



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



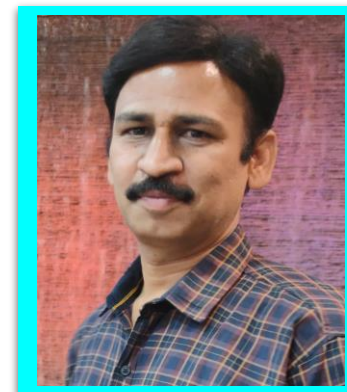
**NEW**

**9<sup>th</sup> class**

**PHYSICAL SCIENCE**

**LESSON PLAN with BYJU's Content**

Visit: [srini science mind](http://srini-science-mind.com)



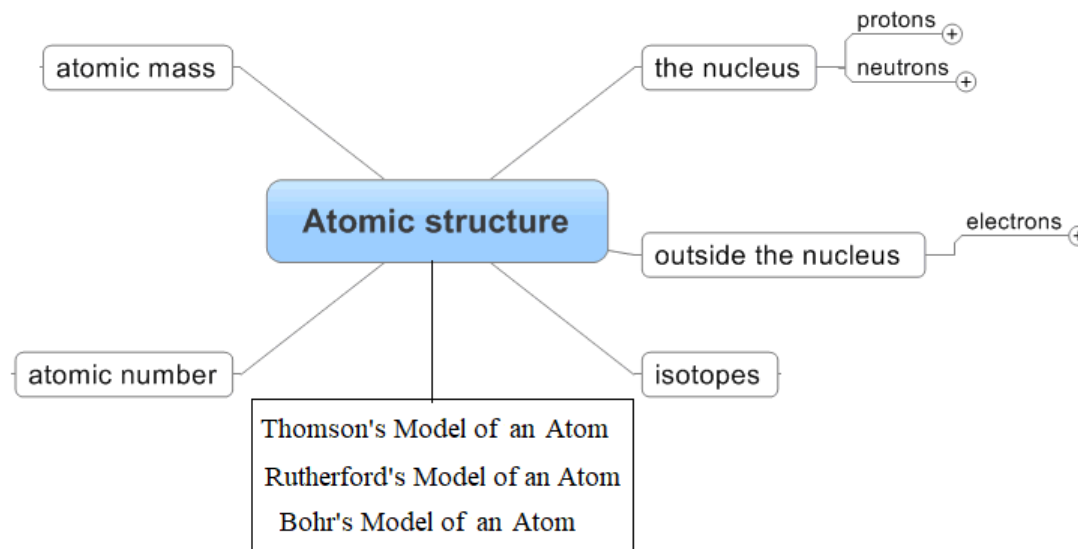
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| 11. Applies the interdependency and interrelationship in the biotic and abiotic factors of the environment to promote co of usage of isotopes | 1 |
| 12. Applies scientific concepts in the daily life of some isotopes used for solving chemical and medical mysteries.                           | 1 |
| 13. Applies the interdependency and interrelationship in the biotic and abiotic factors of the environment to promote co of usage of isobars  | 1 |

### TEACHING LEARNING PROCESS

#### Induction/Introduction:



#### Experience and Reflection:

1. Students appreciate the hard work done by the scientists who made the atomic models.
2. Students can easily understand which atoms form which bonds based on valency.
3. Students will learn about situations where isotopes are used in everyday life.

| Explicit Teaching/Teacher Modelling<br>(I Do)  | Group Work<br>(We Do)  | Independent Work<br>(You Do)  | Notes for:  |
|--|--|---|---|
| <ol style="list-style-type: none"> <li>1. Discussion and explain nature of Atoms.</li> <li>2. Discussion and explain the sub-atomic particles in an atom.</li> </ol> | <ol style="list-style-type: none"> <li>1. Students observe the nature of an atom in a neutral state.</li> <li>2. Students read the biographies of J.J. Thomson and James Chadwick</li> </ol> | <ol style="list-style-type: none"> <li>1. Students express the names of some elements.</li> <li>2. Students express the charges of sub-atomic particles.</li> </ol> | <ol style="list-style-type: none"> <li>1. Why an atom is considered electrically neutral?</li> <li>2. Which atom doesn't contain neutron in its nuclear?</li> </ol> |

