पुना International School

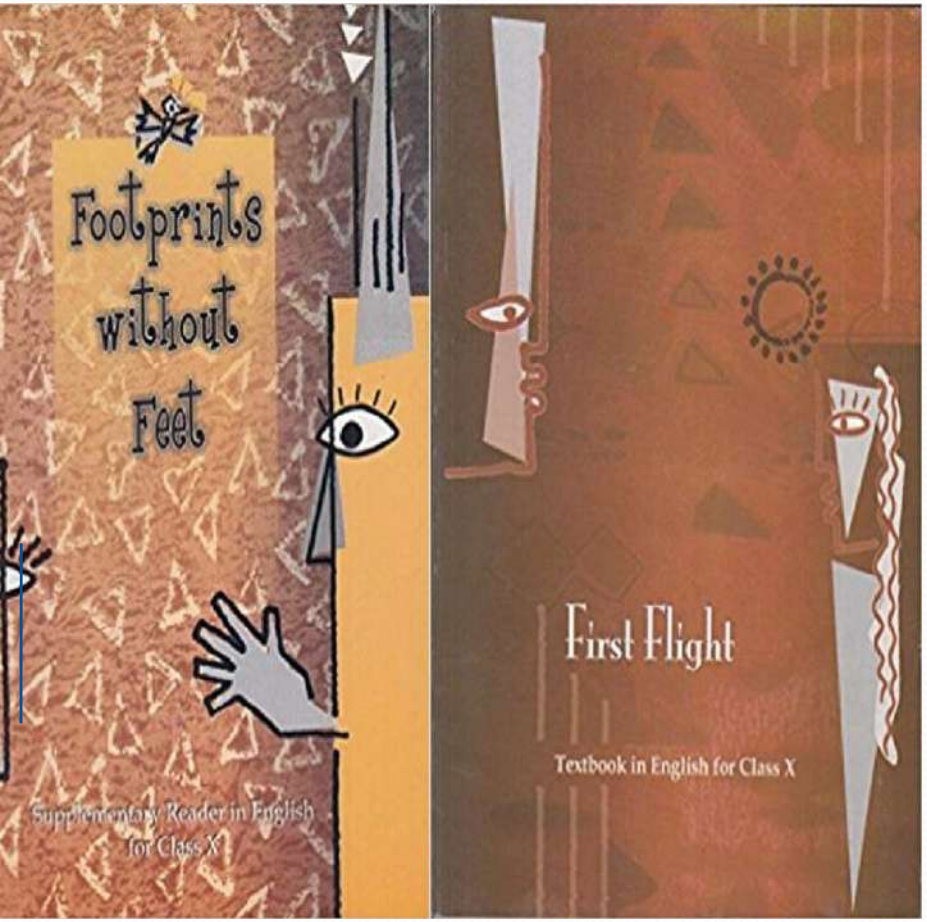
Shree Swaminarayan Gurukul, Zundal

Knowing the learning process
Grade X Teaching methodology
September and October 2019

Subjects

Subjects	Code
English	184
Hindi	085
Mathematics	041
Social studies	087
Science	086

Glance at lessons of September and October2019



Prose

L6 Glimpses of India

L7 Mujbil The Otter

Poetry

L 7 Animals

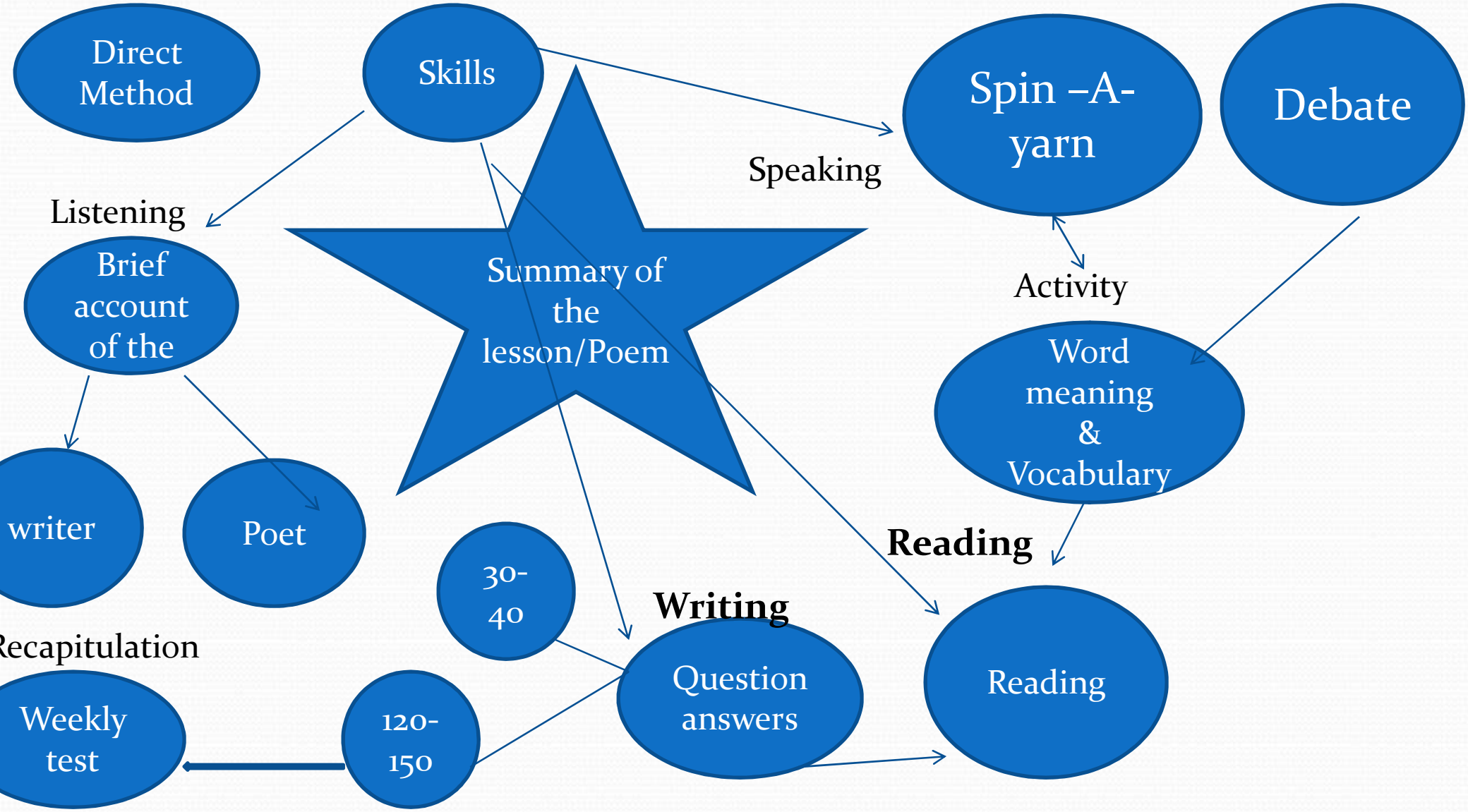
L 8 The Trees

Supplementary

L 7 The Necklace

L8 The Hack Driver

Teaching Methodology



3 , 14-07-2018

Teaching Aids

Supp. L-6 – The making of scientist

Only child of parents

↓

Fascination for butterflies

↓

Guided by guru Urgu Hart

↓

Started doing experiment

Flow chart

Started winning award

↑

Realised importance of cell

↑

Won the first prize

↑

Became good debater

Flash Cards

ROBERT W. PETERSON

Sight words Pronunciation Sentences

Tredrick Weiherer Ebright	Urgu incredible

tutube deo → https://www.youtube.com/watch?v=4-vPTbOSokQ

Teaching Aids

Flow chart

Flash Cards

Prose L-6
Glimpses of
ndia'

baker of Goa-
aking of Bread loaves

↓

oorg- heavenly
lace, good
ospitality

↓

Tea from Assam,

Bakers of Goa

Tea of Assam

Lucio Rodrigue

Sight words
Pronunciation
Sentences

Jingling	**Kabai**
Mysore	**Brahma**
Bylakuppe	**Pranjol**

utube
eo →

https://www.youtube.com/watch?v=u_1Fyczjgm8

PAPER STYLE

A Section	Reading skills	20 Marks
B Section	Writing with grammar	30 Marks
C Section	Literature TB & Extended Reading	30 Marks

Section A Reading **20 Marks**

Q1 : A factual passage 300-350 words 8 Marks

Q2 :A discursive passage 350-400 words with 4 short answer type to test vocabulary. 12 marks

Section B Writing and Grammar **30 marks**

Q3 : Writing an article/ descriptive paragraph(person place event /diary entry) in about 100-150 words 8 Marks

Q4: Writing a short story based on given outline 10 Marks

Q5 : Gap filling with one or two words to test preposition, articles, conjunctions and tenses 4 Marks

Q6 : Editing / Omission 4 Marks

Q7 : Sentence reordering / sentence transformation in context 4 marks

Paper style

Section C **30 Marks**

Q8 : One out of two extract from prose/ poetry/ play . Four very short answer qs **4 Marks**

Q9: Five short answer type qs. From Beehive and Moments (3 from Beehive 2 from moments) 30-40 words. **10 Marks**

Q 10: One out of 2 long answer type qs from Beehive to assess creativity , imagination beyond the text book (100 – 150 words) **8 Marks**

Q11: One out of two long answer qs . From Moments on theme or plot interpretation beyond the text or character sketch **8 Marks**

पर्वत प्रदेश में पावस

सुमित्रानंदन पंत

Class XII Hindi Sparsh

कवि- परिचय

सुमित्रानंदन पंत

मूल नाम: गोसाँई दत्त

जन्म: सन् 1900, कौसानी, जिला अल्मोड़ा (उत्तरांचल)

प्रमुख रचनाएँ: वीणा, ग्रंथि, पल्लव, गुंजन, युगवाणी, ग्राम्या, चिंदबरा, उत्तरा, स्वर्ण किरण, कला और बूढ़ा चाँद, लोकायतन आदि

सम्मान: भारतीय ज्ञानपीठ पुरस्कार, साहित्य अकादमी पुरस्कार, सोवियत लैंड नेहरू पुरस्कार, पद्मभूषण

मृत्यु: सन् 1977

ाठ-सार

पर्वत प्रदेश में वर्षा ऋतु में प्राकृतिक सौंदर्य कई गुना बढ़ जाता है। वहाँ क्षण-क्षण प्रकृति अपना वेश बदलती-सी नज़र आती है। कभी धूप चमकती नज़र आती है, कभी सूर्य बादलों की ओट में छिप जाता है, कभी प्रकृति का सुहावना रंग दिखाई देता है, तो कभी इतने घने बादल छा जाते हैं कि पर्वत तक अदृश्य हो जाते हैं। मात्र झरनों का शोर सुनाई देता रहता है। अचानक घनघोर वर्षा होने लगती है। निःसंदेह पर्वतों की प्रकृति के ये बदलते दृश्य सुहावने तो लगते हैं। पर्यटकों को आकर्षित भी करते हैं, परंतु पहाड़ों पर रहने वाले लोगों के लिए यह मौसम कठिनाइयों का कारण भी बन जाता है। वर्षा ऋतु में बादलों का फटना, चट्टानों का खिसकना बर्फीले तूफानों का आना एक आम समस्या है, जिसमें गाँव-के-गाँव तबाह हो जाते हैं। फिसलन भरे रास्तों के कारण यातायात व्यवस्था ठप्प पड़ जाती है जिससे रोजमर्रा के लिए आवश्यक सामग्री तक उचित समय पर नहीं पहुँच पाती। चिकित्सा-सुविधाएँ न पहुँचना, संचार व्यवस्था का ठप्प होना, सड़कों का टूटना, ऐसी अनेक समस्याएँ हैं। जिनका सामना इन पर्वतीय अंचल में रहने वाले लोगों को करना पड़ता है।

खन विधि -

काव्यांशों की विस्तृत व्याख्या –

- शब्दार्थ
- सन्दर्भ
- व्याख्या
- निष्कर्ष

लघु उत्तरीय प्रश्नोत्तर

निबंधात्मक प्रश्नोत्तर

नरावर्तन

व्याख्याओं का मौखिक अभ्यास

प्रश्नोत्तर का मौखिक अभ्यास

श्रुतिलेख

साप्ताहिक टेस्ट

Co-ordinate Geometry

What is In this chapter

- Introduction
- Distance formula
- Section formula
- Area of triangle

r 7 class 10

NCE FORMULA

y1) and B (x2,y2) are two point then distance AB find by

ON FORMULA

ordinates of the point P(x,y) which divides the line segment joining the points A(x_1,y_1) and
internally in the ratio m_1:m_2

