



Srini Science Mind
Abdul Kalam Physical Science Group



NEW

10th class

PHYSICAL SCIENCE

MODEL LESSON PLAN



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MODEL LESSON PLAN

CLASS: 10

SUBJECT: PS

Name of the Teacher: M.SRINIVASA RAO

Name of the School: A.G.K.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	xx/xx/xxxx	xx/xx/xxxx	
	Promotion of an electron - Hybridisation	1	xx/xx/xxxx	xx/xx/xxxx	
	Allotropes of Carbon	1	xx/xx/xxxx	xx/xx/xxxx	
	Versatile nature of carbon	1	xx/xx/xxxx	xx/xx/xxxx	
	Hydrocarbons	1	xx/xx/xxxx	xx/xx/xxxx	
	Homologous series - Isomerism	1	xx/xx/xxxx	xx/xx/xxxx	
	Functional groups in carbon compounds	1	xx/xx/xxxx	xx/xx/xxxx	
	Nomenclature of Aliphatic Hydrocarbons	2	xx/xx/xxxx	xx/xx/xxxx	
	Chemical properties of carbon compounds	1	xx/xx/xxxx	xx/xx/xxxx	
	Some important carbon compounds	1	xx/xx/xxxx	xx/xx/xxxx	
	Esterification Reactions	1	xx/xx/xxxx	xx/xx/xxxx	
Soaps – Saponification and Micelles- Cleaning action of soap	1	xx/xx/xxxx	xx/xx/xxxx		

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:

1. Explains processes of sp , sp^2 and sp^3 hybridisations, homologous series.
2. Draws labelled diagrams of CH_4 , C_2H_4 and C_2H_2
3. Exhibits creativity in designing models using eco-friendly resources of Formation of micelles, formation of diamond, graphite And Buckminsterfullerene.
4. Takes initiative to know about scientific discoveries and inventions of Buckminsterfullerene.
5. Analysis and interprets data and figures of homologous series
6. Differentiate hydrocarbons based on chemical properties.
7. Relates processes and phenomena with causes and effects of artificial ripening of fruits by ethylene.
8. Explains processes of chemical properties of hydrocarbons.

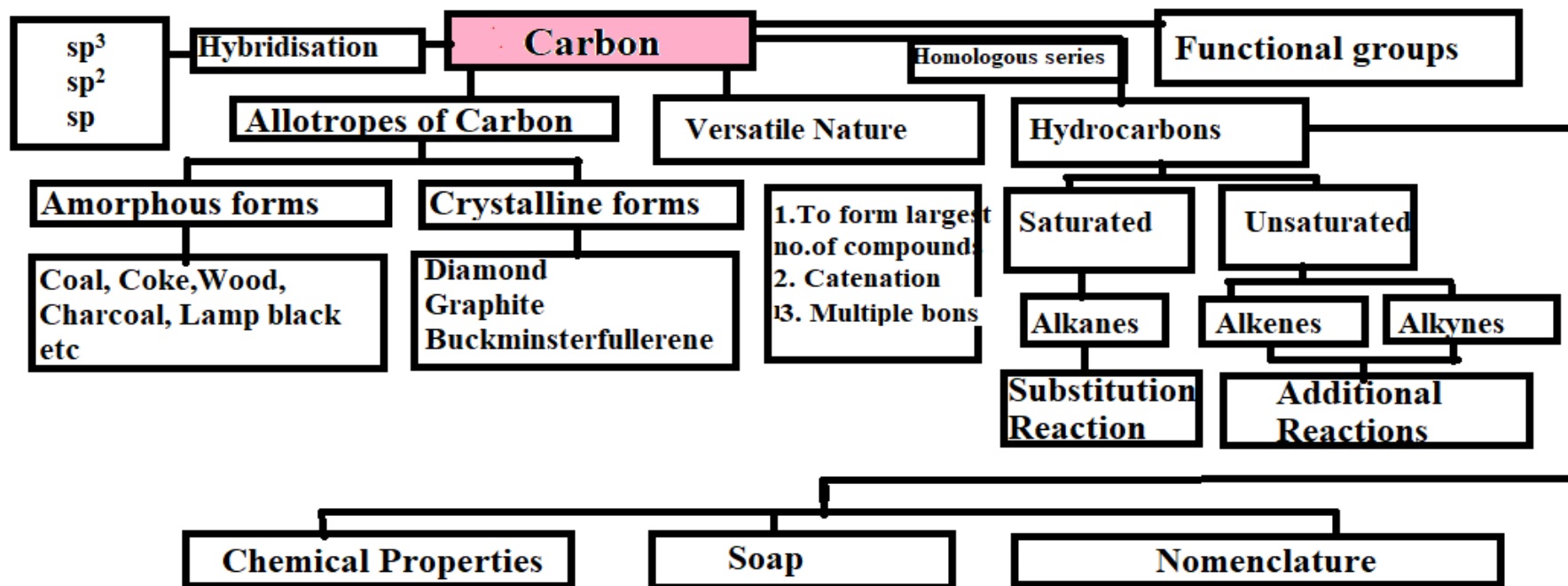
No. of Periods

1
1
1
1
1
1
1
1

9. Communicates the findings and conclusions effectively of nomenclature of aliphatic hydrocarbons.	1
10. Explains processes of cleaning action of soap	1
11. To seek answers to queries on their own “ Compares the foaming capacity of different types of soap samples”	1
12. Applies learning to hypothetical situations “ What is the action of soap particles on the greasy cloth?”	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 Buckyballs?
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. Which alcohol gives fastest esterification reaction?
13. Explain and conduct activity on esterification reaction.	13. Students conduct an activity on esterification reaction.	13. Students complete the homework.	14. What causes the cleaning action of soap?
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.	

