10th CLASS

PHYSICAL SCIENCE

LESSON PLANS

[2023 - 2024]

Special Edition

As per the guidelines of

Department of School Education,AP

I hope this book will be one of the ways to your Success..

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LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** SPSH School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
HEAT **(CHAPTER-1)**	Thermal equilibrium-heat and temperature	2			
	Specific heat and Applications	3			
	Method of mixtures, Principle of method of mixture and Determination of specific heat of a solid	3			
	Evaporation and Condensation	2			
	Humidity, Dew and Fog	2			
	Boiling and Melting	2			
	Freezing and textual problems	2			

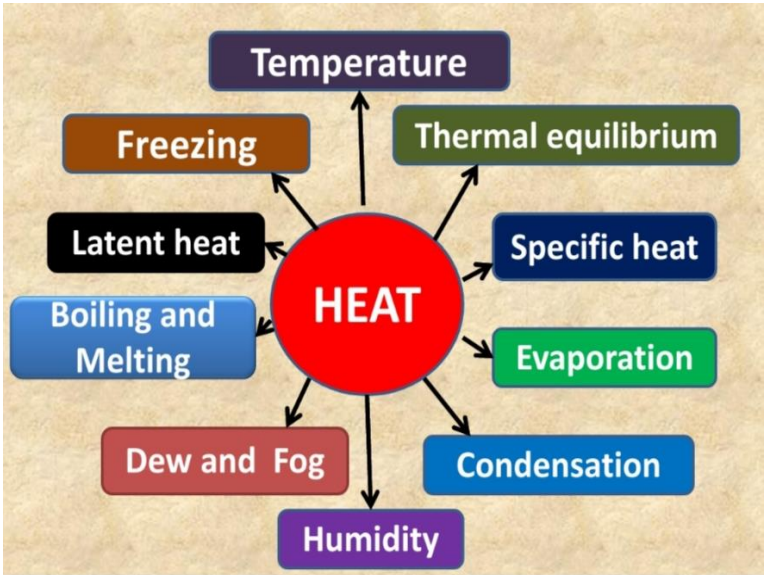
Prior Concept/Skills:

1. How is temperature measured?
2. What are units of temperature?
3. How is heat transferred?
4. How to work thermometer/ clinical thermometer?

Learning Outcomes:	**No. of Periods**
1. Explain process of transfer of heat energy	1
2. Uses scientific conventions to represent units of Kelvin scale to Celsius scale.	1
3. Appreciates and promotes usage of specific heat of substance	2
4. Handles tools and laboratory apparatus properly; measures specific heat of a solid.	2
5. Uses scientific convention to represent units of various quantities, symbols, formulae and equations of temperature, heat and specific heat	1
6. Applies learning to hypothetical situations utilization of specific heat substances	1
7. Communicates the findings and conclusions effectively of Specific heat of different substances.	1
8. Derives formulae, equation and laws of method of mixture, heat, principle of method of mixtures	2
8. Explains processes and phenomena of evaporation and condensation	1
10. Relates processes and phenomena with causes and effects of evaporation and condensation	2
11. Calculates using the data of heat, Latent heat	1
12. Analyses and interprets data, graphs of melting, boiling points, state of substances their temperature	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students expressed feelings about hot water bathing and cold water bathing in our daily life situations.
2. Students apply the evaporation and condensation process based on situations.
3. Students explain the phenomena involved in water droplets formed on leaves, window pans, flowers, grass.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and demonstration of hotness and coldness concept activity.	1. Students show the activity of transfer of heat in daily life	1. Give examples of hot bodies and cold bodies	1. How heat is transferred?
2. Discussion and demonstration of thermal equilibrium concept activity.	2. Discuss the examples of thermal equilibrium situation in daily life	2. Students frame a questions on thermal equilibrium	2. Define "Temperature"
3. Explain Heat, Temperature with examples	3. Group discussion on difference between heat and temperature.		2. Convert 20^0C into Kelvin scale?

4. Discussion and conduct of transfer of heat energy. 5. Discussion and conduct of rate of rise in temperature depends on the nature of the substance. 6. Discussion and conduct of method of mixtures concept activity 7. Explain and discussion on the specific heat and their applications. 8. Conduct and discuss an experiment of finding specific heat of solids. 9. Explain evaporation and condensation process with suitable examples. 10. Explain the concepts of Humidity, Dew and Fog with reasons, examples 11. Discussion and explain about state of substance (ice- water-Vapour) 12. Graphical representation of Boiling, Melting, latent heat 13. Explain freezing and textual problems	4. Students conduct an activity on the relation between temperature and kinetic energy. 5. Solve the problems with the final temperature of a mixture. 6. Collect the information on the specific heat of substance with numerical data 7. Collet the information between evaporation and boiling. 8. Students complete the task on dew and fog 9. Students explain the melting, boiling points 10. Students solve the problems on heat energy and temperature conversion.	3. Write the definitions of heat and temperature. 4. Student complete the homework 5. Students write the formula of final temperature of a mixture. 6. Expressed units of physical quantities of heat, temperature and latent heat, 7. Solve the problems in own way 8. Students write the definitions of humidity, Dew and Fog. 9. Analysis of numerical data and graphical pictures in own way	3. Write the units of heat? 4. The oceans behave like heat store houses for the earth" – Discuss 5. Ice floats on water. Why? 6. Why evaporation is cooling process? 7. Why does it becomes pleasantly warm in winters when freezing starts?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: a) Does transfer of heat take place in all situations? b) Heat is energy that flows form a hotter body to a colder body, but heat is a scalar quantity. Why? c) Why condensation is the reverse process of evaporation? **2. Open Ended/Critical Thinking:** . a) What would happen if liquids never evaporated? b) Why does it becomes pleasantly warm in winters when freezing starts? c) You bring water in a paper cup to a boil by placing it over a hot flame. Why doesn't the paper cup burn? **Student Practice Questions & Activities:** a) Write the difference between evaporation and boiling? b) Explain the procedure of finding specific heat of solid experimentally? c) Write the applications of specific heat in our daily life? d) Give one period to the students for the practice session.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Explain why dogs pant during hot summer days using the concept of evaporation?
2. Suggest an experiment to prove that the rate of evaporation of a liquid depends on its surface area and vapour already present in surroundings air.
3. Convert 20^0C into Kelvin scale
4. Collect the applications of specific heat.
5. Frame any two questions on differentiating between evaporation and boiling.

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Acids, Bases and Salts (Chapter-2)	Chemical properties of Acids and Bases	3			
	What do you observe when water is mixed with acid or base?	1			
	Strength of acid or base - pH scale	2			
	Importance of p^H in everyday life	2			
	More about salts	1			
	Common salt-A raw material for chemicals	1			
	Bleaching powder-Baking soda	1			
	Washing soda-Plaster of Paris	1			

Prior Concept/Skills:

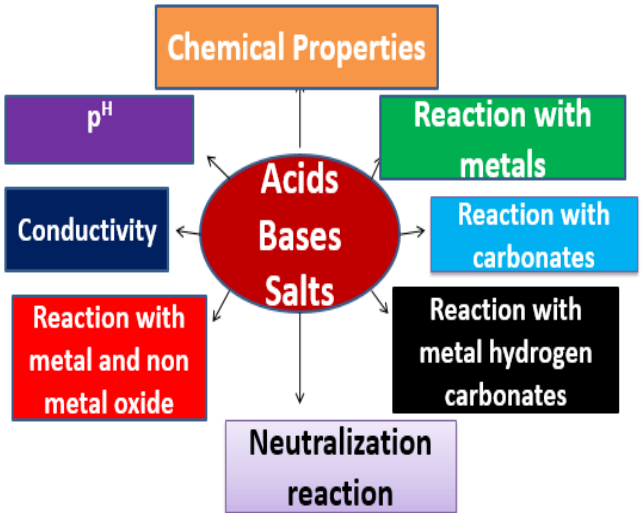
1. Name the acid present in lemon juice?
2. Write any one characteristic of acid?
3. What is the test of the base?
4. What is the nature of soap solution?

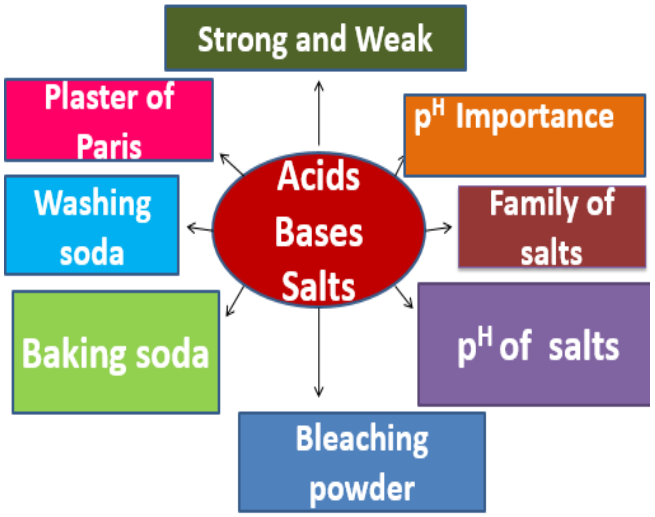
Learning Outcomes:	No. of Periods
1. Classifies materials, acids and bases on the basis of their physical and chemical properties.	1
2. Appies learning to hypothetical situations “Why pickles and sour substances are not stored in brass and copper vessels?”	1
3. Uses scientific conventions to symbols, formulae and equations.	1
4. Plans and conducts investigations and experiments to arrive at and very the facts of tests the conductivity of various solutions	1
5. Draws conclusion of acid solution in water conducts electricity.	1
6. Differentiates materials based on properties and characteristics of strong and weak acids and bases, salts using different indicators.	1
7. Takes initiative to know about scientific discoveries and inventions of p^H scale.	1
8. Handles tools and laboratory apparatus properly, measures $p^H$of substances using p^H paper	
9. Analyses and interprets data of p^H solutions to predict the nature of substances	1
10. Relates processes and phenomena with causes and effects of tooth decay with p^H of saliva,	1
11. Relates processes and phenomena with causes and effects of growth of plants with p^H of the soil, survival of aquatic life with p^H of water.	1

12. Communicates the findings and conclusions effectively of p^H values in our day to day life situations.	1
13. Applies scientific concepts in daily life and solving problems of Baking soda, Washing soda, Bleaching powder and plaster of Paris.	1

TEACHING LEARNING PROCESS

Induction/Introduction:





Experience and Reflection:

1. Students making of natural indicators
2. Students apply the scientific concept involved in storing food items in everyday life.
3. Students will be able to identify substances used in everyday life as acids, bases and salts.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and conduct an activity of identifying the sample as an acidic or basic solution.	1. Students collect information of the physical properties of acids and bases.		1. Write the names of acids?
2. Explain the making of olfactory indicator	2. Students make the olfactory indicator in their own way.	1. Write the colors give the acids and base with litmus papers	2. Who am I? I give different smells in acid and base solution.
3. Conduct and discuss an experiment of reaction of acids and base with metals	3. Discussion on precautions of conducting an experiment.		3. What gas is produced when magnesium is

4. Explain and conduct an experiment of the reaction of acids with carbonates and metal hydrogen carbonates.	4. Describe the procedure of the experiment step by step.	2. Students complete the Homework.	made to react with hydrochloric acid? 4.Is neutralization reaction a double displacement reaction?
5. Explain the concept of 'Neutralization reaction'	5. Students complete the task on Neutralization.	3. Write the neutralization reaction and give examples?	
6. Discussion and demonstration of reactions of acids with metal oxides and base with non-metal oxide.		4. Write the chemical Equation reaction of an acid with metal oxide?	5. What is the nature of metal oxide?
7. Explain and conduct an activity of acid solution in water that conducts electricity.	6. Does the bulb glow in all cases? Group discussion		6. What do acids have in common?
8. Explain the concept "water is mixed acid or base and strength of acids/base	7. Collect the information of the strength of acids and bases,	5. Students have done the dilution process.	7. What is dilution?
9. Discussion and explain p^H scale and introduces p^H values of some substances	8. Discussion of given p^H table	6. Analysis of numerical data and answer the table-based questions?	8. What is p^H scale?
10. Collect the information of importance of p^H in day to day day-to-day life	9. Draw the flow chart about importance of p^H		9. Write the importance of pH of the soil?
11. Explain Salts, Family of salts and p^H of salts		7. Students complete the homework.	10. What is chemical name of common salt and write their formula?
12. Discussion and explain the Bleaching powder, Baking soda and Washing soda, their uses.	10. Prepare slide show on uses of Bleaching powder.	8. Students give use Washing soda and Baking soda.	11. Write the formula of Washing soda?
13. Conduct an activity of 'Removing water of crystallisation'	11. Discussion of conducting experiment.		12. What is the colour of copper sulphate crystals?
14. Discussion and Explain Plaster of Paris and their uses		9. Plaster of Paris can be expressed in its own way.	13.What is the chemical name of POP?

Check For Understanding Questions

1. Factual:

1. What is the strongest natural acid?
2. What is the test of acid, base and salt?
3. Who invented p^H ?
4. What acid is in your stomach?

2. Open Ended/Critical Thinking:

1. Is a negative p^H possible?
2. Why is calcium hydroxide added to soil?
3. While diluting an acid, why is it recommended that the acid should be added to water and not water to the acid?
4. What effects can a lower p^H have on the environment?