OF TRIANGLE

△ABC = 1/2 x base x altitude

Trigonometry

Made by : Pankaj chakraburty

What is in this chapter

- Introduction
- Trignometric ratios
- Trignometric ratios of some specific angles
- Trignometric ratios of complementary angles
- Trignometric identities

Chapter 8

In right angle triangle ABC , $\angle B = 90°$,

$\sin A$ = opposite side / hypotenuse

$\cos A$ = adjacent side / hypotenuse

$\tan A$ = opposite side / adjacent side

Trigonometric Identities

I. $\sin^2\theta + \cos^2\theta = 1$

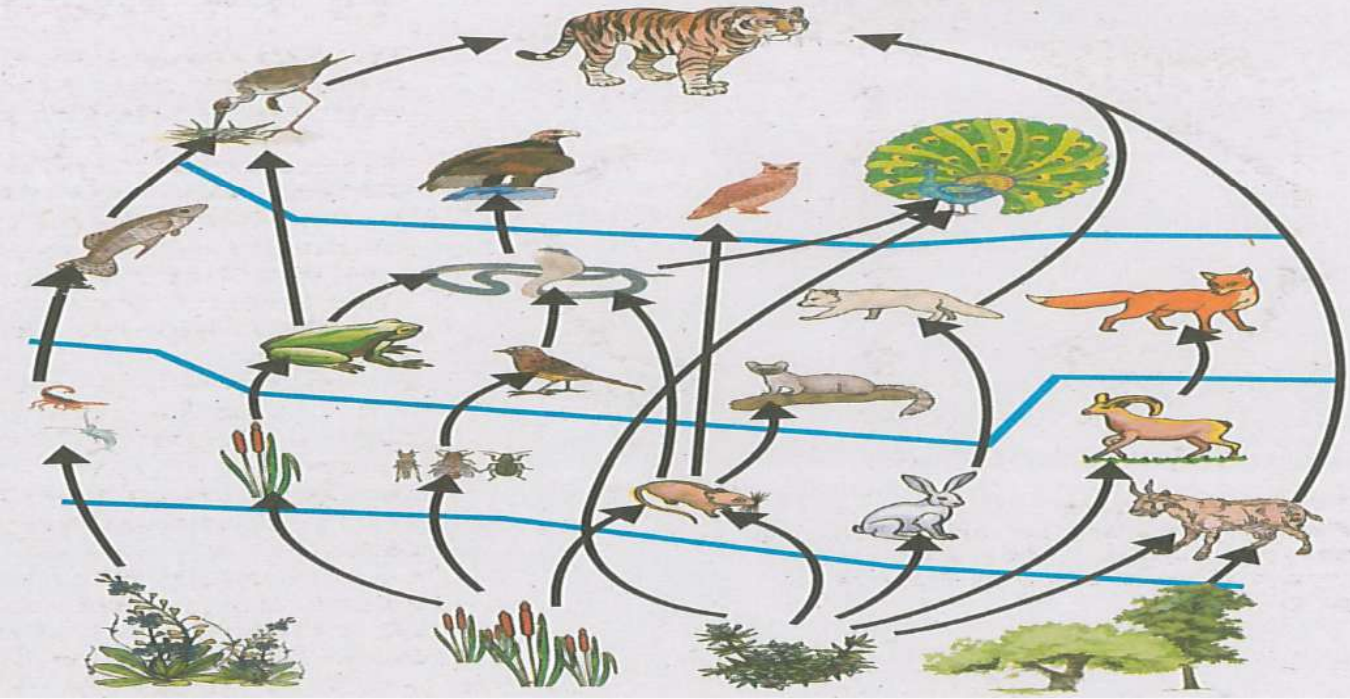
II. $1 + \tan^2\theta = \sec^2\theta$

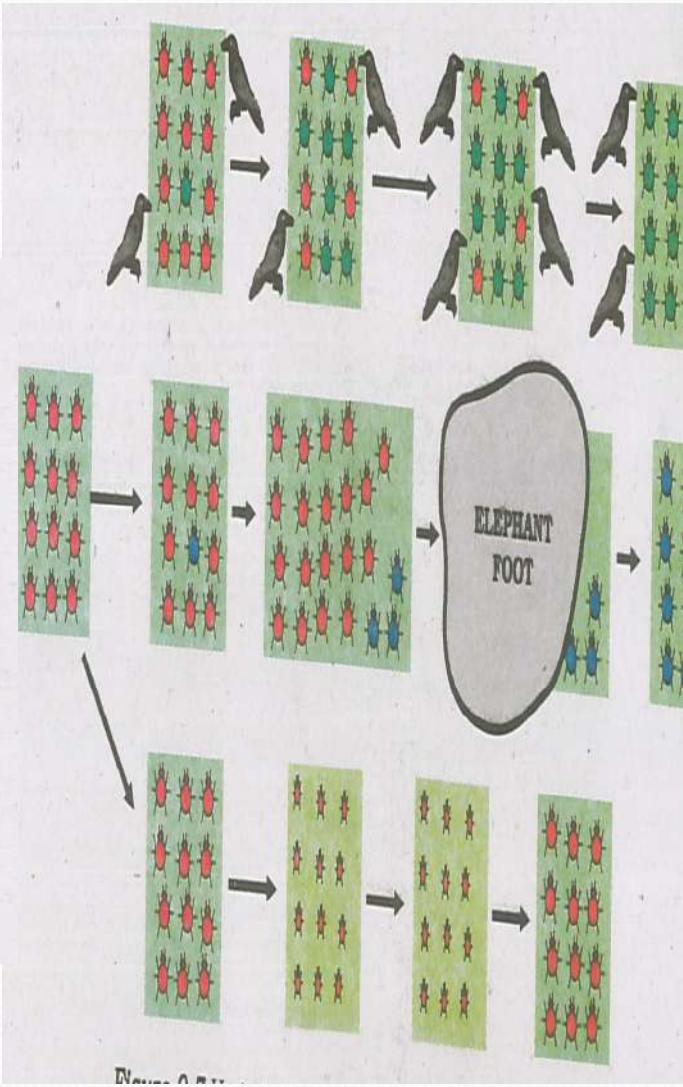
III. $1 + \cos^2\theta = \operatorname{cosec}^2\theta$

BIOLOGY

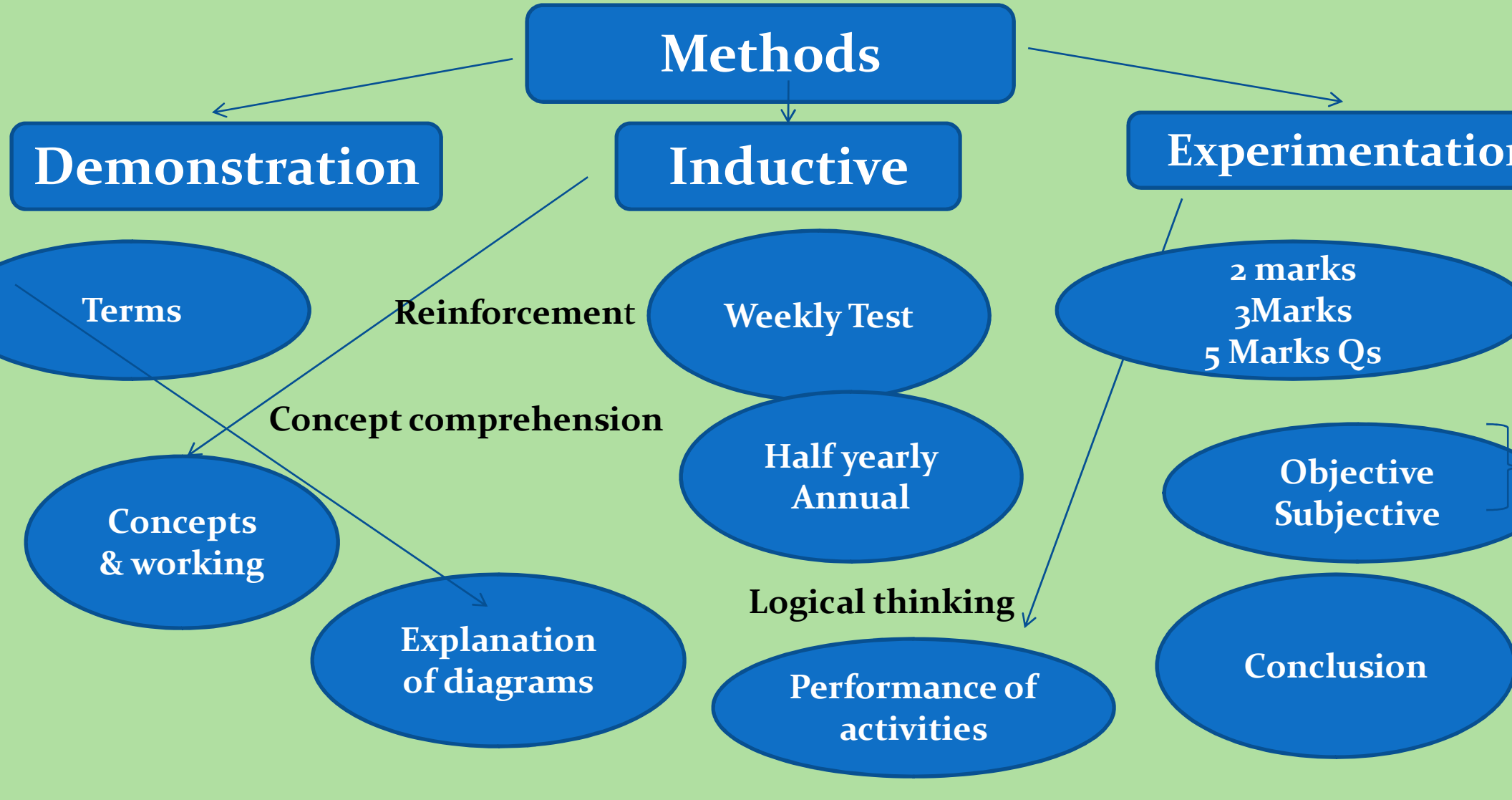
Chapter 9 **Heredity and Evolution**

Chapter 15 **Our Environment**





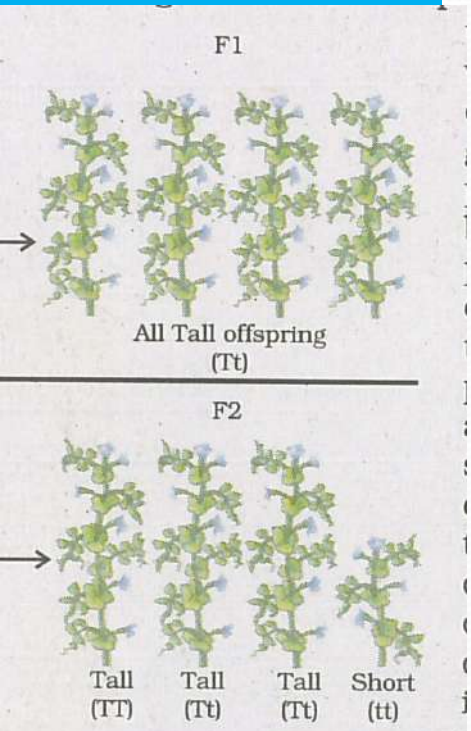
Teaching Methodology



Teaching Aids

Diagrams

edity and
on



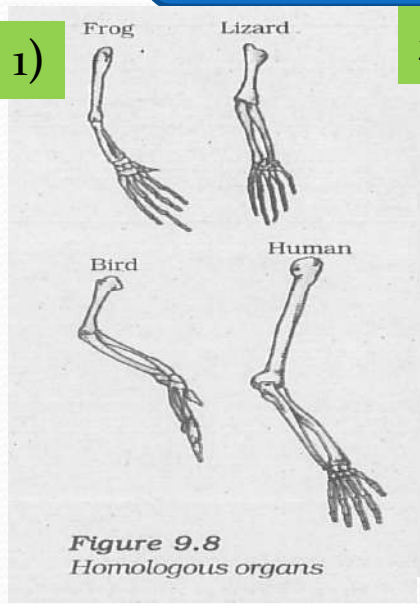
eritance of Traits

2) Various Fossils

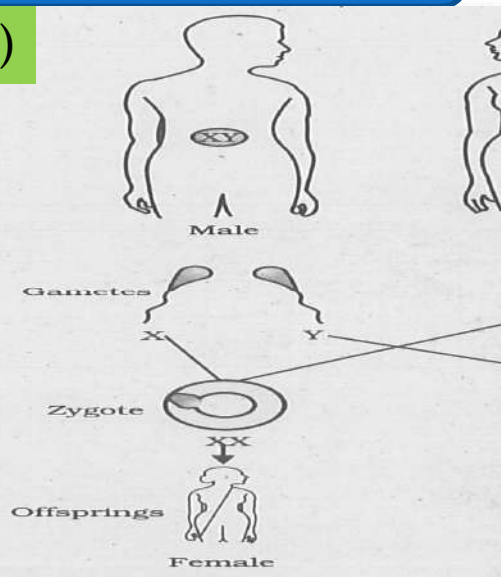
3) Dinousaur Skull from Narmada

Flash cards

1)

