

CLASS X

Science (Class-X)

Learning Outcomes	Sources/ Resources	Suggested Activities (to be guided by teachers/parents)
<p>The learner</p> <ul style="list-style-type: none"> classifies chemical reactions on the basis of their properties. plans and conducts simple activities/ experiments to verify the reactions and seek answer to his/her own queries explains various types of reactions and their conditions draws labelled diagrams for set up of activities/ experiments calculates using the data given, such as, number of atoms in reactants and products to balance a chemical equation uses scientific conventions to represent symbols, formulae, and equations for balanced chemical equations and also physical states of substances identifies the apparatus and handles the materials carefully applies scientific concepts in daily life 	<p>NCERT/State Textbook</p> <p>Chapter 1- Chemical Reactions and Equations</p> <p>Content discussed in the textbook</p> <ul style="list-style-type: none"> Writing a chemical equation Balancing a chemical equation Types of chemical reactions Corrosion Rancidity <ul style="list-style-type: none"> E-Resources developed by NCERT, which are available on NROER and also attached as QR Code in textbook of NCERT. Live telecast of various science concepts at Swayam Prabha Channel https://www.youtube.com/channel/UCT0s92hGjqLX6p7qY9BBrSA ITPD package developed for teachers teaching Science at Secondary Stage http://www.ncert 	<p>Theme – Material</p> <p>WEEK 1</p> <ul style="list-style-type: none"> Open the given link https://www.youtube.com/watch?v=AiYmM1OTJI&feature=youtu.be <p>Watch the video carefully, you can see many reactions taking place in the video. Pause the video after each reaction and translate each reaction into chemical equation and then balance it.</p> <ul style="list-style-type: none"> Open the given link https://nroer.gov.in/55ab34ff81fccb4f1d806025/page/5b1e12bf16b51c01dc2f95c3 <p>This is an interactive image based on experimental setup. Write the balanced chemical equation for the same.</p> <ul style="list-style-type: none"> Have fun with your friends. Develop a crossword puzzle based on chemical reactions. Share with your friends on Whatsapp group. Give at least half an hour to complete and then discuss with them the key along with reasons. Identify and note at least ten chemical reactions taking place in your home/ kitchen and give reasons for the same. You can discuss about them with your parents or friends on Google group/ WhatsApp group, etc. After doing couple of activities, do some work out at home. For example, stretching exercises, skipping, dance, yoga, indoor games, etc. Parents must motivate their children. This you should follow even after your school

<p>such as concept of oxidation reactions which make food rancid, corrosion of objects, etc.</p> <ul style="list-style-type: none"> • draws conclusion for various reactions taking place in home/kitchen • exhibits creativity in designing the game. • exhibits values of honesty, objectivity, rational thinking by reporting and recording experimental data accurately. • communicates the findings and conclusions of the activities/ experiments/orally and in written form effectively • makes efforts to conserve environment by making judicious use of materials and keeping the surroundings/ home clean. 	<p>.nic.in/departments/nie/dse/activities/advisory_board/PDF/teaching_sc.pdf</p> <ul style="list-style-type: none"> ➤ Laboratory Manual in Science for Class X http://ncert.nic.in/ncerts/1/jelm102.pdf ➤ Exemplar Problems in Science for Class X • Chemical Reactions and Equations http://ncert.nic.in/ncerts/1/jeep101.pdf 	<p>reopens.</p> <h2>WEEK 2</h2> <ul style="list-style-type: none"> • Develop a game using cards (cards you can make from thick sheets of paper). Write symbols of elements, formulae, valencies and names of various reactions on different cards. These cards can be used for learning balancing of chemical equations and also in classifying chemical reactions. • You can make video of this game and share with your friends. You can also play the game with your classmates once your school reopens. • Take grape juice, lemon juice, orange juice, soap solution, baking soda solution separately in different containers. You may also take solutions available at your home. Dip one shining iron nail. • in each of these solutions and keep one nail for comparison. • Record your observations for a week or so on the basis of following: <ul style="list-style-type: none"> ➤ Change in physical appearance of the nails ➤ Change in the appearance of the solutions ➤ Identify the changes as physical or chemical with reasons. ➤ You can also draw diagram of this experimental setup. <p>(Remember that we are not moving out of the home due to COVID19. So, try to do the activities with whatever material is available at home).</p> <p>Read the chapter carefully from your textbook. Also, open the link and watch the video carefully https://www.youtube.com/watch?v=AiYmM1OTJI&feature=youtu.be Draw a Table/Flow chart writing various chemical reactions with their examples.</p>
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<ul style="list-style-type: none"> • differentiates acidic, basic, and neutral substances using different indicators • plans and conducts simple activities/ experiments to verify acidic, basic and neutral solutions and seek answer to the queries on his/her own • relates processes with causes and effects such as tooth decay with pH of saliva, growth of plants with pH of the soil, survival of aquatic life with pH of water, • explains about various types of acids, bases and salts and their reactions • draws labelled diagrams for set up of activities/ experiments. • analyses and interprets data such as pH of solutions to predict the nature of substances. • uses scientific 	<p>Chapter 2 - Acids, Bases and Salts Content discussed in the textbook</p> <ul style="list-style-type: none"> • How do acids and bases react with metals? • How do metal carbonates and metal hydrogencarbonates react with acids? • How do acids and bases react with each other? • Reaction of metal oxides with acids • What do have all acids and bases in common? • How strong are acid and base solutions? • Importance of pH in everyday life • More about salts <ul style="list-style-type: none"> ➤ E-Resources developed by NCERT, which are available on NROER and also attached as QR Code in textbooks of NCERT. ➤ Live telecast of various science 	<p>WEEK 3</p> <ul style="list-style-type: none"> • Are toothpastes acidic or basic in nature? Find out from the internet the pH of different tooth pastes available in the market. Compile it in the form of report. Share your findings with your friends on Whatsapp group or through email. • Take materials of various brands such as shampoo, soap, hand wash, etc., and find out their pH by surfing internet and compile the data in the form of report. Share your findings with your friends on Whatsapp group or through email. • Take various substances, such as, amla juice, lemon juice, tamarind solution, tomato juice, baking soda, soap solution, common salt solution, sugar solution, water from tap, etc., and classify their nature as acidic, basic and neutral using black grapes/red cabbage/beetroot/turmic as indicators. You can also use extracts of flowers such as China rose/ Periwinkle/Rose etc as indicators. • You can also draw labelled diagrams of the set up of the experiment, diagram of flowers, fruits and vegetables which you have used as indicators. <p><i>(Remember as advised, we are not moving out of home due to COVID19. So, whatever material is available at home, try to do the activities accordingly).</i></p>