3. Student Practice Questions & Activities:

a) Why does tooth decay start when the p^H of mouth is lower than 5.5?
b) Plaster of Paris should be stored in moisture – proof container. Explain why?
c) Compounds such as alcohols and glucose contain hydrogen but are not categorized as acids. Describe an activity to prove it.
d) Give two important uses of washing soda and baking soda.

TLM's (Digital+Print)

1. Used prepared Quiz paper.
2. Utilized digital classroom.
3. Provide video links QR codes,
4. DIKSHA App
5. YouTube video links
6. IFP

Assessment:

1. What is meant by "water of crystallization" of a substance? Describe an activity to show the water of crystallization.
2. Draw a neat diagram shows the reaction between zinc granules and dilute hydrochloric acid. Write a balanced chemical equation for this reaction.
3. Observe the table and answer the following questions

Solution	A	B	C	D	E	F	G	H
p^H value	4	1	12	7	8	9	2	13

i) Which solution is Neutral? ii) Which solutions are strong Alkali?
iii) Which solutions are strong Acids? iv) Which solutions are week Alkali?

4. Collect the information for calling calcium sulphate hemihydrates as Plaster of Paris.

SIGNATURE OF THE TEACHER SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Refraction of Light at Plane Surfaces	Refraction	1			
	Refractive index – Relative refractive index	2			
	Snell's law verification	3			
	Critical angle – Total internal reflection -	2			
	Mirages	1			
	Applications of total internal reflection	1			
	Refraction through a glass slab	2			

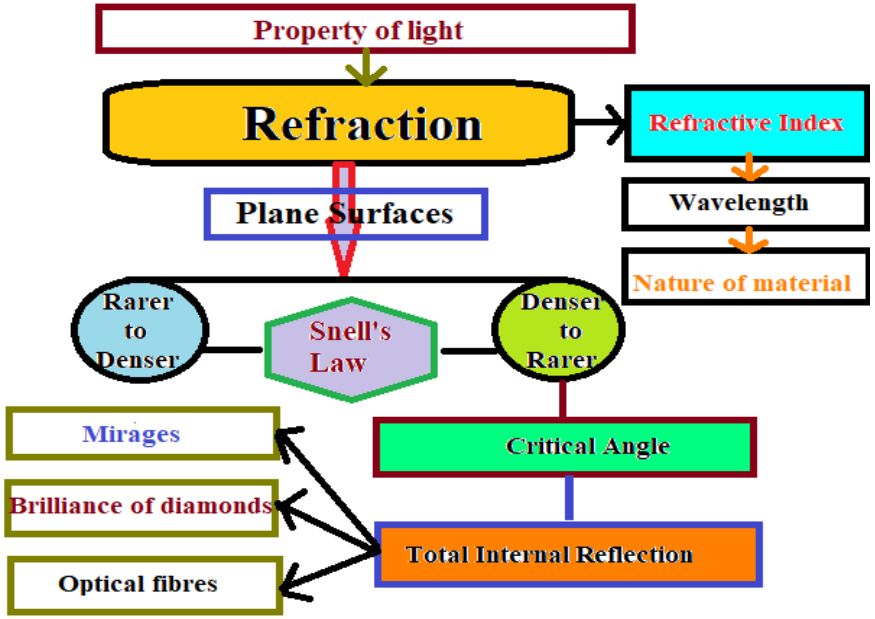
Prior Concept/Skills:

1. State laws of reflection.
2. Define reflection of light
3. What is the real image?
4. Does light travel from air to water or water to air?

Learning Outcomes:	**No. of Periods**
1. Explains processes and phenomena of twinkling of stars.	1
2. Differentiates materials based on properties and characteristics of real and virtual images.	1
3.Calculate using the date of refractive index of materials	1
4.Plans and Conducts investigations and experiments to arrive at and verify the facts, principles of Snell's law	1
5.Derives formulae, equations and laws of refraction of light at plane surfaces	1
6. Seek answers to queries on their own " Why Snell's law does not applicable in normal direction".	1
7. Plans and Conducts investigations and experiments to arrive at and verify the facts of laws of refraction.	1
8. Explains processes and phenomena of formation of Mirages, Total internal reflection	1
9. Applies learning to hypothetical situations of total internal reflection	1
10. Applies scientific concepts in daily life and solving problems of total internal reflection.	1
11. Exhibits creativity in designing models using eco-friendly resources of formation of mirages.	1
12. Handles tools and laboratory apparatus properly; measures lateral shift and vertical shifts using appropriate apparatus.	
13. Draws the labelled diagrams of lateral and vertical shifts of glass slab.	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students are able to utilize the concept of refraction of light day –to –day life.
2. Students will understand the relationship between refractive index and speed of light in medium, apply it in everyday life.
3. Students will be able to identify where the mirages are formed.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and Conduct an activity of refraction with a tumbler, water and pencil.	1. Students arrange the apparatus and conduct activities.	1. Students identify the bending of pencil in a water tumbler.	1. Why does ray of light bent when it travels from one medium to another?
2. Discussion and Explain the concept of refraction with a long wall, bright metal object in the presence of sunlight	2. Conduct activity and observe the involved phenomena.	2. Students give examples of refraction of light.	2. What is the result of the refraction of light?

3. Explain and conduct an activity of refraction through the shallow vessel, coin and water.		3. Write the definition of refraction of light.	3. If light rays travel in the normal direction, what is the speed of light?
4. Explain the concepts of refractive index and relative refractive index.	3. Collect the information of refractive indices of materials	4. Students give reasons for no units of refractive index.	
5. Discussion of refractive indices of some material media.	4. Group discussion on "Why do different material media possess different values of refractive indices?	5. Solved the problems on refractive index.	4. Why the refractive index of kerosene is more than that of the refractive index of water?
6. Explain and conduct of Snell's law verification.		6. Express the mathematical notation of Snell's law.	
7. Explain and conduct an activity of i < r when light rays travel from denser to rarer medium.	5. Conduct activity and record the observations.	7. Students complete the homework.	5. Is Snell's law is applicable, when light ray travels in the normal direction?
8. Explain concepts of the critical angle and total internal reflection with activities.	6. Solved the problems on critical angle	8. Write the laws of refraction?	6. Define Critical angle
9. Discussion and explain the formation of mirages.	7. Students frame some questions in order to find out how mirages are formed.	9. Students will identify the conditions for the formation of mirages.	7. Why should you see a mirage as a flowing water?
10. Explain the applications of total internal reflection.		10. Students learn where total internal reflection is used in the medicine and communication fields.	8. Write the applications of total internal reflection
11. Conduct and discussion of finding lateral shift using glass slab.	8. Students draw the diagram of lateral shift using glass slab.		
12. Conduct and explain of finding the refractive index of glass slab.	9. Students describe the procedure of the activity.	11.Write the mathematical expression of refractive index of glass slab.	9. What is the angle of deviation produced by the glass slab?

Check For Understanding Questions	TLM's (Digital + Print)
1. Factual: 1. Is the refraction of light essentially a surface phenomenon? 2. Why does light ray follows Fermat's principle? 3. Why does light bend in refraction? 4. Why is sine used in Snell's law? **2. Open Ended/Critical Thinking:** 1. Can total internal reflection occur from air to water? Discuss 2. A piece of glass disappears when immersed in glycerin – why? 3. Can a medium have a refractive index less than 1? 4. Why there is no critical angle for light travelling from water to glass? **3. Student Practice Questions & Activities:** a) Explain the formation of mirage? b) How do you verify experimentally that sin i/sin r is a constant? c) How do you verify experimentally that the angle of refraction is more than angle of incidence when light rays travels from denser to rarer medium?. d) Explain the refraction of light through a glass slab with a neat ray diagram.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Collect information on working of optical fibres. Prepare a report about various uses of optical fibres in our daily life.
2. Observe the table. Answer the following qusstions?

Material medium	Water	Benzene	Turpentine oil	Kerosene
Refractive index	1.33	1.50	1.47	1.44

i) Which of the above material media, speed of light is less? ii) Among water and kerosene, which is optically denser?

3. Frame some questions to know about the formation of mirage.
4. Why should you see a mirage as a flowing water?

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Refraction of Light at Curved Surfaces (Chapter-4)	Refraction of light at a curved surface	1			
	Examples and Solutions	1			
	Lenses	1			
	The behaviour of certain light rays when they are incident on a lens	1			
	Ray diagrams of the convex lens	2			
	Determination of focal length of bi-convex lens using UV method	1			
	Len's formula, Solved problems	1			
	Focal length of a convex lens is increased when it is kept in water Lens maker's formula Problems-Solutions	2			

Prior Concept/Skills:

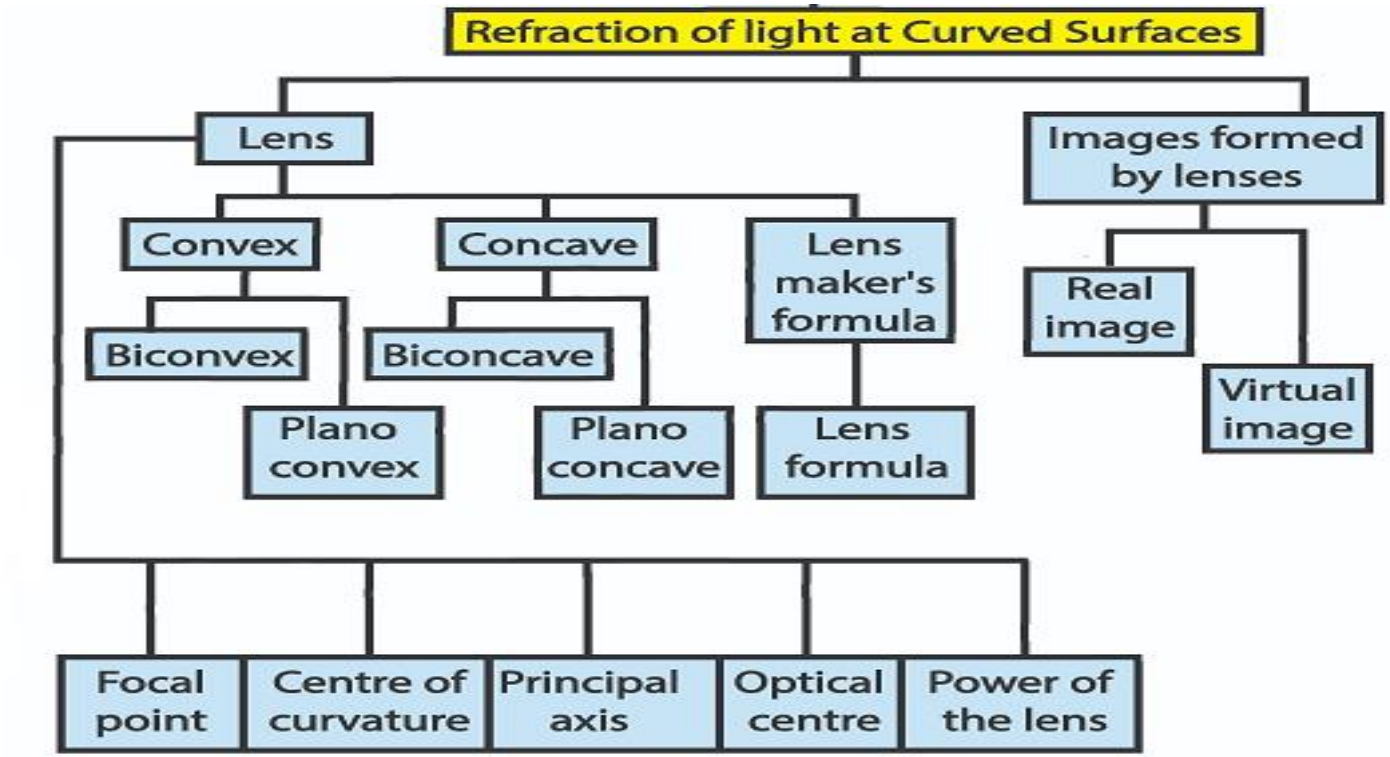
1. Write the laws of refraction of light.
2. What is the cause of refraction?
3. What is normal to the refracting surface?

Learning Outcomes:	No. of Periods
1. Classifies lenses based on properties and characteristics.	1
2. To seek answers to queries on their own of any ray passing through the optic centre is undeviated.	1
3. Draws labelled diagrams, flow charts, concepts maps of bi-convex lens ray diagrams	1
4. Analyses and interprets data and figure of object distance and image distance of convex lens.	1
5. Applying scientific concepts in daily life of lenses	1
6. Uses scientific convention to represent units of various quantities, symbols,formulae and equations of sign convention in optics, SI units	
7. Handles tools and laboratory apparatus properly, measures physical quantities using appropriate apparatus, instruments and devices of finding the focal length of lens by UV method.	1
8. Analyses and interprets figures of ray diagrams.	1
9. Calculates using the data of focal length of a lens.	1
10. Relates processes and phenomena with causes and effects 'On what factors does the focal length of the lens depend?	1

11. Draws conclusion of focal length of convex lens and surroundings 12. Plans and conducts investigations and experiments to arrive at and verify the fact of the focal length of a convex lens is increased when it is kept in water	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students will know what kind of lenses to use for which occasion in their daily life.
2. Students learn the characteristics of images formed by lenses through drawing of ray diagrams.
3. Students will understand ray diagrams in order to find the focal length of the lens.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and conduct an activity on refraction of light with help of a black sketch, thick paper sheet, transparent glass tumbler.	1. Students conduct the activity and observed the characteristics of the arrow mark without water and with water in the glass tumbler.	1. Students write the differences between real and virtual image?	1. When a real image is formed?