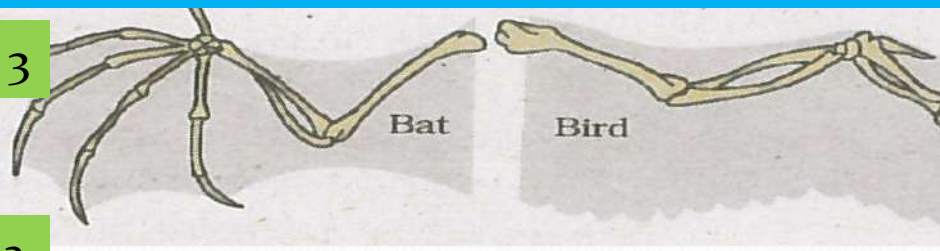


2)



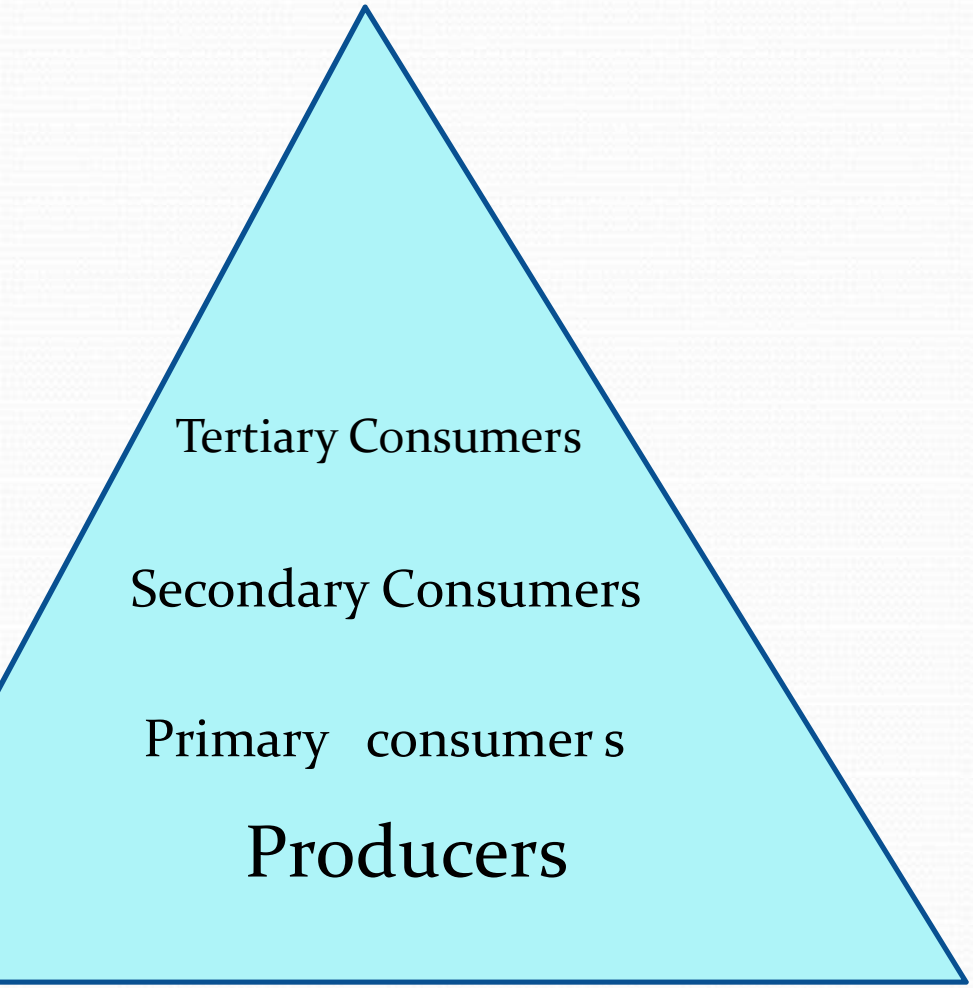
Homologus2) Sex Determination in huma

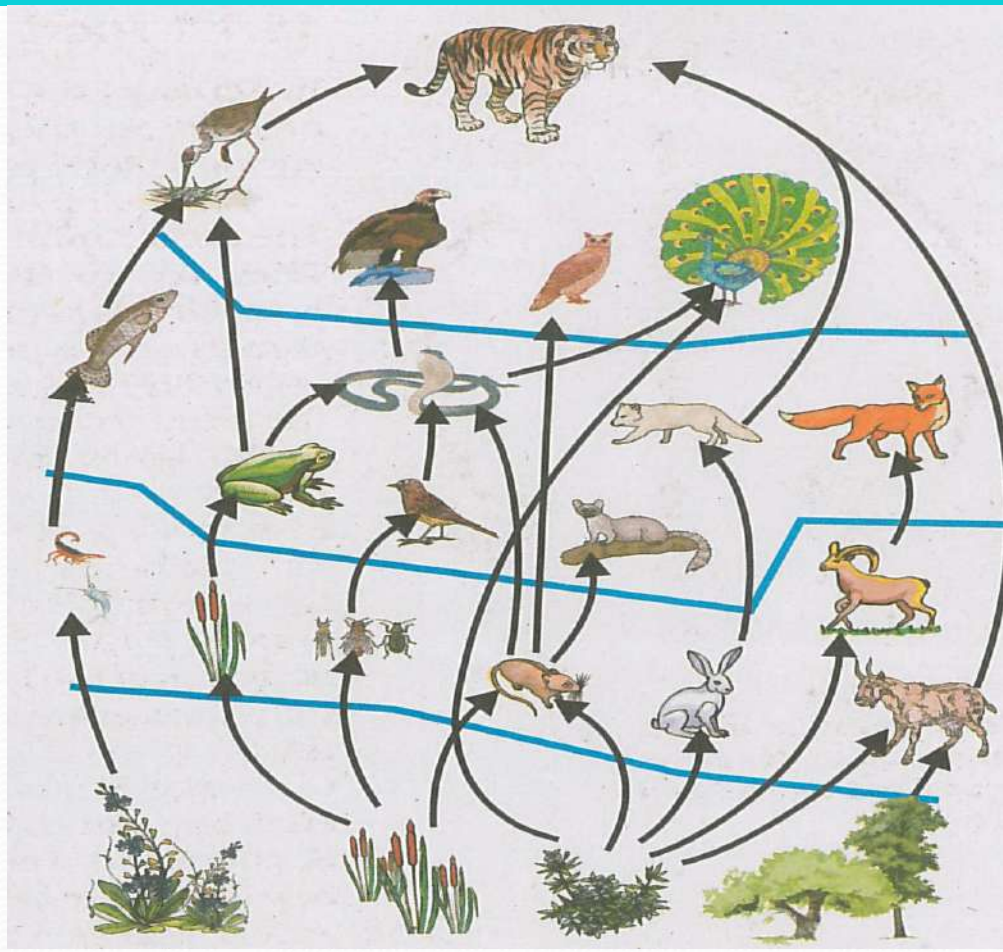
3



3) Analogus Organs

L. 15 OUR ENVIRONMENT





Food Web consisting of many chains

REVIEW :September & October COURS

) How do Mandel's experiment show that traits are inherited ?

) How does the creation of variation in a species promote survival ?

) Why are the small number of tigers a cause of worry from the point of view of genetics?

) What are the problems caused by the non-biodegradable waste that we generate?

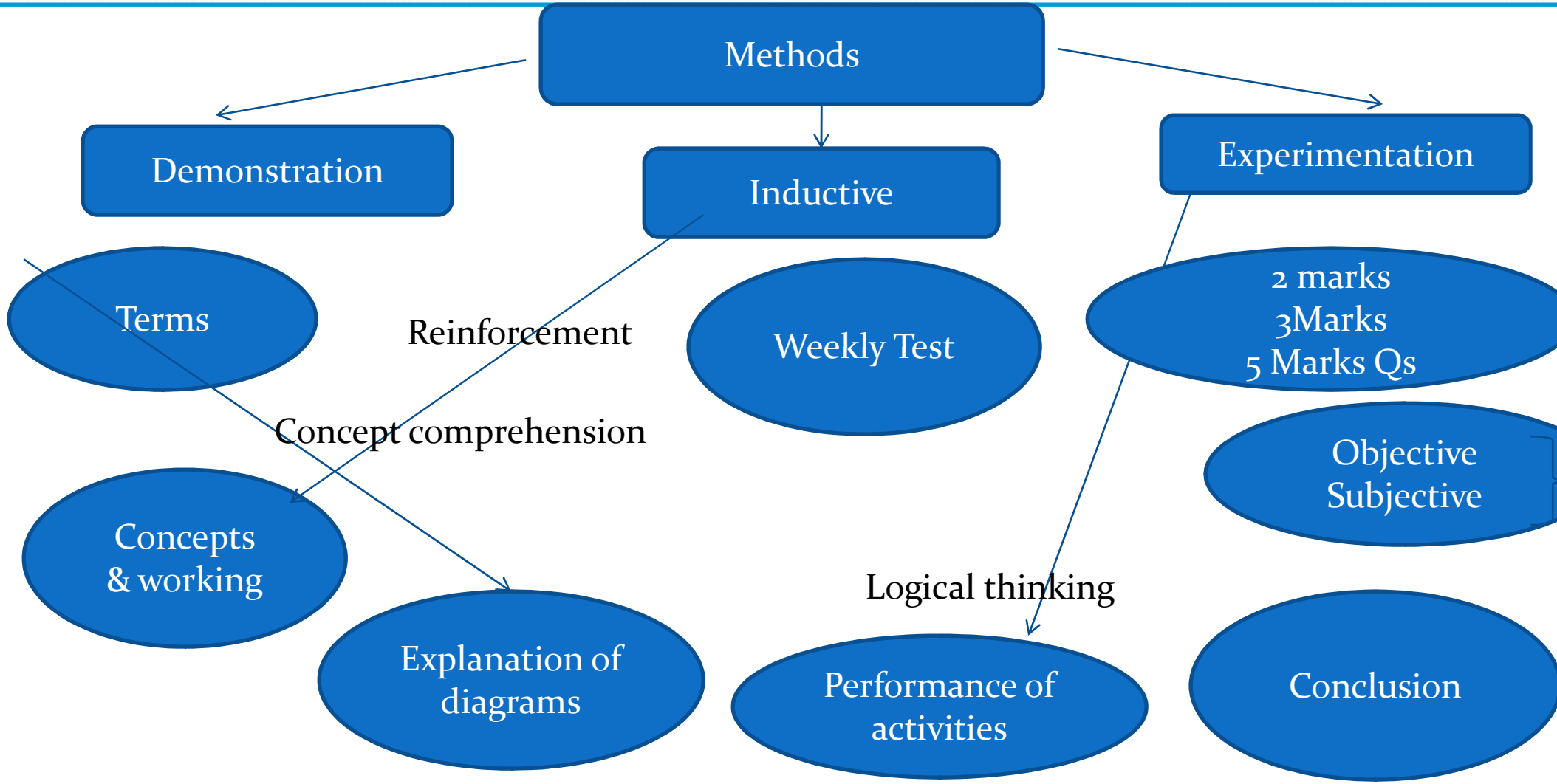
) Why disposable cups made of clay introduced ?

