

SCIENCE SYLLABUS

Class7(2026-27)

FIRST TERM

APRIL

Ch-1 The Ever- Evolving World of Science

Ch-2 Exploring Substances-Acidic, Basic and Neutral

MAY

Ch-3 Electricity -Circuits and their Components

Ch-4 The World of Metals and Non- Metals

JULY

Ch-5 Changes Around Us :Physical and Chemical Changes

Ch-6 Adolescence : A Stage of Growth and Change

AUGUST

Ch-7 Heat Transfer in Nature+ REVISION

SEPTEMBER -Term1 Exams

SECOND TERM

OCTOBER

Ch-8 Measurement of Time and Motion

Ch-9 Life Processes in Animals

NOVEMBER

Ch-10 Life Processes in Plants

DECEMBER

Ch-11 Light, Shadows and Reflections

JANUARY

Ch-12 Earth, Moon and the Sun+ REVISION

Ch-5 Changes Around Us: Physical and Chemical Changes (From Term 1 to be included)

FEBRUARY -Revision

MARCH-Final Exam

LESSON PLAN – 1

Class: VII

Science

Topic

Chapter 1: The Ever-Evolving World of Science

No. of Days for Completing the Topic

5 Days

Learning Objectives

Students will be able to:

Understand the meaning and importance of science in everyday life.

Explain how scientific knowledge develops over time.

Identify contributions of scientists to society.

Develop scientific attitude, curiosity and observation skills.

Appreciate the role of science in solving real-life problems.

Previous Knowledge Testing

Teacher asks:

What is science?

Name any invention that has made our life easier.

Who is your favourite scientist and why?

How do mobile phones and electricity help us daily?

Vocabulary and Important Spellings

Science

Observation

Experiment

Discovery

Invention

Technology

Innovation

Scientist

Evidence

Research

Innovative Methods Used

Brainstorming session

Think–Pair–Share

PowerPoint presentation

Video on scientific discoveries

Group discussion

Concept mapping

Procedure

Introduction

Begin with pictures of old and modern inventions.

Ask students how life has changed because of science.

Presentation

Explain the meaning of science.

Discuss the evolution of scientific knowledge.

Explain the difference between discovery and invention.

Describe contributions of famous scientists.

Explain the importance of scientific thinking in daily life.

Class Activity

Students prepare a timeline showing important scientific discoveries.

Group discussion on "Science in My Daily Life."

Conclusion

Summarise the chapter through a concept map.

Student Participation

Answer oral questions.

Participate in group discussions.

Prepare charts and timelines.

Observe pictures and videos.

Present ideas before the class.

Integration with Other Domains

Social Science: History of scientific discoveries.

English: Reading and speaking skills.

Art: Poster/chart making.

ICT: Digital presentation and educational videos.

Recapitulation

Ask:

What is science?

What is the difference between discovery and invention?

Why does scientific knowledge change over time?

Name two famous scientists.

How does science improve our daily life?

Assessment

Oral questioning

Worksheet

MCQs

Short-answer questions

Observation during classroom activities

Homework assignment

Learning Outcomes

Students will:

Explain the importance of science.

Describe how scientific knowledge evolves.

Differentiate between discovery and invention.

Develop curiosity and scientific attitude.

Relate science to everyday life.

Resources

Science textbook

Smart board

PPT

Charts

Flash cards

Pictures of scientists

Educational videos

Blackboard and chalk

Feedback and Remedial Teaching

Provide additional explanation to students facing difficulty.

Use simple examples from daily life.

Conduct peer learning.

Give extra practice questions and worksheets.

Individual guidance where required.

Inclusive Practices and Full Participation without Discrimination

Encourage equal participation of all students irrespective of gender, ability or background.

Use simple language and visual aids.

Pair slow learners with supportive peers.

Appreciate every student's effort.

Provide additional support to children with special educational needs.

Ensure a safe, respectful and inclusive classroom environment.

LESSON PLAN – 2

Class: VII

Science

Topic

Chapter 2: Exploring Substances – Acidic, Basic and Neutral

No. of Days for Completing the Topic

7 Days

Learning Objectives

Students will be able to:

Identify acidic, basic and neutral substances found in daily life.

Differentiate between acids, bases and neutral substances using their properties.

Explain the use of natural and synthetic indicators.

Perform simple tests using indicators to identify substances.

Understand the importance of acids and bases in everyday life and use them safely.

Previous Knowledge Testing

Teacher asks:

Have you ever tasted lemon or curd? How do they taste?

What is the taste of soap solution? Should we taste it?

What happens when turmeric is applied to soap solution?

Name some substances used in your kitchen that have a sour taste.

Vocabulary and Important Spellings

Acid

Base

Neutral

Indicator

Litmus

Turmeric

Phenolphthalein

Neutralisation

Vinegar

Lemon juice

Baking soda

Innovative Methods Used

Activity-based learning

Laboratory demonstration

Think–Pair–Share

Inquiry-based learning

Group experiments

Educational video and PPT

Procedure

Introduction

Show students lemon, vinegar, baking soda and soap solution.

Ask students to classify them according to their taste or common use.

Introduce the terms acids, bases and neutral substances.

Presentation

Explain the properties of acids, bases and neutral substances.

Discuss examples from daily life.

Explain natural and synthetic indicators.

Demonstrate colour changes using litmus paper and turmeric.

Explain the neutralisation reaction with suitable examples.

Discuss the importance and safe handling of acids and bases.