2. Discussion and explain the refraction of light at curved surfaces with ray diagrams.	2. What happens to ray that is incident on a curved surface separating the two media? – Group discussion	2. Students draw the normal to the curved surfaces.	2. What is the radius of curvature of the plane surface?
3. Explain the textual examples	3. Students solved the problems	3. Students complete the homework.	3. $\frac{n2}{v} - \frac{n1}{u} = \frac{n2-n1}{R}$ Explain the terms in it?
4. Discussion and demonstration of types of lenses	4. Students identify the types of lenses.	4. Students draw the different types of lenses.	4. What is a lens?
5. Explain the terminology used in the lenses.	5. Students identify the principle axis, centre of curvatures, radii of curvature, focal lengths, focal points.	5. Students give reasons, why R= 2f for all lenses.	5. Define the focal point of lens?
6. Discussion and Explain the behaviour of certain light rays when they are incident on a lens.	6. Group discussion on rules to draw ray diagrams for image formation by lenses	6. Students explain in which cases a ray of light undeviated and deviated.	6. Write the symbols of convex and concave lenses.
7. Discussion and Explain the ray diagrams of the convex lens.	7. Students draw the ray diagrams of convex lens when object kept at different positions	7. Students write the characteristics of images formed by a convex lens.	7. What are the rules to draw ray diagram of convex lens?
8. Discussion and explain the ray diagrams of the concave lens.	8. Students draws the ray diagrams of concave lens when object kept at different positions	8. Students solved the problems on the focal length of a concave lens.	8. Is concave lens diverging or converging?
9. Conduct experiment of determination of focal length of bi-convex lens using UV method.	9. Students arrange the apparatus in a proper way and express the procedure of the experiment.	9. Students complete the homework.	9. What are the materials required to find the focal length of a convex lens in UV method?
10. Explain lens formula and its Problems.	10. Students solved the problems on lens formula	10. Collect the information of uses of lenses in our day to day life situations.	10. Write a lens formula?
11. Discussion and conduct an activity on the focal length of a convex lens is increased when it is kept in water.	11. Students conduct an activity	11. On what factors does the focal length of the lens depend?	11. Why an air bubble in water behaves like a diverging lens?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: 1. Are the laws of refraction valid for curved surfaces? 2. What is the purpose of drawing ray diagrams for lenses? 3. Why are real images inverted? **2. Open Ended/Critical Thinking:** 1. Why is there no refraction at the circular surface? 2. Why there are only two cases of the formation of images in the concave lens? 3. Is focal length always positive? **3. Student Practice Questions & Activities:** 1. How do you find the focal length of a lens experimentally? 2. The focal length of a converging lens is 20cm. An object is 60cm from the lens. Where will the image be formed and what kind of image is it? 3. How do you verify experimentally that the focal length of a convex lens is increased when it is kept in water? 4. Your friend is not able to distinguish between concave and convex lenses. Ask two suitable questions to understand the differences between the lenses.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Distinguish between Convex lens and Concave lens
2. Draw ray diagrams for the Convex lens following positions and explain the nature and position the of image.
   1) Object at infinity 2) Object is placed at beyond 2F2 3) Object is placed at 2F2
   4) Object is placed between F2 and 2F2 5) Object is placed at F2
   6) Object is placed between F2 and optic centre
3. Write the rules to draw ray diagrams for image formation by lenses.
4. A double convex lens has two surfaces of equal radii 'R' and refractive index n = 1.5, find the focal length?

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VISITING OFFICER WITH REMARKS

LESSON PLAN

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Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Human Eye and Colourful World (Chapter – 5)	Least distance of distinct vision	1			
	Angle of vision	1			
	Structure of human eye	1			
	Defects of vision	2			
	Power of lens and problems	1			
	Prism	2			
	Dispersion of light	2			
	Scattering of light	1			

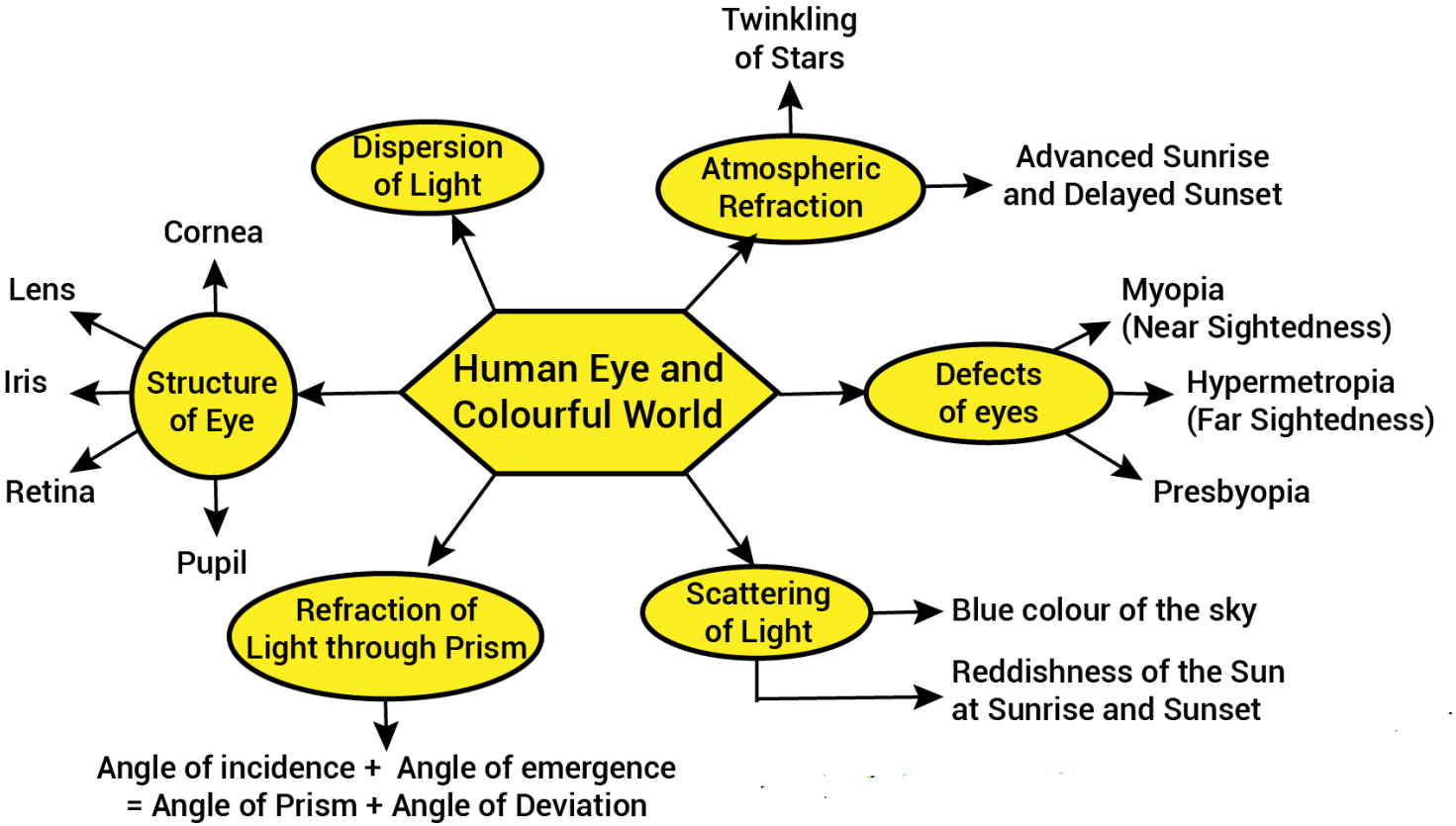
Prior Concept/Skills:

1. What is the most important part of the eye?
2. What are common defects of eye?
3. How many colours are there in a rainbow?

Learning Outcomes:	No. of Periods
1. Draws labelled diagrams of Human eye	1
2. Draws the flow chart of defects of vision.	1
3. Draws conclusions of defects of vision.	1
4. Calculates using the data of power of a lens.	1
5. Handles tools and laboratory apparatus properly, measures physical quantities using appropriate apparatus, instruments and devices of finding the refractive index of a prism.	1
6. Plans and conducts investigations and experiments to arrive at the verifying the facts of refractive index of prism.	1
7. Calculates using the data given refractive index of prism.	
8. Explains processes and phenomena of formation of rainbow.	1
9. Relates processes and phenomena with causes and effects of blue colour of sky with scattering of light	1
10. Explains processes and phenomena of sky appears white sometimes	1
11. Applies learning to hypothetical situations of dispersion of light and scattering of light.	1
12. Explains processes and phenomena of advance sunrise and delayed sunset.	
13. Takes initiative to know about scientific discoveries and inventions of Sir C.V. Raman effect.	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students understand the structure of the human eye and take appropriate measures to prevent eye defects.
2. Students will be able to predict the situations in which a rainbow is formed.
3. Students learn the sequence of colour changes of the sky at different times with scientific knowledge.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain the concept of least distance of distinct vision with help of text book.	1. Why least distance of distinct vision changes with age? – Group discuss	1. Students write the definition of least distance of distinct vision	1. How do you find least distance of distinct vision? 2. What is the value of

2. Explain and conduct an activity on angle of vision with help of a retort stand and different lengths of wooden sticks.	2. Students explain the concept of angle of vision and their importance.	2. Students conduct an activity.	angle of vision for healthy human being?
3. Explain the structure of human eye and the functioning of parts.	3. Students draw the structure of human eye.	3. Students explain the functioning of parts of the human eye.	3. What is the role of rods and cones in the human eye?
4. Discussion and finding the maximum and minimum focal length of eye lens.	4. Students finding the maximum and minimum focal length of eye lens.	4. Students complete the homework.	4. What are the limits to change the focal length of eye lens?
5. Discussion and Explain common defects of vision(Myopia) and its correction.	5. Students draw ray diagrams showing myopia and its correction.	5. Students draw the flow chart of common defects of vision.	5. A person is suffering from myopia, his far distance is 5 m. what is the focal length of his eye lens?
6. Discussion and Explain common defects of vision(Hypermetropia) and its correction.	6. Students draw ray diagrams showing hypermetropia and its correction.	6. Students give reasons about why do we need to use the biconvex lens for hypermetropia.	
7. Discussion and Explain common defects of vision(Presbyopia) and its correction.	7. Collect the information of defects of vision and give reason, how the defects of vision are formed by the students.	7. Students write the differences between myopia and hypermetropia.	6. Bi-focal lenses are advisable for a person suffers from both myopia and hypermetropia. Justify?
8. Explain the concept “Power of lens” and Problems.	8. Students will solve problems on the power of lens.	8. Students complete the homework.	7. Define the power of lens and write its units.
9. Describe the Prism and Finding the refractive index of a prism..	9. Students arrange the apparatus systematically and measure the angles of the incidence, deviation, prism and emergence.	9. Students describe the procedure of the present experiment.	8. Write the formula of Refractive index of the prism. Explain terms in it?
10. Explain and conduct an experiment to produce a rainbow in your classroom.	10. Students conduct the experiment	10. Students observe the colours in the rainbow.	9. Define Dispersion of light?
11. Explain Dispersion of light and formation of rainbow in nature.	11. Students collect the information on the formation of rainbows in nature.	11. Why are there sometimes two rainbows? – Give reason.	10. How could the white light of the sun gives us various colours of the rainbow?
12. Discussion and explain the scattering of light	12. “Scattering of light depend on size of the atoms or molecules” Are you agree this statement? Why? Discuss	12. What is the role of atoms/ molecules in the scattering of light?	

13. Discussion and explain blue of the sky, White of the sky, red colour of sun durithe ng sunrise and at sunset.	13. Students read the scientific history of Sir C.V. Raman	13. Students collect the information of Sir C.V.Raman	11. Why sun does not appears red during noon hours?

Check For Understanding Questions	**TLM's (Digital+Print)**
1. Factual: 1. Is the speed of light of each colour different? 2. Why does least distance of distinct vision increase with age? 3. Does refractive index depend on angle of prism? **2. Open Ended/Critical Thinking:** 1. What is the Colour of sky if there is no atmosphere? Give reason 2. How does eye lens changes its focal length? 3. Why does dispersion occur only in prism but not in glass slab? **3. Student Practice Questions & Activities:** 1. How do you correct the eye defect Myopia? 2. Explain the formation of rainbow. 3. How do you appreciate the role of molecules in the atmosphere for the blue colour of the sky? 4. How do you appreciate the working of Ciliary muscles in the eye?	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. How do you find experimentally the refractive index of material of a prism.
2. Ramana cannot see the objects clearly after 2m. Then answer the following.
   a) What is his eye defect? b) Which lens do you suggest to correct his eye defect?
   c) What is the focal length of that lens? d) Find the power of lens?
3. The focal length of a lens suggested to a person with Hypermetropia is 100cm.Find the distance of near point and power of the lens.
4. When Raju, a ten years old boy, saw rainbow and so many doubts are raised in his mind. Guess those doubts and ask some questions.

