

Class VII

Science

<i>Learning Outcomes</i>	<i>Sources/Resources</i>	<i>Week-wise Suggestive Activities (to be guided by parents with the help of teachers)</i>
<p>The learner</p> <ul style="list-style-type: none"> classifies plants on the basis of modes of nutrition etc. conducts simple investigations to seek answers to queries, e.g., Do leaves other than green also carry out photosynthesis? explains processes such as, photosynthesis in plants; need of nitrogen rich fertilisers in soil, etc. draws labelled diagrams showing photosynthesis applies learning of scientific concepts in day-to-day life, e.g., putting plants in area where they get adequate light and water, method of replenishing nutrients in the soil, etc. relates processes and phenomenon with causes, such as, the need for adding nitrogen rich fertilizers by farmers, eating of insects by some plants and requirement of nutrients, etc. explains - Why some plants eat insects? How fungi grows on some objects? exhibits creativity in designing, planning, making use of available resources, etc such as makin a magnifier for observing fungi growing on bread etc. 	<p>Theme: Food</p> <p>Topic-Nutrition in Plants</p> <p>Contents under this topic are—</p> <ul style="list-style-type: none"> Mode of Nutrition in Plants Photosynthesis-Food Making Process in Plants Other modes of nutrition in plants Saprotrophs How Nutrients are replenished in the soil <p>Chapter NCERT Science Textbook for Class VII</p> <p>http://ncert.nic.in/textbook/textbook.htm?gesc1=1-19</p> <p>Laboratory Manual in Science for Class VI-VIII</p> <p>http://www.ncert.nic.in/exemplar/labmanuals.html</p>	<p>WEEK 5</p> <ul style="list-style-type: none"> Read Chapter 1 of Class VII of the NCERT textbook, if the physical book is not available with you, you can read/download digital book from ePathshala. <p>Link for Chapter 1</p> <p>http://ncert.nic.in/textbook/textbook.htm?gesc1=1-19</p> <ul style="list-style-type: none"> You have learnt in Class VI that food is essential for all living beings. Now, discuss with your friends- from where we get the required nutrients for our body. Based on your discussion make a chart of different Nutrients and their sources. You can share it with your teacher for additional help. Plants are also living beings and they also need food. Discuss with your friends/family members, from where plants get their food. For more clarity you can see the video given in the link below https://www.youtube.com/watch?v=1O0opk-XNhY&feature=youtu.be Draw a chart showing the process of Photosynthesis and its equation. <p>Watch the link given below and explain the process of photosynthesis in plants</p> <p>https://diksha.gov.in/play/collection/do_312726114547941376123545?contentType=TextBook&contentId=do_312580364008857600211648 (process of photosynthesis in plants)</p> <ul style="list-style-type: none"> You may have heard/seen that farmers use nitrogen rich fertilizers, discuss with your elders/friends/teacher, what may be the purpose of using nitrogen rich fertilizers. For more information watch the link given below