Teaching material :

1. PICTURES:

Different forms of money

TEACHING METHODOLOGY



Demonstration and Observation

Demonstration of morphological characters of Bat and earth worm

Continued Teaching aids

Youtube videos

https://www.youtube.com/watch?v=ZVP3s1KMjUU

https://www.youtube.com/watch?v=325VZvdNodk

https://www.youtube.com/watch?v=U-g8Y5GvmxU

https://www.youtube.com/watch?v=gEk6JLJNgoU

NCERT Text book

Dr. PS Verma and VK Agarwal

cience Paper style

The question paper comprises of five sections

A,B,C,D and E

All question are compulsory

nternal choice is given in Sections B, C,D and E

Sec.A Q no 1 and 2 in this section are 1 mark each.

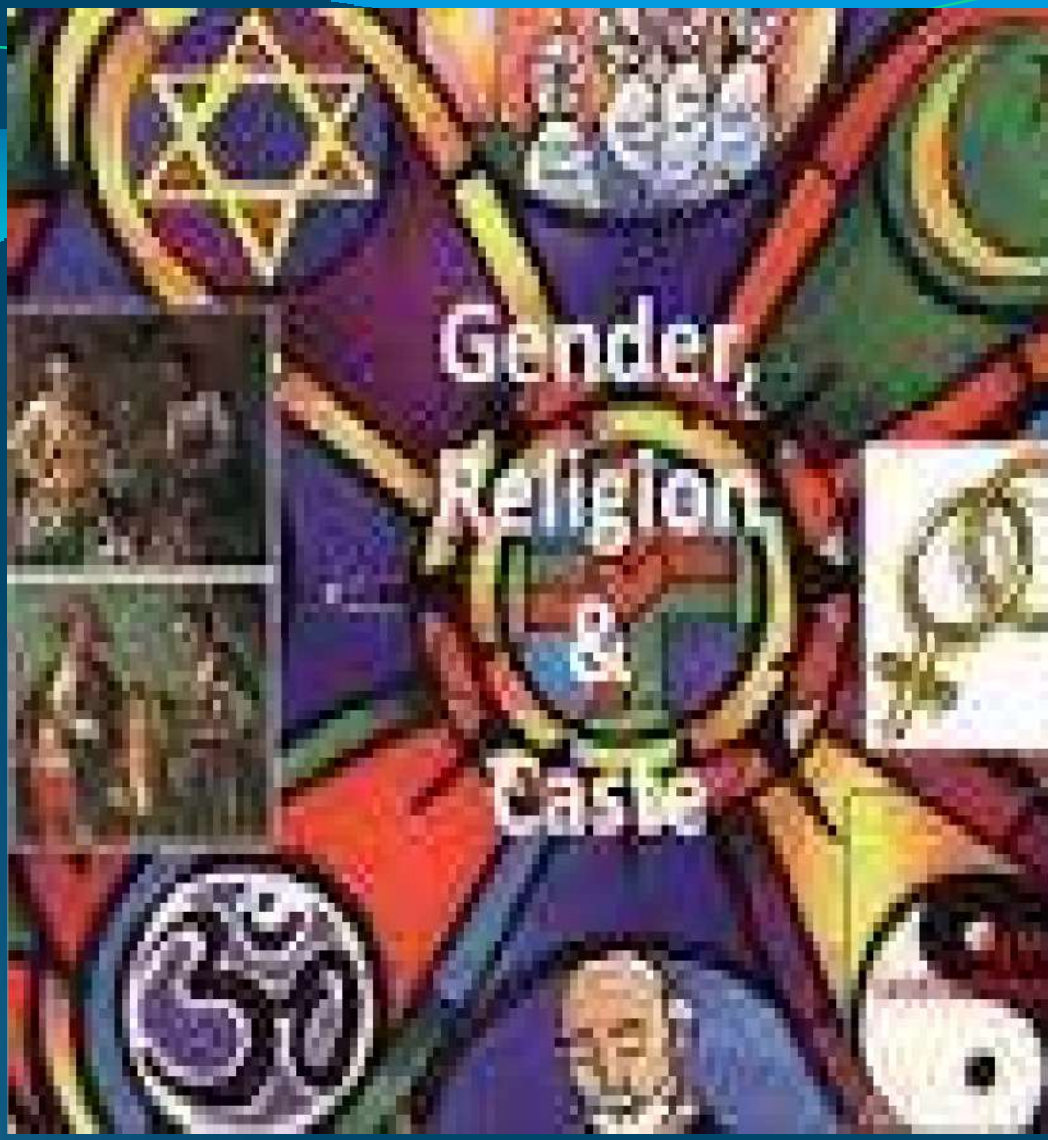
Q. No 3-5 in Section B are 2 marks each to be answered in 30 words

Q. No 6-15 in section C are 3 marks each. They are to be answered in 50 words.

Q. No 16- 21 in Section D are 5 marks each .they are to be answered in 70 words

Q. No 22-27 in Section E are based on practical skills . Each questions is of 2 marks each

ocial Science
GENDER
RELIGION
& **CASTE**

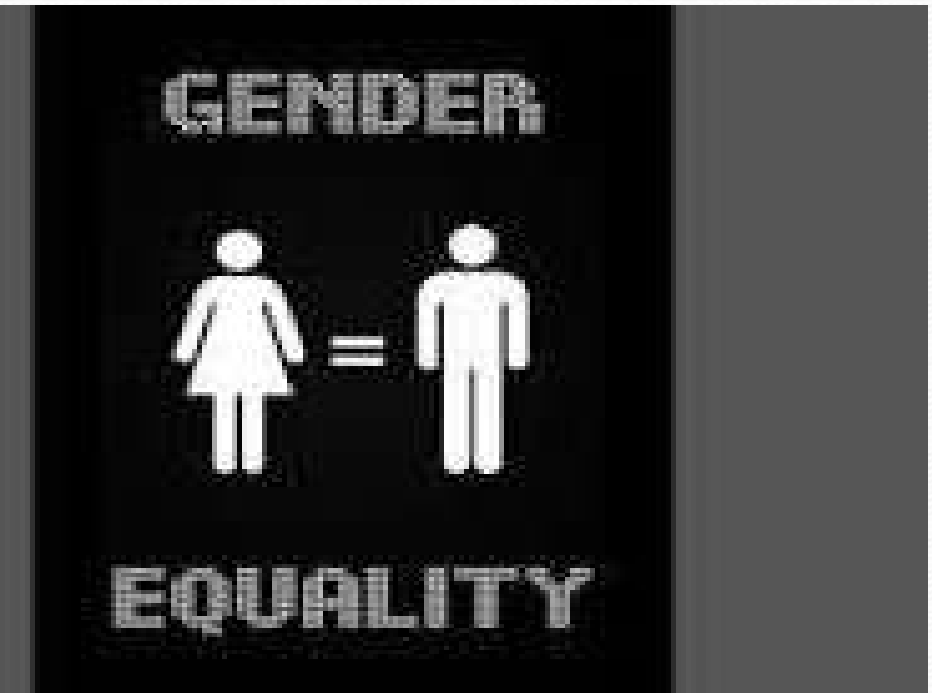



IS
EING
A
GIRL
A
CRIME

ERENT ASPECTS OF LIFE WHERE WOMEN DISCRIMINATED

racy rate among the women is 54% as compared to among men.

nen are paid less than men, even when both do the same e.g. in factories, films women are paid less as compare



India, parents prefer to have sons than girls. T
many ways to have the girl child aborted, be
n.

his decline in the sex ratio. The number of girls
housand boys in our country is 933.

ere are reports of various kinds of harassments, itation and violence both in rural and urban areas. men are not safe at home even due to harassment lomestic violence.

FEMINIST MOVEMENT

nist movements are the movements organized by the women organizations for equalit
women in personal and family life.


GLOBALISATION &
THE INDIAN
ECONOMY

WHAT IS GLOBALISATION

It is the process of rapid integration or terconnection between countries.

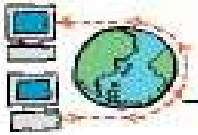
There is one more way through which countries are coming closer and that

Movement of people between countries. People ually move from one country to another in search of bs or better education.This is also a result of obalisation.

Globalisation

Accountability

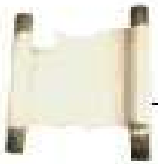
Terrorism



Shrinking World

Technology/ The Internet

Free Trade?



Culture

Capitalism

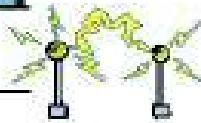
Monopoly Power

Environment

Integration of Economies

Equality/Inequality

Communication



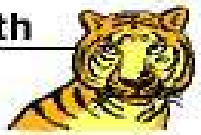
Recognition

Trade versus Aid

Outsourcing

Brands

Exploitation



Growth

Poverty

npact of Globalisation in India

eater competition among producers - both local and
gn producers has been of advantage to consumers.

here is greater choice before these consumers who now
y improvedquality and lower prices for several
ucts.
oreign investment has increased.

FACTORS THAT HAVE ENABLED GLOBALISATION

CHNOLOGY: Rapid improvement in technology has be
e major factor that has stimulated globalisation process.
e to technology there has been improvements in variou
ds as in :

RANSPORTATION TECHNOLOGY.

n past fifty years this technological improvements has to faster delivery of goods across long distances at er caste.

ontainers for transport of goods: have led to hu reduction in port handling costs, increased the spe with which goods can reach markets.

Airlines: the cost of air transport has fallen, this has
nabled much greater volumes of goods being transporte
y airlines.

NFORMATION AND COMMUNICATION
ECHNOLOGY:

, has played a major role in spreading out production
services across countries.

markable improvements have in the areas of
communications, computers &internet.

Telecommunications: facilitated by the satellite
mmunication devices, facilities as telegraph, telephone
luding mobiles, fax are used to
tact around the world, to access the
rmation instantly,& to communicate in the remote area

Computer and internet: computers have entered
lmost all the fields.
rnet allows one to share information on almost every
g, we can send instant e- mail and talk through
ce-mail across the world at almost negligible cost.


Culture
Environment
Society
Globalisation
Economy
Politics

THESE RAPID TRANSFORMATIONS?

Middle of twentieth century:

- Production was largely organized with in the countries
- What crossed the boundaries was mainly the raw materials, food stuff and finished products.
- Trade was the main channel connecting distant countries.

TRADE HISTORY:

Various trade routes connecting India and South Asia to marke
th in the East and West & extensive trade that took place alon
ese routes.

- It was trading interest which attracted various trading comp
ch as East India Company to India.


Foreign Trade
& Integration of Markets
Goods move from one market to another
Exchange of goods (purchase and seeling)
across different countries
Choice of goods in the market rises.
Producers in the two countries closely compete
with each other though
they are separated by thousand miles distance
Price disparity reduces i.e.prices of similar goods
in the two markets tend to become equal.
Foreign trade results in connecting
the markets or integration of markets in different
countries.

unction or purpose of foreign trade?

Foreign trade creates an opportunity for the producer
each beyond the domestic markets i.e., markets of thei
n countries.

Producers can sell their produce not only in marke
ated within the country but can also

compete in markets located in other countries of the world

For the buyers, import of goods produced in another country is one way xpanding the choice of goods beyond what is domestically produced.

world

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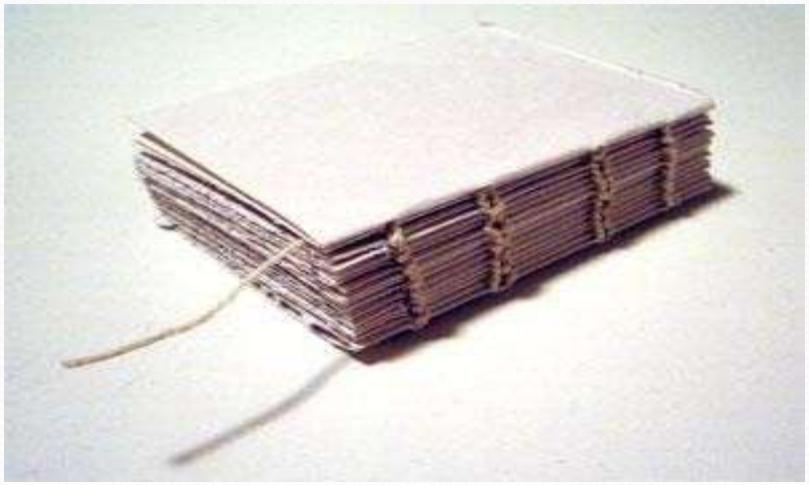
PRINT CULTURE AND THE MODERN WORLD

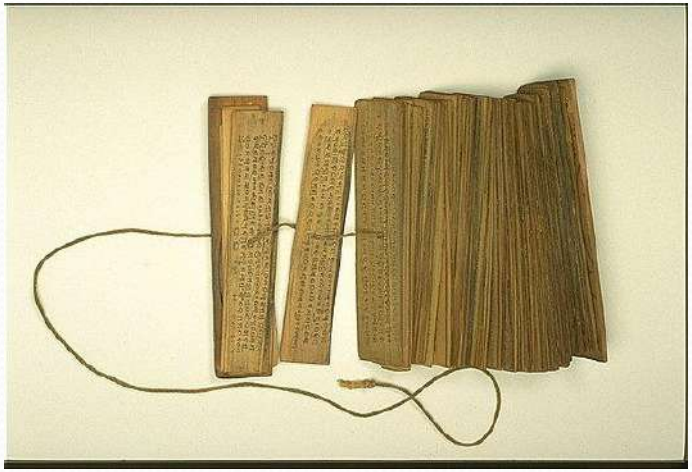
THE FIRST PRINTED BOOKS

- **The Earliest kind of print technology developed in China, Japan and Korea**
- **From AD 576 onwards, books in China were printed by rubbing paper against inked surface of woodblocks**

ACCORDION BOOK

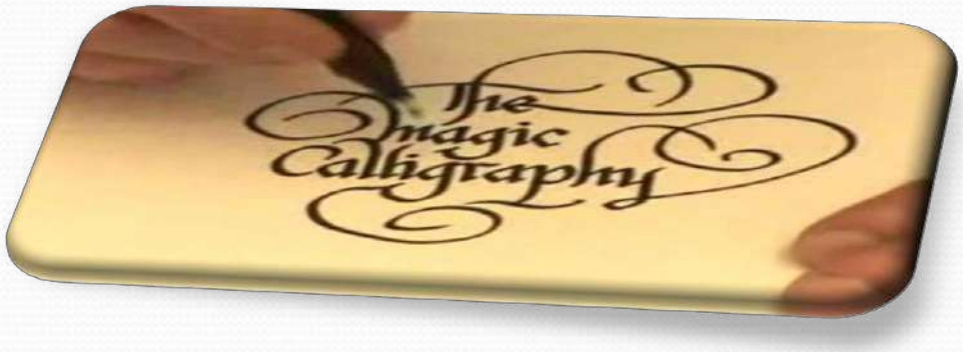
- **The Traditional Chinese 'accordion book' was folded and stitched at the side**





CALLIGRAPHY

- **Calligraphy is the art of beautiful and stylised writing**
- **Superbly skilled craftsmen could duplicate it with accuracy**



- For a very long time china remained the major producer of printed material
- Further the Civil service examination expanded the use of print material
- Apart from scholars even merchants started using print material

- **Rich women began to read and publish their poetry and plays**
- **New reading culture was occupied by new technology**
- **Shanghai became the hub of the new print culture**

PRINTIN JAPAN


持經功德分第十五
須菩提若有善男子善女人初日分以恒
河沙等身布施中日分復以恒河沙等身
布施後日分亦以恒河沙等身布施如是
無量百千萬億劫以身布施若復有人聞
此經典信心不逆其福勝彼何況書寫受
持讀誦爲人解說須菩提以要言之是經
有不可思議不可稱量無邊功德如來爲
發大乘者說爲發最上乘者說若有人能
受持讀誦廣爲人說如來悉知是人悉見
是人皆得成就不可量不可稱無有邊
可思議功德如是人等則爲荷擔如來阿
耨多羅三藐三菩提何以故須菩提若樂
小法者著我見人見衆生見壽者見則於
此經不能聽受讀誦爲人解說須菩提在

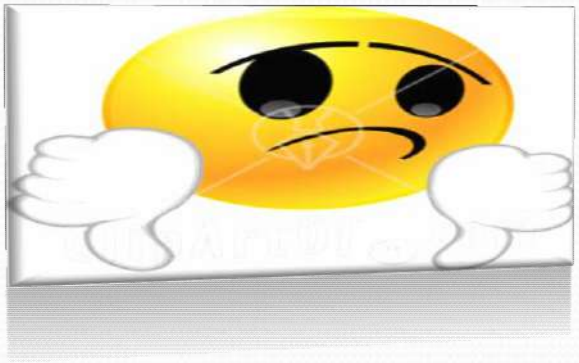
- **Buddhist missionaries from China introduced hand-printing technology into Japan (AD 768- 770)**
- **The oldest Japanese book, printed in AD 868, is the Buddhist 'DIAMOND SUTRA'**

- **Pictures were printed on textiles, playing cards and paper money**
- **In medieval Japan, poets and prose writer were regularly published**
- **Books were cheap abundant**
- **Printing of visual material led to interesting publishing practices**

PRINT COMES TO EUROPE

- **In 1295, Marco polo, a great explorer returned to Italy after many years of exploration in China**
- **He brought the knowledge of print technology back with him from China**
- **Luxury editions were still hand written on very expensive VELLUM**

LIMITATIONS

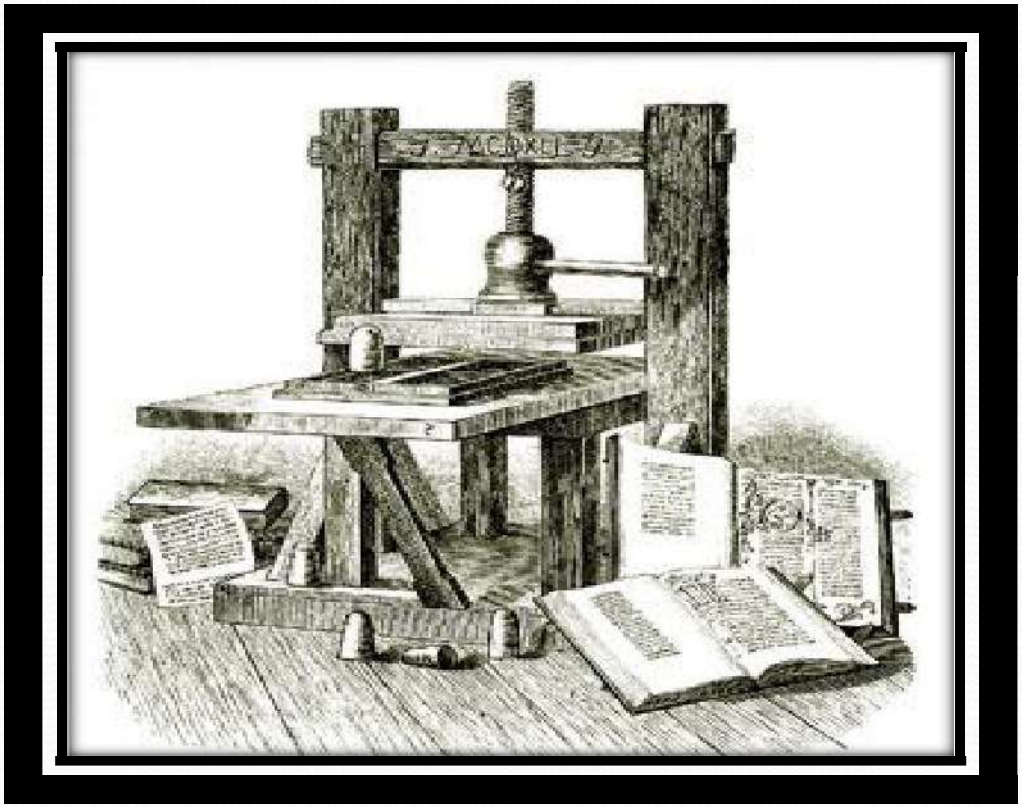


- **Handwritten manuscripts could not satisfy the ever- increasing demands for books**
- **Copying was expensive, laborious and time-consuming**
- **Manuscripts were fragile, difficult to handle and carry around**
- **Their circulation remained limited**
- **Thus there was a great need for quicker and cheaper production**

RISE OF PRINTING PRESS

- Gutenberg was the son of a merchant and grew up on a large agricultural estate
- He became a master goldsmith
- He created lead moulds for making trinkets
- The adopted this technology to design new innovation

GUTENBERG'S PRINTING PRESS



THE BIBLE

PRINT REVOLUTION (MEANING)

- **Development of new ways of producing books**
- **Transformed the lives of people**
- **Change in their relationship with institutions and authorities**
- **Influenced popular perceptions**
- **Opened up new ways of looking at things**

IMPACT OF PRINT REVOLUTION

A. • **ANEW READING PUBLIC**

B. • **RELIGIOUS DEBATES AND THE FEAR OF PRINT**

C. • **PRINT AND DISSENT**

AS A RESULT….

- **Oral culture entered print and printed material was orally transmitted**
- **The hearing public and reading public became intermingled**

B. RELIGIOUS DEBATES AND THE FEAR OF PRINT

- **Print created the wide circulation of ideas**
- **Introduced a new world of debate and discussion**

FEAR OF PRINT…

- **Many were apprehensive of the effect of wider circulation of books on the mind of people**
- **Rebellious & irreligious thoughts might spread**
- **The authority of valuable literature would be destroyed**
- **this anxiety to the widespread criticism of print media**

EXAMPLE…

- **In 1517, the religious reformer Martin Luther wrote Ninety five theses criticising many of the practices & rituals of the Roman Catholic Church**
- **This lead to a division within the church and to the beginning of the 'Protestant Reformation'**

C. PRINT AND DISSENT

- **Print & religious literature stimulated many distinctive individual interpretations of faith**
- **Manocchio reinterpreted the message of Bible and formulated a view of god & creation that enraged the Roman Catholic Church**

oday, it is considered to be the fift

most polluted river in the world.

Reasons for the pollution of Ganga

- Human Waste
- Industrial Effluents
- Religiou Ceremon

AGAINST

WATER POLLUTION IN INDIA

Narmada Bachao Andolan

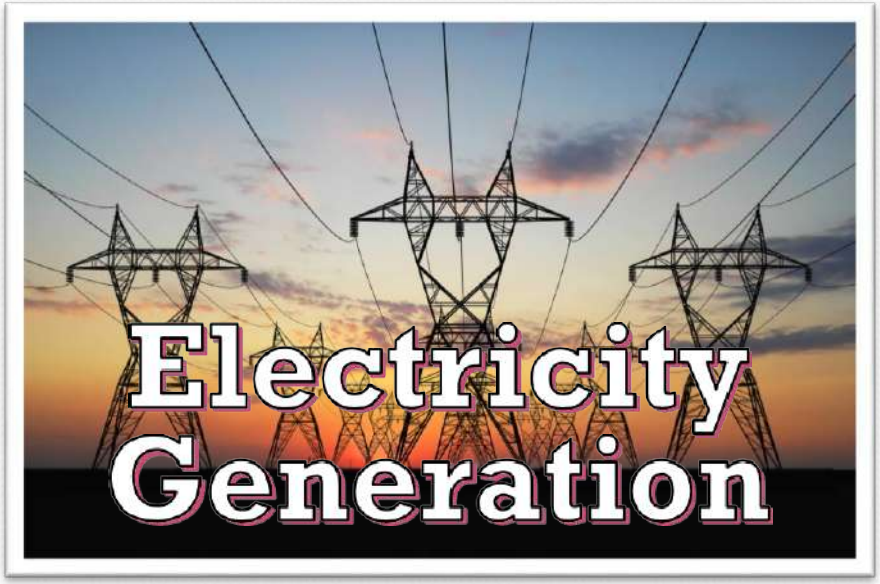
Save Ganga Movement

Tehri Dam Andolan

USES OF DAMS


rrigation


Water Supply


Electricity
Generation

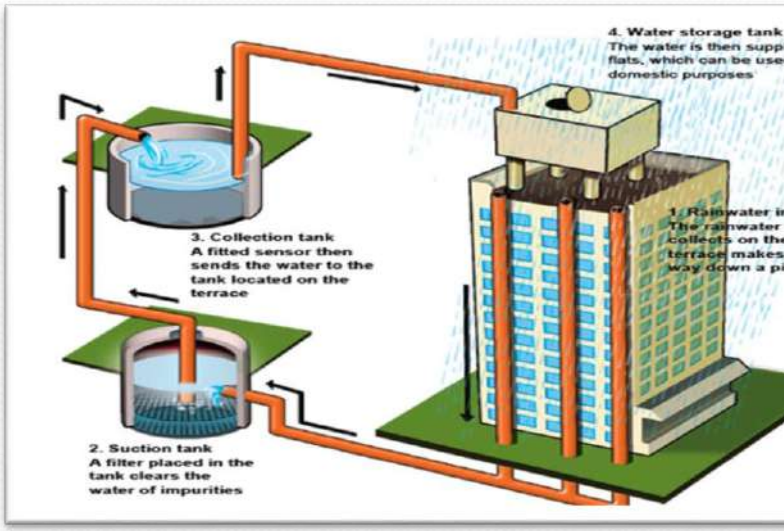

Flood
Control

CONSEQUENCES WHEN A DAM IS BUILT...