SIGNATURE OF THE TEACHER SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Structure of Atom (Chapter-6)	Spectrum	1			
	Electromagnetic Spectrum	1			
	Bohr's model of hydrogen atom and its limitations	2			
	Bohr-Sommerfeld model of an atom	1			
	Quantum mechanical model of atom – Quantum numbers	1			
	Electronic Configuration – The Pauli Exclusion Principle	3			
	Aufbu Principle –Hund's Rule	2			

Prior Concept/Skills:

1. What are the three sub-atomic particles?
2. Why is atom stable?
3. Give the main postulates of Bohr's model of an atom.

Learning Outcomes:	No. of Periods
1. Calculates using the data of wavelength of light.	1
2. Takes initiative to know about scientific discoveries and inventions of atomic models.	
3. Analyses and interprets data of quantum numbers of given electron.	1
4. Draw labelled diagrams of s,p,d-orbitals	1
5. Exhibits creativity in designing models using eco-friendly resources of working model of orbitals.	
6. Draw labelled diagram of moeller chart.	1
7. Draw flow charts of electronic configurations of elements.	1
8. Analyses and interprets data of electronic configuration of elements,	1
9. Draws conclusion of filling order of atomic orbitals.	1
10. To seek answers to queries on their own of electronic configuration of copper and chromium.	
11. Applies learning to hypothetical situations " What will happen if electronic configuration of elements unknown?	1
12. Explains processes of Aufbau principle with suitable examples	1
13. Explains processes of Hund's Principles with suitable examples	1
14. Explains processes of principles with suitable examples	1

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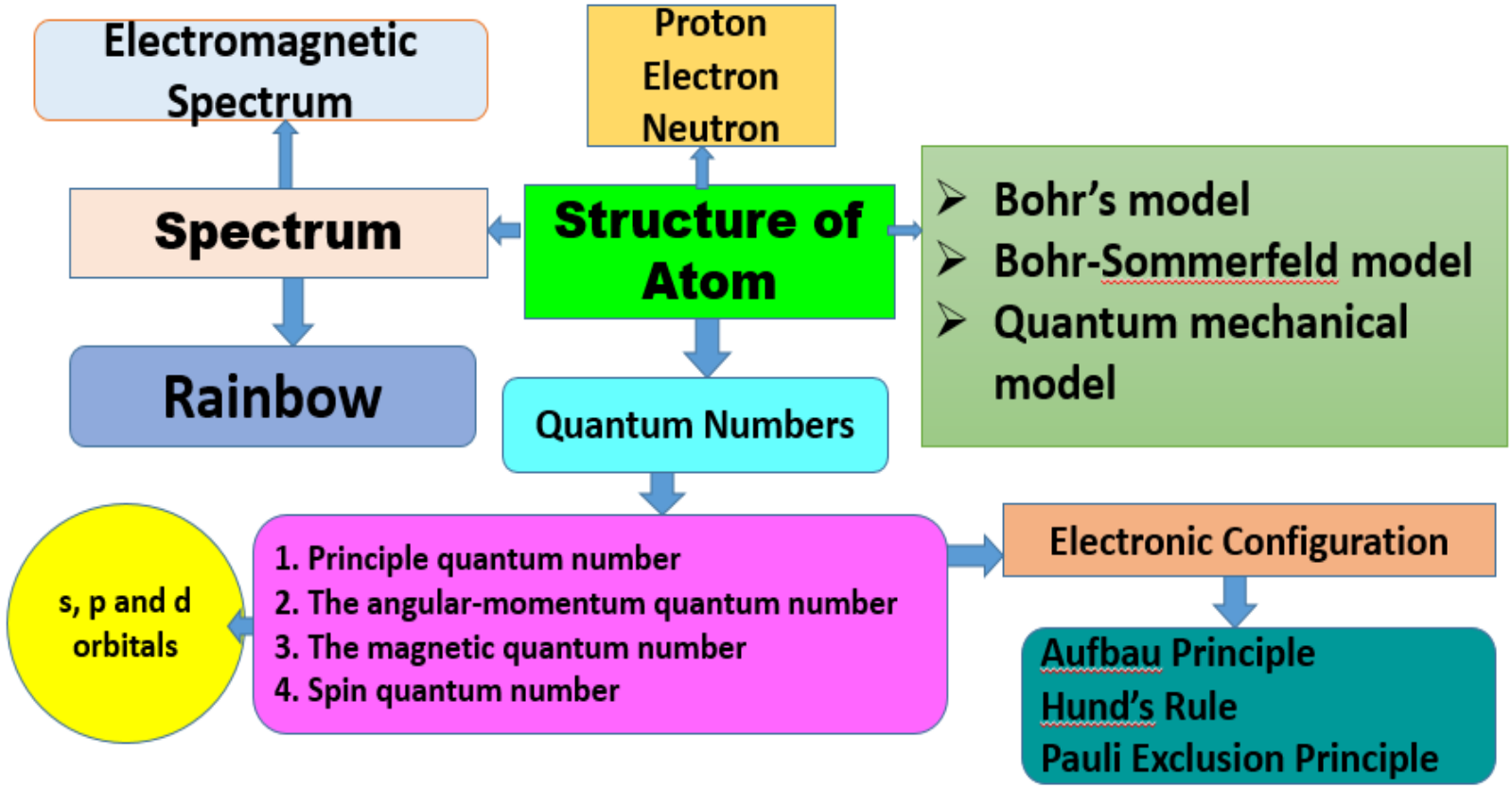

Experience and Reflection:

1. Students will understand why only certain colours are used in traffic signals based on the wavelengths of colours in the visible spectrum.
2. Students will learn which rules to use to write the electronic configurations of elements.
3. Students will learn the importance of quantum numbers used to describe shells, sub-shells and spin of the electrons in an atom.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and exhibit of atomic Model. 2. Discussion and Explain Spectrum and wave nature of light.	1. Students collect the information on different atomic models. 2. Why we were using red, green, yellow colours in the traffic signals? – Group discuss.	1. Do all atoms have the same sub-atomic particles? – Give reason 2. Collect the information of regarding wavelength and corresponding frequencies	1. What is the charge of an electron? 2. What is the longest wavelength in the visible spectrum?

3. Explain Electromagnetic spectrum, Max Planck theory and its equation.	3. Students draw the electromagnetic wave	of three primary colours 3. Students write the definitions of emission and absorption of light spectrum.	3. Write the Planck equation and 'h' value?
4. Explain and Showing the video about line spectra.	4. Students collect the uses of line spectra.	4. Students complete the homework.	4. What are line spectra?
5. Explain Bohr's model of hydrogen atom its limitations.	5. Students explain the limitations of Bohr's model of hydrogen atom.	5. Reading the biography of Neil's Bohr.	5. Why does the Bohr model not work for helium?
6. Discussion and Explain Bohr – Sommerfeld model of an atom.	6. Students observe the shapes of orbits	6. Students give reasons, Why Sommerfeld introduced elliptical orbits?	6. Define fine spectra?
7. Explain Quantum mechanical model of an atom.	7. Discussion on the importance of electrons in an atom.	7. Students write the definition of orbital.	7. Who developed the quantum mechanical model of atom?
8. Discussion and Explain the significance of quantum numbers (Principal quantum number, The angular – momentum quantum number).	8. Students draw the different shells around the nucleus and identify the shells and sub-shells.	8. Students represent the data of s.p.d and f sub-shells in tabular form.	8. How many values can '*l*' have for n=4?
9. Discussion and Explain the significance of quantum numbers (The magnetic quantum number, Spin quantum number)	9. Students collect the information on quantum numbers.	9. Students draw the s,p and d orbitals	9. What is the significance of spin quantum number?
10. Discussion and Explain the nl^x Method.	10. Group discussion on nl^x method.	10. Students complete the homework.	10. What is electronic configuration?
11. Explain the Pauli Exclusion Principle with examples.	11. Can 2 electrons have the same quantum numbers? - Discuss	11. Students give a reason, "how many electrons can occupy an orbital"?	11. How many electrons can occupy an orbital?
12. Explain Aufbau Principle with examples and Moeller Chart.	12. Students express the Aufbau Principle in terms of quantum numbers.	12. Students draw the Moeller chart.	12. Out of 3d and 4s, which has more (n+*l*) value ? Explain
13. Explain Hund's Rule with examples.	13. Students explain Hund's rule with example	13. Students complete the homework.	13. Why Hund's rule not applicable for which

14. Discussion and explain 'How to wrote the electronic configuration of elements?	14. Why Copper and chromium electronic configurations are different from other? Discuss	14. Students are write the electronic configurations of first 30 elements	subshell? 14. What are the 3 rules of electron configuration?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: 1. Is Bohr model applicable to all atoms? 2. What is the order of electron configuration? 3. Why 1p orbital is not possible? **2. Open Ended/Critical Thinking:** 1. What is the importance of electronic configuration? 2. What would happen if the Pauli Exclusion Principle was violated? 3. Why the spin of electron is half? **3. Student Practice Questions & Activities:** 1. Rainbow is an example for continuous spectrum – explain. 2. Explain the significance of three Quantum numbers in predicting the positions of an electron in an atom. 3. What is nl^x method? How it is useful? 4. Draw a diagram to show that the filling order of atomic orbitals and their ascending order of energies?	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Atomic number of element is 17. Answer the following questions
   i) Write the name of the element ii) Write the electronic configuration
   iii) How many electrons are present in M-shell iv) Write the nearest noble gas element
2. State and explain with one example of Aufbau principle?
3. Write postulates and limitations of Bohr's model of hydrogen atom.
4. Write the first 20 elements electronic configuration.

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LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Classification of Elements – The Periodic Table (Chapter -7)	Need for the arrangement of elements in an organized manner	2			
	Dobereiner's law of Triads				
	Newlands' law of Octaves	1			
	Mendeleev's Periodic Table	2			
	Modern Periodic Table	2			
	Periods, Groups, Metals and Non metals	2			
	Periodic properties of the elements in the modern table	2			

Prior Concept/Skills:

1. Write the names of some elements and also write their symbols.
2. Are there any methods to easily understand the properties of elements?
3. Which element was first discovered?

Learning Outcomes:	No. of Periods
1. Takes initiate to know about scientific discoveries and inventions of Dobereiner for discovering triads of elements.	1
2. Takes initiate to know about scientific discoveries and inventions of Mendeleev for the development of the periodic table of Elements.	1
3. Draws labelled diagrams of modern periodic table.	1
4. Explains processes of placement of elements in modern periodic table.	1
5. Classifies elements based on placement of elements in the periodic table.	1
6. Exhibits creativity in designing models using eco-friendly resources of modern periodic table.	1
7. Draws conclusion of properties of elements vary periodically along the groups and periods in periodic table.	
8. Analyses and interprets data of electronic configuration of elements and placing in the periodic table	1
9. Relates processes and phenomena with causes and effects of ionization of energy variable in periodic table.	1
10. To seek answers to queries on their own relation between electronegativity, ionization energy and electron affinity.	1
11. Applies learning to hypothetical situations "What happens if the periodic table not find out?"	1
12. Communicates the findings and conclusions effectively of characteristics of the elements having atomic numbers.	1

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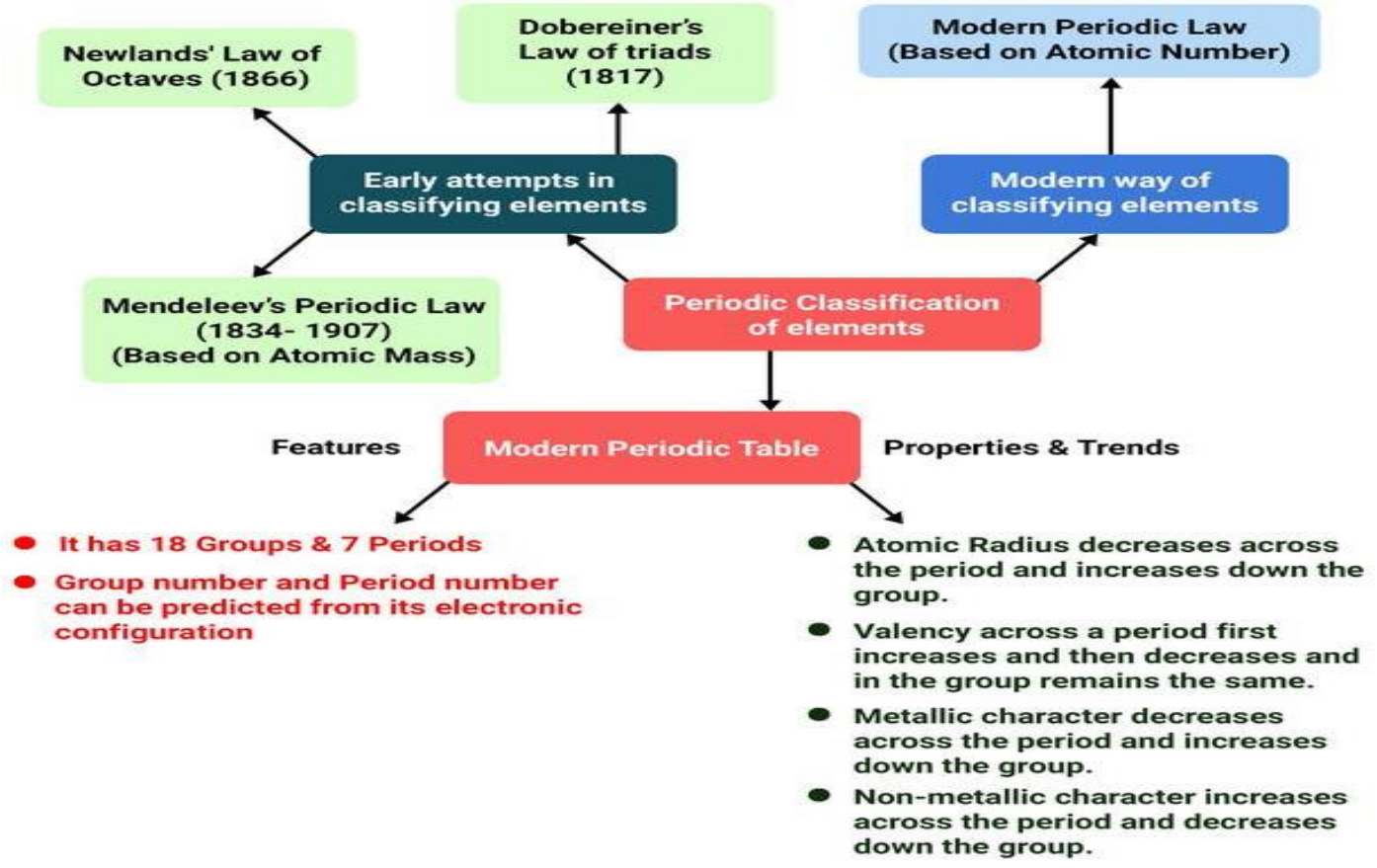