<ul style="list-style-type: none"> exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices 	<p>E-Resources developed by NCERT, which are available on NROER and attached as QR Code in textbooks of NCERT.</p> <p>Exemplar Problems in Science for Class VII, Chapter on Heat</p> <p>http://ncert.nic.in/ncerts/l/geep101.pdf</p> <p>Link to find out the Answers to the Questions</p> <p>http://epathshala.nic.in/QR/books/7Science/geep1an1.pdf</p>	<p>https://diksha.gov.in/play/collection/do_312726114547941_376123545?contentType=TextBook&contentId=do_3125803640694_21056211652 (how nutrients are replenished in the soil)</p> <p>WEEK 7</p> <p>https://diksha.gov.in/play/collection/do_312726114547941376123545?contentType=TextBook&contentId=do_312580364044132352211651 (heterotrophic nutrition in plants)</p> <p>after watching the above link students will be able to explain—</p> <ul style="list-style-type: none"> What is host? Why does a plant depend on its host? What are insectivorous plants? Have you seen Cuscuta (Amarbel)? They do not have chlorophyll. Then how do they survive? From where do they get food? Search the internet or discuss with your family members/friends/teachers and try to find the answer. Try to answer- Why our body cannot make food from carbon dioxide, water and minerals like plants do? If you need help you may float the question in the social networking group created by your teacher.
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<ul style="list-style-type: none"> applies learning of scientific concepts in day-to-day life, e.g., using sharp knife for cutting easily, increasing area to reduce pressure, etc. 	<p>Chapter 11 of the NCERT Science Textbook for Class VIII</p> <p>http://ncert.nic.in/textbook/textbook.htm?hesc1=11-18</p>	<ul style="list-style-type: none"> Search the internet about other plants which get their food in a similar way as the Cuscuta. Study about insectivorous plants. Search in which type of soil they generally grow. Try to relate the need of eating insects by insectivorous plants with scarcity of some nutrients in the soil. <p>Discuss with your teacher for more clarity on the concept.</p> <p>https://diksha.gov.in/play/collection/do_3127261_14547941376123545?contentType=TextBook&contentId=do_3125803640549212161_11895 (saprotrophic nutrition)</p> <p>After watching the above video students can explain the following —</p> <ul style="list-style-type: none"> How do they grow? What are the characteristics of fungi How does nutrition take place? What is the symbiotic relationship with other organisms? Perform Activity 1.2 given in the NCERT textbook. You may not have access to microscope or magnifying glass, try to use some other things for magnification, such as, using spectacles of your grand father/mother or making a temporary magnifier using some transparent bottle or polythene. You can search on internet for making such a magnifier. Have you/your family members/friends have seen growth of fungus on some objects in your house? Discuss about the suitable conditions under which they grow. If any of your family member is aware about farming practices, ask them, if plants keep on absorbing nutrients, then how nutrients are being replenished in the soil. You may search on the internet or discuss with your teacher/friends to know more about it. <p>WEEK 8</p> <p>Theme- Material</p> <p>Fibre to Fabric</p> <ul style="list-style-type: none"> Animal fibres <ol style="list-style-type: none"> Wool
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- exhibits creativity in designing, planning, making use of available resources, etc. for carrying out different suggested activities at home.
- constructs model to show that liquids exert equal pressure at equal heights.
- exhibits values of honesty, objectivity, cooperation, freedom from fear and prejudices, etc., such as, reporting the findings honestly, supporting other friends in need, etc.

- Laboratory Manual in Science for Classes VI-VIII

<http://www.ncert.nic.in/exemplar/labmanuals.html>

- E-Resources developed by NCERT, which are available on NROER and also attached as QR Code in textbooks of NCERT.

Exemplar Problems in Science for Class VIII, Chapter 11

<http://ncert.nic.in/ncerts/l/heep111.pdf>

Link to find out the Answers to the Questions

<http://ncert.nic.in/ncerts/l/heep1an.pdf>

- From fibre to wool
- Processing fibres into wool

Task 1

Watch the following video and try to answer the Questions mentioned below:

- Jaanta vreshey azantu reshe on the given link

<https://www.youtube.com/watch?v=E6MveN6GIUk&feature=youtu.be>

Represent various steps of the processing of fibre into wool with the help of flow chart.

Explore and make a list of the different breeds of sheep. Mark the states in the map of India where these breeds are reared to obtained different quality of wool.

Task 2

Share your opinion on is it fare on the part of human to rear sheep and then chop off their hair for getting wool on group created by your teacher.

WEEK 9

b) Silk

- Life history of silk moth
- From cocoon to silk

Task 1

Watch the following videos and try to answer the questions mentioned below.

- ✓ cocoon se reshamtak on the given link
<https://www.youtube.com/watch?v=pFTT MNKPkh4&feature=youtu.be>

- ✓ Resham on the given link
<https://www.youtube.com/watch?v=G4LtN4ZoYH4&feature=youtu.be>

Questions

- Mention the stage of life cycle of silkworm from which silk is obtained.



- What are the conditions required for rearing of silkworm?
- Explain the process of sericulture with the help of a diagram.
- Draw labeled diagram of the life history of silk moth.

Task 2

Write a story on discovery of silk and make a comic script on that.

Task 3

Collect information on different types of silk fibres and create a picturebook of different types of silk fibers and their sources.

WEEK 10

- Read Chapter 4 of Class VII of the NCERT textbook, if the physical book is not available with you, you can read/download the digital book from ePathshala.

<http://epathshala.nic.in/process.php?id=students&type=eTextbooks&ln=en>

- Observe or think of the objects/things used by you or your family members in the past few days and make a table classifying them into hot and cold. In the third column write down the reason why/how you have classified them as hot or cold.

Collaborative Learning: Take a photo of this table and share it with your friends and similarly ask your friends to share their tables. Observe carefully all the entries made in the tables shared by your friends and afterward discuss it with your friends on social networking group and help each other in putting the right things in right columns.