Activity

Students test different household solutions (provided by the teacher) using litmus paper or turmeric indicator.

Record observations in a table and classify substances as acidic, basic or neutral.

Conclusion

Summarise the properties of acids, bases and neutral substances.

Revise indicator colour changes through a quick quiz.

Student Participation

Observe teacher demonstrations.

Perform indicator activities in groups.

Record observations.

Answer oral questions.

Participate in discussions and presentations.

Integration with Other Domains

Mathematics: Recording observations in tabular form.

Health Education: Safe handling of household chemicals.

Environmental Studies: Safe disposal of chemicals.

ICT: Videos and interactive simulations.

Recapitulation

Ask:

What is an acid?

Name two acidic substances.

What is a base?

What is an indicator?

How does red litmus behave in a base?

What is a neutralisation reaction?

Why should acids and bases be handled carefully?

Assessment

Oral questioning

Observation of practical activities

Worksheet

MCQs

Short-answer questions

Practical record

Homework assignment

Learning Outcomes

Students will:

Classify substances as acidic, basic or neutral.

Use indicators correctly to identify substances.

Explain neutralisation with suitable examples.

Apply scientific knowledge to everyday life.

Demonstrate safe laboratory practices.

Resources

Science textbook

Litmus paper (red and blue)

Turmeric solution/paper

Lemon juice

Vinegar

Soap solution

Baking soda solution

Beakers, droppers and test tubes

Smart board/PPT

Blackboard and chalk

Feedback and Remedial Teaching

Clarify misconceptions using simple demonstrations.

Provide additional practical activities for slow learners.

Encourage peer learning.

Conduct revision quizzes and worksheets.

Give individual attention wherever required.

Inclusive Practices and Full Participation without Discrimination

Ensure every student participates in practical activities.

Form mixed-ability groups.

Use simple language and visual demonstrations.

Provide additional guidance to children with special educational needs.

Encourage equal participation irrespective of gender, ability, language or socio-economic background.

Appreciate every learner's contribution and maintain a respectful classroom environment.

LESSON PLAN – 3

Class: VII

Science

Topic

Chapter 3: Electricity – Circuits and their Components

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Understand the concept of electric current and electric circuits.

Identify the components of an electric circuit and explain their functions.

Differentiate between conductors and insulators.

Draw simple circuit diagrams using standard symbols.

Construct a simple electric circuit and observe the flow of current.

Develop awareness about the safe use of electricity.

Previous Knowledge Testing

Teacher asks:

What appliances at home work on electricity?

What happens when we switch on a bulb?

What is needed to light an electric bulb?

Have you seen a torch? What are its main parts?

Vocabulary and Important Spellings

Electricity

Electric current

Electric circuit

Cell

Battery

Bulb

Switch

Wire

Conductor

Insulator

Terminal

Circuit diagram

Innovative Methods Used

Activity-based learning

Hands-on experiments

Demonstration method

Think–Pair–Share

Simulation/PPT

Group discussion

Quiz-based learning

Procedure

Introduction

Show a torch, dry cell, bulb and connecting wires.

Ask students how the bulb in a torch glows.

Introduce the concept of electricity and electric circuits.

Presentation

Explain the meaning of electric current.

Introduce the components of an electric circuit—cell, bulb, switch and connecting wires.

Explain open and closed circuits.

Discuss conductors and insulators with daily-life examples.

Teach standard circuit symbols and circuit diagrams.

Demonstrate how to make a simple electric circuit.

Explain precautions while using electricity.

Activity

Students work in groups to assemble a simple electric circuit using a cell, bulb, switch and wires.

Observe whether the bulb glows in open and closed circuits.

Identify conductors and insulators by testing different materials.

Conclusion

Revise the components of an electric circuit.

Display a circuit diagram and ask students to identify each symbol.

Student Participation

Observe demonstrations carefully.

Assemble a simple electric circuit.

Draw circuit diagrams using standard symbols.

Identify conductors and insulators.

Participate in discussions and answer oral questions.

Integration with Other Domains

Mathematics: Drawing neat circuit diagrams and symbols.

Computer Science/ICT: Virtual circuit simulations.

Art: Preparing charts of circuit symbols.

Environmental Education: Importance of saving electricity.

Recapitulation

Ask:

What is an electric circuit?

Name the main components of a simple electric circuit.

What is the difference between an open and a closed circuit?

What are conductors? Give two examples.

What are insulators? Give two examples.

Why are circuit symbols used?

Mention two safety precautions while using electricity.

Assessment

Oral questioning

Observation during practical activity

Worksheet

MCQs

Drawing circuit diagrams

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain the working of a simple electric circuit.

Identify and describe the function of circuit components.

Draw simple circuit diagrams using standard symbols.

Differentiate between conductors and insulators.

Demonstrate safe handling of electrical devices.

Apply the concept of electric circuits in everyday life.

Resources

Science textbook

Dry cells

Bulbs

Bulb holders

Connecting wires

Switches

Battery

Circuit symbol chart

Smart board/PPT

Blackboard and chalk

Feedback and Remedial Teaching

Observe students during practical work and provide immediate feedback.

Repeat demonstrations for students who need additional support.

Provide extra worksheets for circuit diagrams.

Encourage peer learning and group assistance.

Conduct short revision quizzes to reinforce concepts.

Inclusive Practices and Full Participation without Discrimination

Ensure every student gets an opportunity to assemble a circuit.

Form mixed-ability groups to promote collaborative learning.

