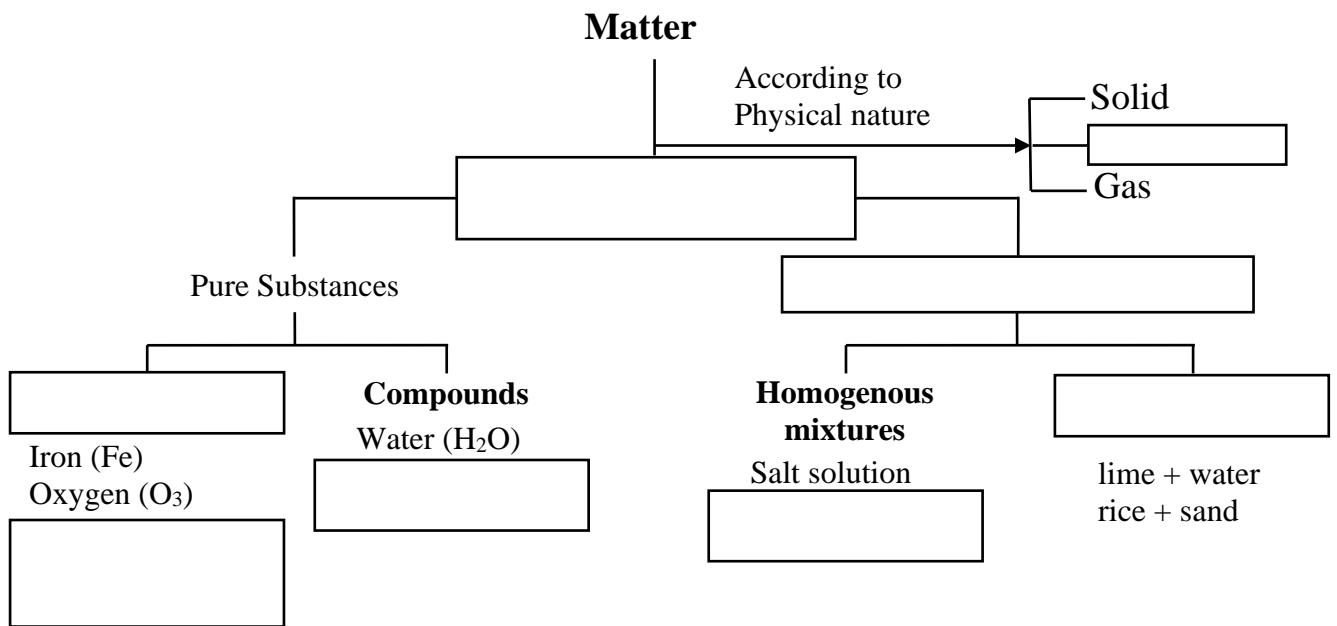
Mr. M.C.Jayasekara

-Grade Head (Grade 10) Mr. G.W.D.S. Welagedara

Preparation of Activity Books

- | | | |
|----------------------|---|--------------------------|
| ▪ Grade 6 (Science) | - | Mr. Anjula Rumesh Kumara |
| ▪ Grade 7 (Science) | - | Mr. Anjula Rumesh Kumara |
| ▪ Grade 8 (Science) | - | Mr. Anjula Rumesh Kumara |
| ▪ Grade 9 (Science) | - | Mr. Anjula Rumesh Kumara |
| ▪ Grade 10 (Science) | - | Mr. G.W.D.S. Welagedara |
| ▪ Grade 11 (Science) | - | Mr. G.W.D.S. Welagedara |

3. Structure of Matter



1.Name the subatomic particles of an atom.

Protons

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Electrons

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Neutrons

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02. Explain the arrangement of particles in an atom.

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03. Atomic model (planetary model) - Ernest Rutherford in 1911

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This is similar to solar system where the planets revolve around the sun.

01. Electrons are attracted by the positive charge of nucleus ; they
don't fall at the nucleus. What is the reason of it?

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02. What are the findings of Neils Bohr?

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Shell	Maximum Number of Electrons
1 - K	2
	8
3- <i>M</i>	
	32

There is a specified energy for each energy level.

03. What is atomic number?

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.....

Atomic number (Z)

Number of Protons in the nucleus

	Number of protons	Atomic Number
Na		11
C	6	
H	1	

04. Compare the number of electrons and protons in a neutral atom.

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05. What will happen to the electrons during the chemical reactions?

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10. What are ions?

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11. Compare the masses of subatomic particles.

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12. What is the mass number of an atom?

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13. Find the mass number of sodium.

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..... What is electronic configuration?

