

Chemistry (Class XII)

Learning Outcomes	Sources/Resources	Suggested Activities (to be guided by teachers)
<p>The learner</p> <ul style="list-style-type: none"> — describes importance of solid state in daily life — describes general characteristic s of solid state; — distinguishes between amorphous and crystalline solids; — classifies crystalline solids on the basis of the nature of binding forces; — defines crystal lattice and unit cell; — distinguish between unit cells of different types of crystal lattices; — explains close packing of particles — describes different types of voids and close packed structures — calculates the packing efficiency of different types of cubic unit cells — correlates the density of a substance with its unit 	<p>WEEK-1</p> <p>Link-1 Video Lecture (Episode-1): (Amorphous and crystalline solids, Classification of solids) https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/57cfea6516b51c6b39a806b5</p> <p>WEEK-2</p> <p>Link-2 Video lecture (Episode 2) (Unit cell and crystal lattice, number of atoms in a unit cell) https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/57cfeac316b51c6b39a806d7</p> <p>Link-3 Animation (Crystal lattice and unit cells) https://www.youtube.com/watch?v=VPCDSmoomGk</p> <p>Link-4 Animation (Number of atoms in unit cells) https://www.youtube.com/watch?v=qAeaHYSX0hs</p> <p>WEEK-3</p> <p>Link-5 Video lecture (Episode-3): (Packing and closed pack structures,</p>	<p>Unit -1: Solid State</p> <p>Twelve learning outcomes are expected to be covered in this unit. Remember we are not moving out of our homes due to COVID-19 therefore, we are required to work at home and make the best use of the time available to us .</p> <p>Solid State is the first unit in the textbook of chemistry. It provides insight into the structure of solids. It also tells us how the properties of solids are affected by the arrangement of atoms, molecules and ions involved in the formation of structure of solid. Understanding the topic requires a lot of abstract thinking and concentration. Yoga and pranayam can help in keeping one's focus on a topic for a longer time. After understanding the topic, learners may become interested in knowing how can one proceed to develop materials of required properties.</p> <p>We can plan the time schedule for learning the topic as follows:</p> <p>WEEK 1</p> <p>Learners may try to make a list of the solids used at home for various purposes. Now they may think of the property that makes the solids in the list useful for the particular purpose for which these are used. This will make students realise the importance of solids in the daily life. After that they may see the Video lecture (Link-1) and classify the solids in the list prepared by them as crystalline and amorphous. After seeing the video, they may go through the text material in the textbook of chemistry for Class XII published by NCERT and read it up to section 1.3. This will help them to classify solids as amorphous and crystalline. They will be able to classify solids on the basis of nature of binding forces. Also, they may make a WhatsApp group with their classmates and discuss the topic learnt. They may make the list of common difficulties and mail it to the teacher or connect her/him through</p>

<p>cell properties; — describes the imperfections in solids and their effect on — Properties correlates the electrical and magnetic properties of solids and their structure</p>	<p>packing efficiency) https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/57cfeb0d16b51c6b39a806f9</p> <p>Link-6 Animation (Hexagonal close packed structure) https://www.youtube.com/watch?v=uKpr-9vmgsc</p> <p>Link-7 Animation (Close packed structures in three dimensions) https://www.youtube.com/watch?v=liwX_ILb2ds</p> <p>Link-8 Animation (Packing efficiency in crystals) https://www.youtube.com/watch?v=Wlcb1WfJvJc</p> <p>WEEK-4</p> <p>Link-9 Video lecture (Episode-4) (Defects and imperfections) https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/57cfeb8516b51c6b39a8071b</p> <p>Link-10 Text A brief on Semiconductors https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/5b4c84cc16b51c01e1912483</p>	<p>WhatsApp or any other mode suggested by her/him to get the solution of their problems. For more clarification of the concepts learnt, they may solve problems related to the concepts learnt using exercise given in the end of chapter. Also, they may solve problems given in the book 'Exemplar Problems' for Class XII, published by NCERT for more clarification of the concepts learnt.</p> <p>WEEK 2</p> <p>They may see the links-2, 3 and 4 these links will cover Section 1.4 and Section 1.5 of the textbook. These links will give insight into the concepts of crystal lattice and unit cell, types of unit cells and number of atoms per unit cell in a crystal lattice. Students may prepare the models for different lattice systems. For example they may prepare the model of sodium chloride crystal using beads of two different colours and sizes and the sticks if available or any other material available. This will help them understand the meaning of face centred cubic lattice. In case material for making models is not available, links of Animations will help them understand the concept.</p> <p>They may discuss the concepts learnt with their classmates in the WhatsApp group and may make the list of common difficulties and mail it to the teacher or connect her/him through WhatsApp or any other mode suggested by her/him to get the solution of their problems. For more clarification of the concepts learnt, they may solve problems related to the concepts learnt using exercise given in the end of chapter. Also, they may solve problems given in the book 'Exemplar Problems' for Class XII, published by NCERT for more clarification of the concepts.</p> <p>WEEK 3</p> <p>Links 5,6,7,8 cover Section 1.6, 1.7 and 1.8 of the textbook. Concepts covered are close packing of particles, different types of voids and close packed structures, packing efficiency and calculations involving unit cell dimensions. This will allow learners understand the patterns of packing of</p>
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