Use visual aids, real objects and simple language for better understanding.

Provide additional assistance to students with special educational needs.

Encourage equal participation irrespective of gender, ability, language or socio-economic background.

Maintain a safe, respectful and inclusive classroom environment.

LESSON PLAN – 4

Class: VII

Science

Topic

Chapter 4: The World of Metals and Non-Metals

No. of Days for Completing the Topic

7 Days

Learning Objectives

Students will be able to:

Identify metals and non-metals based on their physical properties.

Differentiate between metals and non-metals through observation and simple activities.

Explain the uses of metals and non-metals in everyday life.

Recognise the importance of conserving metallic resources through recycling.

Develop scientific observation and classification skills.

Previous Knowledge Testing

Teacher asks:

Name some objects made of iron, copper or aluminium.

Which metal is commonly used for making electrical wires? Why?

Why are cooking utensils generally made of metals?

Can you name any non-metals found around you?

Vocabulary and Important Spellings

Metal

Non-metal

Lustre

Malleability

Ductility

Sonorous

Conductivity

Corrosion

Recycling

Alloy

Innovative Methods Used

Activity-based learning

Demonstration method

Observation and classification activity

Think–Pair–Share

Group discussion

PPT and educational video

Procedure

Introduction

Display samples or pictures of iron, copper, aluminium, sulphur, charcoal and graphite.

Ask students to classify them based on their appearance and uses.

Introduce the concepts of metals and non-metals.

Presentation

Explain the physical properties of metals such as lustre, hardness, malleability, ductility, sonority and conductivity.

Explain the general properties of non-metals.

Compare metals and non-metals using a table.

Discuss the uses of important metals and non-metals in daily life.

Explain corrosion and methods to prevent it.

Highlight the importance of recycling metals for environmental conservation.

Activity

Students observe different materials provided by the teacher and classify them as metals or non-metals.

Record observations in a comparison table.

Discuss why particular materials are used for specific purposes.

Conclusion

Summarise the differences between metals and non-metals.

Revise important properties using a comparison chart.

Student Participation

Observe and classify different materials.

Participate in group discussions.

Complete comparison tables.

Answer oral questions.

Present group findings before the class.

Integration with Other Domains

Social Science: Mining and natural resources.

Environmental Studies: Recycling and conservation of metals.

Mathematics: Preparing comparison tables.

Art: Making charts showing uses of metals and non-metals.

ICT: Videos and digital presentations.

Recapitulation

Ask:

What are metals?

What are non-metals?

Name four properties of metals.

Why is copper used for electrical wiring?

What is malleability?

What is corrosion?

Why is recycling of metals important?

Assessment

Oral questioning

Observation during activities

Worksheet

MCQs

Short-answer questions

Comparison chart preparation

Homework assignment

Learning Outcomes

Students will:

Differentiate between metals and non-metals.

Explain the important properties of metals and non-metals.

Identify suitable uses of different materials based on their properties.

Recognise the importance of recycling and conserving natural resources.

Develop observation, classification and scientific reasoning skills.

Resources

Science textbook

Samples or pictures of metals and non-metals

Iron nail

Copper wire

Aluminium foil

Charcoal

Sulphur (picture/sample)

Magnet

Charts

Smart board/PPT

Blackboard and chalk

Feedback and Remedial Teaching

Provide additional explanation using real-life examples.

Conduct revision through comparison tables and quizzes.

Offer individual guidance to slow learners.

Encourage peer tutoring during classroom activities.

Give additional worksheets for reinforcement.

Inclusive Practices and Full Participation without Discrimination

Ensure equal opportunities for every student during activities.

Form heterogeneous groups to encourage cooperative learning.

Use simple language, visual aids and real objects to support diverse learners.

Provide additional assistance to children with special educational needs.

Encourage respect, cooperation and appreciation of every learner's ideas without discrimination based on gender, ability, language or socio-economic background

LESSON PLAN – 5

Class: VII

Science

Topic

Chapter 5: Changes Around Us – Physical and Chemical Changes

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Differentiate between physical and chemical changes.

Identify physical and chemical changes occurring in daily life.

Explain the characteristics of physical and chemical changes with suitable examples.

Observe simple experiments and record their observations.

Develop scientific thinking, observation and analytical skills.

Previous Knowledge Testing

Teacher asks:

What happens when ice melts?

Can melted ice be converted back into ice?

What happens when paper burns?

Have you seen rust forming on an iron object?

Name some changes that occur in your surroundings every day.

Vocabulary and Important Spellings

Physical change

Chemical change

Reversible

Irreversible

Rusting

Combustion

Expansion

Contraction

Evaporation

Condensation

Reaction

Innovative Methods Used

Activity-based learning

Demonstration method

Experimental learning

Think–Pair–Share

Group discussion

Educational videos and PPT

Observation-based learning

Procedure

Introduction

Show an ice cube, a piece of paper and a rusted iron nail (or pictures).

Ask students to identify the changes taking place.

Introduce the concepts of physical and chemical changes.

Presentation

Explain the meaning and characteristics of physical changes.

Explain the meaning and characteristics of chemical changes.

Compare physical and chemical changes using examples.

Demonstrate simple activities such as melting ice, dissolving sugar in water and rusting of iron (through observation or images).

Discuss reversible and irreversible changes.

Explain the importance of chemical changes in everyday life.

Activity

Students observe different objects or situations and classify the changes as physical or chemical.

Complete a comparison table showing examples and characteristics of both types of changes.

Discuss observations in groups.

Conclusion

Summarise the differences between physical and chemical changes using a concept map.

Reinforce learning through real-life examples.

Student Participation

Observe demonstrations and experiments.

Classify changes into physical and chemical categories.

Record observations in notebooks.

Participate in discussions and group activities.

Answer oral and written questions.

Integration with Other Domains

Environmental Studies: Rusting, recycling and environmental changes.

Mathematics: Organising observations in tables.

Art: Preparing charts showing physical and chemical changes.

ICT: Interactive videos and digital simulations.

Recapitulation

Ask:

What is a physical change?

What is a chemical change?

Give two examples of physical changes.

Give two examples of chemical changes.

What is rusting?

Differentiate between reversible and irreversible changes.

Why is burning of paper considered a chemical change?

Assessment

Oral questioning

Observation during classroom activities

Worksheets

MCQs

Short-answer questions

Classification activity

Homework assignment

Learning Outcomes

Students will:

Distinguish between physical and chemical changes.

Identify different types of changes in everyday life.

Explain the characteristics of physical and chemical changes.

Develop observation, analytical and scientific reasoning skills.

Apply scientific concepts to practical situations.

Resources

Science textbook

Ice cubes

Sugar

Water

Glass beaker

Iron nail (rusty and new)

Candle

Charts

Smart board/PPT

Educational videos

Blackboard and chalk

Feedback and Remedial Teaching

Provide immediate feedback during activities.

Repeat demonstrations for students requiring additional support.

Conduct revision through worksheets and quizzes.

Encourage peer learning and discussion.

Give individual guidance and additional practice questions where needed.

Inclusive Practices and Full Participation without Discrimination

Ensure every student participates actively in classroom activities.

Form mixed-ability groups for cooperative learning.

Use simple language, visual aids and demonstrations to support all learners.

Provide additional assistance and modified tasks for children with special educational needs.

Encourage equal participation and respect for every learner irrespective of gender, ability, language or socio-economic background.

Create a safe, supportive and inclusive classroom environment

LESSON PLAN – 6

Class: VII

Science

Topic

Chapter 6: Adolescence – A Stage of Growth and Change

No. of Days for Completing the Topic

7 Days

Learning Objectives

Students will be able to:

Define adolescence and puberty.

Identify the physical, emotional and social changes that occur during adolescence.

Explain the role of hormones in growth and development.

Understand the importance of personal hygiene, balanced nutrition and healthy habits during adolescence.

Develop a positive attitude towards the changes that occur during this stage of life.

Previous Knowledge Testing

Teacher asks:

Have you noticed changes in height or weight as you grow?

Why do children become taller as they grow older?

Why is personal hygiene important?

What foods help us grow and remain healthy?

Vocabulary and Important Spellings

Adolescence

Puberty

Hormones

Growth

Development

Hygiene

Nutrition

Balanced diet

Reproductive organs

Emotional changes

Physical changes

Innovative Methods Used

Interactive discussion

Activity-based learning

Think–Pair–Share

Educational videos and PPT

Role play

Question box for anonymous queries

Group discussion

Procedure

Introduction

Begin by asking students about the changes they have observed in themselves as they grow.

Explain that adolescence is a natural stage of growth and development experienced by everyone.

Presentation

Define adolescence and puberty.

Explain the physical changes that occur in boys and girls during adolescence.

Discuss emotional and social changes during this period.

Introduce hormones and explain their role in growth and development.

Emphasise the importance of personal hygiene, balanced nutrition, regular exercise and adequate sleep.

Discuss healthy habits and respectful behaviour towards others.

Activity

Students prepare a chart on healthy habits during adolescence.

Group discussion on maintaining physical and mental well-being.

Quiz on balanced diet and personal hygiene.

Conclusion

Summarise the key changes during adolescence.

Reinforce that these changes are natural and vary from person to person.

Student Participation

Participate in classroom discussions.

Prepare charts and posters.

Answer oral questions.

Work in groups to discuss healthy lifestyle practices.

Share ideas respectfully in class.

Integration with Other Domains

Health & Physical Education: Personal hygiene, nutrition and fitness.

Social Science: Social and emotional development.

English: Speaking and communication skills.

Art: Poster making on healthy habits.

ICT: Educational videos and presentations.

Recapitulation

Ask:

What is adolescence?

What is puberty?

Name two physical changes during adolescence.

Why are hormones important?

Why is personal hygiene necessary during adolescence?

What should a balanced diet include?

How can adolescents maintain good physical and mental health?

Assessment

Oral questioning

Classroom discussion

Worksheet

MCQs

Short-answer questions

Chart/poster activity

Homework assignment

Learning Outcomes

Students will:

Explain the meaning of adolescence and puberty.

Describe the physical, emotional and social changes during adolescence.

Understand the importance of hormones in growth.

Adopt healthy habits related to hygiene, nutrition and exercise.

Develop confidence and a positive attitude towards the changes of adolescence.

Resources

Science textbook

Charts

Smart board

PPT

Educational videos

Flash cards

Blackboard and chalk

Worksheets

Feedback and Remedial Teaching

Address students' doubts with sensitivity and confidentiality.

Use simple language and visual aids to reinforce concepts.

Provide additional worksheets and revision activities.

Encourage peer learning and individual guidance where required.

Conduct short quizzes to assess understanding.

Inclusive Practices and Full Participation without Discrimination

Maintain a respectful, safe and supportive classroom environment.

