

# Academic Enrichment : Holiday Homework

2026-27

*Class IX*



**Theme: Viksit Bharat**

**HOLIDAY HOMEWORK  
CLASS IX**

Warm Greetings! Summer vacation is the most awaited time of the year for children. To ensure that the holidays are enjoyable as well as productive, activity based homework and projects on the theme '**Viksit Bharat**' have been assigned.

Stay Safe and Stay Healthy!

Regards

SAM Team

**General Instructions:**

1. All work should be done exclusively by the students. You may take guidance from your parents, but take the lead and complete the work yourself.
2. Original work of students will receive greater recognition and appreciation.
3. Holiday homework **must** be submitted according to the following schedule.
  - **Social Science: 03 July, 2026**
  - **English , IT and Math: 06 July, 2026**
  - **Science: 07 July, 2026**
  - **Hindi: 08 July, 2026**
4. Prepare for your Periodic Test I as per the syllabus provided.

**ENGLISH**

**Theme : Cultural Diversity**

**Objective: Know your nation's diversity and culture.**

**Bharat Darshan Catalogue**

Step 1: Choose Your Focus- Pick 3 Indian states or UTs of your choice.

Step 2: Collect A3 size sheets, fold it into half.

Step 3: Design the Cover Page- Write a bold title like "Bharat Darshan: A Cultural Journey" or any other title of your choice.

Step 4: Format the Inside Pages- Dedicate two pages to each selected state or UT. The Layout: Make it vibrant, informative and add pictures.

Step 5: Bind the Booklet- Staple the pages or tie them with a ribbon like a travel brochure.

**Quick tips**

- Be colorful: Use vibrant colours and pictures.
- Keep text short: Use bullet points, not long paragraphs.
- Include a map: Draw or paste a small India map on the first page as an index.

Rubrics	Marks
Relevance	2
Format & Accuracy	2
Creativity	2
Organisation & Presentation	2
Research & Authenticity	2

**-Complete the given assignment in your English notebook.**

**HINDI**

पाठ - 'आखिरी चट्टान तक' (यात्रा-वृत्त) में कन्याकुमारी को आखिरी चट्टान कहा गया है। इसी पाठ के आधार पर दिए गए केंद्र शासित प्रदेश की भौगोलिक स्थिति, परिवेश, महत्वपूर्ण पर्यटन स्थल एवं जन-जीवन का वर्णन करते हुए एक परियोजना तैयार कीजिए।\*

पर्यटन स्थल:

- दिल्ली : (अनुक्रमांक 1-8),
- अंडमान -निकोबार द्वीपसमूह : (अनुक्रमांक 9-16)
- जम्मू- कश्मीर : (अनुक्रमांक 17-24)
- दमन और दीव: (अनुक्रमांक 25-32),
- लक्षद्वीप आदि : (अनुक्रमांक 33-40)

(परियोजना हेतु ए-4 रंगीन शीट (2-3) का इस्तेमाल कीजिए)

निर्देश : दिए गए समस्त कार्य के अंक आंतरिक मूल्यांकन के आधार पर निर्धारित किए जाएंगे।

