

SCIENCE LESSON PLAN

CLASS – VII

CHAPTER -10	RESPIRATION IN ORGANISMS														
Class transaction	Total 3 periods (35 min each) Day 1- Introduction :Respiration in organisms														
Learning objectives	<i>Students will be able to:--</i> - Define the term respiration in organisms - Differentiate between aerobic and anaerobic respiration. - Describe the process of respiration at cellular level in humans - Explain the process of respiration in other organisms like – Amoeba, Insects, Frog, Fish, Earthworms etc.														
Resources	NCERT text book, green board, smart classroom, Flash cards, science lab														
Teaching strategies	Meditation, Think- pair- share, brainstorming, and lecture –cum- demonstration														
Prerequisite knowledge	The students should be aware about the different components of environment and organs of human body.														
P K testing/ assessment of qualifying knowledge	Q: List the various gases that are present in Earth’s atmosphere. Q: Name the gas which is inhaled by organisms. Q: Name the gas which is exhaled by organisms.														
Warm up activity	MEDITATION: Teacher will begin the lesson by asking the students to close their eyes and slowly inhale and exhale the air. Repeat this process 5 times. Ask the students to put their hand on the chest and feel the change in the thoracic cavity. After this, ask the students to count the number of breaths per minute while doing some activities like jumping for 20times, doing sit ups and push ups for one minute. Give the learners some time to brainstorm, prompt some students to share their answer. Discuss the learner’s responses and tell the students that today we will learn about respiration in organisms.														
Introduction and explanation	Now teacher will define the term respiration and write it down on green board. Demonstration: -- the teacher will show a small video on respiration and difference between aerobic and anaerobic respiration. Various activities will be performed to relate the topic to daily life. The students will be making classification chart of aerobic and anaerobic respiration-- <table border="1"> <thead> <tr> <th>Aerobic respiration</th><th>Anaerobic respiration</th></tr> </thead> <tbody> <tr> <td>1) It requires _____</td><td>_____ is not required.</td></tr> <tr> <td>2) it occurs in _____</td><td>It occurs in _____</td></tr> <tr> <td>3) Number of ATP molecules produced _____</td><td>Number of ATP molecules produced _____</td></tr> <tr> <td>4) All the reactions take place in _____</td><td>All the reactions take place in _____</td></tr> <tr> <td>5)End products are _____</td><td>End products are _____</td></tr> <tr> <td>6) This respiration is shown by _____</td><td>This respiration is shown by _____</td></tr> </tbody> </table> Guided practice will be followed by independent practice. Textbook	Aerobic respiration	Anaerobic respiration	1) It requires _____	_____ is not required.	2) it occurs in _____	It occurs in _____	3) Number of ATP molecules produced _____	Number of ATP molecules produced _____	4) All the reactions take place in _____	All the reactions take place in _____	5)End products are _____	End products are _____	6) This respiration is shown by _____	This respiration is shown by _____
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	questions will be discussed in the classroom.
Learning outcomes	Knowledge:- students will be able to • Develop desirable scientific attitude • Exhibits creativity in designing, planning, making use of available resources. • The learners conduct simple investigations to seek answers to queries. Skills: • critical thinking skills • observational and practical skills values: • honesty • co-ordination and cooperation • team work
Addressing classroom diversity	For gifted students: Presenting HOTS and application based questions. Encourage them to refer other resources. For Average students: Peer mentoring to be provided For differently able students: motivate them and seek counsellors guidance as per requirement
Recapitulation	Students will be asked following questions: Q: what are the two steps of respiration? Q: What is meant by inhalation and exhalation? Q: What happens to your breathing rate when you (a) exercise, (b) go to sleep
Home assignment	Research based learning: -- Artificial respiration given immediately to the victims of electric shocks and drowning can save their life. Collect information about it and prepare a report.
Assessment	Assessment will be done on the basis of chart made in the classroom
Cross- curricular connection (integration)	Social science: they will apply the concept in the daily life Language arts: they will use their notebooks as a way to share their knowledge and observation. Physical education: various activities are performed like meditation, jumping, sit ups and push ups etc. Art and craft: different pictures and tables are made in this topic Computers: videos and pictures