Use gender-sensitive and age-appropriate language.

Encourage equal participation of all students without discrimination.

Respect students' privacy and individual differences in growth and development.

Provide additional support to students with special educational needs.

Foster empathy, mutual respect and positive peer interaction.

LESSON PLAN – 7

Class: VII

Science

Topic

Chapter 7: Heat Transfer in Nature

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Define heat and explain its transfer from a hotter body to a colder body.

Differentiate between conduction, convection and radiation.

Identify examples of different modes of heat transfer in daily life.

Explain the role of heat transfer in natural phenomena such as sea breeze and land breeze.

Appreciate the importance of heat transfer in everyday life and environmental processes.

Previous Knowledge Testing

Teacher asks:

What do you feel when you touch a hot cup of tea?

Why do we wear woollen clothes in winter?

Why does a metal spoon become hot when kept in hot tea?

Why do we feel warmth from the Sun even though there is no direct contact?

Vocabulary and Important Spellings

Heat

Temperature

Conduction

Convection

Radiation

Conductor

Insulator

Sea breeze

Land breeze

Thermometer

Transfer

Innovative Methods Used

Demonstration method

Activity-based learning

Inquiry-based learning

Think–Pair–Share

Group discussion

Educational videos and animations

Smart board/PPT presentation

Procedure

Introduction

Show a metal spoon placed in hot water and ask students why it becomes hot.

Discuss how the warmth of sunlight reaches the Earth.

Introduce the concept of heat transfer.

Presentation

Explain the meaning of heat and heat transfer.

Describe the three modes of heat transfer—conduction, convection and radiation.

Demonstrate conduction using a metal spoon in hot water.

Explain convection with the movement of heated water or air.

Discuss radiation with the example of heat received from the Sun.

Explain sea breeze and land breeze using labelled diagrams.

Discuss practical applications of heat transfer in daily life.

Activity

Students observe simple demonstrations of conduction and convection.

Draw labelled diagrams of conduction, convection and radiation.

Prepare a comparison table of the three modes of heat transfer.

Identify real-life examples of each mode.

Conclusion

Summarise the three modes of heat transfer.

Emphasise their importance in nature and everyday life.

Student Participation

Observe demonstrations carefully.

Participate in group discussions.

Draw labelled diagrams.

Complete comparison tables.

Answer oral and written questions.

Share examples from daily life.

Integration with Other Domains

Geography: Sea breeze, land breeze and weather.

Mathematics: Recording observations in tables.

Art: Diagram drawing and chart preparation.

ICT: Interactive simulations and educational videos.

Recapitulation

Ask:

What is heat?

Name the three modes of heat transfer.

Explain conduction with one example.

How does convection occur?

Why is radiation different from conduction and convection?

What causes sea breeze?

Give two everyday examples of radiation.

Assessment

Oral questioning

Observation during classroom activities

Worksheets

MCQs

Diagram-based questions

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain the three modes of heat transfer.

Differentiate between conduction, convection and radiation.

Relate heat transfer to natural phenomena and daily life.

Draw and label diagrams correctly.

Apply scientific concepts to solve simple real-life problems.

Resources

Science textbook

Metal spoon

Beaker with hot water

Candle or spirit lamp (for teacher demonstration)

Thermometer

Charts and flashcards

Smart board/PPT

Educational videos

Blackboard and chalk

Feedback and Remedial Teaching

Clarify misconceptions through demonstrations and questioning.

Provide additional practice with diagrams and worksheets.

Conduct revision quizzes and peer discussions.

Give individual guidance to students requiring extra support.

Reinforce concepts using familiar real-life examples.

Inclusive Practices and Full Participation without Discrimination

Ensure equal participation of all students in activities and discussions.

Form mixed-ability groups to promote collaborative learning.

Use simple language, visual aids and demonstrations to support diverse learners.

Provide additional assistance and modified tasks for students with special educational needs.

Encourage respect, cooperation and active participation irrespective of gender, ability, language or socio-economic background.

Maintain a safe, supportive and inclusive classroom environment.

LESSON PLAN – 8

Class: VII

Science

Topic

Chapter 8: Measurement of Time and Motion

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Understand the concepts of time, distance and motion.

Differentiate between rest and motion with suitable examples.

Measure time using clocks and stopwatches.

Calculate speed using the relationship between distance and time.

Distinguish between uniform and non-uniform motion.

Appreciate the importance of accurate measurement in daily life and scientific investigations.

Previous Knowledge Testing

Teacher asks:

How do you know when it is time to go to school?

Which instrument is used to measure time?

Have you ever observed a moving bicycle or car?

Can two students reach the same destination at different speeds?

What is meant by distance?

Vocabulary and Important Spellings

Motion

Rest

Distance

Time

Speed

Stopwatch

Clock

Uniform motion

Non-uniform motion

Measurement

Kilometre

Metre

Second

Innovative Methods Used

Activity-based learning

Demonstration method

Outdoor observation

Think–Pair–Share

Group discussion

Smart board/PPT

Educational videos

Learning by doing

Procedure

Introduction

Ask students how they come to school and how much time they take.

Show a stopwatch and a measuring tape.

Introduce the concepts of time and motion through everyday examples.

Presentation

Explain the concepts of rest and motion.

Define distance and time with appropriate SI units.

Introduce instruments used for measuring time.

Explain speed as the distance travelled in a given time.

Differentiate between uniform and non-uniform motion with daily-life examples.