मूल्यांकन रूपरेखा -

	<ul style="list-style-type: none"> <li>●निर्धारित समय: 2 अंक</li> <li>●प्रस्तुतीकरण एवं रचनात्मकता: 2 अंक</li> <li>●विषयवस्तु: 2अंक</li> <li>●वर्तनी: 2 अंक</li> <li>●वास्तविकता: 2अंक</li> <li>●कुल अंक: 10</li> </ul> <p>सामयिक परीक्षा-1 हेतु समस्त पाठ्यक्रम याद कीजिए एवं दिए गए कार्यपत्रक का लिखकर अभ्यास कीजिए।</p>												
<b>MATHS</b>	<p><b>Mathematics in Architecture: Designing a Dream House for Viksit Bharat</b>  Design a complete Dream House Layout on graph paper using coordinates and geometrical shapes.  Your house design must include the following rooms:</p> <ul style="list-style-type: none"> <li>●Living Room</li> <li>●Bedroom</li> <li>●Kitchen</li> <li>●Bathroom</li> <li>●Study Room</li> </ul> <p>Prepare the project neatly on A4 size sheets in a project file.  The project file should contain Cover Page, Acknowledgement, Index, Graph Paper House Design, Explanation of Coordinates Used, Real-Life Applications of Coordinate Geometry, Mind map and conclusion.</p> <p><b>Relation with Viksit Bharat:</b>  Through this project, students will understand how mathematics helps in building well-planned homes and smart cities, contributing towards the vision of a technologically advanced and developed India — Viksit Bharat.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Rubrics</th> <th style="text-align: left;">Marks</th> </tr> </thead> <tbody> <tr> <td>Timely Submission</td> <td>02</td> </tr> <tr> <td>Presentation and Neatness</td> <td>02</td> </tr> <tr> <td>Creativity and Design</td> <td>02</td> </tr> <tr> <td>Mathematical Accuracy</td> <td>02</td> </tr> <tr> <td>Explanation and Conclusion</td> <td>02</td> </tr> </tbody> </table> <p><b>Complete the given assignment in your Maths notebook.</b></p>	Rubrics	Marks	Timely Submission	02	Presentation and Neatness	02	Creativity and Design	02	Mathematical Accuracy	02	Explanation and Conclusion	02
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<b>SCIENCE</b>	<p><b>Advanced Research Project : “Scientific Analysis of Separation Techniques: From Household Methods to Industrial Technology”</b></p> <p>Each project must include:</p> <ol style="list-style-type: none"> <li>1. <b>Scientific Principle Involved</b></li> <li>2. <b>Physical Properties Used for Separation</b></li> <li>3. <b>Industrial and Daily-Life Applications</b></li> <li>4. <b>Advantages and Limitations</b></li> <li>5. <b>Recent Technological Advancements</b></li> <li>6. <b>Real-Life Example</b></li> <li>7. <b>Data Collection/Observation Table</b></li> <li>8. <b>Research Conclusion Based on Analysis</b></li> </ol> <p><b>Research Domains</b></p> <p><b>Roll No. 1 to 10 : Comparative Study of Water Purification Techniques</b></p> <p><b>Research Focus:</b></p>												

- Filtration vs Distillation vs Reverse Osmosis
- Scientific principle behind each method
- Impurities removed and retained by each technique
- Efficiency, cost, and environmental impact

Investigation Areas:

- Why RO water may lack minerals
- Role of activated charcoal filters
- Modern wastewater treatment technologies

### **Roll No. 11 to 20 : Fractional Distillation and Petroleum Refining**

Research Focus:

- Separation based on boiling point differences
- Structure and working of a fractional distillation column
- Petroleum fractions and their uses

Investigation Areas:

- Why LPG rises upward in the column while bitumen settles below
- Environmental issues caused by fossil fuels
- Alternative fuels and cleaner energy sources

### **Roll No. 21 to 30 : Chromatography in Forensic Science and Medicine**

Research Focus:

- Principle of adsorption and solubility
- Types of chromatography
- Role in crime investigation, drug testing, and food analysis

Investigation Areas:

- Identification of unknown substances
- Detection of food adulteration using chromatography
- Importance in pharmaceutical industries

### **Roll No. 31 to 40 : Crystallisation and Purification in Chemical Industries**

Research Focus:

- Difference between evaporation and crystallisation
- Conditions required for crystal formation
- Purification of impure substances

Investigation Areas:

- Why crystallisation gives purer solids
- Crystal formation in medicines and chemicals
- Industrial production of salts and sugar

Students should:

- Present the project like researchers/scientists.
- Use scientific vocabulary confidently.
- Include diagrams, labelled illustrations, graphs, or demonstrations.

- Explain why the technique works, not only how it works.
- Compare efficiency and practical usefulness.

Rubrics	Marks
Timely Submission	02
Creativity & Presentation	02
Scientific Understanding & Content Accuracy	02
Originality of Ideas	02
Neatness and Proper Organization	02

**NOTE: Keep the project compact. Presentation of the project will be done in class. -Assignments to be done in your notebook itself.**

## SOCIAL SCIENCE

**Theme: "Surakshit Bharat, Samridh Bharat: Transforming Geographical Vulnerabilities into Climate Resilience"**

**Roll No: 01-10**

### Idea 1: "The River Guardians: Re-engineering India's Floodplains"

- **The Concept:** Focusing on India's massive river systems (like the Ganga and Brahmaputra), this project shifts the focus from just *surviving* floods to *coexisting* with them through smart, nature-based engineering.
- **What to include:**
  - **Room for the River:** Moving dykes further back to give rivers natural space to overflow safely without destroying towns.
  - **Meandering Restoration:** Re-routing straightened, concrete-heavy rivers back into their natural curves to slow down furious water currents.
  - **Community "Chang" Houses:** Traditional and modern stilt-house architectures adapted from Assam to keep families and livestock safe above high-water marks.
- **Creative Element:** Design a blueprint for a **"Floating School/Hospital"** that can remain fully functional even when an entire region is submerged.

