

Lt. Col. MEHAR LIITLE ANGELS SR. SEC. SCHOOL

SUMMER HOLIDAY HOMEWORK

CLASS X (2026-2027)

Nothing is more powerful for your future than being a gatherer of good ideas and information. That's called doing your homework.

ENGLISH

General Instructions

1. Maintain neat handwriting and proper presentation.
2. Use blue/black pen only.
3. Add a cover page for each file (Name, Class, Section, Subject).
4. Arrange all work properly in one folder.
5. Do not copy directly from the textbook or internet.

Q1 – PERSONAL PORTFOLIO (Separate File)

Prepare a portfolio file using A4 size sheets.

Include the following sections:

- a. Introducing Myself (Name, hobbies, goals, family, etc.)
- b. My Strengths
- c. I Need to Improve On...
- d. My Achievements
- e. I Have Participated In...
- f. Books I Have Read
- g. The Book I Wish to Read

Presentation Tips:

Use colors, headings, and borders

Add pictures/drawings (optional)

Keep it creative and personal

Q2 – Story Writing

Rewrite “A Letter to God” in your own words

Write as if you are Lencho

Word limit: 150 words

You may change or add ideas creatively

Q3 – Autobiography

Define: What is an autobiography?

Read about Nelson Mandela

Write:

Key features of his autobiography

Lessons we learn from his life

Word limit: 100 words

Q4 – Literature Work

Choose:

1 chapter from First Flight

1 chapter from Footprints Without Feet

For EACH chapter:

Summary (100–150 words)

Character Sketch

Any two characters

Add evidence/examples from the text

Theme/Moral

Write in one paragraph

Note: Q2 to Q4 – (Separate File)

Complete all questions in a second file (A4 sheets or ruled sheets)

हिन्दी

1) निम्नलिखित कार्य एक आकर्षक फ़ाइल में कीजिए--

क) बंगाल/कोलकाता के दर्शनीय स्थल, रहन – सहन या लोक गीत / संगीत आदि से संबंधित किन्हीं 2 पर दो विज्ञापन (पाठ – डायरी का एक पन्ना) के आधार पर बनाएँ।

ख) नौ रसों के चित्र सहित नाम लिखें तथा उनका उदाहरण सहित विवरण लिखें।

ग) अपने जीवन की किसी एक घटना को लघु-कथा के रूप में लिखें।

घ) निम्नलिखित विषयों में से किसी एक विषय पर भाषण लिखें तथा प्रतियोगिता के लिए कंठस्थ करें।

- i) युवा पीढ़ी और नैतिक मूल्य
- ii) संयुक्त परिवार - आज की आवश्यकता
- iii) पर्यावरण असंतुलन – उत्तरदायी कौन?
- iv) डिजिटल इंडिया और ग्रामीण विकास

च) एक लंबी कविता लिखें और उसे प्रतियोगिता के लिए कंठस्थ करें। (कविता स्वरचित भी हो सकती है।)

छ) 'बड़े भाई साहब' पाठ में से 30 मुहावरों के अर्थसहित वाक्य बनाएँ। (यह कार्य व्याकरण रजिस्टर में कीजिए)

2) प्रतिदिन अपनी दिनचर्या/ अनुभव की डायरी लिखें (1 से 15 जून तक) (डायरी अलग बनाएँ)

3) मुंशी प्रेमचंद पर एक आकर्षक फ़ाइल में पोर्टफोलियो (निवेश-पत्र) तैयार करें, जिसमें उनके जीवन से संबंधित निम्नलिखित सचित्र जानकारी हो।

प्रथम पृष्ठ पर – हिन्दी निवेश पत्र लिखें।

द्वितीय पृष्ठ पर – अपना परिचय लिखें।

तृतीय पृष्ठ पर – लेखक का नाम लिखें।

चतुर्थ पृष्ठ पर – प्रमाण-पत्र लिखें।

पंचम पृष्ठ पर - अनुक्रमणिका (विषय-सूची) लिखें।

अनुक्रमणिका में निम्नलिखित विषय लिखें तथा उसी के अनुसार फ़ाइल में आकर्षक कार्य करें--

1) व्यक्तिगत जानकारी

2) पारिवारिक जानकारी

3) शैक्षणिक जानकारी

4) विशिष्ट उपलब्धियाँ / पुरस्कार

5) मुंशी प्रेमचंद जी की रचनाओं के नाम

6) 'बड़े भाई साहब' पाठ का सार लिखें।

7) पाठ में आपको क्या अच्छा लगा और क्यों?

