SHAMBHU DAYAL GLOBAL SCHOOL
SUMMER's HOLIDAYS HOMEWORK
SESSION 2026-27
CLASS IX

MAIN SUBJECT	RESEARCH BASED TOPICS
HINDI	🌸 **कक्षा-9 हिंदी अवकाश गृहकार्य** 🌸 सत्र : 2026-27 कुल अंक : 50 ✨ निर्देश कार्य साफ-सुथरी लिखावट में करें। रंगीन चित्र एवं सजावट का प्रयोग करें। सभी कार्य A4 शीट / प्रोजेक्ट फाइल में करें। प्रत्येक गतिविधि में रचनात्मकता अवश्य दिखाएँ। **गतिविधि - 1 : भविष्य से पत्र** **(10 अंक)** कल्पना कीजिए कि वर्ष 2050 का एक विद्यार्थी आपको पत्र लिख रहा है। पत्र में बताए - भविष्य की शिक्षा कैसी है? किताबें हैं या नहीं? AI और रोबोट का उपयोग पर्यावरण की स्थिति (औपचारिक / अनौपचारिक शैली में) 🧠 **गतिविधि – 2 : हिंदी डिटेक्टिव चैलेंज** **(10 अंक)** अपने घर या आसपास होने वाली किसी छोटी समस्या पर "जांच रिपोर्ट" बनाइए। उदाहरण: पानी की बर्बादी मोबाइल की लत प्लास्टिक का उपयोग समय की बर्बादी रिपोर्ट में लिखें - 🔹 समस्या क्या है? 🔹 कारण क्या हैं? 🔹 लोगों की राय 🔹 समाधान 🔹 आपका निष्कर्ष (चित्र / ग्राफ / सर्वे जोड़ सकते हैं) 🎥 **गतिविधि - 3 : "एक दिन बिना मोबाइल के"** **(10 अंक)** कल्पना कीजिए कि पूरे विश्व में एक दिन के लिए मोबाइल बंद हो जाते हैं। ✍️ इस अनुभव पर एक रचनात्मक लेख लिखिए - लोगों की प्रतिक्रिया विद्यार्थियों की स्थिति परिवार में बदलाव फायदे और नुकसान (200 शब्द)

	🌍 **गतिविधि - 4 : "यदि मैं पृथ्वी का रक्षक होता/होती" (10 अंक)** एक "Mission Save Earth" योजना बनाइए। उसमें लिखें - 🌱 5 नियम 🌱 3 अभियान 🌱 2 नारे 🌱 एक लोगो (Logo) डिज़ाइन
MATHS	**Mathematics Project: Exploring Algebra and Graphs** **Total Marks:** 50 **Chapters Covered:** Polynomials & Coordinate Geometry **General Instructions for Students** • **Mode of Submission:** Use an A4 size project file or practical file. • **Graph Work:** All Cartesian planes and plots must be drawn on actual graph paper and neatly pasted into the project file. • **Neatness:** Use a ruler for lines, write clearly, and highlight your final answers. • Choose anyone Task from the given Tasks. • **Structure:** Your project should include a **Title Page**, **Index**, **Introduction to Chapters**, **Core Tasks**, and a **Conclusion/Learning Outcome.** **Section A: Introduction & Presentation (5 Mark)** Write a brief introduction (half a page each) explaining: 1. What a **Polynomial** is and how it is used in real life (e.g., calculating areas, trajectories). 2. The history and concept of **Coordinate Geometry** (mentioning René Descartes). **Section B: Polynomials (15 Marks)** **Task 1: Classification Matrix (5 Marks)** Create a neat table classifying the following polynomials by their **degree** and by their **number of terms**. Identify their coefficients and constant terms. 1. $p(x) = 4x^3 - 3x^2 + 2x - 7$ 2. $q(y) = 9y^2 - 4$ 3. $r(z) = 5z$ 4. $f(x) = \sqrt{2}x + 1$ 5. $g(x) = -12$ **Task 2: Verification & Factorization (5 Marks)** • **Part A:** Verify whether $x = -2$ and $x = 3$ are zeroes of the polynomial $p(x) = x^2 - x - 6$. • **Part B:** Factorize the cubic polynomial completely using the Factor Theorem and splitting the middle term: $p(x) = x^3 - 6x^2 + 11x - 6$ **Task 3: Algebraic Identities in Real Life (5 Marks)** Using the identity $(a+b)^2 = a^2 + 2ab + b^2$ or $(a-b)^2 = a^2 - 2ab + b^2$, show how to mentally calculate the squares of **103** and **99** without direct multiplication. Show all algebraic steps. **Section C: Coordinate Geometry (15 Marks)** **Task 1: The Neighborhood Map (5 Marks)** Imagine your graph sheet is a town map where the origin $(0,0)$ is your **Home**. • The X-axis represents East (positive) and West (negative). • The Y-axis represents North (positive) and South (negative). Plot and label the coordinates for the following landmarks based on the directions: 1. **School:** 4 units East, 3 units North. 2. **Market:** 5 units West, 2 units North. 3. **Hospital:** 3 units West, 4 units South. 4. **Playground:** 2 units East, 5 units South. 5. **Library:** On the X-axis, 6 units to the West. **Task 2: Quadrant Analysis (5 Marks)** Without plotting, state the quadrant or axis on which the following points lie, and explain the sign convention (e.g., $(+, -)$) for each: • A(-4, 7)