Experience and Reflection:

1. Students will appreciate the efforts of scientists to classify the elements.
2. Students will observe the properties of the elements in predicting the positions of the elements in the modern periodic table.
3. Students will be able to predict the uses of elements based on the modern periodic table.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain need for the arrangement of elements in an organized manner.	1. Collect information on Robert Boyle, Lavoisier and Louis Proust.	1. Students write the names of the known elements	1. How many elements have been discovered at the end of the 18^{th} century?

2. Explain the Dobereiner's law of triads and limitations.	2. Students give examples of Dobereiner's triads.	2. Students express the limitations of Dobereiner's law of triad	2. Write Dobereiner's law of triad.
3. Discussion and explain Newlands' law of Octaves and defects.	3. Students compare Newland's law of octaves with Indian musical notes.	3. Students complete the homework.	3. What is the basis of triad formation of elements?
4. Discussion and explain Mendeleev's Periodic Law and Mendeleev's Periodic Table.	4. Reading the biography of Mendeleev	4. Students draw the block diagram of Mendeleev's periodic table	4. Why did Mendeleev use eka?
5. Explain the salient features and achievements of the Mendeleev;s periodic table and limitations.	5. Collect the information on Mendeleev's Periodic Table	5. Students give a reason, why Mendeleeff had to leave certain black spaces in his periodic table?	5. How many groups and periods are in Mendeleev's periodic table?
6. Discussion and explain the modern periodic law, Moseley law and modern periodic table.	6. Group discussion on 'Who proposed modern periodic law and the need for the situation.'	6. Students write the modern periodic law	6. What is the easiest way to memorise the modern periodic table?
7. Explain the positions of elements in the Modern Periodic Table.	7. Discussion on the construction of modern periodic table	7. Collect the information on names of groups in periodic table and uses of elements in our life.	7. How could we determine an element on the basis of a given group and period?
8. Discussion and Explain the periodic properties of the elements in the modern periodic table(Valence, Atomic radius).	8. Students will be able to explain how atomic radius changes in periods and groups	8. How does the valency vary in a period on going from left to right? – Discuss	8. Define Atomic radius and write their units.
9. Discussion and Explain the periodic properties of the elements in the modern periodic table(Ionization energy, Electron affinity)	9. Students collect information on ionization energy and influence factors.	9. Students complete the homework.	9. Second ionization energy of an element is higher than its first ionization energy. Why?
10. Discussion and Explain the periodic properties of the elements in the modern periodic table (Electronegativity, Metallic and Non-Metallic Properties)	10. Students draw flow charts of how the atomic properties change across groups and periods in the modern periodic table.	10. Does the metallic character depend on electronegativity?	10. Which elements are electropositive elements and Which elements are electronegative elements?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: 1. Why noble gases are not reactive? 2. Why are groups called families? 3. Why lanthanides and actinides are placed separately at the bottom of the periodic table? **2. Open Ended/Critical Thinking:** 1. How are lanthanides used in everyday life? 2. Why do metals have low ionization energy? 3. Do the atom of an element and its ion have same size? **3. Student Practice Questions & Activities:** 1. Define the modern periodic Law. Discuss the construction of the long form of the periodic table. 2. Explain how the elements are classified into s, p, d and f- block elements in the periodic table and give the advantage of this kind of classification. 3. An element X belongs to 3rd period and group 2 of the periodic table. State (a) The no. of valence electrons (b) The valency (c) Whether it is metal ornon-metal 4. Define ionization energy? What are the factors that influence it?	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Collect information regarding metallic character of elements of IA group and prepare report to support the idea of metallic character increases in a group as we move from top to bottom.
2. What is a periodic property? How do the following properties change in a group and period? Explain.
   (a) Atomic radius (b)Ionization energy (c)Electron affinity (d) Electronegativity
3. Given below is the electronic configuration of elements A, B, C, D. (AS1)

A.1s2 2s2	1. Which are the elements coming within the same period
B.1s2 2s2 2p6 3s2	2. Which are the elements coming within the same group?
C.1s2 2s2 2p6 3s2 3p3	3. Which are the noble gas elements?
D.1s2 2s2 2p6	4. To which group and period does the elements 'C 'belong

4. What are the salient features of Mendaleeff's periodic table?

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Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Chemical Bonding (Chapter – 8)	Introduction and Lewis symbols/Lewis dot structure	1			
	Electronic theory of valence by Lewis and Kossel	1			
	Ionic bonds with Lewis dot formulae	2			
	The arrangement of ions in ionic compounds	1			
	Covalent bonds with Lewis dot formulae	2			
	Valence Shell Electron Pair Repulsion Theory(VSEPRT)	1			
	Valence bond theory	2			
	Valence bond theory - Hybridisation	2			

Prior Concept/Skills:

1. What is the maximum number of valence electrons?
2. Where is the position of metals and non-metals in the modern periodic table?
3. Which of the atoms and molecules exhibits stability?

Learning Outcomes:	No. of Periods
1. Draw labelled diagrams of electron dot structure of atoms and molecules.	1
2. Explains processes of formation of ionic bonds	1
3. Explains processes of formation of covalent bonds.	1
4. Relates processes with causes and effects of valence bond theory with valence shell electron pair repulsion theory.	1
5. Explain the formation of $BeCl_2$. BF_3, NH_3 and H_2O molecule using hybridisation.	1
6. Applies learning to hypothetical situations “Does hybridization always occur?”	
7. Draws labelled diagrams of $BeCl_2$, BF_3, H_2O,CH_4	1
8. Applies learning to hypothetical situations of bond angles differ with hybridization.	1
9, Draws flow charts of hybridisation of different molecules.	1
10. Analyses and interprets figures of molecules.	1
11. Exhibits creativity in designing models using eco-friendly resources of $BeCl_2$, BF_3, H_2O and CH_4	1
12. Analysis and interprets data,graphs of melting and boiling points of substances to differentiate between covalent and ionic compounds.	1
13. Differentiates compounds as ionic and covalent compounds based on properties.	1

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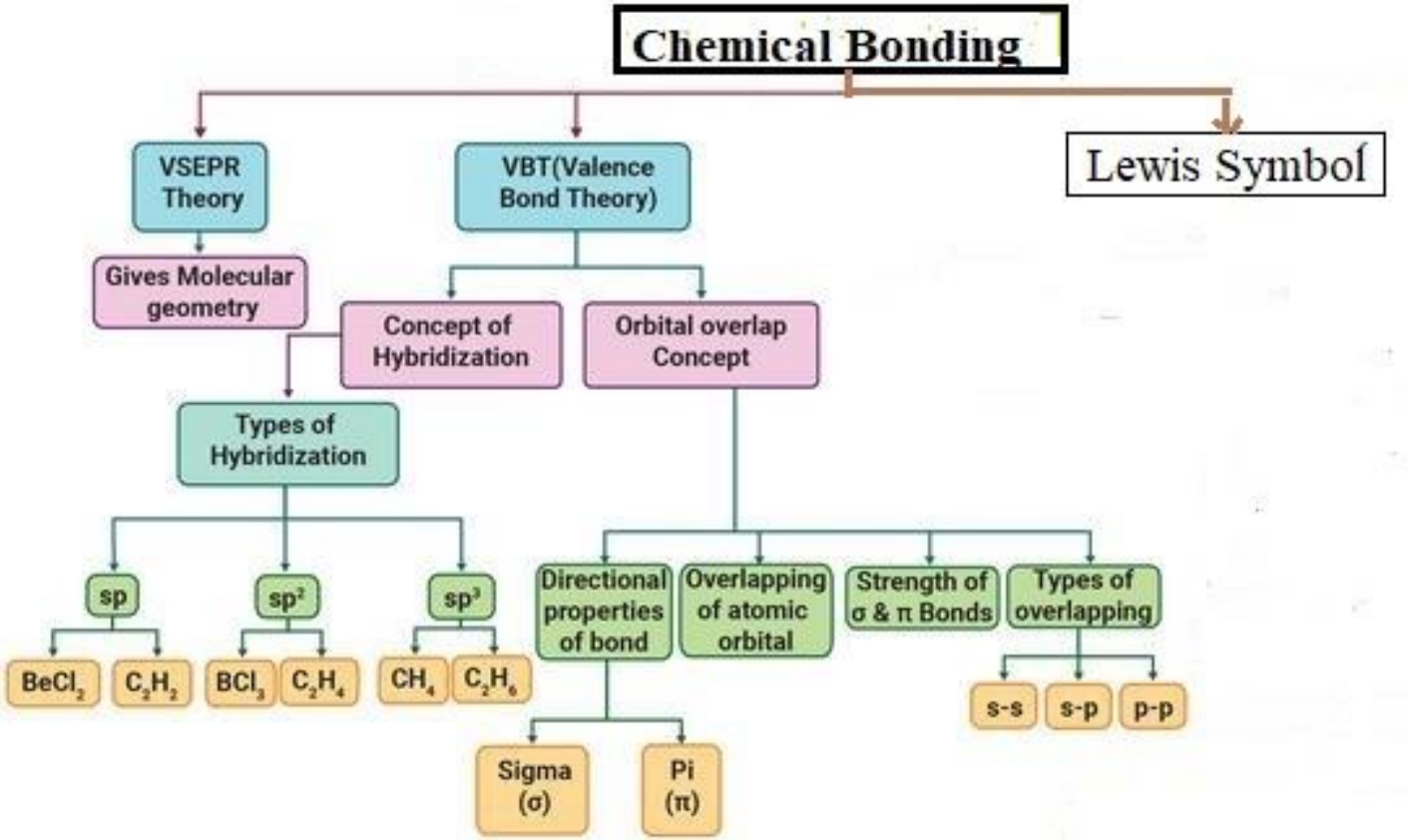

Experience and Reflection:

1. Students will be able to express what chemical bonds form between which groups in the periodic table.
2. Students will be able to know the properties of ionic and covalent substances and predict when they are soluble.
3. Students will be able to predict the shapes and bond angles of molecules when they hybridisation.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1.Discussion and explain valency, valence shell, valence electrons and formation of bonds between atoms.	1. Group discussion on differences between valence electrons and covalency of an element	1. Students write definitions of the valency of an element, valence shell and valence electrons	1. How does valeny affect chemical bonding?