Discuss the importance of accurate measurement in sports, transport and scientific experiments.

Activity

Students measure the time taken by a classmate to walk a fixed distance using a stopwatch.

Calculate the speed of the student.

Observe examples of uniform and non-uniform motion in the school playground.

Record observations in a table.

Conclusion

Summarise the concepts of distance, time, speed and types of motion.

Reinforce learning through practical examples and oral questioning.

Student Participation

Participate in outdoor activities.

Measure distance and time.

Calculate speed.

Observe different types of motion.

Record observations.

Answer oral and written questions.

Integration with Other Domains

Mathematics: Measurement, calculations and data recording.

Physical Education: Measuring time and speed during races.

Geography: Distance on maps and transportation.

ICT: Educational videos and simulations.

Recapitulation

Ask:

What is motion?

What is the difference between rest and motion?

Which instrument is used to measure time?

What are the SI units of distance and time?

What is speed?

Differentiate between uniform and non-uniform motion.

Why is accurate measurement important?

Assessment

Oral questioning

Observation during activities

Worksheet

MCQs

Numerical problems based on speed

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain the concepts of rest, motion, distance and time.

Measure time accurately using suitable instruments.

Calculate speed in simple situations.

Differentiate between uniform and non-uniform motion.

Apply concepts of measurement in daily life and scientific activities.

Resources

Science textbook

Stopwatch

Clock

Measuring tape/metre scale

Smart board/PPT

Educational videos

Charts

Blackboard and chalk

Worksheets

Feedback and Remedial Teaching

Provide immediate feedback during practical activities.

Give additional practice on speed calculations.

Use simple real-life examples to clarify concepts.

Encourage peer learning and group discussion.

Conduct revision quizzes and provide individual support to students who need additional help.

Inclusive Practices and Full Participation without Discrimination

Ensure all students participate in measurement activities.

Form mixed-ability groups to encourage collaborative learning.

Use simple language, demonstrations and visual aids for better understanding.

Provide additional time and support to students with special educational needs.

Encourage equal participation irrespective of gender, ability, language or socio-economic background.

Maintain a safe, respectful and inclusive classroom environment.

LESSON PLAN – 9

Class: VII

Science

Topic

Chapter 9: Life Processes in Animals

No. of Days for Completing the Topic

10 Days

Learning Objectives

Students will be able to:

Understand the basic life processes necessary for survival in animals.

Explain the processes of nutrition, respiration, transportation and excretion in animals.

Describe the role of different organs involved in life processes.

Compare different modes of nutrition and respiration in animals.

Develop awareness about maintaining a healthy lifestyle.

Previous Knowledge Testing

Teacher asks:

Why do animals need food?

Why do we breathe continuously?

How does food give us energy?

Which organ helps in pumping blood in our body?

Why does our body remove waste materials?

Vocabulary and Important Spellings

Life processes

Nutrition

Digestion

Respiration

Transportation

Circulation

Blood

Heart

Excretion

Kidney

Organ

Energy

Innovative Methods Used

Activity-based learning

Demonstration method

Concept mapping

Models and diagrams

Group discussion

Educational videos and animations

Think–Pair–Share

Procedure

Introduction

Discuss why all living organisms need food, oxygen and removal of waste.

Introduce the term "life processes" as activities necessary for maintaining life.

Presentation

Explain different life processes in animals:

Nutrition: Intake and digestion of food for energy and growth.

Respiration: Process of releasing energy from food.

Transportation: Movement of nutrients, oxygen and wastes through the body.

Excretion: Removal of harmful waste products.

Explain the role of digestive system, respiratory system, circulatory system and excretory system.

Discuss the importance of a balanced diet and healthy habits.

Activity

Students label diagrams of digestive, respiratory, circulatory and excretory systems.

Prepare a flow chart showing the journey of food in the body.

Group discussion on healthy habits for proper functioning of body systems.

Conclusion

Summarise the major life processes and their importance.

Revise concepts using a concept map.

Student Participation

Observe models and diagrams.

Participate in group discussions.

Label diagrams.

Prepare flow charts.

Answer oral questions.

Share examples related to daily life.

Integration with Other Domains

Health Education: Balanced diet, hygiene and healthy lifestyle.

Physical Education: Importance of exercise for body systems.

Art: Drawing biological diagrams.

ICT: Animated videos showing body processes.

English: Scientific vocabulary and explanation skills.

Recapitulation

Ask:

What are life processes?

Why do animals need nutrition?

What is respiration?

What is the function of the heart?

What is the role of blood?

Which organ removes wastes from the body?

Why is a balanced diet important?

Assessment

Oral questioning

Diagram labelling

Worksheets

MCQs

Short-answer questions

Concept map activity

Homework assignment

Learning Outcomes

Students will:

Explain different life processes in animals.

Describe the functions of major body systems.

Understand the importance of nutrition, respiration, transportation and excretion.

Relate scientific concepts to personal health and hygiene.

Develop observation and reasoning skills.

Resources

Science textbook

Human body system charts

Models of organs

Smart board/PPT

Educational videos

Flash cards

Worksheets

Blackboard and chalk

Feedback and Remedial Teaching

Provide additional explanation using models and diagrams.

Conduct revision activities and quizzes.

Give extra practice for diagram labelling.

Encourage peer learning.

Provide individual support to students requiring additional help.

Inclusive Practices and Full Participation without Discrimination

Encourage participation of all students in discussions and activities.

Use visual aids and models to support different learning needs.