.....

14. What is the standard way of writing atomic and the mass number of an element?

A -

X -

Z -

A

X

Z

15. What is electronic configuration?

.....

.....

.....

16. Write down the electronic configuration of following element.

Electronic configuration of some element

Element	Symbol	Atomic number	Element configuration			
			K	L	M	N
Hydrogen	H		1			
Carbon		6		4		
Magnesium	Mg		2		2	
	Cl	17	2	8		
Calcium	Ca		2		8	

17. Draw the modern periodic table.

18. Who introduced the table for classifying elements?

.....

19. Write the two things that the modern periodic table is based on?

.....

.....

20. What is known as periodic law?

.....

.....

.....

21.Explain Followings.

a) Periods -.....

b) Groups -.....

22. What is the relationship between periodic number and the number of energy levels?

Periodic number - Number of energy levels carrying electrons

Period 1

Period 2

Period 3

Period 4

23. Fill in the following table.

H	1	Period 1
He	2	
.....	2,1	Period 2
Be	
B	2,3	
C	
N	2,5	
O	
F	
.....	2,8	
.....	2,8,1	Period 3

Mg	
Al	2,8,3	
Si	,,,,,,,,	
.....	2,8,5	
S	
.....	2,8,7	
Ar	
.....	2,8,8,1	Period 4
Ca	

14. What is the relationship between group number and number of electrons in its outermost energy level?

<u>Element</u>	No. of electrons in outer shell	<u>Group</u>
H	1	
He		VIII / 0
Bo		II
	3	III
C	4	
	5	V
O		VI
F	7	
	8	VII / 0

Na	1	I
	3	III
Si	4	IV
P		V
S	6	
Cl	7	
Ar		VIII / O
K	1	
Ca		II

25. Find the position of elements in periodic table.

Atomic No.	Eleme	Electric Configuration	Period	Group
1		1	Period 1	I
2	He	2		VII / O
3		2, 1	Period 2	I
4	Be			II
5	B	2, 3		III
6		2, 4	Period 2	
7	N		Period 2	V
8		2, 6	Period 2	
9	F		Period 2	VII
10		2, 8	Period 2	VIII / O
11	Na			I
12		2, 8, 2	Period 3	II
13	Al		Period 3	III
14		2, 8, 4	Period 3	IV
15		2, 8, 5	Period 3	
16	S		Period 3	VI
17		2, 8, 7	Period 3	VII
18	Ar		Period 3	VIII / O
19		2, 8, 8, 1	Period 4	I
20	Ca		Period 4	II

26. What are Isotopes?

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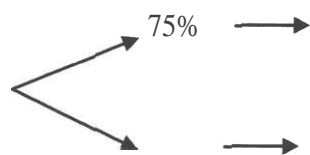
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27.Explain isotopes of Hydrogen

Isotope	Protium	Deuterium	Tritium
Atomic model			
Electrons		1	1
Protons	1		1
Neutrons	<u>0</u>	1	2
Atomic number		1	
Mass Number	<u>1</u>	2	3
Standard representation			

27. Explain Isotopes of Chlorine.

Percentage abundance of chlorine gas



In 100 parts of gas

28. What are the patterns seen in the periodic table?

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29. What is first Ionization energy'?

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30. What is the first Ionization energy of sodium?

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31. What is the unit of ionization energy?

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32. Compare the 1st ionization energy of different groups of periodic table.

Group I

Group VII Has maximum first Ionization energy

33. How Ionization energy varies in a periodic table?

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34. What is the reason of decreasing first ionization energy from top to bottom of a group?

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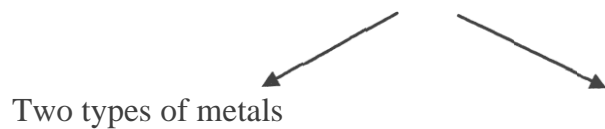
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Scale of measuring	Pauling scale
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										VII I/O									
I		II												III	IV	V	VI	VII	
														Al	Si	P	S	Cl	Ar
		Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr		
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe		
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	Un										
				Ce	Pr	Nd	Pm	Sm	Eu	Gd	To	Dy	Ho	Er	Tm	Yb	Lu		
				Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr		

Green Metalloids

38. Explain about metals? There are 8 metals



Native metals
.....
Gold

39. List the physical properties of metals?

Physical Properties of metals

- i. Have a metallic luster
- ii. Sonorous
- iii.
- iv.
- v.
- vi.
- vii.

40. List the chemical properties of metals?

- a. Form positive ions or cations by losing electrons.
- b.
- c.