	• B(3, -2) • C(0, -5) • D(-6, -6) • E(8, 0) **Task 3: Geometric Shape Identification (5 Marks)** Plot the points P(-2, 3), Q(4, 3), R(4, -1), and S(-2, -1) on a graph sheet. Join the points in order $P \rightarrow Q \rightarrow R \rightarrow S$ 1. Identify the geometric shape formed. **2.** Calculate the perimeter of this shape by counting the grid units. **Section D: Integrated Task — Cartesian Art (10 Marks)** **Task: Connect-the-Dots Mystery Picture** On a fresh sheet of graph paper, draw a Cartesian plane. Carefully plot the following points in sequence and connect them with straight lines as you go. • **Set 1 (Body):** Start at (0, 4)→ (2, 2) → (2, -3)→ (-2, -3) → (-2, 2) → (0, 4) (Close the shape). • **Set 2 (Roof/Top):** From (0, 4)→ (3, 4) → (2, 2)and from (0, 4) → (-3, 4) → (-2, 2). • **Set 3 (Features):** Plot individual points/segments to create a small window at (0,0) and a door from (-1, -3)to (1, -1). *Color the resulting figure neatly. (Teachers can adjust coordinates to make shapes like arrows, stars, or boats).* **Section E: Reflection & Viva-Voce (5 Marks)** Write a brief conclusion answering the following questions: 1. How does changing the sign of an x-coordinate change its position on the graph? 2. What is the difference between an algebraic expression and a polynomial?

MATHS ADVANCE	**Project Title Suggestions**
	• “Understanding Sets Through Venn Diagrams”
	• “Applications of Sets in Daily Life”
	• “Operations on Sets Using Venn Diagrams”
	• “Survey Analysis Using Sets”
	Content
	A. Introduction to Sets
	Include:
	• Definition of Sets
	• Types of Sets:
	  ○ Empty Set
	  ○ Finite & Infinite Sets
	  ○ Equal Sets
	  ○ Subsets
	  ○ Universal Set

MATHS ADVANCE	**B. Venn Diagram** Explain: • Meaning of Venn Diagram • Symbols used in sets Common symbols: • Union: $A \cup B$ • Intersection: $A \cap B$ • Complement: A' • Difference: $A - B$ **C. Operations on Sets** **1. Union of Sets** $A \cup B$ Explain with example and Venn diagram. **2. Intersection of Sets** $A \cap B$

Explain with example and Venn diagram.

3. Complement of a Set

$A' = U - A$

4. Difference of Sets

$A - B$

D. Real-Life Applications

Students can include:

- Students playing cricket and football
- Favourite subjects survey
- Mobile app usage
- Food preferences

Create surveys and represent data using Venn diagrams.

E. Practical Activity

Conduct a survey of 20–30 students and analyze:

- Students who like Maths
- Students who like science
- Students who like both

Draw proper Venn diagrams and conclusions.

F. Conclusion

Write what you learned from the project and the importance of sets in daily life.

G. Bibliography

Mention sources:

- NCERT Mathematics Book
- Teacher Notes
- Educational websites

Presentation Instructions

- Use A4 sheets/file.
- Draw neat Venn diagrams using colors.
- Maintain clean handwriting.
- Use proper headings and margins.
- Include at least 4–5 diagrams.

Assessment Rubrics (50 Marks)

Criteria	Description	Marks
Content Accuracy	Correct mathematical concepts and explanations	10
Venn Diagram Representation	Neatness and correctness of diagrams	10
Creativity & Presentation	Attractive layout, charts, colors, organization	10
Practical Survey & Analysis	Real-life application and interpretation	10
Viva/Explanation	Understanding and explanation of project	5
Timely Submission & File Maintenance	Proper completion and submission	5
Total		**50 Marks**

ENGLISH

Task: Choose **one topic** from the list below and prepare a complete research project/portfolio.
Word limit: Up to **2000 words**
Marks: 50

What the student must include

1. **Title page** with topic name, name, class, section, roll number.
2. **Introduction** of the topic.
3. **Explanation / main body** with facts and data.

4. **Images, charts, or drawings** related to the topic.
5. **Conclusion** or learning outcome.
6. **Resources used**.
7. **Bibliography / references** at the end.
8. Optional: **portfolio cover, index, acknowledgements**.

How the student should do it

- Use **simple, clear English**.
- Write in **your own words**.
- Keep the work neat and well-organized.
- Add **headings and subheadings**.
- Use at least **2–3 reliable sources** such as books, newspapers, magazines, or trusted websites.
- Include images only if they are relevant to the topic.
- Do not exceed **2000 words**.

Suggested Structure for the Project

Students can follow this format:

1. Title Page

- Topic name
- Student name
- Class and section
- Roll number
- School name

2. Introduction

- What the topic is about
- Why it is important
- 4–5 lines in simple language

3. Main Content

- Explanation of the topic
- Facts and data
- Examples
- Causes/effects/solutions if needed
- Use subheadings for clarity

4. Visuals

- Paste or draw pictures
- Add charts, graphs, or diagrams if suitable

5. Conclusion

- 3–5 lines summarizing what was learned

6. Resources and Bibliography

- Books
- Newspapers
- Magazines
- Websites
- Any other reference material

Each student must choose only one topic and submit one complete portfolio project within 2000 words. The project should include introduction, explanation, facts/data, visuals, and bibliography.