<p>conventions to represent symbols, formulae, and equations for balanced chemical equation and also physical states of substances</p> <ul style="list-style-type: none"> identifies the apparatus and handles materials properly. applies scientific concepts in daily life such as concept of decomposition reaction of baking soda to make spongy cakes, importance of pH in animals and plants, pH is the cause of tooth decay, etc. draws conclusion for various reactions such as acids react with metals to form salt and hydrogen gas, metal oxide reacts with acid to form salt and water, acid and base react to form salt and water, etc. exhibits creativity in designing model of soda acid fire extinguisher using eco-friendly resources exhibits values of honesty, objectivity, rational thinking by reporting and recording experimental data accurately 	<p>concepts at <i>Swayam Prabha</i> Channel</p> <p>https://www.youtube.com/channel/UCT0s92hGjqLX6p7qY9BBrSA</p> <ul style="list-style-type: none"> ITPD package developed for teachers teaching at Secondary Stage <p>http://www.ncert.nic.in/departments/nie/dse/activities/advisory_board/PDF/teaching_sc.pdf</p> <ul style="list-style-type: none"> Laboratory Manual in Science for Class X <p>http://ncert.nic.in/ncerts/l/jelm102.pdf</p> <ul style="list-style-type: none"> Chemical Reactions and Equations <p>http://ncert.nic.in/ncerts/l/jeep101.pdf</p> <ul style="list-style-type: none"> Exemplar Problems Acids, Bases and Salts <p>http://ncert.nic.in/ncerts/l/jeep102.pdf</p>	<ul style="list-style-type: none"> Open the given link http://nroer.gov.in/55ab34ff81fccb4f1d806025/page/58870b46472d4a1fef810919 Watch the video carefully and note down the reactions showing in this video. Close the video and write down the balanced chemical equation for each reaction. Find out from the internet and textbook – How pH of saliva affects tooth decay, effect of pH on growth of plants and effect of pH on aquatic animals. Compile it in the form of a report. <p>WEEK 4</p> <ul style="list-style-type: none"> Make an innovative collage of various substances such as fruits, vegetables, flowers and other substances and identify them as acidic, basic and neutral using natural and man-made indicators. You can make a collage by cutting pictures or you can also draw the pictures. You may colour and decorate them. You may click photographs of this collage and share with your friends on the group created by your teacher. You can showcase this collage in class once you are back to school. Bake a cake in the presence of an elder. Write down the recipe and try to verify the scientific concept about the formation of spongy cake. Write down the reaction involved to make the cake spongy and fluffy. Plaster of Paris is used for making toys and decoration items. Find out from internet — why calcium sulphate hemihydrate is called Plaster of Paris? Discuss with your friends on the group created by your teacher. Try to design and develop eco-friendly Soda Acid Fire Extinguisher
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<ul style="list-style-type: none"> • communicates the findings and conclusions of the activities/experiments/projects or any task orally and in written form effectively using appropriate figures, tables and digital forms, etc. • makes efforts to conserve environment by doing activities/experiments by making use of materials judiciously and keeping surroundings/home clean. 		<p>with the material available at home. Click a photograph or make a video and share with your friends at Whatsapp group. You can also display this model when you are back to school.</p> <ul style="list-style-type: none"> • Open this link and try to solve the questions in your note book. http://ncert.nic.in/ncerts/1/jeep102.pdf • You can check your answers with the given key. • If you have any doubts, discuss with your friends and teacher on the group created by your teacher.
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