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| <p>3. Explain the properties of sub-atomic particles.</p> <p>4. Discussion and demonstrate Thomson's model of the atom.</p> <p>5. Explain and demonstrate Rutherford's alpha particles scattering experiment, its limitations.</p> <p>6. Review of Byju's tab content</p> <p>7. Discussion and explain Bohr's model of an atom.</p> <p>8. Discussion and demonstrate of distribution of electrons in different orbits or shells by Bohr and Bury rules.</p> <p>9. Explain valency of an atom and importance of valency.</p> <p>10. Review of Byju's tab content</p> <p>11. Discussion and explain the concepts of Atomic number and atomic mass number.</p> <p>12. Explain writing symbols of atoms and finding number of neutrons.</p> <p>13. Explain Isotopes, its examples and applications of isotopes.</p> <p>14. Explain Isobars and its examples</p> <p>15. Review of Byju's tab content</p> | <p>3. Students draw flow charts of the properties of sub-atomic particles.</p> <p>4. Students collect information on J.J.Thomson's model of the atom.</p> <p>5. Students describe Rutherford's model of the atom.</p> <p>6. Viewing the content in Byju's Tab</p> <p>7. Group discussion on the main postulates of Bohr's model of an atom.</p> <p>8. Students draw the arrangement of electrons for the first 18 elements.</p> <p>9. Students collect information on the valencies of elements.</p> <p>10. Viewing the content in Byju's Tab</p> <p>11. Group discussion on the difference between atomic mass and atomic mass number?</p> <p>12. Students write the symbols of atoms</p> <p>13. Students give examples of isotopes.</p> <p>14. Viewing the content in Byju's Tab</p> | <p>3. Students complete the homework</p> <p>4. Students give a reasons, Why Thomson's model of the atom called as Plum pudding model.</p> <p>5. Students draw diagrams of Rutherford's atomic model.</p> <p>6. Viewing the content in Byju's Tab</p> <p>7. Students draw a neat diagram of energy levels of an atom.</p> <p>8. Students identify the shells around the nucleus.</p> <p>9. Students complete the homework.</p> <p>10. Viewing the content in Byju's Tab</p> <p>11. Students find the number of neutrons in an atom</p> <p>12. Students complete the homework.</p> <p>13. Students write the applications of isotopes.</p> <p>14. Students identify the Isobars from given data</p> <p>15. Viewing the content in Byju's Tab</p> | <p>3. What is the most stable subatomic particle?</p> <p>4. Why JJ Thomson model of atom was failed?</p> <p>5. What are the limitations of Rutherford's atomic model?</p> <p>6. Why Bohr's orbits are known as stationary orbits?</p> <p>7. What is maximum number of electrons present in M-shell?</p> <p>8. What is valency?</p> <p>9. Find the neutrons in <math>^{16}_8\text{O}</math>?</p> <p>10. Why is it useful to have symbols for atoms?</p> <p>11. What are isotopes?</p> <p>12. What are isobars?</p> |
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### Check For Understanding Questions

#### 1. Factual:

1. How can an atom achieve octet?
2. Why valency is always a whole number?
3. How can you distinguish between the atoms of one element from the atoms of another element?

#### 2. Open Ended/Critical Thinking:

1. Why some elements show multiple Valency?
2. If alpha particle scattering experiment carried out using a foil of metal other than gold?
3. What causes isotopes to form?

#### 3. Student Practice Questions & Activities:

1. Compare the properties of electrons, protons, and neutrons.
2. What are the limitations of Rutherford's model of the atom?
3.  $\text{Na}^+$  has completely filled K and L shells. Explain.
4. What are the applications of isotopes in our daily life?

#### TLM's (Digital + Print)

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

#### Assessment:

1. Describe Bohr's model of the atom.
2. If  $Z = 3$ , what would be the valency of the element? Also, name the element.
3. Show that diagram of a few energy levels in an atom.
4. Complete the following table.

| Atomic Number | Mass Number | Number of Neutrons | Number of Protons | Number of Electrons | Name of the Atomic Species |
|---------------|-------------|--------------------|-------------------|---------------------|----------------------------|
| 9             | -           | 10                 | -                 | -                   | -                          |
| 16            | 32          | -                  | -                 | -                   | Sulphur                    |
| -             | 24          | -                  | 12                | -                   | -                          |
| -             | 2           | -                  | 1                 | -                   | -                          |
| -             | 1           | 1                  | 1                 | 0                   | -                          |

SIGNATURE OF THE TEACHER

SIGNATURE OF THE HEADMASTER

VISITING OFFICER WITH REMARKS