Topics:-

1. Holistic Education and Student Development
2. Importance of Skill-Based Learning
3. Vocational Education in Schools
4. Multilingualism and the Value of Languages
5. The Role of Technology in Modern Education
6. Digital Learning and Smart Classrooms
7. Art-Integrated Learning

8. Importance of Sports and Physical Education
9. Life Skills for Students
10. The Value of Environmental Education
11. Inclusive Education for All Learners
12. Critical Thinking and Problem Solving in Education
13. Project-Based Learning in Schools
14. The Importance of Reading and Libraries
15. Student Well-being and Mental Health
16. Experiential Learning Through Activities
17. Indian Knowledge Systems and Cultural Learning
18. Assessment Without Stress: New Ways of Testing
19. Developing Communication Skills in English
20. The Role of Teachers in the New Education System

How These Topics Fit NEP

These topics reflect major NEP ideas such as:

- holistic and multidisciplinary learning,
- skills over rote memorization,
- technology use in education,
- arts, sports, and life skills,
- inclusive and experiential learning,
- value-based and student-centered education.

Suggested Project Style

For each topic, ask the student to include:

- Introduction.
- Main explanation with facts and examples.
- One diagram, chart, photo, or illustration.
- Conclusion.
- Sources and bibliography.

Assessment Sheet

You can use this as a teacher-friendly assessment rubric.

Criteria	**Marks**
Topic relevance and research quality	10
Content accuracy and originality	10
Language and expression	10
Organization and neat presentation	10
Creativity and visuals	10
Total	50

Student Instructions

- Use **simple English** and write in your own words.
- Do not copy long paragraphs from the internet.
- Make the work neat and error-free.
- Submit on time in a folder or file, as instructed by the teacher.
- Check spelling, punctuation, and paragraphing before submitting.

SCIENCE	**All Topics are 50 marks each** **Topic 1: GPS Navigator (For Roll nos. 1, 11, 21 and 31)** **Project Title** **"GPS Navigator: How Navigation Technology Helps Us Find Directions"** **Aim of the Project** To study how GPS navigation systems work, their applications, advantages, limitations, and their impact on daily life. **Objectives** • To understand the working principle of GPS technology. • To learn about satellites and navigation systems. • To explore real-life applications of GPS. • To analyze the benefits and challenges of GPS navigation. • To develop research and presentation skills. **Research Questions** 1. What is GPS? 2. How does a GPS navigator determine location? 3. What are the main components of a GPS system? 4. How are satellites used in navigation? 5. What are the uses of GPS in different fields? 6. What are the advantages and disadvantages of GPS technology? **Topic 2: Cell Organelles (For Roll nos. 2, 12, 22 and 32)** **Project Title** **"Cell Organelles: The Tiny Structures that Control Life"** **Aim of the Project** To study the structure, functions, and importance of different cell organelles present in plant and animal cells. **Objectives** • To understand the structure of cells. • To identify major cell organelles and their functions. • To compare plant and animal cells. • To study the importance of organelles in maintaining life. • To develop observation and research skills. **Research Questions** 1. What is a cell? 2. What are cell organelles? 3. Why are organelles called the "organs" of a cell? 4. What are the functions of different organelles? 5. How are plant and animal cells different? 6. What happens if organelles stop functioning properly? **Topic 3: Circular Motion in Daily Life(For Roll nos. 3, 13, 23 and 33)** **Project Title** **"Circular Motion in Daily Life: Understanding Motion Around Us"** **Aim of the Project** To study circular motion, understand its types and principles, and explore its applications in everyday life. **Objectives** • To understand the concept of circular motion. • To identify examples of circular motion in everyday life. • To study centripetal force and its role. • To connect scientific principles with practical applications. • To improve observation and research skills. **Research Questions** 1. What is circular motion? 2. What are the different types of circular motion?

3. How does force act during circular motion?
4. Where do we observe circular motion in daily life?
5. Why is circular motion important in science and technology?

Topic 4: Cell Organelles Around Us (For Roll nos. 4, 14, 24 and 34)

Project Title

"Cell Organelles Mini Booklet: Tiny Parts with Big Functions"

Aim of the Activity

To understand the structure and functions of cell organelles by creating a creative mini booklet with diagrams, functions, and real-life analogies.

Instructions for Students

- Create a small booklet using A4 sheets folded into pages.
- Dedicate **one page to each organelle**.
- Each page must include:
  - Name of the organelle
  - Hand-drawn colored diagram
  - Main function
  - Real-life analogy
  - One interesting fact
- Use neat handwriting and colorful illustrations.
- Add a cover page and bibliography.

Research Questions

1. Which organelle controls the cell?
2. Why are mitochondria called the powerhouse of the cell?
3. Which organelle performs photosynthesis?
4. What is the function of the Golgi body?
5. What does the cell membrane do?

Topic 5: Distance–Time Graph of a Moving Object(For Roll nos. 5, 15 and 25)

Project Title

"Time Graph of a Moving Object and analysis"

Aim of the Activity

To observe the motion of a moving object, record its position at regular time intervals, plot a distance–time graph, and identify the type of motion.

Object Chosen

Toy Car / Bicycle / Moving Ball

(Students may choose any one object.)

Research Questions

1. What does a distance–time graph show?
2. Which axis represents time?
3. What type of graph indicates uniform motion?
4. What is non-uniform motion?
5. Why are graphs useful in science?

Topic 6: Separation Techniques Used in Industries (For Roll nos. 6, 16 and 26)

Project Title "Separation Techniques Used in Industries"

Aim of the Project

To study how different separation techniques are used in industries and understand why specific methods are preferred for certain processes.

Objectives

1. To understand the importance of separation techniques in industries.
2. To study different industrial separation methods such as distillation, filtration, centrifugation, and crystallisation.
3. To learn the scientific principles behind each separation technique.
4. To identify how physical properties like boiling point, density, solubility, and particle size are used in separation.
5. To explore the applications of separation methods in real industries such as petroleum refining, dairy processing, water treatment, and sugar manufacturing.