- Regulating and damming of rivers affect their natural flow causing poor sediment flow and excessive sedimentation at the bottom of the reservoir resulting in rockier stream beds and poor habitat for aquatic life's
- Make it difficult for aquatic fauna to migrate, especially for spawning.
- Triggers flood

AIN WATER HARVESTING

ainwater harvesting is a technology
d for collecting and storing rainwater
m rooftops, the land surface or rock
hments using simple techniques such
ars and pots as well as more complex
hniques such as underground check
dams.



PHYSICS

What is Light?

Light is a wave, or rather acts like a wave.

How do we know?

- Reflection
- Refraction
- Dispersion
- Diffraction
- Interference
- Polarization

ectromagnetic Waves

- Electromagnetic waves are special in the fact that they do not need a medium to propagate through.
- But what is creating the disturbance? What is emitting this energy?
- ELECTRONS

ectromagnetic Waves

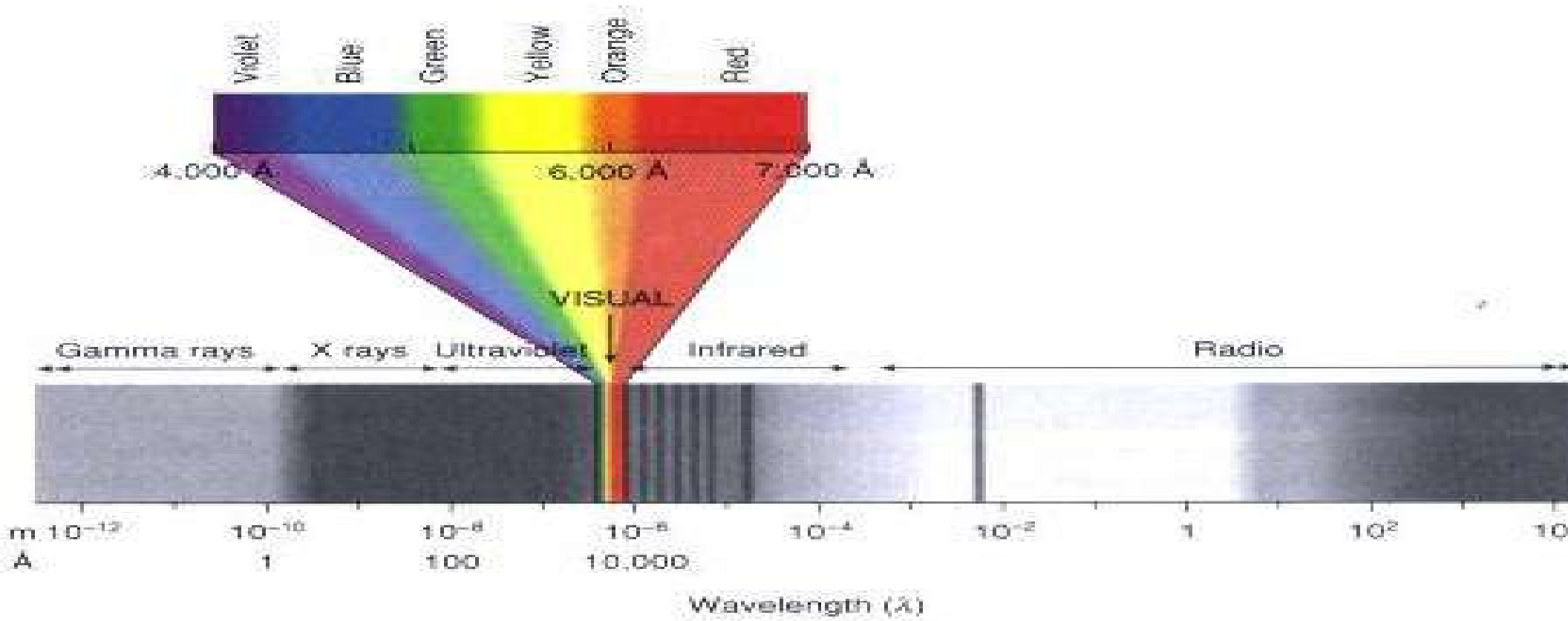
- Electrons in materials are vibrated and emit energy in the form of photons, which propagate across the universe.
- Photons have no mass, but are pure energy.
- Electromagnetic Waves are waves that are made up of these "photon
- When these photons come in contact with boundaries, E-M waves i like other waves would.

ectromagnetic Waves

- Electromagnetic waves are everywhere.
- Light is only a small part of them

- **Radios**
- **TVs**
- **Microwaves**
- **Light**
- **Radiation**
- **Lasers**
- **CD/DVD players**
- **X-Rays**

ectromagnetic Spectrum



peed of E/M Waves

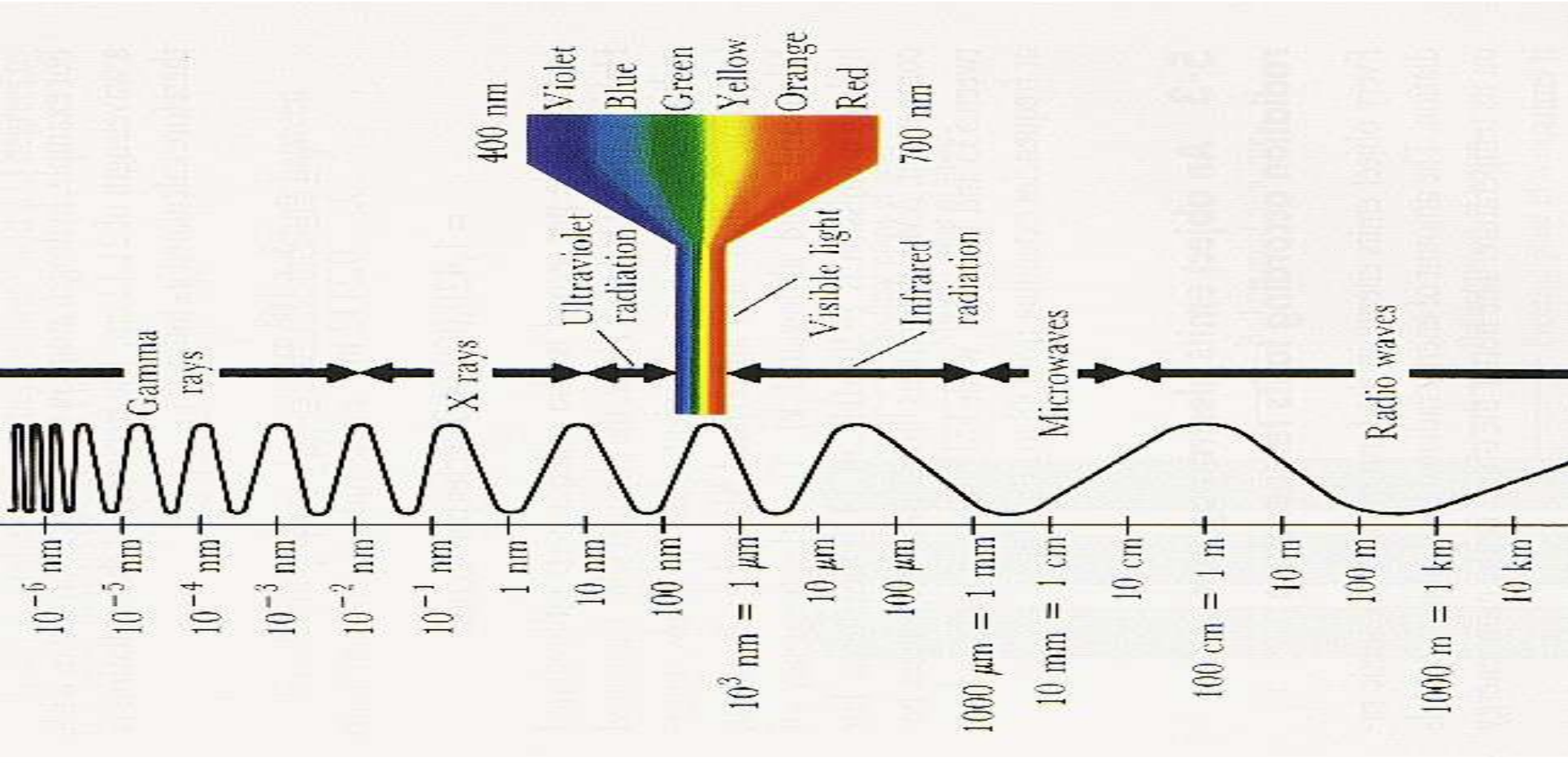
- From last chapter, we found that
  - $V = f * \lambda$
- We also said that the speed of a wave in a certain medi is always constant.
- It has been found that the speed of E-M waves and ligh is ---
  - 3×10^8 or 300,000,000 m/s
  - 671,000,000 mph
  - 186,000 miles per second
  - We call this value "c"

$c = f * \lambda$

- C is constant throughout the universe, as long as light is in vacuum.
- When it is in other materials, c can change, but can never b larger than its value in a vacuum.
- Since "c" is constant, all of E-M waves will have a correspon frequency to go along with their wavelength.

$c = f * \lambda \sim\sim\sim f = c / \lambda$

- Lets find the corresponding frequency ranges for a few of the groups of E-M waves.



nergy in E-M Waves

- Which waves have more energy, Radio waves or gamma waves?
- The greater the frequency of an E-M wave, the more crests pass a point in a certain amount of time, therefore the more photons pass that point.
- This means that more energy moves past that point in a certain amount of time or that the wave contains more energy.

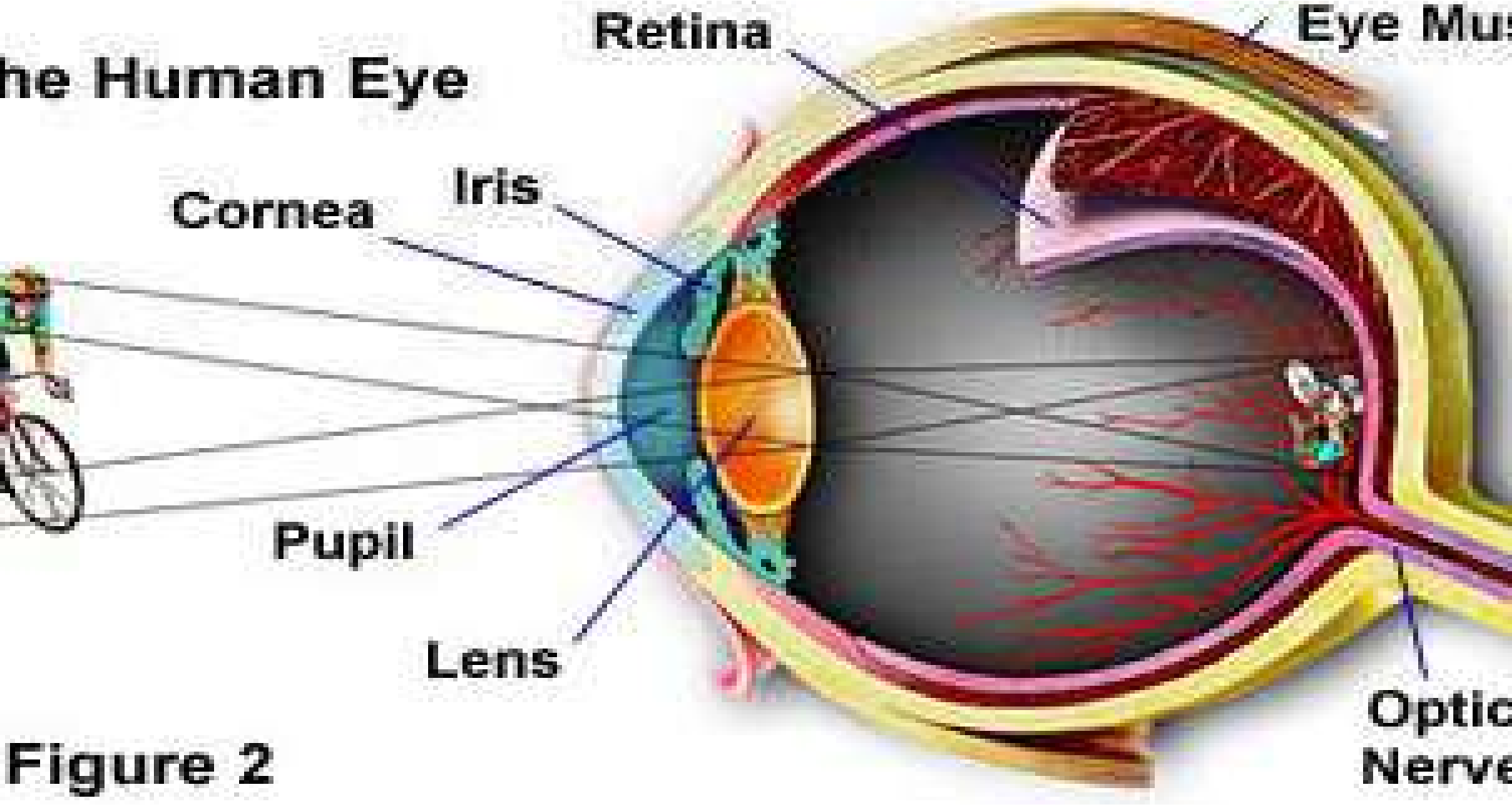

he Human Eye
Retina
Eye Mus
Iris
Cornea
Pupil
Lens
Optic
Nerve

Figure 2

isible Light

We now know what we see is part of the electromagnetic spectrum. We know that the light waves enter our eye, and stimulate parts of it that cause a electrical impulse to be sent to the brain which creates this visua image.