MATHEMATICS

1. Do activity 5, 7 and 8 based on triangle, circles and surface area and volume in lab manual file

2. Make portfolio on the following topics-

(I) Polynomials, its types on the basis of terms and degrees, graphical representation of zeroes of different polynomials, relationship of zeroes and coefficient of quadratic and cubic polynomial (roll nos 1 to 10)

(ii) Trigonometry, its ratios, its identities, values of ratios, importance of trigonometry (roll nos 11 to 20)

(iii) Circle, its parts, concept of pi and theorems based on tangents of the circle. (roll nos 21 onwards)

3. ASSIGNMENT (To be done in separate thin register)

1. Use Euclid's Division Algorithm to find HCF of:

(i) 867 and 255

(ii) 10152 and 13608

2. Show that $6n$ cannot end with digit 0 for any natural number n .

3. Prove that $\sqrt{5}$ is irrational.
4. Find the greatest number which divides 306 and 657 leaving remainder 9 in each case.
5. Find LCM and HCF of 510 and 92 and verify:

$$\text{LCM} \times \text{HCF} = \text{Product of numbers}$$

6. Find a cubic polynomial whose zeroes are 2, -1 and 3.
7. If α and β are zeroes of $x^2 - 7x + 10$, find:
 - (i) $\alpha^2 + \beta^2$
 - (ii) $\frac{1}{\alpha} + \frac{1}{\beta}$
8. If one zero of a quadratic polynomial is reciprocal of the other, find relation between coefficients.
9. Find the remainder when $x^3 - 4x^2 + 5x - 2$ is divided by $x - 2$.
10. If $(x-1)$ is a factor of $ax^3 - 3x^2 - ax + 1$, find a .
11. Solve the following equations $5x + 7y = 19$, $3x - 2y = 4$
12. Find value of k so that the system has no solution:

$$2x + ky = 3, 4x + 2ky = 8$$
13. Solve graphically and identify nature of solution:

$$x + y = 4, 2x + 2y = 8$$
14. The sum of digits of a two-digit number is 9. The number formed by reversing digits is 27 more than the original. Find the number.
15. Two numbers differ by 5 and their sum is 25. Form equations and solve.
16. Rationalize: $\frac{5}{\sqrt{7}-\sqrt{3}}$
17. Express 0.125125125... in $\frac{p}{q}$ form.
18. Find value of: $(\sqrt{3} + \sqrt{2})^2 - (\sqrt{3} - \sqrt{2})^2$
19. If $x + \frac{1}{x} = 3$, find $x^2 + \frac{1}{x^2}$
20. Find zeroes of: $2x^2 - 8x + 6$
21. A shopkeeper buys two types of pens. Cost of 3 pens of type A and 2 of type B is ₹44. Cost of 5 pens of type A and 4 of type B is ₹76. Find cost of each pen.
22. A train travels certain distance. If speed increases by 10 km/h, time reduces by 2 hours. Form equations and solve.

23. The perimeter of a rectangle is 100 m. Its length is 10 m more than breadth. Find dimensions.

24. If a and b are positive integers such that: $\text{HCF}(a, b) = 12$, $\text{LCM}(a, b) = 180$
Find possible values of a and b .

25. Find all values of k such that system has infinitely many solutions: $(k - 1)x + 2y = 3$, $3x + (k + 1)y = 6$

SCIENCE

PHYSICS

Creative & Practical Projects

Choose ONE of the following to complete:

1. The Human Eye & Camera Model: Build a simple Pinhole Camera using two cardboard boxes (one sliding into the other) and tracing paper as a screen.

Task: Observe a distant bright object (like a tree or building). Draw the image formed on the screen and explain why it is inverted using a ray diagram.

2. Refraction Journal: Find three examples of refraction in your home (e.g., a pencil appearing bent in water, a glass slab on a book, or a magnifying glass).

Task: Take photos or draw these observations. For each, explain the "apparent" vs "real" position of the object using the concept of optical density.

3. Ray Diagram Poster: Create an A3-sized chart illustrating the sign convention (New Cartesian Sign Convention) for spherical mirrors and lenses. This is the most common area for errors in numericals, so making a clear visual guide will help you all year.

Solve these in your physics notebook:

1. Draw neat ray diagrams for a concave mirror when the object is placed:
 - i. Between P and F (Explain why this case is used by dentists).
 - ii. At C (Describe the nature and size of the image).
2. Explain why convex mirrors are preferred as rear-view mirrors in vehicles. Support your answer with a ray diagram showing the "field of view."
3. The Rectangular Glass Slab: Draw a ray diagram showing the path of a ray of light passing through a rectangular glass slab. Label the incident ray, refracted ray, emergent ray, and lateral displacement.
4. Lens Power: A person uses a lens of power -2.0D for correcting distant vision.

i. What type of lens is being used?

ii. Calculate the focal length of this lens using the formula $P = 1/f$ m.