Research Questions

1. Which method is used in petroleum refining?
2. Why is centrifugation used in dairies?
3. What is the principle of filtration?
4. Why is crystallisation important in sugar industries?
5. Which method separates substances based on boiling point?

Topic 7: Flipbook / Foldable on Motion Graphs (For Roll nos. 7, 17 and 27)

Project Title

"Understanding Motion Through Graphs

Aim of the Activity

To create a flipbook or foldable showing different types of motion graphs and understand how graphs represent motion in real life.

Instructions for Students

- Use colored A4 sheets or chart paper.
- Fold sheets into 6 sections/pages.
- Each page should contain:
  - Name of the graph
  - Hand-drawn graph
  - Meaning of slope
  - Real-world example
  - Short explanation
- Use scale, ruler, and colored pens for neat graphs.

Research Questions

1. What does the slope of a distance–time graph represent?
2. Which graph represents an object at rest?
3. What is retardation?
4. What does a curved distance–time graph show?
5. Which graph shows constant velocity?

Topic 8: Osmosis Home Experiment (For Roll nos. 8, 18 and 28)

Project Title

"Understanding Osmosis Using Potato Experiment"

Aim of the Experiment

To study the process of osmosis using potato cups placed in salt water and plain water.

Objectives

1. To understand the process of osmosis.
2. To observe movement of water through a semipermeable membrane.
3. To compare the effect of salt water and plain water on potato cells.
4. To identify the direction of water movement during osmosis.
5. To relate osmosis with real-life biological processes in plants and animals.
6. To develop observation and experimental skills.
7. To learn how concentration difference affects water movement.
8. To improve diagram-drawing and scientific reporting skills.

Research Questions

1. What is osmosis?
2. What is a semipermeable membrane?
3. Why does water move during osmosis?
4. What happened in salt water setup?
5. Name one real-life example of osmosis.

Topic 9: Prokaryote vs Eukaryote Comparison Project (For Roll nos. 9, 19 and 29)

Project Title

"Comparing Prokaryotic and Eukaryotic Cells"

Aim of the Project

To compare prokaryotic and eukaryotic cells by studying their structure, organelles, functions, and examples of organisms.

Objectives

	1. To understand the basic structure of cells. 2. To identify the differences between prokaryotic and eukaryotic cells. 3. To study the role of the nucleus and other organelles. 4. To learn about organisms made of prokaryotic and eukaryotic cells. 5. To develop observation and comparison skills through diagrams and tables. 6. To improve scientific drawing and labeling skills. 7. To understand why the nucleus is called the "control centre" of the cell. 8. To connect microscopic cell structure with living organisms around us. **Research Questions** 1. What is a prokaryotic cell? 2. What is a eukaryotic cell? 3. Why is the nucleus called the control centre? 4. Name one prokaryotic organism. 5. Which cell type contains membrane-bound organelles? 6. What is the function of DNA? 7. Which cells are more complex? 8. Name two organelles found in eukaryotic cells. **Topic 10: Types of Motion Around Us (For Roll nos. 10, 20 and 30)** **Project Title** **"Exploring Different Types of Motion in Daily Life"** **Aim of the Project** To study different types of motion, identify their real-life examples, and understand how objects move in our surroundings. **Objectives** 1. To understand the meaning of motion. 2. To identify different types of motion observed in daily life. 3. To study translatory, circular, rotational, periodic, oscillatory, and random motion. 4. To compare different motions based on direction and movement. 5. To observe moving objects and classify their type of motion. 6. To develop scientific observation and analytical skills. 7. To improve diagram drawing and presentation skills. 8. To connect physics concepts with real-world activities and machines. **Research Questions** 1. What is motion? 2. What is circular motion? 3. Give one example of rotational motion. 4. What is oscillatory motion? 5. Which type of motion repeats after equal intervals of time? 6. What is random motion? 7. Name two examples of translatory motion. **Assessment Sheet** **Criteria , Marks** Topic relevance and research quality , 10 Content accuracy and originality , 10 Language and expression , 10 Organization and neat presentation , 10 Creativity and visuals , 10 Total , 50
SCIENCE ADVANCE	**PROJECT – 1 Motion Around Me: Discovering Motion in Daily Life** **Total Marks: 50** Based on Motion concepts from the CBSE Grade IX material. **1. PPT Presentation (20 Marks):** Prepare a PPT (10–12 slides) on Motion in One Dimension including meaning of motion, distance & displacement, speed, velocity, acceleration and daily-life examples. **2. Activity (10 Marks):** Measure the speed of a moving object (walking student/bicycle/toy car), record observations and write conclusion.

