

**MAHESHWARI PUBLIC SCHOOL, JAWAHAR NAGAR, JAIPUR**

**HOLIDAY HOME WORK**

**CLASS-10**

**A multidisciplinary project is a project in which different subjects are connected together through one common topic. It helps students to apply the knowledge and skills of various subjects in an integrated and practical manner.**

**Students are instructed to prepare a project file for the multidisciplinary project. The file should contain interleaving pages, and all the subject-related work must be completed in the same file only. No separate sheets, notebooks, or charts are to be prepared for this project. All the subject teachers will evaluate the work done in the project file.**

**TOPIC – INDIA: Emerging power centre on the world forum**

**ENGLISH**

**For Roll No. 1 to 25**

Q1 Design a poster with catchy slogans on: “Vocal for Local – Building a Self-Reliant India.” Write five original slogans in English.

Q2. Write an article in about 200 words on “How Indian Youth Can Strengthen India’s Position on the Global Platform.”

Q3. Collect newspaper clippings or online articles showing India’s progress in sports, defense, science, environment, technology.

**For Roll No. 26 onwards**

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Q4. Think & Write-If you were India’s ambassador to the world, what three changes would you introduce to make India stronger globally?

Q5. Write a letter to a foreign friend describing how India is changing rapidly and becoming a powerful nation globally. (150 words)

**HINDI**

**For Roll No. 1 to 25**

“भारतीय साहित्य, संस्कृति एवं उदात्त जीवन-मूल्यों की वैश्विक प्रासंगिकता ने भारत को विश्व मंच पर एक सशक्त राष्ट्र के रूप में स्थापित करने में अनूठा योगदान दिया है।”

उपर्युक्त विषय पर उदाहरणों एवं चित्रों की सहायता से एक सुंदर लेख तैयार कीजिए।

**For Roll No. 26 onwards**

चित्र, उद्धरण और समाचार कटिंग द्वारा विभिन्न क्षेत्रों में भारत के बढ़ते वर्चस्व को दर्शाते हुए अपने विचार लिखित रूप में प्रस्तुत कीजिए।

**SANSKRIT**

**For Roll No. 1 to 25**

‘भारतस्य प्रगतिः’ (अंतरिक्षविज्ञानम्, अर्थव्यवस्था – इत्यादयः) - इति विषयमधिकृत्य दशसंस्कृतवाक्यानि सचित्रं लिखत।

**For Roll No. 26 onwards**

‘स्वप्नभारतम्’ :- 2047 तमे वर्षे मम भारतम् इति विषयम् अधिकृत्य सचित्रं दशवाक्यात्मकम् एकम् अनुच्छेदं लिखत।

**FRENCH**

Rédigez un article de 300 mots sur “ L’ Inde un centre de puissance émergente sur le forum mondial “ .

(Write an article of 300 words in FRENCH on “ India , an emerging power center on world forum “ .

**MATHS**

**For Roll No. 1 to 25**

**Topic : India’s Defence Strength: A Rising Strategic Power**

1. Collect Defence-Related Data

Students may collect data on: Strength of Army, Navy, and Air Force. Defence budget (last 5–10 years). Number of aircraft, ships, submarines, tanks. Growth in defence exports.

Indigenous defence production (Make in India). DRDO achievements.

2. Prepare Data Tables: - Table 1: Defence Budget (Last 5 Years). Table 2: Strength of Defence Forces.
3. Represent the Data Mathematically  
Bar Graph/Pie Chart: - Represent: Defence budget over the years OR Strength of Army, Navy, Air Force

### **For Roll No. 26 onwards**

#### **Topic- Agricultural Power: Feeding the world**

1. Collect Agricultural Data  
Students may collect data on: - Production of major crops (rice, wheat, pulses, sugarcane, cotton). Agricultural exports (rice, spices, tea, fruits, and vegetables). Growth in agricultural GDP. Irrigated vs. non-irrigated land. Fertilizer consumption. State-wise crop production.
2. Prepare Data Tables: - Table 1: Production of Major Crops (in Million Tonnes) and Table 2: India's Agricultural Exports (₹ Crore)
3. Represent the Data Mathematically
  - A. Bar Graph: - Represent: Crop production OR Agricultural exports
  - B. Line Graph: - Plot: Export value vs. years OR Agricultural GDP growth.
  - C. Pie Chart: - Show percentage distribution of: Production of different crops OR Export share of major commodities.