Unit	DAY 2 (35 min)
Topic	Human Respiratory System
Resources	Smart classroom, green board, science lab and notebooks
Teaching strategies	Group activity, animation demonstration, Lung models
Prerequisite knowledge	Basic knowledge about the external and internal respiration process
P K testing/ assessment of qualifying knowledge	Q: Differentiate between breathing and cellular respiration. Q: Why does the breathing becomes faster during exercise?
Warm up activity	‘Respiratory Relay’: -- Organise students into group of 6, sitting in circle on the floor or at tables. Shuffle the Respiratory relay cards (having names of different organs like—nostrils, pharynx, lungs, bronchi, alveoli

	and diaphragm) and give one to each student. Show a short video for information on how the respiratory system and lungs work. Then, going around the circle each student will read the card and describe where that body part fits into respiratory system. Then, toss the ball from student to student to match the order that oxygen would travel inside the body as we inhale. As each student gets the ball, he or she needs to say the body part on his or her card and the body part that comes next. (Do this few times, then collect the cards, reshuffle and redistribute for each group and repeat the process)
Introduction and explanation	Take the students to science lab and show them respiratory model for better understanding. Flip the class activity: then students will silently read the concept from textbook and explain it one by one. At the end there will be group discussion to clear the concept.
Learning outcomes	Knowledge:- students will be able to • Develop inquiring minds and curiosity about science and natural world. • Communicate scientific ideas and practical experiences accurately in a variety of ways. Skills: • critical thinking skills • observational and practical skills values: • honesty • co-ordination and cooperation • team work
Recapitulation	Students will complete the back exercise of the textbook
Home assignment	Draw a well labelled diagram of human respiratory system.
Assessment	Assessment will be done on the basis of classroom response
Cross- curricular connection (integration)	Social science: they will apply the concept in the daily life Language arts: they will use their notebooks as a way to share their knowledge and observation. Art and craft: diagrams and flash cards are made in this topic Computers: videos and pictures General knowledge: they will be aware about their body and how it interacts with outside world.

Unit	DAY 3 (35 min)
Topic	Respiration in other animals
Resources	Smart classroom, green board, science lab and notebooks
Teaching strategies	Show and tell, Lecture cum demonstration, group discussion
Prerequisite knowledge	The topic require basic knowledge of respiratory system
P K testing/ assessment of qualifying knowledge	Ask following questions:- 1) What happens to ribs and diaphragm during exhalation? 2) Why should we breathe through nose and not through mouth?

Warm up activity	Flash card showing activity: show some pictures of animals like <i>Amoeba</i> , <i>Paramecium</i> , Insects, Frog, Earthworm, fish and ask the students to discuss and conclude how respiration takes place in these organisms. Give the learners some time to brainstorm, prompt some students to share their answer. Discuss the learner's responses in classroom and write important points on green board.
Introduction and explanation	Demonstration: The teacher will explain the concept with the help of chart. This is followed by various pictures and small videos on smart board to explain respiration in other organisms. Students would brainstorm on the reasons for the same and present their finding next day as group activity.
Learning outcomes	Knowledge:- students will be able to • Recognise the process of respiration in various organisms. • Conduct simple investigations to seek answers to queries. Skills: • critical thinking skills • observational and practical skills
Recapitulation	Students will complete the back exercise of the textbook
Home assignment	Field visit: Visit a doctor. Learn the harmful effects of smoking. You can also collect information from the internet. Find the percentage of people in your area who smoke and aware them about the disadvantages of smoking.
Assessment	Assessment will be done on the basis of classroom activities as well as response to classroom discussion.
Cross- curricular connection (integration)	Social science: they will apply the concept in their daily life. Language arts: they will use their notebooks as a way to share their knowledge and observation. Computers: videos and pictures General knowledge: they will be aware about the outside world.