After finalising you can share the compiled table with your teacher for any help.

Perform the Activity 4.1, Ch 4, Class VII, Science of NCERT Textbook

(Teachers may give activity from state developed textbooks also, if state is not using NCERT textbooks)



After performing the activity, can you still rely on your touch sense for classifying objects as hot/cold?

Collaborative Learning: Discuss with your siblings/parents at home or friends through social networking apps and try to find out few more situations/activities by which we can justify that we cannot always classify between hot and cold just by touching or feeling. Keep your teacher in loop so that she can help you when required.

- If you have a thermometer at home, observe it carefully or surf on the internet to see different types of thermometers, their range of measurements and uses.
- If you have a mercury thermometer at your home, perform Activities 4.2 and 4.3 given in NCERT textbook.
- If you do not have thermometer at your home you can visit the following link to understand how to use clinical thermometer for measuring body temperature.

<https://nroer.gov.in/5645d28d81fccb60f166681d/file/58871229472d4a1fef810d12>

In Activity 4.3, it has been suggested to measure the body temperature of at least 10 persons, but during lockdown you may not have 10 persons at your home. For this you can ask all your classmates to measure the temperatures of the persons available in their respective homes and then share the values along with the names, one of the student can compile it and put it in a table. After compiling the results the table can be shared in the group and you all can discuss about the reason of variation of temperature from person to person. Discuss with your teacher for further clarification.

Caution: In order to prevent ourselves and others from infections we must not place the bulb of thermometer under anyone's tongue for measuring temperature of a person instead we can put the thermometer in armpit.