Provide additional assistance to students with special educational needs.

Encourage respectful sharing of ideas and questions.

Ensure equal opportunities for every student irrespective of gender, ability, language or background.

Maintain a safe and inclusive classroom environment.

LESSON PLAN – 10

Class: VII

Science

Topic

Chapter 10: Life Processes in Plants

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Understand the basic life processes occurring in plants.

Explain the processes of photosynthesis, respiration, transportation and reproduction in plants.

Describe the role of roots, stems and leaves in plant life.

Understand the importance of sunlight, water and carbon dioxide for plants.

Appreciate the role of plants in maintaining life on Earth.

Previous Knowledge Testing

Teacher asks:

Why do plants need sunlight?

Which part of a plant prepares food?

Why do plants need water?

Do plants also respire like animals?

What is the importance of plants for living organisms?

Vocabulary and Important Spellings

Photosynthesis

Chlorophyll

Respiration

Transportation

Transpiration

Stomata

Roots

Stem

Leaves

Reproduction

Carbon dioxide

Oxygen

Innovative Methods Used

Activity-based learning

Demonstration method

Observation of plants

Concept mapping

Group discussion

Educational videos and animations

Smart board/PPT presentation

Procedure

Introduction

Show a green plant and ask students how it prepares its food.

Discuss the importance of plants in our environment.

Introduce life processes in plants.

Presentation

Explain important life processes in plants:

Photosynthesis: Preparation of food using sunlight, water and carbon dioxide in the presence of chlorophyll.

Respiration: Release of energy from food.

Transportation: Movement of water, minerals and food through plant parts.

Transpiration: Loss of water vapour through stomata.

Reproduction: Formation of new plants.

Explain the functions of roots, stems and leaves.

Discuss the importance of plants for oxygen production and ecological balance.

Activity

Students observe different plant parts and identify their functions.

Prepare a labelled diagram of a leaf showing stomata.

Make a flow chart of photosynthesis.

Observe transpiration activity using a covered plant branch (teacher demonstration).

Conclusion

Summarise the life processes in plants.

Reinforce the importance of plants for all living organisms.

Student Participation

Observe plant samples and diagrams.

Participate in discussions.

Draw and label diagrams.

Prepare concept maps and flow charts.

Answer oral questions.

Share examples from their surroundings.

Integration with Other Domains

Environmental Studies: Importance of plants and conservation.

Agriculture: Role of photosynthesis and transportation in crops.

Art: Drawing plant diagrams and posters.

ICT: Videos and animations of plant processes.

Health Education: Importance of plants for oxygen and food.

Recapitulation

Ask:

What are life processes?

What is photosynthesis?

Which pigment helps plants prepare food?

What is the role of roots?

What is transpiration?

How do plants transport water and minerals?

Why are plants important for life on Earth?

Assessment

Oral questioning

Diagram-based questions

Worksheets

MCQs

Concept map activity

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain major life processes in plants.

Describe the process of photosynthesis and respiration.

Understand transportation and transpiration in plants.

Identify functions of different plant parts.

Develop awareness about the importance of plants and environmental conservation.

Resources

Science textbook

Green plant samples

Leaf samples

Plant models

Charts and diagrams

Smart board/PPT

Educational videos

Worksheets

Blackboard and chalk

Feedback and Remedial Teaching

Provide additional explanations using real plant examples.

Repeat demonstrations for better understanding.

Give extra worksheets for diagrams and concepts.

Encourage peer learning.

Provide individual guidance to students who need additional support.

Inclusive Practices and Full Participation without Discrimination

Ensure equal participation of all students in activities.

Use real objects, diagrams and videos to support different learning styles.

Provide additional help to students with special educational needs.

Encourage teamwork and respect for every student's ideas.

Give equal opportunities irrespective of gender, ability, language or background.

Maintain a supportive and inclusive classroom environment.

LESSON PLAN – 11

Class: VII

Science

Topic

Chapter 11: Light – Shadows and Reflections

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Understand the properties of light and its rectilinear propagation.

Explain the formation of shadows and the conditions required for shadow formation.

Differentiate between transparent, translucent and opaque objects.

Understand the phenomenon of reflection of light.

Identify the uses of mirrors and reflections in daily life.

Develop observation and experimental skills related to light.

Previous Knowledge Testing

Teacher asks:

How do we see objects around us?

Why can we not see objects in a dark room?

Have you observed your image in a mirror?

Why are shadows formed?

Name some objects through which light can pass.

Vocabulary and Important Spellings

Light

Shadow

Reflection

Transparent

Translucent

Opaque

Mirror

Incident ray

Reflected ray

Image

Luminous

Non-luminous

Innovative Methods Used

Demonstration method

Activity-based learning

Experiment-based learning

Shadow play activity

Think–Pair–Share

Smart board/PPT presentation

Educational videos

Procedure

Introduction

Create a shadow using a torch and an object.

Ask students how and why the shadow is formed.

Introduce the concepts of light, shadows and reflections.

Presentation

Explain that light travels in a straight line.

Discuss luminous and non-luminous objects.

Explain transparent, translucent and opaque materials with examples.

Explain the formation of shadows and factors affecting shadows.

Introduce reflection of light and formation of images in mirrors.

Discuss the uses of mirrors in daily life.

Activity

Students perform a shadow formation activity using a torch, object and screen.

Observe reflection using a mirror.

Classify objects as transparent, translucent and opaque.

Draw ray diagrams showing reflection.