2. Explain Lewis symbols/ Lewis dot structure.	2. Students represent atoms, molecules using Lewis notation.	2. Students collect information on Lewis dot structure.	2. What is the importance of Lewis dot structure?
3. Discussion and explain Electronic theory of valence by Lewis and Kossel and Octet rule.	3. Students write Group IA,IIA, IIIA, IVA,VA,VIA,VIIA and VIIIA electronic configurations.	3. Students appreciate the role of octet rule in the chemical properties of elements.	3. What is octet rule?
4. Discussion and explain ionic bonds with Lewis dot formulae. (Formation of NaCl, $MgCl_2$ etc)	4. Students collect information on the formation of an ionic bond between atoms.	4. Students complete the homework.	4. Explain the formation of
5. Explain the arrangement of ions in ionic compounds and factors affecting the formation of cation and anion.	5. Students explain the tendency of losing electrons to form cations depends on factors.	5. Students write the coordination number of ion and give examples.	5. What is structure of NaCl and coordination number of Na^+ and Cl^- ions?
6. Discussion and explain covalent bonds with Lewis dot formulae. (Formation of F_2, O_2, N_2, CH_4, NH_3 and H_2O molecules)	6. Students explain the formation of O_2 and N_2 molecules	6. Students draw O_2 and N_2 molecules in Lewis notation.	6. What is a covalent bond? How it is formed?
7. Explain Valence shell electron pair repulsion theory with Examples of $BeCl_2$, CH_4, NH_3 and H_2O molecules.	7. Discuss about Main features of Valence Shell Electron Pair Repulsion Theory	7. Students give reasons, Why bond angle of NH_3 is greater than H_2O?	7. Write drawbacks of electronic theory of valence.
8. Discussion and explain Valence bond Theory with examples of H_2, Cl_2, N_2 and O_2 molecules.	8. Group discussion on "Why is the sigma bond stronger than pi bond?"	8. Students complete the homework.	8. Who proposed valence bond theory explain the formation of N2 molecule by using this theory?
9. Discussion and explain hybridisation and Formation of $BeCl_2$. BF_3 molecules.	9. Collect the information of molecules, hybridization, bond angle, lone pair of electrons, shape of the molecules	9. Students draw the shapes of $BeCl_2$. BF_3 molecules.	9. Define hybridisation?
10. Explain the formation of NH_3 and H_2O molecules using hybridisation.	10. Students explain the formation of NH_3 molecule using hybridisation.	10. Students draw the shapes of NH_3 and H_2O molecules.	10. What are the important conditions for hybridisation?
11. Explain the properties of ionic and covalent compounds.	11. Collect information of properties of ionic and covalent compounds.	11. Write any four points about difference between ionic and covalent compounds	11. What kind of force is present in ionic bond?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: 1. How many molecular shapes are there? 2. What causes ionic and covalent properties to have different properties? 3. Which hybridization has the highest bond angle? **2. Open Ended/Critical Thinking:** 1. Why do covalent compounds have no charge? 2. What are the applications of VSEPR theory? 3. What are the factors affecting ionic bond? **3. Student Practice Questions & Activities:** 1. Represent each of the following molecules using Lewis notation: (a) Bromine gas(Br_2) (b) Calcium chloride ($CaCl_2$) (c) Carbon dioxide (CO_2) 2. Explain the formation of $BeCl_2$ molecule using hybridization 3. Explain the formation of BF_3 molecule using hybridization. 4. What is octet rule? How do you appreciate role of the 'octet rule' in explaining the chemical properties of elements?	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. What is ionic bond? How does n ionic bond form? Explain with one example.
2. Observe the figure and answer the questions.

a) How many valance electrons are present in Y b) How many valance electrons are present in X
c) How many covalent bonds are formed by X ? d) How many covalent bonds are formed by Y ?
e) What is the valancy of X and Y f) Suggest the names for elements X and Y
g) Which method used in the molecular representation? h) Suggest the shape of the molecule?

3. Collect the information about properties and uses of covalent compounds and prepare a report?
4. Explain the formation of N_2 and O_2 molecules.

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LESSON PLAN

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Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Electric Current (Chapter – 9)	Introduction and Electric current	2			
	Potential Difference – Electromotive force(EMF)	2			
	Ohm's law	3			
	Electric shock	1			
	Factors affecting the resistance of a material	3			
	Electric Circuits	2			
	Kirchhoff's law	3			
	Electric power – Overload	2			

Prior Concept/Skills:

1. What flows in an electric wire?
2. What is the charge of electron?
3. What is the SI unit of current?

Learning Outcomes:	No. of Periods
1. Draws conclusion of potential difference across a metal conductor is proportional to the electric current flowing through it.	2
2. Handles tools and laboratory apparatus properly, measures physical quantities using appropriate apparatus, instruments and devices of electric current and potential difference using ammeter and voltmeter	1
3. Plans and Conducts investigations and experiments to arrive at and verify the facts of verifies Ohm's law	1
4. Classifies materials as Ohmic and Non-Ohmic conductors based on Ohm's law.	2
5. Exhibits creativity in designing models using eco-friendly resources of Ohm's law verification.	1
6. Analyses and interprets data, graphs and figures of V-I graphs.	2
7. Relates processes and phenomena with causes and effects of electric shock.	2
8. Applies learning to hypothetical situations "What causes electric shock in the human body-current or voltage?	1
9. Communicates the findings and conclusions effectively of resistivity of various materials.	1
10. Derives formulae, equations and law of equivalent resistance of resistors in series and parallel	2
11. Calculates using the data of electric power.	1
12. Relates processes and phenomena with causes and effects of overload.	2

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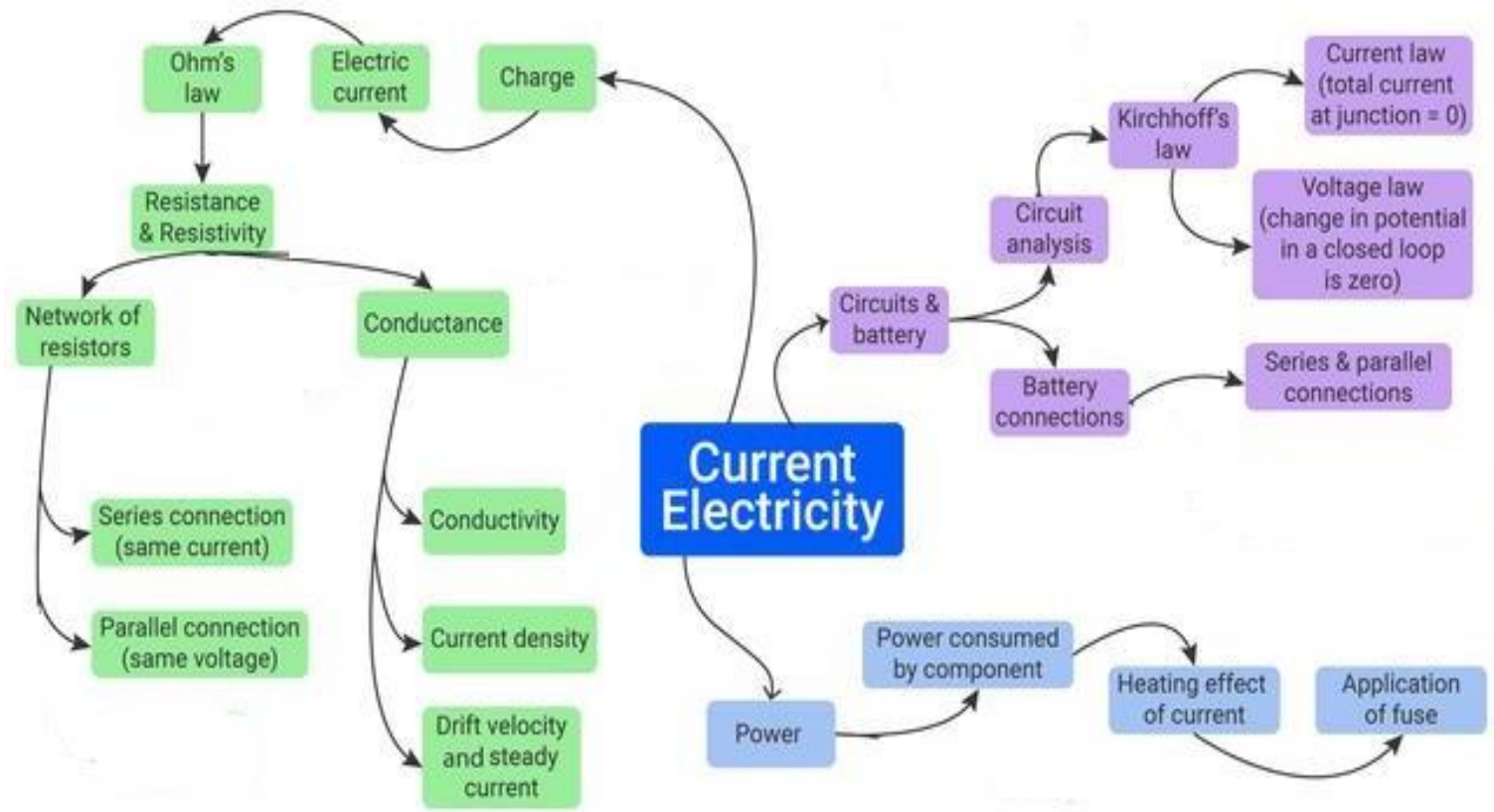


Experience and Reflection:

1. Students will learn why Kirchhoff's laws apply to DC circuits.
2. Students will combine and use electrical devices in the best manner according to their needs in daily life.
3. Students will learn what precautions to take in case of electric shock when connecting electrical equipment.

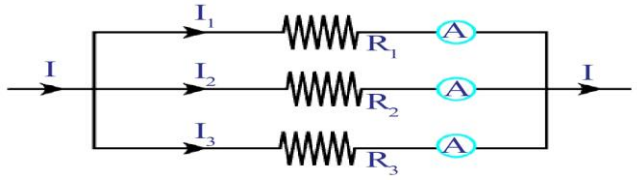
Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and conduct activities on electric circuits and the functioning of various components.	1. Students observe the activities.	1. Students arrange the various electric components.	1. Which device can change chemical energy into electric energy?

2. Explain ordered motion of electrons in open and closed circuits and net charge.	2. Group discussion on Drude and Lorentz theory.	2. Students give reasons, Why net charge is zero when the conductor is in open circuit.	2. Why do all materials not act as conductors?
3. Explain the concepts of Electric current and Drift velocity.	3. Students derive drift speed of electron in a copper wire,	3. Students complete the homework.	3. Define Electric current?
4. Discussion and explain the potential difference.	4. Students explain the direction of electric current in terms of potential difference.	4. Students write the definition of Potential difference.	4. What is the S.I unit of potential difference?
5. Explain EMf and difference between Potential difference and EMF.	5. Group discussion on differences between Potential difference and EMF.	5. Students give reasons, Why emf is called force?	5. Define Electro motive force.
6. Conduct experiments on V/I is a constant for a conductor and V/I is not constant in LED conductor.	6. Students conduct experiments and describe the procedure.	6. Students read the biography of G.S.Ohm	6. Do all materials obey Ohm's law? Explain
7. Explain V-I graphs, Limitations of Ohm's law and Types of conductors.	7. Students draw the V-I graphs of Ohmic and Non-Ohmic conductors.	7. Students express the limitations of Ohm's law	7. What are Ohmic and Non-Ohmic materials?
8. Discussion and explain Electric shock.	8. Students collect information on Electric Shock.	8. Students complete the homework.	8. What causes electric shock in the human body?
9. Explain and conduct experiments on factors affecting the resistance of a materials.	9. Students verify the resistance of a conductor is proportional to the length of the conductor	9. Students derive $R = \rho\, l/A$	9. What are the factors on which the resistance of the conductor depends?
10. Explain resistivity and resistivity of various materials.	10. Students collect information on the resistivity of materials and their conductivity.	10. Students complete the homework.	10. What is specific resistance and write its units?
11. Discussion and explain series and parallel connection of resistors.	11. Students collect information on applications of series and parallel connections in daily life.	11. Students will solve problems on series and parallel connections.	11. Silver is a better conductor of electricity than copper. Why?
12. Explain Kirchhoff's laws and Problems.	12. Students will solve problems on Kirchhoff's laws.	12. Students write Kirchhoff's laws.	12. What quantity is conserved in Kirchhoff's first law?
13. Discussion and explain Electric power and overload.	13. What precautions should be taken to avoid the overloading of domestic electric circuits?- Discuss	13. Students will solve problems on electric power.	13. What do you mean by overload?

Check For Understanding Questions	TLM's (Digital+Print)
1. Factual: 1. Why the potential difference is necessary to produce current in a circuit? 2. Are Kirchhoff's laws applicable to AC or DC circuits? 3. Why doesn't a bird get a shock when it stands on a high voltage wire? **2. Open Ended/Critical Thinking:** 1. What happens when one of the resistors in series breaks down? 2. Why is resistivity called a material property? 3. Why does overload cause damage to electric appliances? **3. Student Practice Questions & Activities:** 1. Deduce the expression for the equivalent resistance of three resistors connected in series. 2. State Ohm's law. Suggest an experiment to verify it and explain the procedure. 3. Write the differences between potential difference and emf. 4. Two bulbs have ratings 100 W, 220V and 60 W, 220V. Which one has the greatest resistance? 5. Explain overloading of household circuits.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. Derive $R = \rho l/A$
2. How do you verify that resistance of a conductor is proportional to the length of the conductor for constant cross section area and temperature
3. Explain Kirchhoff's laws with examples
4. Observe the figure and answer the questions.



a) Are all the resistors connected in series or parallel?
b) What is the equivalent resistance of the combination of three resistors?
c) In this system, which physical quantity is constant?
d) If $R_1 = 2\ \Omega$, $R_2 = 3\ \Omega$ and $R_3 = 6\ \Omega$, then find equivalent resistance?