	3. Observation Task (10 Marks): Observe any 5 objects around you and identify whether they show uniform or non-uniform motion. **4. Numerical Practice (5 Marks):** Solve any two numericals based on speed, velocity or acceleration. **5. Creativity Task (5 Marks):** Prepare a poster/model/comic related to Motion. **PROJECT – 2 Road Trip Physics: Motion on Wheels Total Marks: 50** **1. PPT Presentation (20 Marks):** Prepare a PPT showing examples of one-dimensional motion seen in vehicles, roads and transportation. **2. Activity (10 Marks):** Observe a moving vehicle and estimate its speed using distance and time. **3. Observation Task (10 Marks):** Record any 5 examples of one-dimensional motion from surroundings. **4. Numerical Practice (5 Marks):** Solve any two numericals from Motion chapter. **5. Creativity Task (5 Marks):** Design a road-safety poster connecting motion and physics. **PROJECT – 3 Time, Distance and Speed Explorer Total Marks: 50** **1. PPT Presentation (20 Marks):** Prepare a PPT on distance, displacement, speed and velocity with suitable examples. **2. Activity (10 Marks):** Measure distance travelled and time taken by any family member while walking. **3. Observation Task (10 Marks):** Compare motion of 5 different moving objects around you. **4. Numerical Practice (5 Marks):** Solve any two chapter-based numerical. **5. Creativity Task (5 Marks):** Create a chart showing relationships between speed, distance and time. **PROJECT – 4 The Science of Moving Objects Total Marks: 50** **1. PPT Presentation (20 Marks):** Prepare a PPT on acceleration and equations of motion with real-life examples. **2. Activity (10 Marks):** Observe motion of a toy car or ball and record observations. **3. Observation Task (10 Marks):** Find any 5 examples showing acceleration or retardation. **4. Numerical Practice (5 Marks):** Solve any two-chapter numerical. **5. Creativity Task (5 Marks):** Prepare a comic strip on "Physics of Motion". **PROJECT – 5 Journey of Motion: From Start to Stop Total Marks: 50** **1. PPT Presentation (20 Marks):** Prepare a PPT on types of motion in one dimension and their applications. **2. Activity (10 Marks):** Record time and distance for a moving object and calculate average speed. **3. Observation Task (10 Marks):** Observe and classify 5 examples as uniform or non-uniform motion. **4. Numerical Practice (5 Marks):** Solve any two numerical based on equations of motion. **5. Creativity Task (5 Marks):** Prepare a working model/poster related to Motion in daily life.
SOCIAL SCIENCE	**Topic: The Dynamic Atmosphere and Changing Climate** **Total Marks: 50** **Instructions:** • This project is completely **assessment, research, and analysis based**. • Students must complete the work neatly in a project file/scrapbook. • Use maps, charts, newspaper articles, graphs, and case studies wherever required. • Proper headings, data analysis, and conclusions must be included. • All the tasks given are compulsory. **SECTION A – RESEARCH & CASE STUDY (10 Marks)** **Activity 1: Understanding Climate Change** Research the following topics: 1. Difference between weather and climate 2. Layers of the atmosphere 3. Greenhouse effect 4. Global warming 5. Causes of climate change **Case Study Task:**

Select any one recent climate-related event:

- Heatwave
- Flood
- Cyclone
- Drought
- Cloudburst
- Glacier melting

Write:

- Place affected
- Causes of the event
- Impact on people and environment
- Preventive measures taken

SECTION B – DATA ANALYSIS ACTIVITY (10 Marks)

Activity 2: Climate Data Interpretation

Collect climate-related data for the last 5 years from newspapers, the internet, or magazines.

Examples:

- Temperature rise
- Rainfall changes
- Air Quality Index (AQI)
- Carbon emissions
- Glacier melting data

Task:

- Represent the data using:
  - Bar graph
  - Line graph
  - Table
- Analyse the data and write 5 observations.

SECTION C – SURVEY & ASSESSMENT TASK (10 Marks)

Activity 3: Public Awareness Survey

Conduct a survey of **10 people** regarding climate change awareness.

Ask the following questions:

S.No	Questions
1	Do you think climate change is affecting our daily life?
2	Have temperatures increased in recent years?
3	Are pollution levels increasing in your area?
4	Do you follow eco-friendly practices?
5	Should climate education be compulsory in schools?

Task:

- Record responses in table form.
- Calculate percentages of responses.
- Prepare a pie chart or bar graph.
- Write a short analysis of the survey findings.

SECTION D – ANALYTICAL REPORT WRITING (10 Marks)

Activity 4: Climate Action Report

Prepare an assessment report on:

"How Human Activities Affect the Atmosphere"

Include:

1. Deforestation

2. Industrial pollution
3. Vehicle emissions
4. Urbanization
5. Excessive use of fossil fuels

Also Mention:

- Effects on weather patterns
- Impact on human life
- Solutions for sustainable living

SECTION E – SUBJECTIVE ASSESSMENT QUESTIONS (10 Marks)

Answer the following questions:

1. Why is the atmosphere important for life on Earth?
2. How is climate change different from weather change?
3. What are the major causes of global warming?
4. How can individuals help reduce climate change?
5. What did you learn from your research and survey activities?

Assessment Sheet

Criteria	**Marks**
Topic relevance and research quality	10
Content accuracy and originality	10
Language and expression	10
Organization and neat presentation	10
Creativity and visuals	10
Total	50

MOVIE MAKING

Holiday Homework – Movie Making
Topic: Basic Camera Shots
Write Short Notes on:
Close Up Shot
Long Shot
Pan Shot
Tilt Shot
High Angle Shot
Practical Work:
Make a 1–2 minute video on Friendship or School Life using:
1 Close Up
1 Long Shot
1 Pan Shot

MARKETING & SALES

Research-Based Project Work
Theme: "From Product to Customer"
Task 1: Product Hunt and Market Survey
Activity:Choose one product from your daily life such as:
Chocolate
Shampoo
Water bottle
School bag
Mobile cover

Soft drink

Research Work:Visit nearby shops or ask family members and collect information about:

Name of the product
Brand name
Price
Packaging style
Why customers prefer it

Presentation:

Create a table like this:

Product	Brand	Price	Attractive Feature	Customer Choice Reason

Task 2: Advertisement Analysis

Activity:Watch any 2 advertisements on TV, YouTube, newspapers, or social media.
Answer the Following:
What product is being sold?
Which age group is targeted?
What attractive words or slogans are used?
Which colours/music/images attract customers?
Did the advertisement convince you? Why?
Creative Work:Design your own slogan for one product.