Conclusion

Summarise the concepts of light, shadows and reflection.

Revise important terms through questioning.

Student Participation

Perform activities in groups.

Observe and record findings.

Classify materials.

Draw diagrams.

Participate in discussions and answer questions.

Integration with Other Domains

Art: Shadow drawing and creative activities.

Mathematics: Drawing accurate ray diagrams.

ICT: Simulations and educational videos.

Environmental Studies: Importance of sunlight and natural light.

Craft: Making simple shadow puppets.

Recapitulation

Ask:

What is light?

Why are shadows formed?

What are transparent objects?

Differentiate between translucent and opaque objects.

What is reflection of light?

Why can we see our image in a mirror?

Give two uses of mirrors.

Assessment

Oral questioning

Activity observation

Worksheets

MCQs

Diagram-based questions

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain the basic properties of light.

Describe the formation of shadows.

Classify materials based on their interaction with light.

Understand reflection and its applications.

Develop scientific observation and experimentation skills.

Resources

Science textbook

Torch

Mirror

Objects of different materials

Screen/cardboard

Charts

Smart board/PPT

Educational videos

Blackboard and chalk

Feedback and Remedial Teaching

Clarify misconceptions through demonstrations.

Provide additional practice for ray diagrams.

Use real-life examples for better understanding.

Conduct revision quizzes and worksheets.

Provide individual support to students **requiring extra help**.

Inclusive Practices and Full Participation without Discrimination

Provide equal opportunities for all students to perform activities.

Use visual aids, demonstrations and simple explanations.

Encourage teamwork and peer support.

Provide additional assistance to students with special educational needs.

Respect all students' ideas and encourage participation irrespective of gender, ability, language or background.

Maintain a safe and inclusive classroom environment.

LESSON PLAN – 12

Class: VII

Science

Topic

Chapter 12: Earth, Moon and the Sun

No. of Days for Completing the Topic

8 Days

Learning Objectives

Students will be able to:

Understand the relationship between the Earth, Moon and the Sun.

Explain the rotation and revolution of the Earth.

Describe the causes of day and night and changes in seasons.

Explain the phases of the Moon.

Understand eclipses and other celestial phenomena.

Develop curiosity and interest in space science.

Previous Knowledge Testing

Teacher asks:

What do we see in the sky during the day and night?

Why does the Sun appear to move across the sky?

Why does the Moon appear to change its shape?

What causes day and night?

Name some objects present in the solar system.

Vocabulary and Important Spellings

Earth

Moon

Sun

Solar system

Rotation

Revolution

Orbit

Axis

Phases of Moon

Eclipse

Satellite

Celestial bodies

Innovative Methods Used

Model-based learning

Demonstration using globe and torch

Activity-based learning

Videos and animations

Group discussion

Concept mapping

Smart board/PPT presentation

Procedure

Introduction

Show pictures/models of the Earth, Moon and Sun.

Ask students about their observations of the sky.

Introduce the importance of these celestial bodies in our lives.

Presentation

Explain the characteristics and importance of the Sun, Earth and Moon.

Describe the rotation of Earth and its role in causing day and night.

Explain revolution of Earth and its relation with seasons.

Discuss the Moon as a natural satellite of Earth.

Explain different phases of the Moon.

Introduce solar and lunar eclipses with diagrams.

Discuss the importance of the Sun for life on Earth.

Activity

Students use a globe and torch to demonstrate day and night.

Prepare a model/chart showing phases of the Moon.

Observe and record the changing appearance of the Moon over time.

Draw labelled diagrams of rotation, revolution and eclipses.

Conclusion

Summarise the relationship between Earth, Moon and Sun.

Reinforce concepts through a quiz and discussion.

Student Participation

Perform demonstrations using models.

Prepare charts and diagrams.

Participate in discussions.

Observe Moon phases.

Answer questions and share observations.

Integration with Other Domains

Geography: Earth's rotation, revolution and seasons.

Mathematics: Time calculation and cycles.

Art: Making models and space charts.

ICT: Space videos and digital simulations.

Environmental Studies: Importance of the Sun for life.

Recapitulation

Ask:

What is the source of energy for Earth?

What causes day and night?

What is rotation?

What is revolution?

Why does the Moon show different phases?

What is an eclipse?

Why is the Sun important for life on Earth?

Assessment

Oral questioning

Worksheets

MCQs

Diagram-based questions

Model/chart activity

Short-answer questions

Homework assignment

Learning Outcomes

Students will:

Explain the relationship between Earth, Moon and Sun.

Understand rotation and revolution of Earth.

Describe phases of the Moon and eclipses.

Relate celestial movements with natural phenomena.

Develop interest in astronomy and scientific observation.

Resources

Science textbook

Globe

Torch/lamp

Models of Earth, Moon and Sun

Charts

Smart board/PPT

Educational videos

Space images

Blackboard and chalk

Feedback and Remedial Teaching

Use models and demonstrations to clarify concepts.

Provide additional diagrams and worksheets.

Encourage students to ask questions and discuss doubts.

Conduct revision activities and quizzes.

Provide individual support to students requiring extra help.

Inclusive Practices and Full Participation without Discrimination

Ensure all students participate in demonstrations and activities.

Use visual models and hands-on activities for better understanding.

Encourage cooperative learning through group work.

Provide additional support to students with special educational needs.

Respect every student's ideas and encourage equal participation irrespective of gender, ability, language or background.

Maintain a safe, respectful and inclusive classroom environment.