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Electromagnetism (Chapter – 10)	Oersted experiment	1			
	Magnetic field – Lines of magnetic field	1			
	Magnetic flux - Magnetic flux density	1			
	Magnetic field due to currents	2			
	Magnetic force on moving charge and Current carrying wire	2			
	Electric Motor	1			
	Electromagnetic induction	2			
	Faraday's Law – lenz law – Applications of Faraday's law of electromagnetic induction	1			
	Electric Generator and Alternating – Direct Currents	1			

Prior Concept/Skills:

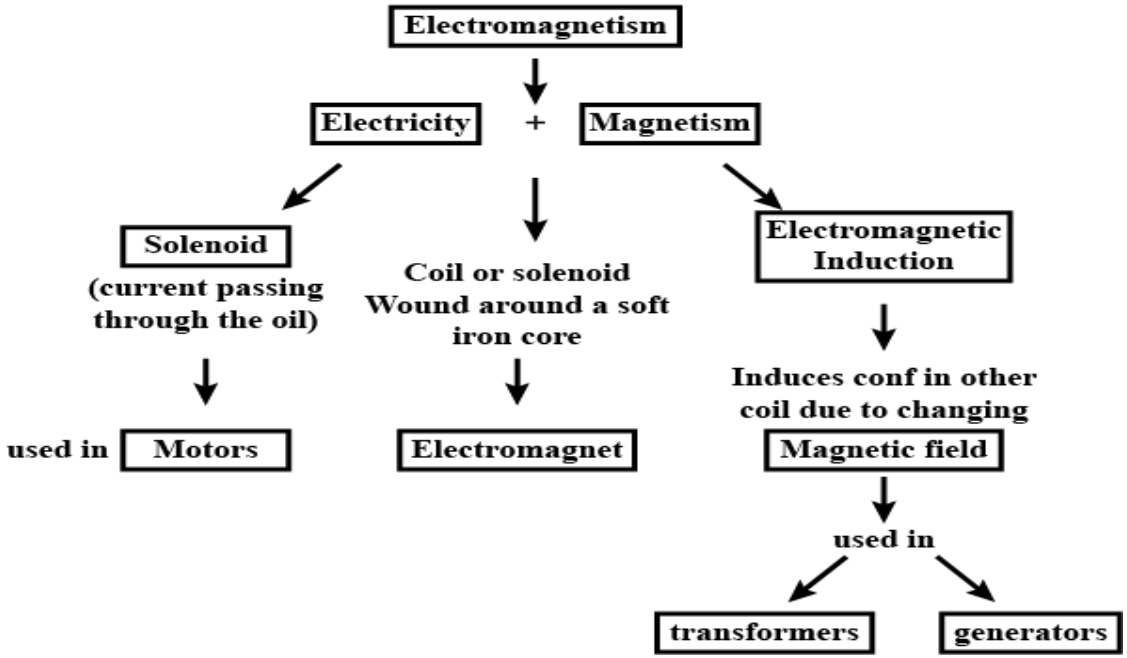
1. Give examples of heating effects of electric current.
2. What is magnetic field? How many poles in a magnet?
3. Is there any relation between electricity and magnetism?

Learning Outcomes:	No. of Periods
1. Takes initiative to know about scientific discoveries and invention of Oersted's discovery that electricity and magnetism are related.	1
2. Plans and conducts investigations and experiments to arrive at and verify the facts of a current carrying wire produces a magnetic field.	1
3. Relates processes and phenomena with causes and effects of deflection of compass needle due to magnetic effect of electric current.	1
4. Draws labelled diagrams of magnetic field lines.	1
5. Uses scientific conventions to represent units of magnetic flux, magnetic flux density symbols, formulae and equation.	1
6. Draws conclusion of magnetic field due to electric field and electric field due to magnetic field.	1
7. Explains processes and phenomena of working of electric motor.	1
8. Communicates the findings and conclusions effectively of faraday law of electromagnetism.	
9. Explains processes and phenomena of working of generator.	1

10. Applies scientific concepts in daily life and solving problems of applications of Faraday's law of electromagnetic induction. 11. Draws labelled diagrams of electric motor and generator. 12. Exhibits creativity in designing models using eco-friendly resources of working model of electric motor and generator. 13. Makes efforts to conserve environment of uses energy efficient electric devices.	1 1 1 1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students learn the inextricable relationship between electricity and magnetism and apply it to future needs.
2. Students use devices that work on the basis of electromagnetic induction to avoid pollution of the environment.
3. Students will be able to tell which objects in their home, work by the electromagnetic induction.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and conduct Oersted Experiment. 2. Explain and conduct an activity on magnetic field and lines of magnetic	1. Students explain procedure of Oersted experiment. 2. "Magnetic field lines are closed and they start at north pole of bar magnet	1. Students arrange the apparatus of the Oersted experiment. 2. Students draw the magnetic field lines around the	1. Why does the needle get deflected by the magnet? 2. What is magnetic field?

field.	and end at south pole" - Based on above statement rewrite the statement and frame questions	magnet.	
3. Explain uniform and non-uniform magnetic field.	3. Students explain uniform and non-uniform field.	3. Students complete the homework.	3. How can we find the strength of the field and direction of the field?
4. Discussion and explain magnetic flux and magnetic flux density.	4. Can we generalize the formula of flux for any orientation of the plane taken in the field? – Discuss.	4. Students write the definitions of magnetic flux and magnetic flux density.	4. What is the flux through the plane taken parallel to the field?
5. Explain and Demonstrate magnetic field due to straight wire carrying current, magnetic field due to circular coil, magnetic field due to solenoid.	5. Students explain magnetic field due to straight wire carrying current, magnetic field due to circular coil, magnetic field due to solenoid.	5. Students compare the magnetic field lines of a bar magnet and magnetic field lines of a solenoid.	5. Why do solenoid behaves like a bar magnet?
6. Explain Magnetic force on the moving charge in parallel and perpendicular to a magnetic field.	6. Students collect information of magnetic force on the moving charge in parallel and perpendicular to a magnetic field.	6. Students give the reason, Why magnetic force is zero, when a charge moving parallel to a magnetic field?	6. What happens to a charged particle when it moves perpendicular to a magnetic field?
7. Discussion and explain Magnetic force on a current carrying wire which is placed along and perpendicular to a magnetic field.	7. Group discussion on electric field effects on the magnetic field.	7. Students complete the homework.	7. Write Right-hand rule for positive charge.
8. Explain and conduct an experiment on a current carrying conductor experiences a force when it is kept in magnetic field.	8. Students conduct an experiment in the classroom with help of the teacher.	8. Students describe the activity in own way.	8. In which situation a current carrying does not experience any force in uniform magnetic field?
9. Demonstrate electric motor and Explain the working of the electric motor.	9. Students making models of electric Motor.	9. Students draw a neat diagram of the electric motor and label its parts.	9. What happens when a coil without current is made to rotate in magnetic field?
10. Explain the concept of Electromagnetic induction.	10. Students collect information on electromagnetic induction.	10. Students complete the homework.	10. Could the ring be levitated if DC is used?
11.Discussion and demonstrate Faraday's law and Lenz law	11. Students explain Faraday's law.	11. Students write Lenz law.	11. Is there emf in an open circuit?
12. Discussion and explain the	12. Students collect information on	12. Students read the	12. What is the equation of

applications of Faraday's law of electromagnetic induction. 13. Explain working of AC and DC generators.	applications of Faraday's law of electromagnetic induction. 13. Students making models of electric AC and DC generators.	biography of Faraday. 13. Can AC and DC current flow in same wire?	Faraday's law of induction? 13. What are the differences between AC and DC generators?

Check For Understanding Questions	**TLM's (Digital+Print)**
1. Factual: 1. Why steel is not used in solenoid? 2. Why does a moving charge experience a force in the magnetic field? 3. How does Lenz's law relate to Faraday's law? **2. Open Ended/Critical Thinking:** 1. What happens to the magnetic field when the number of turns in the coil is increased? 2. Why DC generators are not used in modern vehicles? 3. What happens if Earth loses its magnetic field? **3. Student Practice Questions & Activities:** 1. Are the magnetic field lines closed? Explain. 2. How can you verify that a current carrying wire produces a magnetic field with the help of an experiment? 3. Explain the working of electric motor with a neat diagram. 4. Explain the working of DC generator with a neat diagram.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP
Assessment: 1. Describe an activity to find magnetic field due to a straight wire carrying current. 2. Explain Faraday's law of induction with the help of an activity. 3. Draw a neat diagram of an AC generator. Name the parts 4. Write the applications of Faraday's law of electromagnetic induction. 5. Collect information about the generation of current by using Faraday's law	

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Principles of Metallurgy (Chapter –11)	Metallurgy – Occurrence of the metals in nature	1			
	Extraction of metals from the ores – Reactivity of metals	2			
	Concentration of Dressing	2			
	Extraction of crude metal from the ore	2			
	Refining or purification of the crude metals	2			
	Corrosion – Prevention of corrosion	2			
	A few important processes used in metallurgy	1			

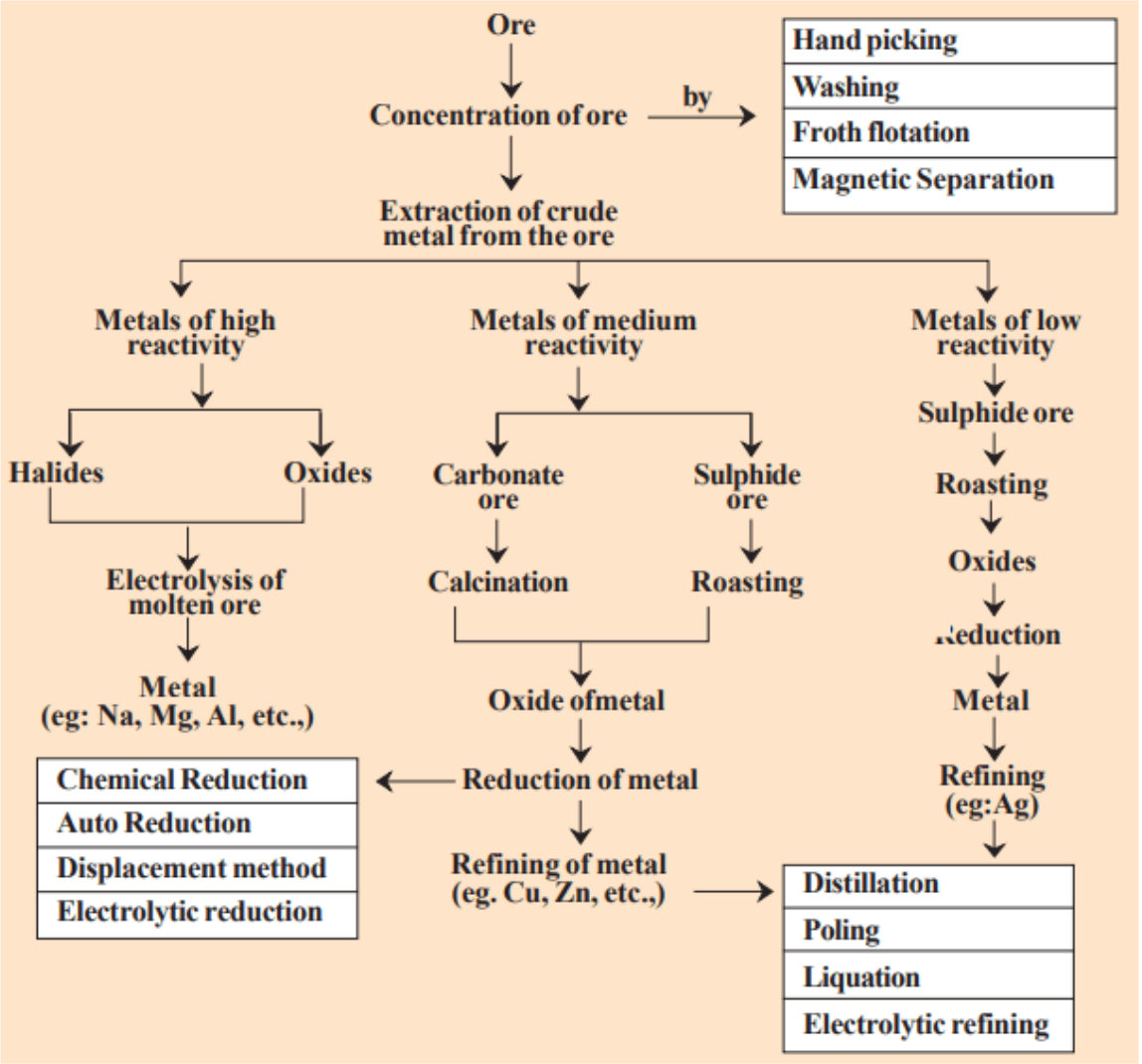
Prior Concept/Skills:

1. On which side of the periodic table of elements are the active elements?
2. Where do we get these elements from?
3. Are the elements we get pure? Or should these be refind?

Learning Outcomes:	No. of Periods
1. Classifies elements based on reaction of metals as low, moderate, high reactive metals.	1
2. Draws flow chart on stages of extraction of metals.	1
3. Relates processes and phenomena with causes and effects of froth floatation process.	1
4. Draw labelled diagrams of Froth floatation process and Magnetic separation.	1
5. Explains processes and phenomena, such as extraction of metals from ores and reactivity series.	1
6. To seek answers to queries on their own “Why Aluminum used in thermite process?	1
7. Analyses and interprets data of extraction of metals from the ores.	1
8. Plans and Conducts investigations and experiments to arrive at and verify the facts, principles, phenomena of investigates necessary for rusting.	1
9. Plans and Conducts investigations and experiments to arrive at and prove that the presence of air and water are essential for corrosion,	1
10. Handles tools and laboratory apparatus properly, measures physical quantities using appropriate apparatus of corrosion experiment.	1
11. Draws labelled diagrams of Reverberatory furnace	1
12. Makes efforts to conserve environment realising the inter-dependency and inter-relationship in the biotic and abiotic factors of environment such as extraction of metals from the ores.	1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students learn how to purify naturally occurring elements.
2. Students will learn what precautions should be taken to prevent corrosion of oxides of highly reactive elements.
3. Students observe environmental regulations while extracting metals from ores.

Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain the concept of metallurgy.	1. Group discussion on Metallurgy.	1. Students will tell the uses of metals in everyday life.	1. What do metallurgists do?
2. Discussion and explain"Occurrence of the metals in nature".	2. Students collect information on How the metals are present in nature.	2. Students write the definitions of minerals and ores.	2. List three metals that are found in nature as oxide ores.
3. Explain high, moderate and low activity series.	3. Students draw flow chart of reactivity of metals.	3. students give a reasons, Why K, Na, Ca, Mg and A*l* are never found in nature in free state?	3. Write the names of any two ores of iron.
4. Discussion and explain extraction of metals from the ores. (Concentration or Dressing of the ore)	4. Students explain Froth floatation method	4. Students draw the neat diagram of Froth floatation process for concentration of sulphide ores.	4. How are metals extracted from mineral ores?
5. Discussion and explain extraction of metals from the ores. (Extraction of crude metal from the ore)	5.Students explain extraction of metals at the top of the activity series.	5. Students complete the Homework.	5. Give an example for reduction of metal oxide with carbon.
6. Discussion and explain extraction of metals from the ores. (Extraction of crude metal from the ore)	6. Group discussion on extraction of metals at the bottom of the activity series.	6. Students collect information on thermite process.	6. Why Fe, Pb, Cu are reduced by Hydrogen?
7. Discussion and explain extraction of metals from the ores. (Purification of the crude metal)	7. Students collect information on purification of the crude metal.	7. Students explain Distillation method.	7. Mention some important methods of refining.
8. Discussion and conduct an experiment on corrosion and explain prevention of corrosion.	8. The presence of air and water are essential for corrosion in lab activity done by the students	8. Students express the prevention of corrosion methods.	8. Give two examples of corrosion.
9. Discussion and explain Smelting and Blast furnace.	9. Students will observe the parts in the blast furnace.	9. Students complete the Homework.	9. Define Smelting.
10. Discussion and explain Roasting and Reverberatory furnace.	10. Students draw a neat diagram of Reverberatory furnace.	10. Students write definitions of Roasting	10. What is the use of Hearth in the furnace?

11. Explain Calcination, Flux and Furnace	11. Group discussion on “The role of furnace in metallurgy.”	11. Students write the difference between roasting and calcination.	11. What is a furnace?

Check For Understanding Questions	TLM’s (Digital+Print)
1. Factual: 1.Why are some metals not found in free state in nature? 2. Is roasting exothermic? 3. What is the role of the furnace in metallurgy? **2. Open Ended/Critical Thinking:** 1. Why is froth flotation used for sulphide ores? 2. Which process is used to oxidize impurities in crude metal? 3. Why should the impurities be removed before the reduction process? **3. Student Practice Questions & Activities:** 1. What is the difference between roasting and calcinations? Give one example for each? 2. What is activity series? How it helps in extraction of metals? 3. Suggest an experiment to prove that the presence of air and water are essential for corrosion. Explain the procedure. 4. Draw a neat diagram of Reverboratory furnace and label it neatly?	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:
1. What is thermite process? Mention its applications in daily life?
2. How do you appreciate the role of furnace in metallurgy?
3. Collect information about extraction of metals of low reactivity silver, platinum and gold and prepare a report.
4. Draw the diagram showing i) Froth floatation ii) Magnetic separation.

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VISITING OFFICER WITH REMARKS

LESSON PLAN

CLASS: 10 **SUBJECT:** PS **Name of the Teacher:** M.SRINIVASA RAO **Name of the School:** S.P.S.M.H.School,Gudivada

Name of the Lesson/Unit	Topic	No.of Periods Required	Timeline for teaching		Any specific information
			From	To	
Carbon and its Compounds (Chapter –12)	Introduction	1			
	Promotion of an electron - Hybridisation	1			
	Allotropes of Carbon	1			
	Versatile nature of carbon	1			
	Hydrocarbons	1			
	Homologous series - Isomerism	1			
	Functional groups in carbon compounds	1			
	Nomenclature of Aliphatic Hydrocarbons	2			
	Chemical properties of carbon compounds	1			
	Some important carbon compounds	1			
	Esterification Reactions	1			
	Soaps – Saponification and Micelles- Cleaning action of soap	1			

Prior Concept/Skills:

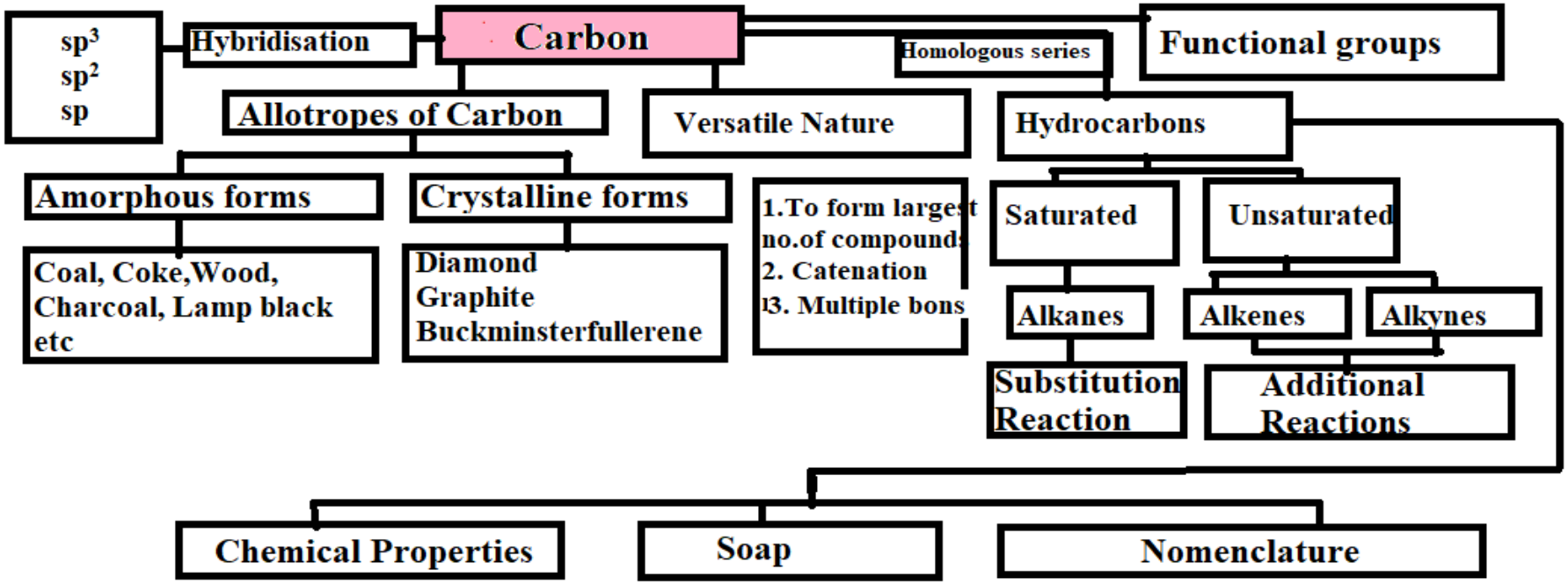
1. What is the atomic number of Carbon? What is its valency?
2. Is Carbon metal or Non-metal?
3. Write the electronic configuration of Carbon in ground state.

Learning Outcomes:	**No. of Periods**
1. Explains processes of sp, sp^2 and sp^3 hybridisations, homologous series.	1
2. Draws labelled diagrams of CH_4, C_2H_4 and C_2H_2	1
3. Exhibits creativity in designing models using eco-friendly resources of Formation of micelles, formation of diamond, graphite And Buckminsterfullerene**.**	1
4. Takes initiative to know about scientific discoveries and inventions of Buckminsterfullerene.	1
5. Analysis and interprets data and figures of homologous series	1
6. Differentiate hydrocarbons based on chemical properties.	1
7. Relates processes and phenomena with causes and effects of artificial ripening of fruits by ethylene.	1
8. Explains processes of chemical properties of hydrocarbons.	2

9. Communicates the findings and conclusions effectively of nomenclature of aliphatic hydrocarbons. 10. Explains processes of cleaning action of soap 11. To seek answers to queries on their own "Compares the foaming capacity of different types of soap samples" 12. Applies learning to hypothetical situations "What is the action of soap particles on the greasy cloth?	1 1 1 1

TEACHING LEARNING PROCESS

Induction/Introduction:



Experience and Reflection:

1. Students will learn about Allotropes of Carbon and how they are used in everyday life.
2. Students will learn the uses of esters and incorporate them into foods.
3. Students use IUPAC rules in naming carbon compounds.

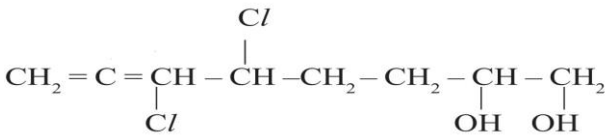
Explicit Teaching/Teacher Modelling (I Do)	Group Work (We Do)	Independent Work (You Do)	Notes for:
1. Discussion and explain carbon nature, Ground electronic configuration, Excited estate configuration and valency.	1. Discuss about importance of Carbon elements and specialization of Carbon	1. Students write the electronic configuration of carbon in ground and excited states.	1. Can carbon get Helium configuration by losing 4 electrons from the outer shell?

2.Explain promotion of an electron in the carbon atom and Hybridisation.	2. Discussion on Hybridisation and conditions.	2. Students explain the covalent bonds in the methane molecule.	2. What are hybrid orbitals?
3. Discussion and explain of sp^3, sp^2 and sp hybridisation.	3. Students explain sp^3 hybridisation in CH_4	3. Students draw structures of CH_4, C_2H_4, C_2H_2 molecules	3. What are bond angles in CH_4, C_2H_4 and C_2H_2 molecules
4. Discussion and explain Allotropes of Carbon.(Amorphous forms, Crystalline forms)	4. Students collect information on allotropes of carbon	4. Students draw the diamond structure.	4. What are Backyballs?
5. Discussion and explain Allotropes of Carbon.(Crystalline forms)	5. Students learn about the scientists who discovered buckminsterfullerene.	5. Students write the uses of Nanotubes.	5. Why graphite is a good conductor of electricity?
6. Explain versatile nature of carbon.	6. Discussion on versatile nature of carbon.	6. Students complete the homework.	6. What is catenation?
7. Discussion and explain hydrocarbons, Types of hydrocarbons.	7. Students collect information on types of hydrocarbons.	7. Students identify closed and open chain hydrocarbons.	7. What are the uses of hydrocarbons in our daily life?
8. Discussion and explain of homologous Series, Isomerism.	8. Discussion on characteristics of homologous series.	8. Students write the names of given homologous series.	8. Why does carbon show isomerism?
9. Explain functional groups in carbon compounds.	9. Students collect information on functional groups in carbon compounds.	9. Students identify the functional group in given carbon compounds.	9. Give the names of -CHO and –C=O functional groups.
10. Discussion and explain Nomenclature of aliphatic hydrocarbons.	10. Students write the nomenclature of Aliphatic hydrocarbons of given structures	10. Students complete the homework.	10. Expand IUPAC
11. Explain the chemical properties of carbon compounds.	11. Group discussion on Substitution reactions of carbon compounds.	11. Students give the reasons, “Why does Alkenes undergo additional reactions”?	11. Why do sometimes cooking vessels get blackened on a gas or kerosene stove?
12. Discussion and explain some important carbon compounds.	12. Students collect information on uses of Ethanol in day-to-day life.	12. Students write the chemical equation of ethanol preparation.	
13. Explain and conduct activity on esterification reaction.	13. Students conduct an activity on esterification reaction.	13. Students complete the homework.	13. Which alcohol gives fastest esterification reaction?
14. Discussion and explain Saponification reaction, micelle and Cleaning action of soap.	14. Students explain the formation of micelle?	14. Students draw a neat diagram of soap molecules.	14.. What causes the cleaning action of soap?

Check For Understanding Questions	TLM's (Digital + Print)
1. Factual: 1. Why do carbon compounds have low melting and boiling point? 2. What conditions are needed for esterification? 3. What is responsible for the cleaning action of soap? **2. Open Ended/Critical Thinking:** 1. Why coal is not an allotrope of carbon? 2. Why are the chemical properties of homologous series always same? 3. Why is ethanol the most important alcohol? **3. Student Practice Questions & Activities:** 1. Explain the cleansing action of soap. 2. Distinguish between esterification and saponification reactions of organic compounds. 3. Alkanes are considered as Paraffins. So, they undergo substitution reactions. But not addition reactions. Explain with suitable examples. 4. Write the applications of esterification reaction.	1. Used prepared Quiz paper. 2. Utilized digital classroom. 3. Provide video links QR codes, 4. DIKSHA App 5. YouTube video links 6. IFP

Assessment:

1. What are the differences between Alkanes, Alkenes and Alkynes
2. Collect information about artificial ripening of fruits by ethylene.
3. Draw the electronic dot structure of ethane molecule.
4. Observe the structure and answer the questions.



a) What is the word root in the compound?
b) What is the functional group in the compound?
c) What is the name of the compound?
d) Which number is assigned for –OH group in the compound?
e) In which direction the numbering should be given?
f) Is it an unsaturated compound. If Yes,why?

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PHYSICAL SCIENCE

LESSON PLANS

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