Numericals

1. An object 4.0 cm in size is placed at 25.0 cm in front of a concave mirror of focal length 15.0 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? Find the nature and height of the image.
2. A convex lens forms a real and inverted image of a needle at a distance of 50 cm from it. Where is the needle placed in front of the convex lens if the image is equal to the size of the object? Also, find the power of the lens.
3. The refractive index of diamond is 2.42. What is the meaning of this statement in terms of the speed of light? Calculate the speed of light in diamond (Speed of light in vacuum = 3×10^8 m/s).

CHEMISTRY

1. Prepare a “Chemical Reaction Portfolio” by collecting at least 8–10 examples of chemical reactions from daily life (such as rusting, burning, digestion, respiration, etc.).

For each example, write the word equation, balanced chemical equation, type of reaction, and observation.

Present your work neatly with proper headings and a conclusion.

Example: Rusting of Iron

Reaction: Iron + Oxygen + Water $\rightarrow$ Rust (Iron Oxide)

Balanced Equation: $4\text{Fe} + 3\text{O}_2 + x\text{H}_2\text{O} \rightarrow 2\text{Fe}_2\text{O}_3 \cdot x\text{H}_2\text{O}$

Type of Reaction: Oxidation

Observation: Brown layer forms on iron

Use a colored A4 file or scrapbook

Keep one reaction per page

Draw diagrams or paste pictures (if possible)

Page Format

Reaction Name: _____

Word Equation: _____

Balanced Chemical Equation: _____

Type of Reaction: _____

(Combination / Decomposition / Displacement / Double Displacement / Redox)

Observation: _____

Suggested Examples

Rusting of iron

Burning of magnesium ribbon

Digestion of food

Respiration

Photosynthesis

Electrolysis of water

Reaction of vinegar and baking soda

Formation of curd

Neutralization (acid + base)

Combustion of fuel

Conclusion Page

Write 4–5 lines about:

What you learned about chemical reactions

How reactions are important in daily life

Add a cover page design

Include a “Did You Know?” fact on each page

BIOLOGY

Chapter: 5 Life Processes (Nutrition, Respiration, Transportation, Excretion)

Part A – Creative Tasks (Do as assigned)

1. **Nutrition Comic Strip (5 Marks)** Create a comic strip showing the journey of food from ingestion to assimilation in humans. Use dialogues, humor, and creative illustrations (ROLL NO 1-12).
2. **Respiration Role Play (5 Marks)** Write a short script for a classroom skit where “Oxygen” and “Glucose” meet in the mitochondria and discuss how they produce energy (ROLL NO 13-26).

3. **Transport Infographic (5 Marks)** Design a colorful infographic explaining how water and minerals move in plants through xylem and how food moves through phloem (ROLL NO 27-40).

Part B – Competency-Based Tasks (Do in biology notebook)

1. A sportsperson collapses after a marathon due to dehydration. Explain the role of the excretory system and homeostasis in this situation.
2. Prepare a table comparing aerobic and anaerobic respiration in terms of efficiency, end products, and real-life examples.
3. If a person's kidney stops functioning properly, what immediate effects will it have on their body? Suggest possible medical interventions.

Part C – Integration & Learning approach

1. Revise complete Chapter life process. Do 3 times practice of each diagram on A4 sheets.
2. Solve the given assignment in biology notebook.

SOCIAL SCIENCE

I. Atlas

Make a beautiful and colorful **ATLAS** on the following topics:

History

Nationalism in India

1. Congress sessions: i 1920 Calcutta ii. 1920 Nagpur iii. 1927 Madras session
2. Satyagraha movements: i. Kheda ii. Champaran iii. Ahmedabad mill workers
3. Jallianwala Bagh
4. Dandi March

Geography

Resources and Development

Major Soil Types

Water Resources

Salal Sardar Sarovar, Bhakra Nangal, Hirakud, Tehri ,Nagarjun Sagar , Rana Pratap Sagar ,Tungabhadra

Agriculture

Major areas of Rice and Wheat

Largest/Major producer states of Sugarcane, Tea, Coffee,

Rubber, Cotton and Jute

Minerals and Energy Resources

Iron Ore Mines

Mayurbhanj ,Durg, Bailadila, Bellary, Kudremukh

Coal Mines

Raniganj ,Bokaro ,Talcher, Neyveli

Oil Fields

Naharkatia ,Mumbai High, Bassien, Kalol ,Ankaleshwar

Power Plants

Thermal

Namrup, Singrauli , Ramagundam

Nuclear

Narora, Kakrapara, Tarapur, Kalpakkam

Manufacturing Industries

Cotton textile Industries

Mumbai, Indore, Surat, Kanpur, Coimbatore

Iron and Steel Plants

Durgapur, Bokaro, Jamshedpur, Bhilai, Vijayanagar, Salem

Software technology Parks

Noida, Gandhinagar, Mumbai, Pune, Hyderabad, Bengaluru, Chennai, Thiruvananthapuram