Task 3: Create Your Own Brand

Activity:Imagine you are launching a new product.
Choose:
Product name
Brand logo
Tagline
Target customers
Price
Creative Task:

Design:

A colourful logo
Product packaging on A4 sheet

Write:

Why will customers buy your product?

Task 4: Sales and Profit Investigation

Activity:Visit a small shop nearby and observe:
Which product sells the most?
Which product sells the least?
Why do people buy certain products more?
Mathematical Research:
Collect prices of any 5 products and calculate:
Total cost
Profit if sold at higher price
Discount percentage (if any)
Example:

Product	Cost Price	Selling Price	Profit

Task 5: Customer Feedback Research Report

Activity:Ask 5 family members or neighbours these questions:
Which brand do you trust most?
What makes you buy a product?
Do advertisements affect your choice?
Which is more important: quality or price?
Would you recommend the product to others?
Presentation:
Prepare a report on the feedbacks.
Final Project Submission Guidelines

✅ Use a separate project file or scrapbook.

	✅ Include drawings, charts, logos, and pictures. ✅ Write neatly with headings and colourful presentation. ✅ Attach survey sheets if possible. ✅ Submit after summer vacation. Teacher's Note "Marketing is not only selling a product; it is understanding people's needs and creating value for customers."
PAINTING	Class 9 Painting Holiday Homework (2026-2027) Research-Based Creative Project Topic: "Indian Folk Art and Modern Painting Styles" **Instructions:** Students will prepare a creative research file on Indian painting styles. **The project should include:** • Research work • Drawing and coloring • Creative activities • Art appreciation • Self-expression Use an A4 size file or handmade scrapbook. **Activity 1 – Cover Page** **Design a creative cover page with:** **Title: Painting Holiday Homework** • **Student Name** • **Class & Section** • **School Name** • **Session Year** Add decorative borders, folk motifs, or color patterns. **Activity 2 – Introduction to Indian Art** **Write 1–2 pages on:** • What is painting? • Importance of art in daily life • Indian traditional art forms • How painting expresses emotions and culture Add small illustrations or borders. **Activity 3 – Research Work** **Research any 3 Indian Folk Art Forms** **Choose from:** • Madhubani Painting • Warli Art • Pattachitra • Gond Art • Kalamkari **For each art form include:** 1. Origin and history 2. Famous features 3. Colors and patterns used 4. Materials used 5. One hand-drawn illustration **Activity 4 – Creative Practical Work (A3 Size File)** **Make any 3 paintings:** 1. Nature Composition 2. Festival Scene 3. Folk Art Design 4. Poster on "Save Environment"

	5. Abstract Art Composition **Use:** • Water colors • Sketch pens • Pencil shading **Marking Scheme:** **Section Marks:** Cover Page & Presentation (10) Introduction (10) Research Work (15) Practical Artwork (15) **Submission Guidelines:** • Keep work neat and colorful • Use proper headings • Draw neatly with black outline • Submit after summer vacation in a file folder
BEAUTY & WELLNESS	**Beauty & Wellness (Code 407)** **Units Covered:** Unit–1: Introduction to Beauty & Wellness: Beauty & Wellness Industry **Question 1: Beauty & Wellness Research (10 Marks)** Visit a nearby salon or wellness center and write: 1-Meaning of Beauty & Wellness 2-Any two services provided there 3-Importance of these services 4-Hygiene practices followed by the staff 5-You may paste pictures or draw related diagrams. **Question 2: Career Research Activity (10 Marks)** Research any one career such as Beautician, Hair Stylist, Makeup Artist, Nail Artist, or Spa Therapist. Write about: 1-Work responsibilities 2-Skills required 3-Tools/products used 4-Why this career is popular 5-Why you find it interesting **Question 3: Creative Craft Activity (10 Marks)** Make any one beauty-related craft item using waste or easily available materials. **Examples:** 1-Makeup Organizer 2-Nail Paint Stand 3-Hair Accessories Box 4-Mehendi Cone Holder Write: 1-Materials used 2-Steps of making 3-Benefits of using recycled materials 4-Paste or draw the final design neatly.

Question 4: Natural Skin Care Activity (10 Marks)

Prepare any one natural cream or face pack using safe household ingredients.

Write:

1-Name of the product
2-Ingredients used
3-Method of preparation
4-Benefits for skin care
5-Why natural products are useful?
6-You may paste or draw pictures of the activity.

Question 5: Healthy Lifestyle Survey (10 Marks)

Conduct a small survey of 5 people about healthy habits like:

1-Drinking water
2-Exercise or yoga
3-Proper sleep
4-Healthy food habits

Present your findings in a small table or chart and write a short conclusion on wellness and a healthy lifestyle.

Rubrics

Research & Understanding	10 Marks	Students show proper understanding through research and activities.
Creativity & Practical Skills	10 Marks	Students show creativity and practical knowledge in activities and craft work.
Presentation & Cleanliness	10 Marks	Work is neat, attractive, and well-arranged.
Language & Grammar	10 Marks	Students use simple and correct language with proper grammar.
Analysis & Application	10 Marks	Students apply beauty, hygiene, and wellness concepts effectively.

TOURISM

Question 1: Choosing a Destination (10 Marks)

If you could travel anywhere in India for a holiday, which place would you choose? Write the name of the place and explain one reason why you want to go there?

Question 2: Selecting Transport (10 Marks)

How will you travel from your home to your dream destination? Choose one mode of transport (Train, Airplane, Bus, or Car) and explain why it is the best choice for your family?

Question 3: Finding Accommodation (10 Marks)

Where will you stay during your holiday? Look up a type of place to stay (like a Hotel, a Guest House, or a Resort) and write down a few things your room should have to make you feel comfortable.