**Roll No: 11-20**

### Idea 2: "Shielding the Shield: Glacial Lake Outburst Floods (GLOF) in the Himalayas"

- **The Concept:** Driven by climate change, melting glaciers in the north form unstable lakes that can burst violently (as seen in Sikkim and Uttarakhand). This project tackles high-altitude disaster prevention.
- **What to include:**
  - **Early Warning IoT Networks:** Deploying solar-powered sensors at high altitudes that text downstream villages the moment a glacial lake level rises dangerously.
  - **Siphoning and Controlled Drainage:** Engineering solutions like installing massive pipelines to drain dangerous water volumes out of glacial lakes before they burst.
  - **Eco-Barriers:** Using deep-rooting Himalayan vegetation to anchor loose moraine rocks and prevent landslides from triggering lake bursts.
- **Creative Element:** Create a **"Community Evacuation Protocol Poster"** with color-coded warning flags (Green, Yellow, Red) tailored for remote mountain villages.

**Roll No: 21-30**

### Idea 3: "Green Walls: Halting the Desert and Taming the Dust"

- **The Concept:** Connecting to India's arid geography and desertification threats, this project focuses on the Thar Desert's expansion and the resulting severe dust storms that paralyze northern India every summer.
- **What to include:**
  - **The Great Green Wall of Aravallis:** A massive proposed ecological corridor of native trees planted along the Aravalli range to act as a barrier against dust and desert expansion.
  - **Agroforestry and Shelterbelts:** Designing belts of trees around agricultural fields in Rajasthan and Haryana to prevent soil erosion and break high-speed winds.
  - **Traditional Water Harvesting (Taankas & Johads):** Reviving ancient water structures to fight severe, prolonged droughts in arid zones.
- **Creative Element:** Draft an "**AI-Powered Farmer's Almanac**" concept—a simple guide on how precision farming and drought-resistant crops (like millets) can prevent crop failure disasters.

**Roll No: 31-41**

**Idea 4: "Forest Fire Fortresses: Protecting India's Biodiversity Hotspots"**

- **The Concept:** Forest fires in places like Uttarakhand, Simlipal, and the Western Ghats destroy precious ecosystems and worsen air quality. This project focuses on high-tech and community-led wildfire management.
- **What to include:**
  - **Satellite & Drone Surveillance:** Utilizing ISRO's satellite data (like Bhuvan) and thermal drones to spot smoke and heat signatures before a fire spreads out of control.
  - **Controlled Burning & Firebreaks:** Creating strategic gaps in forests (fire lines) cleared of dry leaves and pine needles to starve moving fires of fuel.
  - **The "Van Panchayat" Model:** Empowering local tribal and forest communities as the first line of defense with modern firefighting gear and training.
- **Creative Element:** Build a "**Wildfire Risk Map**" of a hypothetical forest reserve, marking out fire towers, water replenishment zones, and evacuation routes for wildlife.

Rubrics	Marks
Timely Submission	02
Organisation and Presentation	02
Evidence and Examples	02
Factual Support and Research	02
Creative Element Execution	02

**-NOTE: Keep the project compact. Presentation of the project will be done in class.  
-Assignments to be done in your notebook itself.**

**IT**

**DIGITAL DOCUMENTATION**

**Designing a Poster on Viksit Bharat using LibreOffice**

**Instructions:**

1. Create a poster on "Viksit Bharat" in LibreOffice.
2. Include the following details in the poster:
  - a. Write the 8 Core Pillars for Holistic Development of Viksit Bharat in bullet points.

b. Insert relevant images and short descriptions showing the initiatives taken by the Government towards Viksit Bharat.

3. Apply the following formatting:

i. Use Arial font, size 14 for all headings.

ii. Use Arial font, size 12 for content/text.

iii. Set line spacing to 1.5 throughout the document.

iv. Keep all headings centre aligned.

v. Keep the content justified.

4. Create a table titled “Recommendations for Action in Viksit Bharat” in following areas:-

a. Government

b. Citizens & Civil Society

c. Businesses & Industry

Please ensure that the project file is printed and submitted in a ring folder as instructed.