Lifelines of National Economy

Major Sea Ports

Kandla , Tuticorin , Mumbai , Chennai , Marmagaon, Vishakhapatnam, New Mangalore, Paradip , Kochi , Haldia

International Airport

Amritsar (Raja Sansi-Sri Guru Ram Das ji) , Delhi (Indira Gandhi) , Mumbai (Chhatrapati Shivaji) , Chennai (Meenambakkam) , Kolkata (Netaji Subhash Chandra Bose) , Hyderabad (Rajiv Gandhi)

Tips to make it Beautiful for submission:

Title page -SOCIAL SCIENCE ATLAS, NAME, ROLL NO.,CLASS& SECTION.

2. Index page

3. Key

4. Neatness

II. PROJECT FILE

Make a **PROJECT FILE** on any one of the following:

a. Sustainable Development

Contents to be covered:

What is meant by sustainable development

Evolution of sustainable development

Concept, need and importance of sustainable development

The pillars of sustainable development

Sustainable development in India

Goals and approaches of sustainable development

Steps taken by Government of India

Outcomes of sustainable development

b. Social Issues: Female Foeticide, Gender discrimination, Racial discrimination, Castesim

Choose any one Social Issues

Contents to be covered :

What is a social problem ?

Major social problems in the world

What is present status?

Causes

Consequences

Preventive measures

Examples

c. Consumer Awareness:

Contents to be covered :

Who is a consumer?

Different ways of consumers exploitation

Factors responsible for consumers exploitation give examples from every day life.

Rise of consumer awareness

Need for consumers awareness

Consumer rights

Consumer duties

What are consumer redressal forums/courts? What do they do?

From newspaper reports, give an example of a case when consumers have won their rights.

Instructions to be followed:

- i. Do all the work on A4 size plain white ivory/cartridge sheet .
- ii. Cover page: Name of School, Name, Roll No Class &Section, Session.
- iii. At the bottom of the page write the page no.

Page1: Topic

Page 2: Acknowledgement

Page 3: List of contents: S.no, content and page no.

Page 4: Introduction

Page 5: Explanation of topics given above.

Second last page: Conclusion

Last Page: Bibliography

iv.. Make beautiful and colourful borders.

v.. Marks will be awarded for originality and creativity too.

III. Revise for Periodic Test.

ECONOMICS

Make a creative poster on A3 size Sheet on Primary secondary and tertiary sectors of Indian economy.

INFORMATION TECHNOLOGY

DIGITAL DOCUMENTATION

1. Create a timetable for your class in landscape mode and apply the following formatting effects in LibreOffice

Writer:

- a. Merge cells
- b. Insert an image and apply colour to a cell
- c. Apply page colour and add table borders/designs

2. Create posters using shapes, images, different styles, page colour, and borders:

- a. Book Cover
- b. Artificial Intelligence Tools
- c. Cyber Safety Rules

3. Create a Table of Contents (TOC) for your syllabus.

4. Design a creative template for a Bill Book.

5. Learn and practice Unit – 1 Digital Documentation (Advanced) and Unit – 3 DBMS.

DIGITAL PRESENTATION

Prepare a PowerPoint presentation on the following topics according to your roll number:

- a. Artificial Intelligence (Roll No. 1–15)
- b. Emerging Trends (Roll No. 16 onwards)

NOTE: The presentation should contain at least 15–18 slides. Include images, tables, charts, video clips, and audio clips. Also use WordArt, SmartArt, insert objects, and apply transition effects.

Note: Bring your work in a clear bag.

MEAL PLANNING

Prepare a project report on Meal Planning (approximately 15 pages).

The project should include the following:

- 1. Deficiency Diseases of Nutrients (with sources and symptoms):
 - a. Protein Energy Malnutrition (PEM)
 - b. Vitamin A Deficiency
 - c. Iron Deficiency
 - d. Iodine Deficiency
 - e. Calcium Deficiency
- 2. Oil-Free Diet

Meaning and importance

Benefits of reducing oil intake

ART

1. Theme-Based Art Journal

Create a 12–15 page handmade art journal on any one theme:

- i. My Dream World
- ii. Nature & Me
- iii. Indian Culture & Festivals

Each page should include different techniques like drawing, painting, collage, and doodling. Add a short description on each page.

2. Best Out of Waste

Create a useful or decorative item using waste materials available at home.

Examples:

- i. Plastic bottles → Pen stand or planter
- ii. Cardboard → Organizer or model house
- iii. Old newspapers → Paper craft items

Focus on creativity and neatness.