Question 4: Identifying Attractions (10 Marks)

Every tourist destination has famous places to see (Attractions). Find out one famous monument, park, or beach at your chosen destination. Describe what it looks like in your own words.

Question 5: Bringing Home a Souvenir (10 Marks)

A souvenir is a special gift we buy to remember our trip. What local item or handicraft is famous at your destination? Explain what you would buy and who you would give it to when you return home.

Rubrics

1. Content Relevance	10 marks	Student answers according to the question and gives correct Information.
2. Creativity & Ideas	10 marks	Student shows imagination, original thoughts,

	and interesting ideas. 3. Presentation & Neatness 10 marks Work is clean, properly written, and easy to read. 4. Language & Grammar 10 marks Simple and correct language with proper Grammar and sentence formation. 5. Research & Understanding 10 marks Student shows basic research and understanding of tourism concepts.
GAMIFICATION	GENERAL INSTRUCTIONS 1. Complete all tasks in a file. 2. Use colors, creativity, and proper presentation. 3. Students may work digitally or on paper wherever mentioned. 4. Submit the homework after the vacation along with all activities. **Case Study 1 – Learning Through Games** Riya finds studying Mathematics boring, but she enjoys using apps like Duolingo and Quizizz because they give points, badges, and rewards after every task. Her teacher noticed that she completes more activities when rewards are involved. **Questions:** 1. What is gamification? 2. Name any two-game mechanics used in the case study. 3. How did gamification help Riya in learning? **Marks:** 8 **Case Study 2 – The School Maze Challenge** A group of students created a maze game for the school exhibition. The maze had obstacles, checkpoints, rules, and different difficulty levels. Players had to find the correct path to reach the finish point. **Questions:** 1. Why are rules important in a maze game? 2. What makes a maze game challenging and interesting? 3. Suggest one new obstacle that can be added to the maze. **Marks:** 8 **Case Study 3 – Board Game Designers** A team designed a board game on "Save Environment." Players earned points for planting trees and lost turns for polluting rivers. The game became popular because it was fun and educational. **Questions:** 1. How can board games help in learning? 2. Identify one reward and one penalty used in the game. 3. Why do educational games engage students better? **Marks:** 8 **Case Study 4 – Favourite Game Analysis** Arjun loves playing Minecraft because he can build structures, explore worlds, and complete challenges with friends. He spends time planning strategies and improving his creations. **Questions:** 1. Which game mechanics make Minecraft engaging? 2. How does teamwork help in such games? 3. What skills can students learn from games like Minecraft? **Marks:** 8 **Activity Based Task** Design your own mini board game or maze game on paper. Include: • Name of the game • Rules • Obstacles/challenges • Winning condition • Creative design **Marks:** 18

Rubrics Assessment Table (50 Marks)

Criteria	Marks
Understanding of Gamification Concepts	10
Creativity in Game Design	10
Problem Solving & Logical Thinking	10
Presentation & Neatness	10
Case Study Analysis & Responses	10

MECHATRONICS

PROJECT – 1
Diodes in Daily Life: Exploring Electronic Components
Mechatronics Club
Topic: Diodes and Rectifiers
Total Marks: 50
1. PPT Presentation (20 Marks): Prepare a PPT (10–12 slides) on diode, symbol, working principle, forward & reverse biasing and applications of diodes.
2. Activity (10 Marks): Observe and list devices at home using diodes (LED bulb, charger, TV, etc.) and write their use.
3. Observation Task (10 Marks): Identify and record any 5 applications of diodes in daily life.
4. Numerical Practice (5 Marks): Solve any two simple questions related to diode operation.
5. Creativity Task (5 Marks): Prepare a poster/model/comic on diodes.

PROJECT – 2
Power Conversion: Understanding Rectifiers
Mechatronics Club
Topic: Rectifiers
Total Marks: 50
1. PPT Presentation (20 Marks): Prepare a PPT on rectifiers, AC and DC current, Half-wave rectifier and Full-wave rectifier.
2. Activity (10 Marks): Observe mobile chargers/adapters and identify devices converting AC to DC.
3. Observation Task (10 Marks): List 5 electronic devices that use rectification.
4. Numerical Practice (5 Marks): Solve any two basic rectifier-related questions.
5. Creativity Task (5 Marks): Create a flowchart/model showing AC to DC conversion.

PROJECT – 3
From AC to DC: Journey of Electricity
Mechatronics Club
Topic: Diodes and Rectifiers
Total Marks: 50
1. PPT Presentation (20 Marks): Prepare a PPT explaining the role of diodes in converting AC to DC with suitable diagrams.
2. Activity (10 Marks): Draw and label Half-wave and Full-wave rectifier circuits.
3. Observation Task (10 Marks): Find 5 places where rectifiers are used in daily life.
4. Numerical Practice (5 Marks): Solve any two circuit-related questions.
5. Creativity Task (5 Marks): Design a chart/poster showing current flow in rectifier circuits.

PROJECT – 4
Electronic Heroes: Learning Through Diodes
Mechatronics Club
Topic: Diodes
Total Marks: 50
1. PPT Presentation (20 Marks): Prepare a PPT on diode construction, symbols, types and applications.
2. Activity (10 Marks): Observe LEDs around your surroundings and record their applications.
3. Observation Task (10 Marks): Compare any 5 diode-based devices.
4. Numerical Practice (5 Marks): Solve any two concept-based questions.
5. Creativity Task (5 Marks): Create a comic/poster/model on diode applications.