	<ul style="list-style-type: none"> • Learning Outcomes at Elementary Stage http://www.ncert.nic.in/publication/Miscellaneous/pdf_files/tilops101.pdf <p>Chapter 1</p> <p>Crop Production and Management</p> <ul style="list-style-type: none"> ✓ Agricultural Practices ✓ Basic Practices of Crop Production 	<p>You may have a digital thermometer at home, which directly shows the temperature of human body in digits.</p> <ul style="list-style-type: none"> • Read about the Laboratory thermometer from your textbook. Surf the internet to see the videos for taking measurements with Laboratory thermometers. • Draw the diagrams of Clinical thermometer and Laboratory thermometer. Write similarities and differences between clinical thermometer and laboratory thermometer. <p>WEEK 11</p> <ul style="list-style-type: none"> • To learn how heat flows from one end of metal to other (Conduction) perform Activity 4.6 given in the NCERT textbook. If due to non-availability of required items you are not able to perform it, visit the following link to see the process. https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/5699f80781fccb15fb2138d1 • For classifying materials in conductors and insulators perform Activity 4.7 given in the NCERT textbook. Share your findings with your friends. Now visit your kitchen and observe different parts of cooking vessels. Identify which part is made with conducting material and which part is made of non-conducting material. Share your findings with your friends, discuss about observations, such as, the use of plastic/wooden handles, etc. • To learn how water gets heated when kept on stove/heat source (Convection), perform the Activities 4.8 and 4.9 given in the NCERT textbook. You can also visit the following link for observing the demonstration of the heating process of water https://nroer.gov.in/5645d28d81fccb60f166681d/file/58870924472d4a1fef81083f • Learn more about sea breeze and land breeze, try to explain them by applying your understanding of heat transfer by convection. If you live near coastal areas try to feel the difference in land breeze and sea breeze. If you are not
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	<p>Theme: Natural Phenomenon</p> <p>Theme: Winds, Storms and Cyclones</p> <p>Contents of the Chapter</p> <ul style="list-style-type: none"> • Air Exerts Pressure • High speed winds are accompanied by reduced pressure 	<p>near coastal area, surf the Internet to study more about sea breeze and land breeze.</p> <ul style="list-style-type: none"> • Study about a third method by which heat gets transferred i.e. Radiation. Discuss various examples of heat transfer due to radiation. • Draw a chart/table depicting three different processes by which heat gets transferred along with examples of each process. • To understand the variation of absorption of heat with colour of objects, perform Activities 4.10 and 4.11 of NCERT textbook. <p>Perform the above-mentioned activity by painting tin cans with other colours such as red, green, etc.</p> <p>Write your observations in each case.</p> <p>Do you observe any change in the temperature of tin cans painted in different colours?</p> <p>Search the internet to find the reasons for your observations or you can discuss with your friends, elders or teachers.</p> <ul style="list-style-type: none"> • Caution: Perform all the activities under the guidance of elders. <p>Now can you explain which kind of clothes we should wear in summer and winter seasons?</p> <p>Now enjoy solving the puzzle based on the concepts learnt in this chapter.</p> <p>Puzzle on Chapter Heat</p> <p>Link: http://econtent.ncert.org.in/pdf/Science%20Upper%20primary/VII_Heat.pdf</p> <p>WEEK 12</p> <ul style="list-style-type: none"> • Read Chapter 8 of the NCERT textbook, if the physical book is not available with you, you can read/download digital book from ePathshala or NCERT website. <p>http://ncert.nic.in/textbook/textbook.htm?gesc1=8-19</p>
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	<ul style="list-style-type: none"> • Air expands on heating • Wind currents are generated due to uneven heating on the earth. • Thunderstorms and Cyclones • Destruction caused by cyclones • Effective safety measures <p>Chapter 8 NCERT Science Textbook Class VII</p> <p>http://ncert.nic.in/textbook/textbook.htm?gesc1=8-19</p> <p>Laboratory Manual in Science for Classes VI-VIII</p> <p>http://www.ncert.nic.in/exemplar/labmanuals.html</p> <p>E-Resources developed by NCERT, which are available on NROER and attached as QR Code in textbooks of NCERT.</p> <p>Exemplar Problems in Science for Class VII, Chapter 8. Winds, Storms and Cyclones http://ncert.nic.in/ncerts/1/geep108.pdf</p>	<ul style="list-style-type: none"> • Think/recall the situations when you have seen/experienced that air exerts pressure and share your findings with your friends over any social networking platforms. Different group members may give different/same examples. In this way you all will be able to appreciate that air exerts pressure. • Learn while you play Read and perform Activities 8.2, 8.3 and 8.4 from NCERT textbook. Now you can ask your family members to separate the two balloons (as in Activity 8.3) by just blowing hard in between them. When they will fail to do so then you can explain them the reason why they could not separate the balloons by blowing hard - high speed winds reduces air pressure. Similarly you can ask them to blow a strip of paper(Activity 8.4) or blowing into a bottle(Activity 8.2) • Perform Activity 8.5 of the NCERT textbook, this will help you in understanding that air expands on heating. If you do not have test tube or beakers, then also you can perform the activity by using plastic bottles in place of test tubes and any vessel/bucket in place of beaker. • Discuss with your friends some more activities by which it can be shown that air expands on heating. You can also search the internet for this and share your findings with your friends and teachers. • Study how wind currents are generated due to uneven heating on earth. Study about different types of wind currents and their causes on globe/map. • Listen to the weather news.They generally discuss about different wind currents or refer to website of India Meteorological Department https://mausam.imd.gov.in/ • Also, try to understand more about different wind currents/monsoon. • What is your opinion, Rain is always good, or it can create some problems too? Ask about the opinion of your family members/friends. Discuss these opinions with your teacher for more information/help.
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	<p>Link to find out the Answers to the Questions</p> <p>http://epathshala.nic.in/QR/books/7Science/geep1an8.pdf</p>	<ul style="list-style-type: none"> • After studying about thunderstorm, cyclone and destruction caused by them, visit the following link to understand more about them https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/585b5a9b472d4af21c54d7d5 After seeing this video, discuss about your findings with your friends and teachers, if you could not understand some of the things your friends or teacher may help you in its explanation. • Try to make a model of cyclone. For this see the video from the link given below https://nroer.gov.in/55ab34ff81fccb4f1d806025/file/569a09d681fccb15fb220f5e • List out all the cyclones which were very destructive and try to find out the losses caused by them. In your opinion which one of them was the worst and why? Ask for opinion of your friends also and discuss. • Write an essay or make a powerpoint presentation on— Cyclones—destructive effects and safety measures. • Draw a painting showing destructive effects of Cyclones. • Make a poster for Dos and Dont's during cyclone. • Advanced technology has helped us in minimising the destructive effects of cyclones by their early predictions and alerts. Visit the following link of the National Disaster Management Authority of India, to get more information about different types of disasters and effective safety measures https://ndma.gov.in/en/ • Prepare a list of technological tools which are helpful in the prediction of thunderstorm/cyclone. <p>Project: Make a model of an anemometer for measuring the speed of wind using paper cups or plastic bottles. Refer to extended learning activities for more details.</p>
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