### **SCIENCE**

#### **For Roll No. 1 to 25**

Topic- Extracting Metals and the Rise of India's Manufacturing hub. ("Make in India").

What to Prepare: A neat assignment in a file. Make sure to use your own words and include diagrams, labeled flowcharts, relevant pictures, and chemical equations.

Your Tasks:

1. Metal Extraction Flowchart: Draw and explain the general steps for extracting common metals. Clearly show and label these four main stages, explaining the scientific rule behind each one:
  - Concentration of the ore
  - Calcination / Roasting
  - Reduction
  - Refining
2. Chemical Equations: Write the balanced chemical equations for extracting:
  - Copper (from Copper glance or Copper pyrite)
  - Zinc (from Zinc blende)

3. The "Make in India" Connection: Write a short essay (150–200 words) explaining how metallurgical and industrial growth is helping India in becoming a major global manufacturing hub?
4. Make sure to link your explanation to:
  - Steel production for infrastructure.
  - Copper and zinc production for automobile and electronics industries.
  - Job creation and economic strength.
  - Mention at least 2–3 real Indian companies or mines.

**(Roll No. 26 onwards)**

Topic- India's leadership in Renewable Energy and Genetic Engineering.

What to Prepare: A well-organized project file (aim for at least 8–10 pages). Include a cover page, charts, diagrams, pictures, and tables.

Your Tasks:

1: Clean Energy

- Explain how Solar Cells work (the Photovoltaic effect) and how Wind Energy converts kinetic energy into electricity.
- Write chemical reactions related to Green Hydrogen production and a redox reaction from Lithium-ion battery technology.
- Mention the International Solar Alliance (ISA), the National Solar Mission, major solar parks, and current clean energy targets.
- Explain how all this makes India a global leader in clean energy.

2: Gene Science

- Explain the basic process of genetic engineering.
- Describe one key Indian example, such as Bt Cotton or the use of genome editing in agriculture/vaccine development.
- Draw a simple flowchart showing the steps of the genetic engineering process.
- Discuss the impact of this technology on food security, farming productivity, and India's position in biotechnology worldwide.

**SOCIAL SCIENCE**

Topic: Make a project on any one of the given topic:

- Consumer Rights
- Social issues
- Sustainable Development

Note:

- ❖ The project should be in a file with 10 to 15 pages.

- ❖ It should be done in neat and legible writing.
- ❖ Paste pictures, maps, and also draw diagrams as and when required.

## **Artificial Intelligence**

### **Q1: Modernizing Bharat – The AI Project Cycle**

**Theme:** India's rise as an agricultural powerhouse using AI.

- **Interactive Activity:** India is a global leader in agriculture. Imagine you are an AI developer creating a tool to help Indian farmers detect pests using drones. **Create a Flowchart** representing the **six stages of the AI Project Cycle** for this specific Indian project.
- **Questions:**
  1. What would be your primary goal during **Problem Scoping** for this project?
  2. How would **Data Exploration** help you interpret patterns in the images of Indian farmlands?

### **Q2: India's Digital Diplomacy – AI Domains**

**Theme:** India's role in global communication and language diversity.

- **Interactive Activity:** India is emerging as a "tech hub" for the world. Create a **Comparison Table** for the **three AI domains**—Statistical Data, Computer Vision (CV), and Natural Language Processing (NLP)—and provide a real-life example of how India could use each to boost its global presence.
- **Questions:**
  1. How could an **NLP** tool like "Machine Translation" help India at a world forum like the G20?
  2. If India uses **Statistical Data** for its "Digital India" initiative, what is the system's primary function?

### **Q3: India as the World's Pharmacy – Principles of Bioethics**

**Theme:** India's healthcare leadership on the global stage.

- **Interactive Activity:** India is often called the "Pharmacy of the World." Using the **Bioethics Framework**, analyze a scenario where an Indian AI health-tech company is distributing vaccines globally. Create a **Four-Quadrant Diagram** representing the **four principles of Bioethics** (Autonomy, Non-maleficence, Beneficence, and Justice).
- **Questions:**
  1. Define **Justice** in the context of distributing Indian medical resources globally.
  2. How does the principle of **Non-maleficence** protect international patients from biased AI algorithms?