PROJECT – 5

	Rectifiers at Work: Electronics Around Us **Topic: Rectifiers and Diodes** **Total Marks: 50** **1. PPT Presentation (20 Marks):** Prepare a PPT on rectifiers and practical applications in electronics. **2. Activity (10 Marks):** Make a comparison table of Half-wave and Full-wave rectifiers. **3. Observation Task (10 Marks):** Observe and record 5 uses of rectifiers in everyday devices. **4. Numerical Practice (5 Marks):** Solve any two basic problems related to rectifier concepts. **5. Creativity Task (5 Marks):** Prepare a working model/poster related to rectifiers
AI EMBROIDERY	Class 9 AI Embroidery Holiday Homework (2026–2027) Research-Based Creative Project Topic: "AI Embroidery and Traditional Textile Art" Holiday Homework Instructions Students will prepare a creative research file on AI-based embroidery designs and traditional textile art forms. The project should include: • Research work • Drawing and coloring • Creative activities • Design appreciation • Self-expression • Fabric pattern creativity Use an A4 size file or handmade scrapbook. **Activity 1 – Introduction to AI Embroidery** Write 1–2 pages on: • What is embroidery? • Importance of embroidery in fashion and textile design • Introduction to AI in embroidery designing • Difference between hand embroidery and digital embroidery • How AI helps in creating modern embroidery patterns Add small embroidery sketches or colorful borders. **Activity 2 – Research Work** **Research Any 3 Indian Embroidery Art Forms** Choose from: • Chikankari • Phulkari • Kantha Embroidery • Kashmiri Embroidery • Zardozi Work • Mirror Work (Kutch Embroidery) For each embroidery art form include: 1. Origin and history 2. Famous features 3. Colors and stitch patterns used 4. Fabrics and materials used 5. One hand-drawn embroidery illustration **Activity 3 – Handmade Embroidery Work** **Create Any 3 Hand Embroidery Designs** • Choose from: • Floral Design • Leaf Pattern

- Traditional Border Design
- Mirror Work Design
- Saree Border Pattern
- Cushion Cover Design

Use Basic Stitches:

- Running Stitch
- Chain Stitch
- Cross Stitch
- Satin Stitch
- Buttonhole Stitch

Materials Required:

- Embroidery Threads
- Needle
- Fabric Cloth
- Hoop Ring
- Mirror Pieces (optional)
- Decorative Beads
- Paste small fabric samples in the file.

Activity 4 – Creative Practical Work (A4 Size File)

Make any 3 embroidery-inspired artworks:

1. Floral Embroidery Pattern
2. Traditional Indian Textile Design
3. Festival Dress Embroidery Design
4. Eco-Friendly Fabric Pattern
5. Modern AI Fashion Design
6. Abstract Thread Art Composition

Use:

- Water colors
- Sketch pens
- Pencil shading
- Colored pencils
- Glitter pens (optional)

Marking Scheme

Section	Marks
Cover Page & Presentation	10
Introduction & Research Work	10
Embroidery Art Research	10
AI Embroidery Design Study	5
Practical Artwork	15
Total	**50**

Submission Guidelines

- Keep work neat and colorful
- Use proper headings and borders
- Draw neatly with black outline
- Use creative embroidery-inspired patterns
- Submit after summer vacation in a file folder

3D EMBEDDED TEC.ROBOTICS	**Activity 1: Self balancing robot** **Materials Required**: 1. Arduino uno board

	2. L298N motor driver 3. MPU 6050 sensor 4. 18650 battery holders with on/off switch 5. 18650 batteries 6. Motors with wheels 7. Jumper wires
JOURNALISM	**Topic: What is Mass Communication?** **Total Marks: 50** **Instructions:** • This project is completely research, survey, and assessment based. • Students must complete the work neatly in a project file/scrapbook. • Use newspaper cuttings, pictures, graphs, advertisements, and interview responses wherever required. • Both tasks are compulsory. **TASK 1 – RESEARCH, MEDIA ANALYSIS & REPORT WRITING (25 Marks)** **Activity: Understanding Mass Communication** **Research the following:** 1. Meaning of mass communication 2. Types of mass communication: a. Print Media b. Electronic Media c. Social Media d. Digital Media 3. Importance of mass communication in society 4. Advantages and disadvantages of media 5. Fake news and its impact on people **Media Analysis:** Collect and analyze: • 2 newspaper headlines • 2 social media news posts • 2 advertisements **Analyze:** 1. Purpose of the message 2. Target audience 3. Positive or negative impact 4. Whether the information appears real or misleading **Interview Task:** Take a short interview of any one person: • Teacher • Parent • Shopkeeper • Journalist (if possible) **Ask:** 1. How does mass communication help society? 2. Which media platform is the most powerful today? 3. How can fake news be controlled? **Task:** • Write the interview in the report format. • Add your conclusion on: **"How Mass Communication Influences Society"** **TASK 2 – SURVEY, DATA COLLECTION & PRESENTATION (25 Marks)** **Activity: Media Usage Survey** Conduct a survey of **10 people**. **Ask the following questions:** **S.No** **Questions** 1 Which source of news do you use the most? 2 How many hours do you spend on social media daily?

3	Do you trust news shared on social media?
4	Which medium spreads information the fastest?
5	Can fake news affect society?

Task:

1. Record responses in the table form.
2. Calculate:
    a. Total responses
    b. Most common answers
    c. Percentages
3. Prepare:
    a. One bar graph
    b. One pie chart
4. Write 5 observations based on the survey.
5. Write a short paragraph on:

"How Media Affects Teenagers and Society"

Assessment Sheet

Criteria	**Marks**
Topic relevance and research quality	10
Content accuracy and originality	10
Language and expression	10
Organization and neat presentation	10
Creativity and visuals	10
Total	50