



**Srini Science Mind**  
Abdul Kalam Physical Science Group



**NEW**

**10<sup>th</sup> 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	
<b>Classification of Elements – The Periodic Table (Chapter -7)</b>	Need for the arrangement of elements in an organized manner	1	xx/xx/xxxx	xx/xx/xxxx	
	Dobereiner’s law of Triads				
	Newlands’ law of Octaves	1	xx/xx/xxxx	xx/xx/xxxx	
	Mendeleev’s Periodic Table	2	xx/xx/xxxx	xx/xx/xxxx	
	Modern Periodic Table	2	xx/xx/xxxx	xx/xx/xxxx	
	Periods, Groups, Metals and Non metals	1	xx/xx/xxxx	xx/xx/xxxx	
	Periodic properties of the elements in the modern table	2	xx/xx/xxxx	xx/xx/xxxx	

## 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:

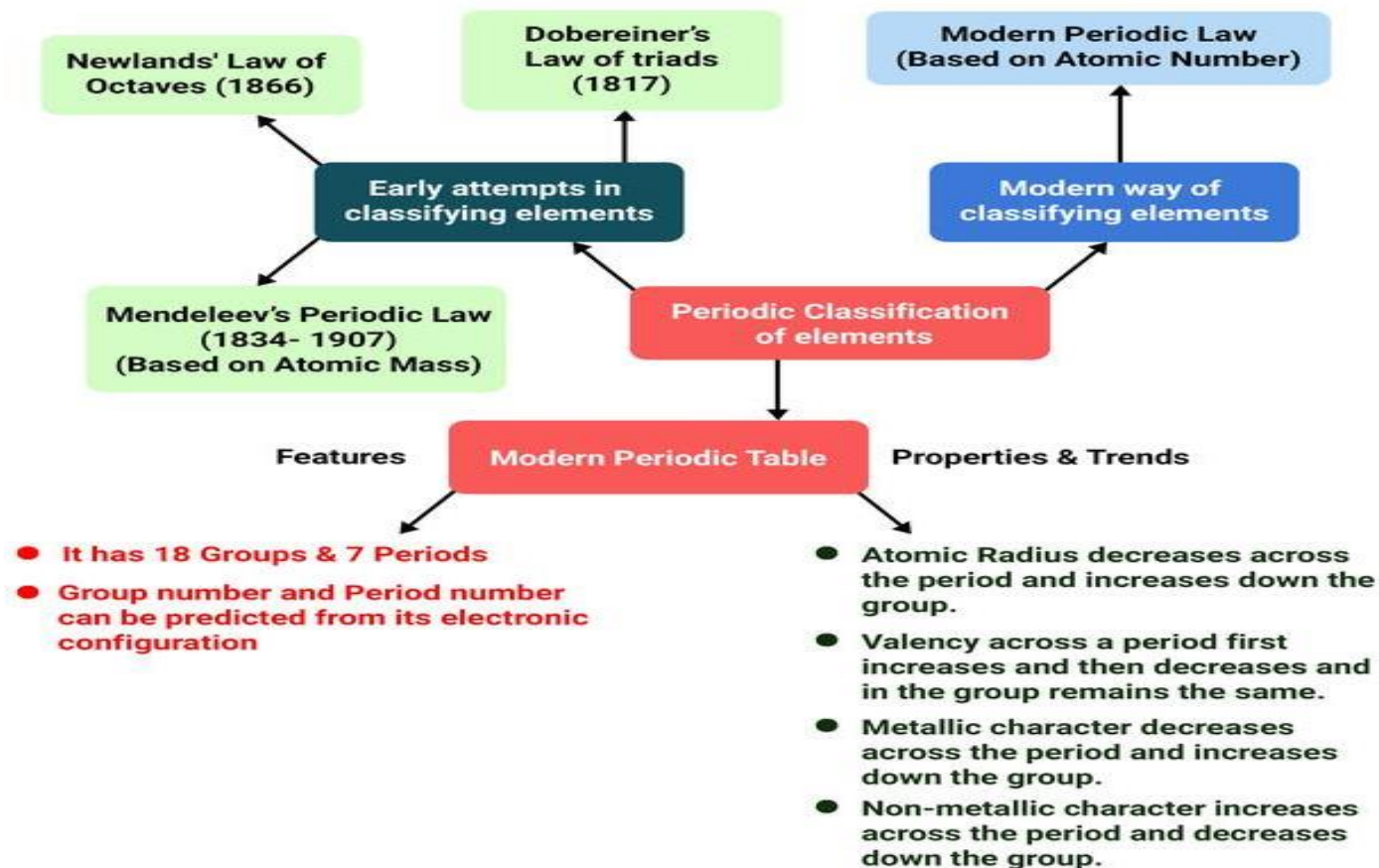
1. Takes initiate to know about scientific discoveries and inventions of Dobereiner for discovering triads of elements.
2. Takes initiate to know about scientific discoveries and inventions of Mendeleev for the development of the periodic table of Elements.
3. Draws labelled diagrams of modern periodic table.
4. Explains processes of placement of elements in modern periodic table.
5. Classifies elements based on placement of elements in the periodic table.
6. Exhibits creativity in designing models using eco-friendly resources of modern periodic table.
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
9. Relates processes and phenomena with causes and effects of ionization of energy variable in periodic table.
10. To seek answers to queries on their own relation between electronegativity, ionization energy and electron affinity.
11. Applies learning to hypothetical situations “ What happens if the periodic table not find out?”
12. Communicates the findings and conclusions effectively of characteristics of the elements having atomic numbers.