But everything does not emit radiation. How do we see those things? And why cant we see a window?

eeing things

We know that when waves run into a boundary they are partially transmitted and partially reflected.

Light behaves as a wave, so it to is reflected.

Therefore, an object does not need to emit photons itself to be seen it just has to reflect light back to our eyes where we can detect it.

Objects that do not allow light to pass through them are called opaque.

Objects that allow light to pass through them are considered transparent.

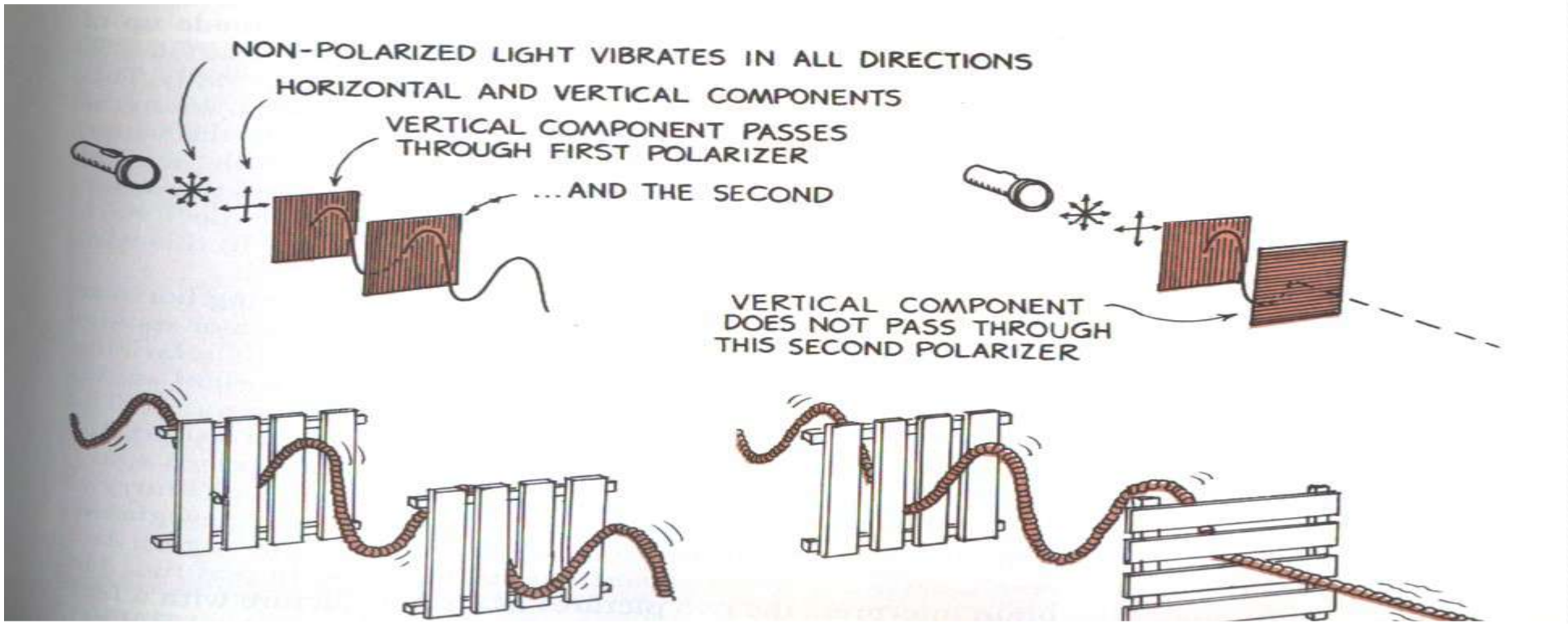
Objects in between are called translucent.

olarization

Polarization is a phenomenon of light that is used in sun-glasses and 3-D movies.

Play with the two polarizing filters for a few minutes and note what is happening and see if you can think of any reasons for it.

olarization



olor

Different objects may emit different wavelengths of E-M radiation, so we would see that light as different colors.

But why do we see colors in objects that reflect light? If you shine a whit ight on my clothes, and it gets reflected why doesn't all of my clothes appear white?

When I shine white light through a colored piece of plastic, why does it change color?

olor

The light we see is know as visible or white light – although it is not that simple.

The light is not really white, the white we see is a combination of all the colors of the rainbow.

Remember R-O-Y G. B-I-V from art class.

When all of these light waves are combined we see white light.

olor Reflection

So if we see something as WHITE, that means …

- It reflected back all the wavelengths of light to our eyes

If we see something as RED or BLUE

- It reflected only the RED or only the BLUE wavelengths
- The others were absorbed.

And if we see something as black?

- It did not reflect back any of the light.

olor Transmission

Filters work in a similar way.

- Red filters only let RED light thru.
- Blue let only BLUE light thru.

What do you think that UV sticker means on your sunglasses?

Why do they sell those orange glasses that are supposed to reduce glare?

ome Sweet Color Tricks

Combining colors in art class
How does color printing work?
Combining lights
Why is the sky blue?
Why are sunsets red?
Why is water greenish-blue?
How does 3-D work?
Why does a CD reflect a rainbow, and a mirror does not?
How can you help people who are color blind?
OTHERS ← link to site

ux

- We now know how light behaves, but we must measure how strong it is.
- The rate at which a source emits light is called the LUMINOUS FLUX (P).
- What do you think this is measured in? What are light bulbs measured in.
- LUMINOUS FLUX (P) is actually measured in something called a lumen (lm).
- A typical 100-W bulb emits 1750 lm.

uminance

Flux is the total of all the light that is emitted from a source.

This is not very useful, often we would like to know how much of that ight is hitting a surface at some point.

The illumination of a surface is called illuminance, E. It is measured in umens per square meter, lm/m^2

uminance

How do you think illuminance is affected when the object moves away from the source?

- Right the illuminance decreases

So what would you expect an equation to look like for E in terms of P and the distance away d?

- Close it is actually

$$E = \frac{P}{4\Pi d^2}$$

CHEMISTRHY
CHAPTER - 5

PERIODIC CLASSIFICATION OF ELEMENTS

1) Classification of elements :-

e arranging of elements into different groups on the of the similarities in their properties is called fication of elements.
e classification of similar elements into groups makes udy of elements easier.
re are about 114 different elements known so far.

rly attempts at classification of elements :-

he earliest attempt to classify elements was grouping en known elements (about 30 elements) into two s called metals and non metals.
he defect in this classification was that it had no place etalloids (elements which have properties of both s and non metals) which were discovered later.

b) Dobereiner's Triads :-

bereiner classified elements in the increasing order of their atomic
es into groups of three elements called triads. In each triad the atom
of the middle element was approximately equal to the average atom
of the other two elements.

defect in this classification was that all the then known elements co
e correctly arranged into triads.

Triad		Atomic mass	Average atomic mass of Ist and 3rd element
Lithium	Li	6.9	
Sodium	Na	23.0	22.95
Potassium	K	39.0	
Calcium	Ca	40.1	
Strontium	Sr	87.6	88.7
Barium	Ba	137.3	
Chlorine	Cl	35.5	
Bromine	Br	79.9	81.2
Iodine	I	126.9	

c) Newland's octaves :-

vland classified the elements in the increasing order of their atomic masses into gr
nt elements called octaves like the notes of music. He found that when the elemer
rranged in the increasing order of their atomic masses into octaves then there wa
rity of properties in every eighth element.

a	re	ga	ma	pa	da	ni
	Ll	Be	B	C	N	O
	Na	Mg	Al	Si	P	S
l	K	Ca	Cr	Tl	Mn	Fe
nd Ni	Cu	Zn	Y	In	As	Se
r	Rb	Sr	Ce and La	Zr	-	-

defect in this classification was:-

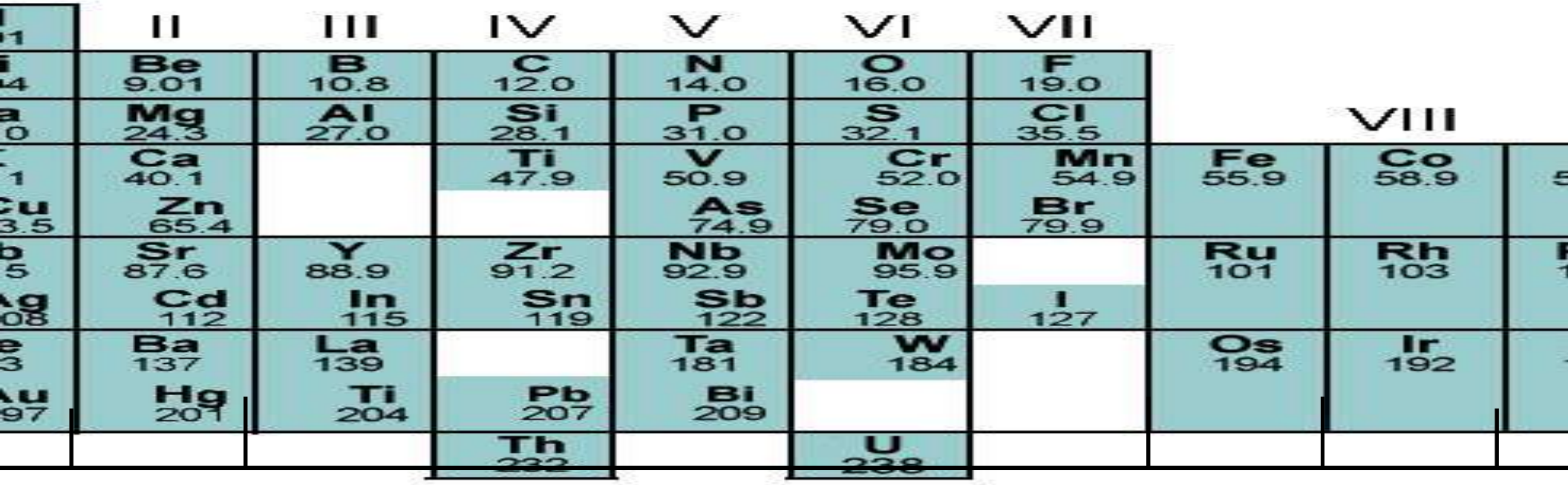
he known elements and elements discovered later could not be correctly arranged
s.

me elements having different properties were placed in the same rows like cobalt
having different properties are placed along with Fluorine, Chlorine and Bromine.
properties similar to Cobalt and Nickel are placed in different rows.

3a) Mendeleev's periodic law :-

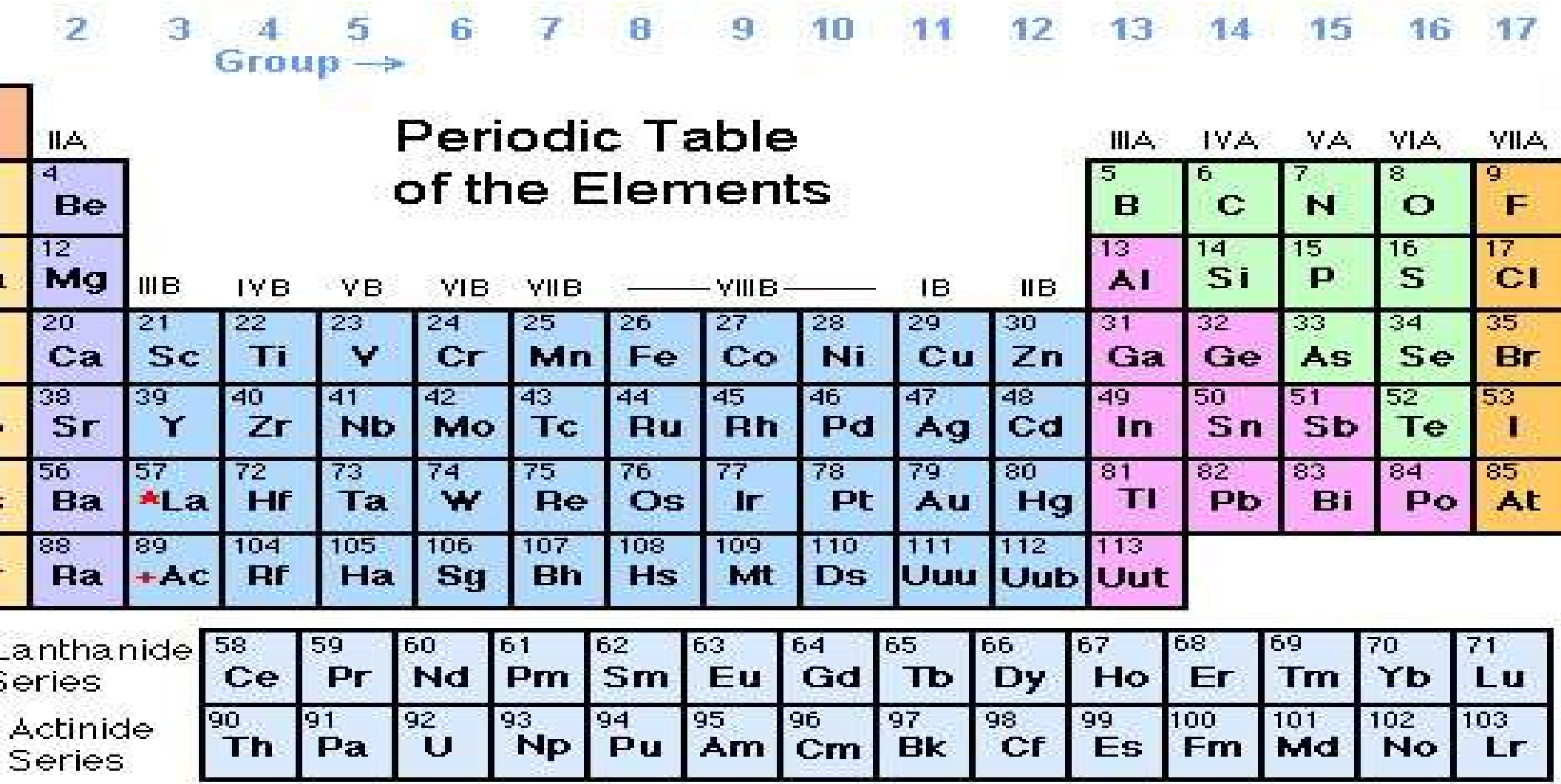
endeleev's periodic law states that, ' The properties of elements are
dic functions of their atomic masses'.

B	A B	A B	A B	A B	A B	A B	
							Transition series

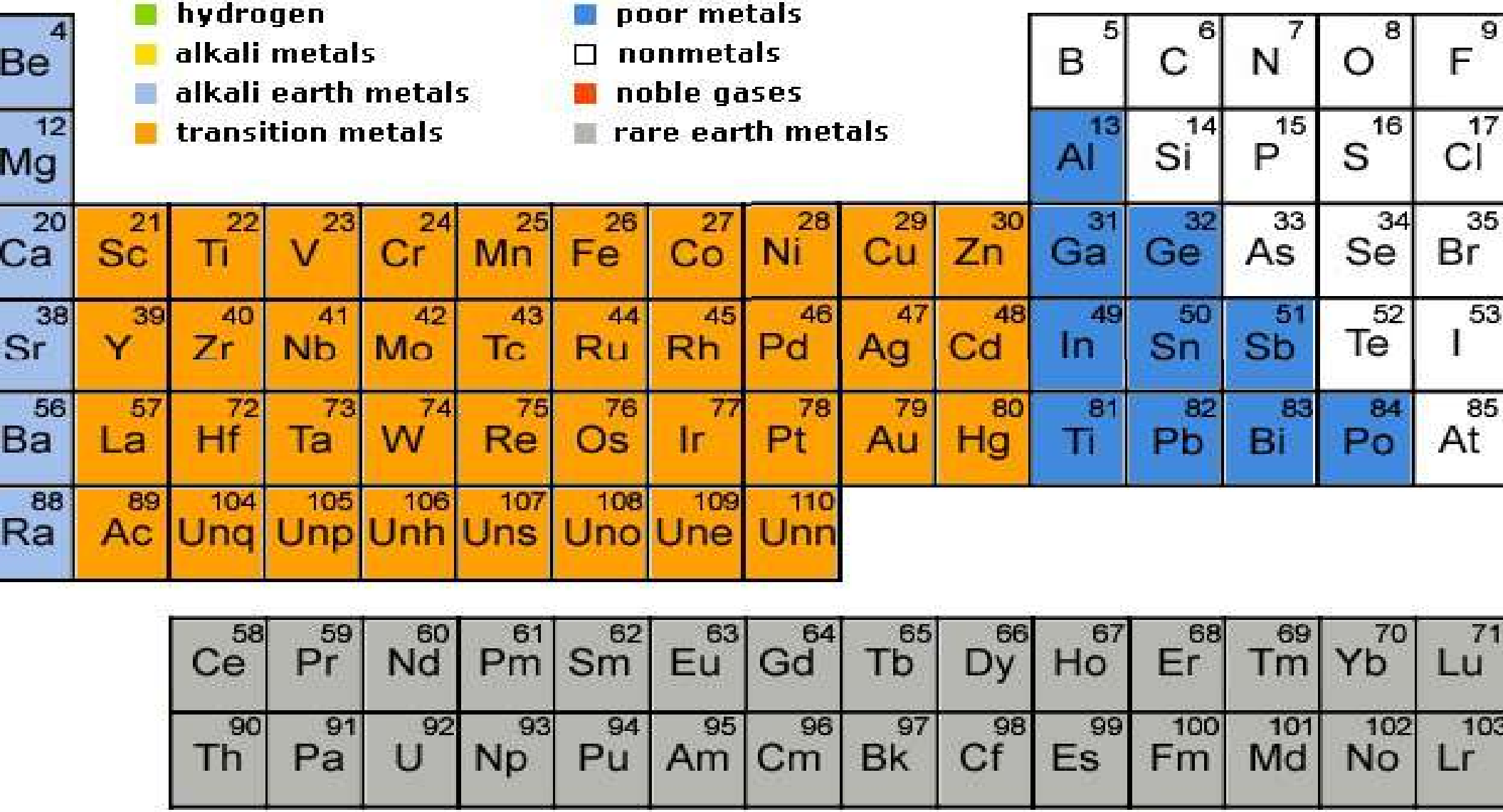


4a) Modern periodic law :-

odern periodic law states that, ‘ The properties of elements are peri
ions of their atomic numbers’.



Periodic Table of the Elements



5. Properties of elements in periods and groups :-

ence electrons :-

period the number of valence electrons increases from 1 to 8 from the left to the
number of shells is the same.

2nd Period

ents	– Li,	Be,	B,	C,	N,	O,	F,	Ne
	– 3	4	5	6	7	8	9	10
	– 2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8
e electrons	– 1	2	3	4	5	6	7	8
	– 2	2	2	2	2	2	2	2

roup the number of valence electrons is the same for all the elements but the nur
s increases from top to bottom.

Group – I A

ents	AN	EC	VE	Shells
	1	1	1	1
	3	2,1	1	2
a	11	2,8,1	1	3
	19	2,8,8,1	1	4

ii) Valency :-

period the valency of the elements increases from 1 to 4 and then decreases from
ne left to the right.

nd Period

ents	–	Li,	Be,	B,	C,	N,	O,	F,	Ne
	–	3	4	5	6	7	8	9	10
	–	2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8
e electrons	–	1	2	3	4	5	6	7	8
y	–	1	2	3	4	3	2	1	0

group the valency is the same for all elements of the group.

Group – I A

nents	AN	EC	VE	Valency
H	1	1	1	1
i	3	2,1	1	1
Na	11	2,8,1	1	1
K	19	2,8,8,1	1	1

iii) Atomic size (Radius of the atom) :-

a period the atomic size of the elements decreases from the left to the right becau
r charge (number of protons) increases and so the electrons are pulled closer to th
s.

nd Period

ents – Li, Be, B, C, N, O, F, Ne

– 3 4 5 6 7 8 9 10

– 2,1 2,2 2,3 2,4 2,5 2,6 2,7 2,8

protons – 3 4 5 6 7 8 9 10

Atomic size decreases

group the atomic size of the elements increases from top to bottom because the
er of shells increases and the distance between the nucleus and shells also increas

Group – I A

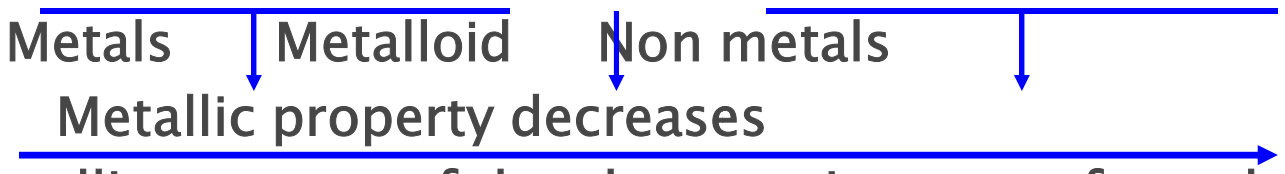
nents	AN	EC	VE	Shells	
H	1	1	1	1	Atomic
Li	3	2,1	1	2	size
Na	11	2,8,1	1	3	increases
K	19	2,8,8,1	1	4	

iv) Metallic property (Electropositive nature) :-

a period the metallic property of the elements decreases from the left to the right.

- 3rd Period

ents – Na, Mg, Al, Si, P, S, Cl, Ar



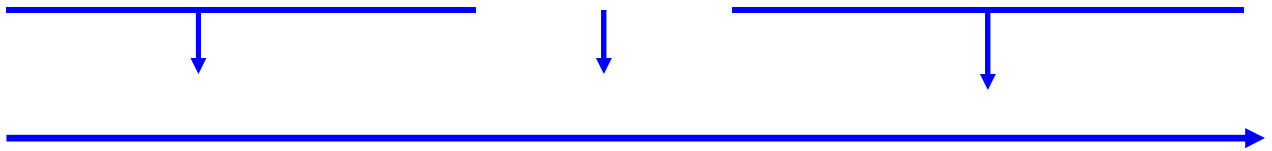
group the metallic property of the elements increases from the top to the bottom

- Group VI A

Elements				
Carbon	C	–	Non metal	Metallic
Silicon	Si	–	Metalloid	property
Germanium	Ge	–	Metalloid	increases
Tin	Sn	–	Metal	
Lead	Pb	–	Metal	

v) Non metallic property (Electronegative nature) :-

period the non metallic property of the elements increases from
ft to the right.
3rd Period
ents – Na, Mg, Al, Si, P, S, Cl, Ar



Metals Metalloid Non metals
Non metallic property increases

group the non metallic property of the elements decreases from
p to the bottom.
– Group VI A

Elements				
Carbon	C	–	Non metal	Non metallic
Silicon	Si	–	Metalloid	property
Germanium	Ge	–	Metalloid	decreases
Tin	Sn	–	Metal	
Lead	Pb	–	Metal	


THANK YOU