## No. of Periods

1  
1  
  
1  
1  
1  
  
1  
1  
  
1  
1

## TEACHING LEARNING PROCESS

### Induction/Introduction:



### 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 <sup>th</sup> century?

<p>2. Explain the Dobereiner's law of triads and limitations.</p> <p>3. Discussion and explain Newlands' law of Octaves and defects.</p> <p>4. Discussion and explain Mendeleev's Periodic Law and Mendeleev's Periodic Table.</p> <p>5. Explain the salient features and achievements of the Mendeleev's periodic table and limitations.</p> <p>6. Discussion and explain the modern periodic law, Moseley law and modern periodic table.</p> <p>7. Explain the positions of elements in the Modern Periodic Table.</p> <p>8. Discussion and Explain the periodic properties of the elements in the modern periodic table( Valence, Atomic radius).</p> <p>9. Discussion and Explain the periodic properties of the elements in the modern periodic table(Ionization energy, Electron affinity)</p> <p>10. Discussion and Explain the periodic properties of the elements in the modern periodic table (Electronegativity, Metallic and Non-Metallic Properties)</p>	<p>2. Students give examples of Dobereiner's triads.</p> <p>3. Students compare Newland's law of octaves with Indian musical notes.</p> <p>4. Reading the biography of Mendeleev</p> <p>5. Collect the information on Mendeleev's Periodic Table</p> <p>6. Group discussion on 'Who proposed modern periodic law and the need for the situation.'</p> <p>7. Discussion on the construction of modern periodic table</p> <p>8. Students will be able to explain how atomic radius changes in periods and groups</p> <p>9. Students collect information on ionization energy and influence factors.</p> <p>10. Students draw flow charts of how the atomic properties change across groups and periods in the modern periodic table.</p>	<p>2. Students express the limitations of Dobereiner's law of triad</p> <p>3. Students complete the homework.</p> <p>4. Students draw the block diagram of Mendeleev's periodic table</p> <p>5. Students give a reason, why Mendeleeff had to leave certain black spaces in his periodic table?</p> <p>6. Students write the modern periodic law</p> <p>7. Collect the information on names of groups in periodic table and uses of elements in our life.</p> <p>8. How does the valency vary in a period on going from left to right? – Discuss</p> <p>9. Students complete the homework.</p> <p>10. Does the metallic character depend on electronegativity?</p>	<p>2. Write Dobereiner's law of triad.</p> <p>3. What is the basis of triad formation of elements?</p> <p>4. Why did Mendeleev use eka?</p> <p>5. How many groups and periods are in Mendeleev's periodic table?</p> <p>6. What is the easiest way to memorise the modern periodic table?</p> <p>7. How could we determine an element on the basis of a given group and period?</p> <p>8. Define Atomic radius and write their units.</p> <p>9. Second ionization energy of an element is higher than its first ionization energy. Why?</p> <p>10. Which elements are electropositive elements and Which elements are electronegative elements?</p>
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Check For Understanding Questions	TLM's (Digital+Print)
<p><b>1. Factual:</b></p> <ol style="list-style-type: none"> <li>1. Why noble gases are not reactive?</li> <li>2. Why are groups called families?</li> <li>3. Why lanthanides and actinides are placed separately at the bottom of the periodic table?</li> </ol> <p><b>2. Open Ended/Critical Thinking:</b></p> <ol style="list-style-type: none"> <li>1. How are lanthanides used in everyday life?</li> <li>2. Why do metals have low ionization energy?</li> <li>3. Do the atom of an element and its ion have same size?</li> </ol> <p><b>3. Student Practice Questions &amp; Activities:</b></p> <ol style="list-style-type: none"> <li>1. Define the modern periodic Law. Discuss the construction of the long form of the periodic table.</li> <li>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.</li> <li>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 or non-metal</li> <li>4. Define ionization energy? What are the factors that influence it?</li> </ol>	<ol style="list-style-type: none"> <li>1. Used prepared Quiz paper.</li> <li>2. Utilized digital classroom.</li> <li>3. Provide video links QR codes, DIKSHA App</li> <li>4. YouTube video links</li> </ol>
<p><b>Assessment:</b></p> <ol style="list-style-type: none"> <li>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.</li> <li>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</li> <li>3. Given below is the electronic configuration of elements A, B, C, D. (AS1)  A. <math>1s^2 2s^2</math>      1. Which are the elements coming within the same period  B. <math>1s^2 2s^2 2p^6 3s^2</math>      2. Which are the elements coming within the same group?  C. <math>1s^2 2s^2 2p^6 3s^2 3p^3</math>      3. Which are the noble gas elements?  D. <math>1s^2 2s^2 2p^6</math>      4. To which group and period does the elements 'C' belong</li> <li>4. What are the salient features of Mendeleev's periodic table?</li> </ol>	

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS