

**LAKSHMIPAT SINGHANIA ACADEMY**

**PROJECT PLAN FOR TERM-II**

**SESSION- 2024-2025**

**CLASS – IX**

**SUBJECT: ENGLISH**



*“Exploration is wired into our brains. If we can see the horizon, we want to know what’s beyond.”*

— Buzz Aldrin, American former astronaut and engineer

Space research has played a pivotal role in India's scientific, technological, and economic development. The Indian Space Research Organisation (ISRO) has pioneered numerous space missions that have positioned India as a global leader in space technology. Many Indian states have made significant contributions to space research. Awareness of space research projects is vital as it inspires curiosity and critical thinking. Understanding the contribution of Indian states fosters pride and motivation, encouraging learners to pursue careers in Science, Technology, Engineering, and Mathematics (STEM).

This project focuses on space and its nuances.

- This will be a group activity.
- It should be presented in a channel file.
- Should consist of 10 pages, with relevant data, illustration, statistical representation, index and bibliography.

**GROUP:** The class will be divided into 6 groups.

- **Group 1, 2, 3** will work on West Bengal and Tamil Nadu
- **Group 4, 5, 6** will work on West Bengal and Maharashtra

## **Topic: Space Exploration and Life as an Astronaut**

This group project will help students explore space projects conducted in the two given states, while encouraging them to think critically about the challenges faced by astronauts. The project is divided into two parts:

1. Research and presentation on space projects in two given states
2. Creative diary entry

### **Part 1: Research and Presentation**

Explore the role and contribution of **West Bengal and Tamil Nadu or West Bengal and Maharashtra** to Indian space research, focusing on specific missions, satellite programs, or space-related institutions in these states.

Students may focus on:

- **Background:** Brief history of the project, key dates, and its significance to space research.
- **Technology/Innovation:** Key technological innovations or contributions from each state.
- **Impact:** How this project benefited or contributed to the Indian space program.
- **Key Figures:** Any notable individuals from these states involved in the projects.

### **Part 2: Diary Entry**

Imagine yourself as astronaut Sunita Williams and write a diary entry within **200 words** reflecting on the physical, mental, and emotional challenges faced during space missions.

**Students may focus on:**

- Physical challenges: Zero gravity, spacewalks, maintaining fitness, etc.
- Mental and emotional challenges: Isolation, staying focused, communication with Earth, missing family, etc.
- Reflection: Include a personal reflection on the significance of being an astronaut

### **LEARNING OBJECTIVE:**

Students will be able to understand India's space program, the contributions of regional institutions, and the realities faced by astronauts, while honing research, writing, and collaboration skills.

### **LEARNING OUTCOME:**

Students have learnt to compose with clarity, coherence and precision.

## RUBRICS FOR EVALUATION

PARAMETERS	5	4	3
Authenticity of the <b>contents and appropriate expression</b> (5)	Content is unique and proper research done and concepts properly explained but lacks expression	Not Unique but the concepts are well explained	Neither unique nor well explained
<b>Timely submission</b> demonstrates concise knowledge and understanding of the theme (5)	The submission addresses the requirement in meaningful and relevant way. The information is concise and accurate	The submission addresses the requirement. The information is presented accurately and in a concise manner	The submission somewhat addresses the requirement, but not in a cohesive or concise manner
<b>Use of Technology</b> (5)	Accesses suggested sites and employed technologies fluently	Accesses suggested sites and employed technologies adequately with support	Struggled while using technology. Struggled with teacher-provide strategies and resources
<b>Creativity and Art Integration</b> (5)	The concept and presentation in submission is creative, especially as compared with other submissions	The concept in the submission is somewhat creative	The concepts in the submission lacks creativity

### SUBJECT: MATHEMATICS

#### **PULSARS AND SIMPLE EQUATIONS (Groups 1, 3, 5)**

A **pulsar** is a rapidly spinning star. It's about the same size as Earth, but it contains as much mass as an entire normal star like the sun. When they are formed, they spin at an unimaginable pace: nearly 30 times every second. As they grow older, they slow down.

Astronomers have measured the spinning of two pulsars: The Crab Nebula pulsar, and AP 2016+28. They used this data to create two simple equations that predict the pulsar's spin rates in the future.

Problem 1: Research and find out simple equations that predict the spin rates of the above mentioned two pulsars.

Problem 2: Evaluate each equation for P, the time to spin once around on its axis, for a time that is 10,000 years in the future. How fast are the two pulsars spinning at that time?

Problem 3: How long will it take Pulsar AP 2016+28 to slow to a period of 1.116 seconds?

Problem 4: In how many years from now will the two pulsars be spinning at exactly the same rates?

Problem 5: How long will it take each pulsar to slow to a period of exactly 2.0 seconds?

(5+5+3+4+3)

<https://spacemath.gsfc.nasa.gov/stars.html>

### **Finding Mass in the Cosmos (Groups 2, 4, 6)**

One of the neatest things in astronomy is being able to figure out the mass of a distant object, without having to 'go there'. Astronomers do this by employing a very simple technique. It depends only on measuring the separation and period of a pair of bodies orbiting each other.

Imagine a massive body such as a star, and around it there is a small planet in orbit. The force of gravity,  $F_g$ , of the star will be pulling the planet inwards, but there will also be a centrifugal force,  $F_c$ , pushing the planet outwards.

This is because the planet is travelling at a particular speed,  $V$ , in its orbit. When the force of gravity and the centrifugal force on the planet are exactly equal, the planet will travel in a circular path around the star with the star exactly at the centre of the orbit.

Problem 1: Research and find out equations that give the force of gravity, centrifugal force and the velocity of the planet at any instant.

Problem 2: Use the three equations found in Problem 1, to derive the mass of the primary body ( $M$ ), given the period  $T$  and radius  $R$  of the companion's circular orbit.

Problem 3: Use the formula  $M = \frac{4\pi^2 R^3}{GT^2}$ , where  $G = 6.6726 \times 10^{-11} \text{ N m}^2 / \text{kg}^2$  and  $M$  is the mass of the primary body in kilograms,  $R$  is the orbit radius in metres and  $T$  is the orbit period in seconds, to find the masses of the primary bodies in the table below. Make a table showing the different values of  $R$  and  $T$  in each case and find the mass of primary body. (Note: 1 light year = 9.5 trillion kilometres)

<b><u>Primary</u></b>	Earth	Jupiter	Sun	Milky Way	Pluto
<b><u>Companion</u></b>	Moon	Callisto	Earth	Sun	Charon

<https://spacemath.gsfc.nasa.gov/stars.html>

### RUBRICS FOR EVALUATION

<b>PARAMETERS</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2/1</b>
Authenticity of the contents and appropriate expression (5)	Content is unique and proper research done and concepts properly explained but lacks expression	Not unique but the concepts are well explained.	Project is not well researched but complete.	Project is neither unique nor well explained.  Submitted late.
Timely submission demonstrates concise knowledge and understanding of the theme (5)	The submission addresses the requirement in meaningful and relevant way. The information is concise and accurate	The submission addresses the requirement. The information is presented accurately and in a concise manner	The submission somewhat addresses the requirement, but not in a cohesive or concise manner	The submission did not address the requirement
Use of Technology (5)	Accesses suggested sites and employed technologies fluently	Accesses suggested sites and employed technologies adequately with support	Minimum use of suggested sites and inadequate use of technologies	Struggled while using technology. Struggled with teacher-provided  strategies and resources
Creativity and Art Integration (5)	The concept and presentation in submission is exceptionally creative, especially as compared with other submissions	The concepts in the submission is somewhat creative	The concepts in the submission is somewhat creative but lacked presentation	The concepts in the submission lacks creativity

## **SUBJECT: SCIENCE**

### **PHYSICS**



#### **Learning Objectives:**

To teach the students about the space scientists and their contribution to space technology since 1947.

Instruction: Class will be divided into 6 groups as per the given Scientist's Name - AJC Bose, C V Raman, SN Bose, M. Annadurai, M. Shankaran and S. Somnath.

#### **For Groups A, B and C**

1. Brief introduction of the Scientist as the group name is assigned.
2. Do a brief research and prepare a collage on a full chart paper to show the contribution of scientists of West Bengal and Tamil Nadu in space technology (three from each state).
3. Show some recent achievement on space research by India through a series of pictures (minimum 5) on the same chart paper.

#### **For Groups D, E and F**

1. Brief introduction of the Scientist as the group name is assigned.
2. Do a brief research and prepare a collage with a full chart paper to show contribution of scientists of West Bengal and Maharashtra in space technology (three from each state).
3. Show some recent achievement on space research by India through a series of pictures (minimum 5) on the same chart paper.

### Learning Outcomes:

Students learnt about some prominent scientists of West Bengal, Maharashtra and Tamil Nadu and their contribution to space technology.

### CHEMISTRY

**LEARNING OBJECTIVES:** The students will learn about

- The different problems faced by astronauts

An issue in spacecraft air is: suspended particles, also known as aerosols, inside a spacecraft.

1. What are aerosols? What are their sources in a spacecraft?
2. How should the spacesuit be designed for astronauts to survive extreme conditions in space.
3. Breathing pure oxygen is dangerous. Why? Still astronauts are made to breathe pure oxygen. Explain.

- Project will be presented in a file.
- Give relevant pictures wherever necessary.

**LEARNING OUTCOMES:** The students learnt about:

- Sources of aerosols in spacecraft
- Methods of survival of astronauts

### **RUBRICS FOR EVALUATION – Physics, Chemistry-**

Parameters	2	1.5	1	.5
<b>Content (2)</b>	Applicable to Theoretical knowledge and all facts are correct.	Applicable to Theoretical knowledge and all facts are correct. One or two factual errors	Applicable to Theoretical knowledge and all facts are correct. Few factual errors.	Applicable to theoretical knowledge and all facts are not at all relevant to the topic.

<b>Presentation (2)</b>	Excellent document layout, with effective use of colors, text, and images	Overall impact of the project is attractive and appealing to the viewers. Students are well prepared. Teamwork is visible. Project is compiled up to the mark.	Overall impact of the project is somewhat appealing to the viewers. Students are well prepared. Teamwork is visible. Project is fairly compiled.	Some attempt has been made to make the presentation appealing to the viewers. Students are well prepared. Teamwork is visible. Project is not compiled up to the mark.
<b>Art Integration- Graphics/ Photographs /Charts/ Relevance to the topic (1)</b>			Presentation includes relevant photographs/ charts/ diagrams. Aesthetically appealing.	Graphics & Chart are not clear. They are irrelevant to the topic
<b>Team Work (1)</b>			Excellent collaboration.	Independent research work with little collaboration.

## **BIOLOGY**

### **Learning objective**

Students will be able to –

- Realize the importance of the favorable living conditions they receive on Earth.
- Understand how zero gravity affects the physiology.
- Get an idea of the adversities faced in the spacecraft to maintain their daily activities and hygiene.

### **Learning Outcome**

Students were able to –

- Explain the effect of zero gravity on our vitals.
- Compare living conditions on Earth and in space.



## LIFE IN SPACE

**Astronauts don't have to worry about germs like on Earth! The only germs aboard the space shuttle or the International Space Station are the ones they take with them. But that doesn't mean they won't get sick. Zero gravity and a sunrise every 90 minutes can disrupt an astronaut's health, both physically and mentally.**

1. What are the health risks do prolonged space travels present?
2. Astronauts are required to exercise two hours per day. What type of exercises do they need to do and how do these exercises help?
3. How is the hygiene maintained in the spacecraft? How does the waste disposal mechanism work there?
4. Elaborate the fact that existence on surface of earth needs no adjustment with the environment as compared to living in space. Express your gratitude to the system of nature for an easy living on earth through any form of art.

### **Evaluation Rubrics**

<b>PARAMATERS</b>	<b>2</b>	<b>1.5</b>	<b>1</b>
Details of Research on the topic (2)	Content is well researched ,genuine with detailed explanation	Not well researched , but the concepts are well explained	Neither well researched , nor well explained
Presentation (2)	Well presented	Average	Sketchy
Creativity and Art Integration (2)	The presentation is creative and aesthetically appealing.	The presentation is creative but lacks aesthetic touches.	The presentation lacks creativity
Ethical aspect (2)	Concept well related to life problems	Concept is related to life problems is not well explained	Lack of problem solving aspect

## **SUBJECT: SOCIAL SCIENCE**

### **ALIGNED WITH CBSE PROJECT TOPIC**

## **GEOGRAPHY**

**TOPIC: "Natural Vegetation and Wildlife"**

**SUB TOPIC: Wildlife**



The wildlife in India consists of the variety of plants (flora) and animals (fauna) living in a geographic area and working together to form a chain of life. In India nearly 7-8% of all plant and animal species are found. The only country in the world that has both lions and tigers in India. Some species of deer such as Indian Bison, Nilgai, Chausingha, and Gazel are found in India has a variety of species and living things because of its different and favorable geographical factors. India is the home to about 7.6% of mammals, 14.7% of amphibians, 6% of birds, 6.2% of reptiles, and 6.0% of flowering plant species. India's forest lands nurture about 500 species of mammals and 2000+ bird species.. India hosts 4 biodiversity hotspots: the Himalayas, the Western Ghats, the Indo-Burma region and the Sundaland. These hotspots have numerous endemic species. As India is home to many rare and vulnerable animal species, a wildlife sanctuary in India has been set up to keep the animals safe and to protect them from any harm.

### **PROJECT FORMAT:**

- ✓ Projects need to be done in groups.
  - ✓ Support the project with relevant pictures.
  - ✓ Students will do it on **full-size** chart paper.
- The class will be divided into 6 groups.
  - Each group is assigned a specific case study related to wildlife conservation, flora and fauna, and government initiatives.

- Students will provide a brief report on the CASE STUDY assigned to them. (80 Words)

### **Group 1: Project Tiger and Lion Conservation**

- **Case Study:** Focus on the conservation of tigers in Madhya Pradesh, West Bengal (Sundarbans), and Gir Forest in Gujarat for lions. Discuss how these species have been protected under Project Tiger.
- **Map Work:** Mark the locations of tiger and lion reserves in India. (Any 4)

### **Group 2: Conservation of the Indian Elephant and One-Horned Rhinoceros**

- **Case Study:** Study the habitats of elephants in Assam, Karnataka, Kerala, and the conservation efforts for the one-horned rhinoceros in Assam and West Bengal.
- **Map Work:** Mark the regions where elephants and rhinoceros are commonly found.(Any 4)

### **Group 3: Wildlife in the Desert Regions – Wild Ass and Camels**

- **Case Study:** Explore the wildlife found in arid regions like the Rann of Kachchh and the Thar Desert, focusing on wild ass and camels.
- **Map Work:** Highlight the Rann of Kachchh and the Thar Desert on the map and the wildlife sanctuaries present in those areas. (Any 4)

### **Group 4: Conservation of Endangered Species (Red Panda, Snow Leopard) in the Himalayan Region.**

- **Case Study:** Focus on endangered species like the Red Panda and snow leopard in the Himalayas, Ladakh, and Sikkim. Explore conservation challenges in high-altitude ecosystems.
- **Map Work:** Mark the regions where these endangered species are found. (Any 4)

### **Group 5: Conservation of Marine and Aquatic Life.**

- **Case Study:** Research the marine and aquatic life in India's rivers, lakes, and coastal areas, focusing on species like turtles, gharials, and crocodiles.

- **Map Work:** Mark significant river systems, lakes, and coastal areas known for aquatic species. (Any 4)

#### **Group 6: Role of Biosphere Reserves in Protecting Flora and Fauna.**

- **Case Study:** Investigate the role of biosphere reserves like the Sundarbans, Nanda Devi, and Nilgiri in protecting India's biodiversity.
- **Map Work:** Mark the locations of the biosphere reserves in India.(Any 4)

**SUBJECT INTEGRATION:** Biology, Environmental Science, Art, English and Mathematics.

#### **LEARNING OBJECTIVE:**

The objective of this project is to create awareness about the biodiversity of India, the importance of wildlife conservation, and the moral responsibility we hold in preserving our ecosystem. By researching India's wildlife, natural habitats, and government initiatives for protection, students will learn the value of coexisting with nature and the importance of maintaining balance in the ecosystem for the well-being of all species, including humans.

#### **LEARNING OUTCOME:**

1. Knowledge of India's Biodiversity and awareness of conservation Efforts.
2. Students will develop moral values related to environmental ethics, understanding their role in preventing the destruction of nature.
3. Students will enhance their ability to work in teams, research case studies, and present findings effectively.
4. Students will improve their geographical knowledge by identifying and marking key wildlife habitats and conservation areas on the map.
5. Critical Thinking- Students will analyze the impact of human activities on ecosystems and suggest solutions for better environmental protection.
6. By embodying these moral values, students will not only become better environmental stewards but also grow into responsible global citizens with a deep sense of compassion, respect, and responsibility for the world around them.

## **LINKS:**

[https://www.wii.gov.in/desert\\_ecosystem](https://www.wii.gov.in/desert_ecosystem)

<https://www.snowleopard.org>

<https://www.redpandanetwork.org>

<https://www.wcsindia.org>

<https://en.unesco.org/biosphere>

<https://www.tigernet.nic.in>

<https://www.sanctuarynaturefoundation.org/projects/elephants>

<https://en.wikipedia.org/wiki/Wildlife#:~:text=Wildlife%20refers%20to%20undomesticated%20animal,be%20found%20in%20all%20ecosystems.>

## **Reference:**

NCERT BOOK

## **HISTORY**

PASTORALISM :-ALIGNED WITH THE LESSON : PASTORALISM AND THE MODERN WORLD.(A CBSE HISTORY PROJECT)

The rich tapestry of Indian Pastoralism from bleating sheep in the north to snorting camels in the west, quacking ducks in the south and the mooing yaks in the east demands renewed attention. Pastoralists offers a multifaceted production system that contributes significantly to economy, culture and environmental sustainability.

**Learning Objective:** Through this students will learn about the pastoralists, their livelihood, use of tools, understand their mobility and challenges they face.

**Learning Outcome:** Students will also learn about the impact of social changes, how pastoral community balance conservation and do sustainable use of rangelands.

**Methodology:** students will be grouped according to their respective groups and will make the project according to the questions assigned to them.

They will use the shoe lace file for their project. Each project will be supported by ILLUSTRATIONS, STORYBOARD, RELEVANT DATA, NEWSPAPER ARTICLES, PICTURES.

Contribution of each member must be clearly mentioned in the project.

### **GROUP 1:**

- 1) India is a collage of pastoralist cultures, and among its myriad castes and communities justify this how pastoralism is carried out in INDIA?
- 2) Pastoralists in Modern India: What is their Current Status and Future prospects?
- 3) Discuss with illustrations, maps the life and movements of the pastoral nomads in INDIA?

### **SUGGESTED REFERENCE:**

[Pastoralism in India: rangeland, not wasteland | Heinrich Böll Stiftung | Brussels office - European Union \(boell.org\)](#)  
[\(PDF\) Pastoralists in Modern India: Current Status and Future Prospectus \(researchgate.net\)](#)

### **GROUP 2:**

- 1) What is the state of the Pastoralists and their economic contribution in India?
- 2) How can the State and private agencies work towards improving the livelihood of pastoralists?
- 3) What are the challenges faced by pastoralists today in INDIA? Suggest 5 solutions your group can bring forth to help the pastoralist

### **GROUP 3 and 4**

- 1) Pastoralists in INDIA need better access to land and Right recognition- support your project with different constitutional Acts and Government programs.
- 2) Why is it important to understand the pastoral folklore and cultural Expressions?
- 3) How can we reclaim Pastoralism as a key contributor to the ecosystem?

## **Suggested references**

[Greener pastures: How Indian pastoralists are being aided to return to their traditional livelihood \(downtoearth.org.in\)](http://downtoearth.org.in)

## **GROUP 5 AND 6**

- 1) Pastoralism has been for centuries an important component of living for multiple tribal groups in Africa, particularly for the Maasai- research this aspect in your project?
- 2) What are the policy framework for pastoralism in Africa to secure, protect and improve the lives, livelihoods and rights of pastoralist communities?
- 3) How has the modern life harming the Masai tribes and their tradition?

[Maasai Pastoralists: Practices, Culture, and Role in Tanzanian Society | ECHOcommunity.org](http://ECHOcommunity.org)

[30259-doc-pastoral\\_policy\\_framework\\_low\\_res.pdf \(au.int\)](http://30259-doc-pastoral_policy_framework_low_res.pdf)

## **Rubrics for Evaluation**

<b>PARAMETERS</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
Content (4)	Applicable to Theoretical knowledge and all facts are correct. Map work done perfectly.	Applicable to Theoretical knowledge and all facts are correct. One or two factual errors. Map work done but not shaded/ coloured correctly.	Applicable to Theoretical knowledge and all facts are correct. Few factual errors.  Map work not shaded correctly. All states are not marked.	Applicable to theoretical knowledge and all facts are not at all relevant to the topic. Map is missing.
Presentation (3)	-	Overall impact of the project is attractive and appealing to the viewers. Students are well prepared. Teamwork is visible. Project is compiled up to the mark.	Overall impact of the project is quite appealing to the viewers. Students are well prepared. Teamwork is visible. Project is fairly compiled.	Some attempt has been made to make the presentation appealing to the viewers. Students are well prepared. Teamwork is visible. Project is not compiled up to the mark.
Graphics/Photographs/Charts/Relevance to the topic and Team Work	-	Presentation includes relevant photographs/ charts/ Maps/	Presentation includes relevant photographs/ charts/ Maps/	Graphics / Chart /models are not clear. They are irrelevant to the topic.

(3)		<p>model/diagrams are correct/relevant to the topics.</p> <p>Independent research work and collaboration shown by the team members. Tried to adapt the new technology.</p>	<p>model/diagrams are partially correct/relevant to the topics.</p> <p>Team work shows communication gap.</p>	<p>No group coordination shown.</p>
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**SUBJECT: ARTIFICIAL INTELLIGENCE**

**Topic: Solution to Sustainable Development Goal through AI Project Cycle**

**Learning Objective: -**

- Foster a deeper understanding of Sustainable Development Goals
- Develop data handling and data analysis skill
- Research on AI based skills and employability skills required for futuristic solutions
- Empower youth to become human-centric designers and users of AI

**Learning Outcome:**

*Students will be able to -*

- Develop 21<sup>st</sup> century's design thinking skill.
- Conduct survey and derive visual presentation after analyzing data.
- Handle various AI related tools and techniques.
- Empower themselves as design thinkers by identifying a problem and designing a prospective AI based model.

**Introduction:-**

AI project cycle is a structured roadmap for developing and deploying artificial intelligence projects to solve real-world problems. It guides us through a structured process that includes problem scoping, data acquisition, data exploration, modeling, and evaluation.

<https://aiforkids.in/class-10/project-cycle/>

**To Do:-**



**Create a simple doable Artificial Intelligence based solution for any one problem around you, and also associated with one out of 17 sustainable development goals set by United Nation.**

I. Team will comprise of two members of consecutive roll numbers. Discuss with your team members, research upon SDGs and decide a problem statement you would like to cater through your project.

<https://sdgs.un.org/goals>

II. Attempt all the stages of AI project life cycle through the techniques/ tools/ application taught.

1. **Problem Scoping** - Who, What, Where and Why are most essential part for any problem or even a solution.

Create a 4W canvas template using MS Word. Fill up all the Ws of template based on the problem statement chosen by you.

2. **Data Acquisition** - Reliable data can be collected through various sources like surveys, cameras, web scraping etc. and store in a secured location.

i. Each member will do a survey with 4-6 people to gather enough textual data so that next step can be done effectively.

ii. Each member will collect 5-7 image data using web scraping or camera for training their model.

3. **Data Exploration** - Analyse the data collected to understand a pattern and gain insights.

i. Based on the survey data, create a spreadsheet using MS Excel with at least 3 column heading and 8 records/ rows.

ii. Prepare a graph using the spreadsheet created above, to analyse the data effectively.

4. **Data Modelling** - Using the images collected by your team, prepare a learning based AI model with the help of <https://teachablemachine.withgoogle.com/>

(Details of teachable machine is given in your text book (page 252 onwards) as well as below for your kind perusal.)

5. **Evaluation** - It is the process of testing an AI model to understand its reliability. It is done by feeding a test dataset into the model as input and comparing its outputs with actual answers.

**Submission Process:-**

- i. Create a folder on the desktop named 9Sec\_Names\_Prj2.
- ii. Bring required resources in a pen drive, and store in the folder.
- iii. Save all the activities done during project in this folder, except teachable machine which has to save in a drive location. Filenames will be StageNumber\_FirstNames.

### Sources:-

<https://sdgs.un.org/goals>

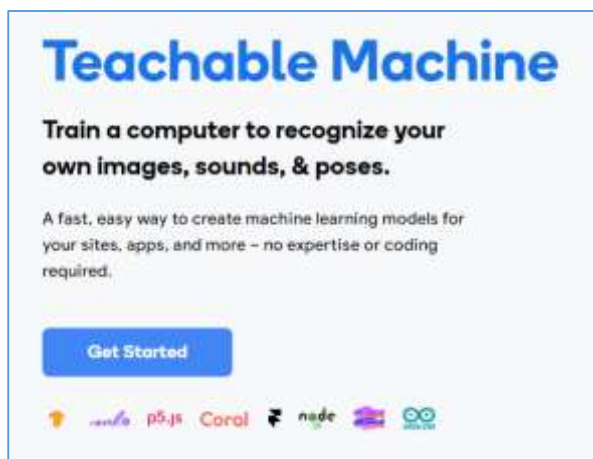
<https://aiforkids.in/class-10/project-cycle/>

<https://teachablemachine.withgoogle.com/>

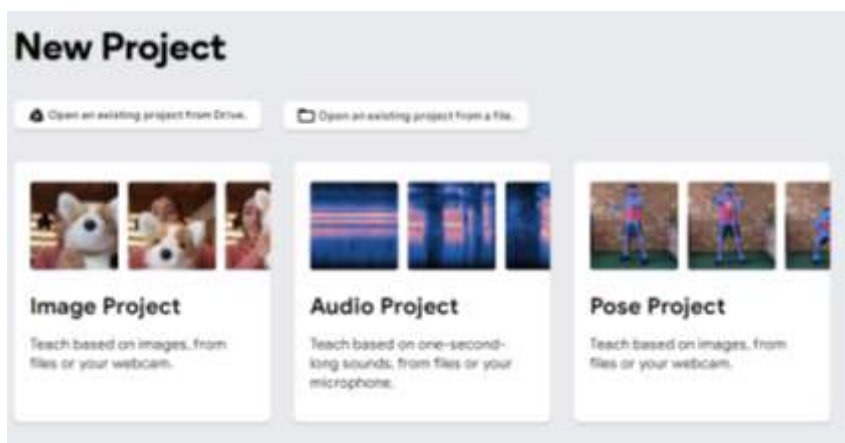
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### Learning Based AI Modelling Activity -

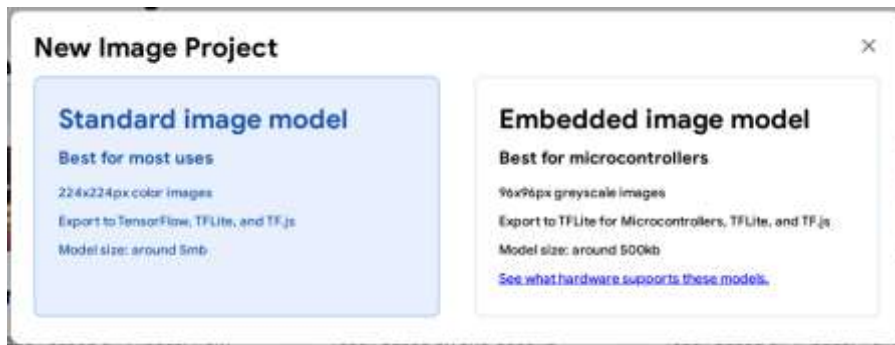
1. Use a browser to open <https://teachablemachine.withgoogle.com/>
2. Click on get started button..



3. Three different types of projects can be done. Prefer to choose Image project



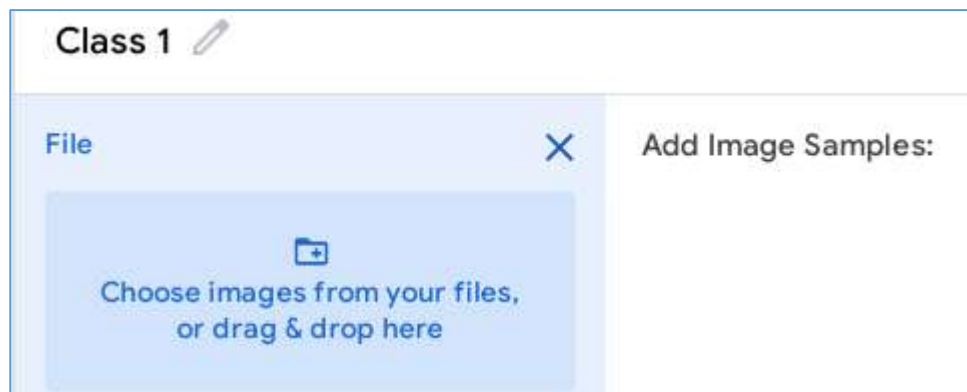
4. Choose the option Standard Image Project.



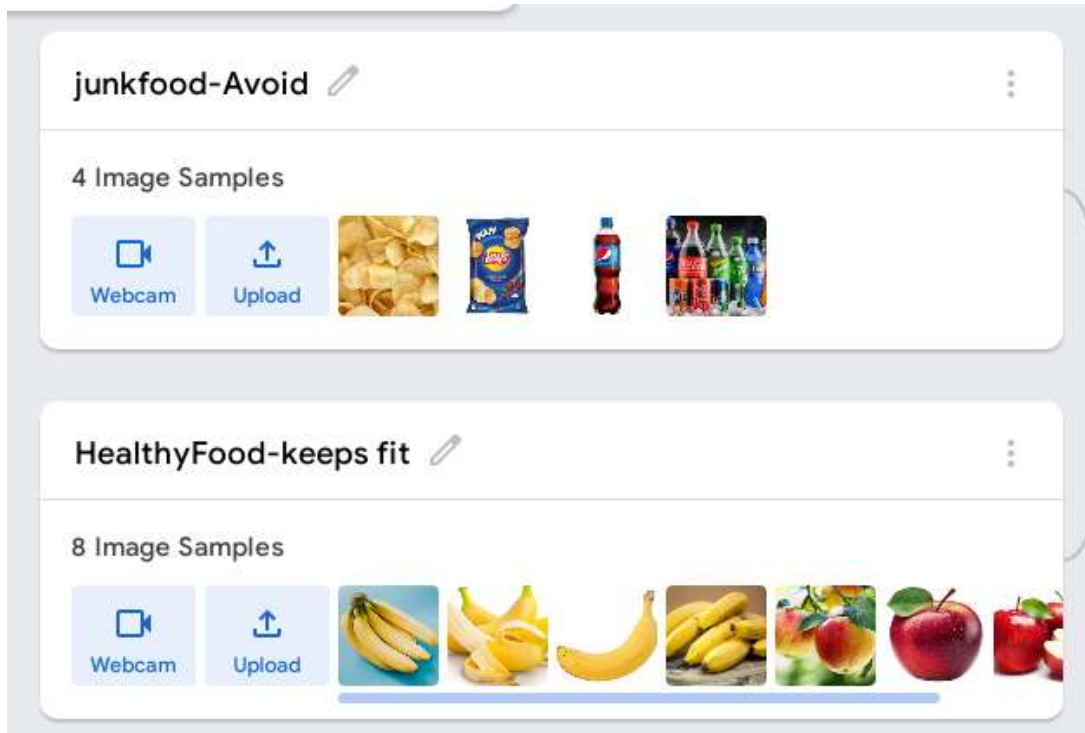
5. We can add sample data through class. Rename Class 1 by clicking on the pen next to it and give a suitable name to your sample data set 1.

6. Choose the option images from your file, select the folder where your image data are stored and upload them.

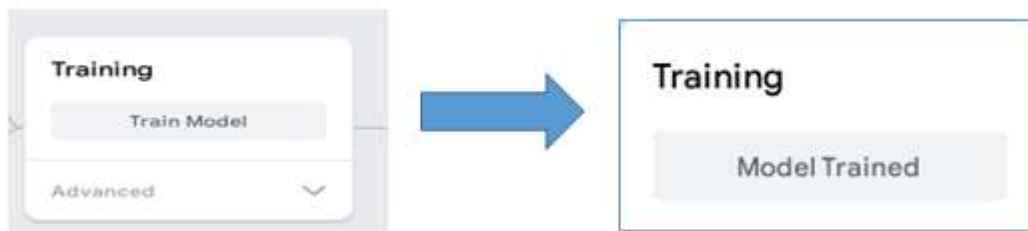
**Note- Each class should have at least 10 sample data.**



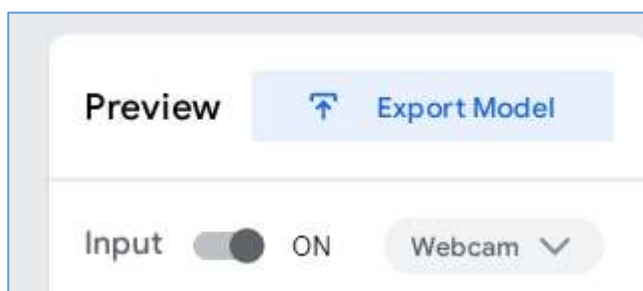
An example is shown below-



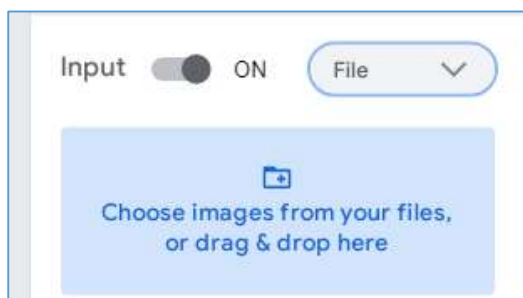
7. Once sample data added in all the required classes click on Train Model button.



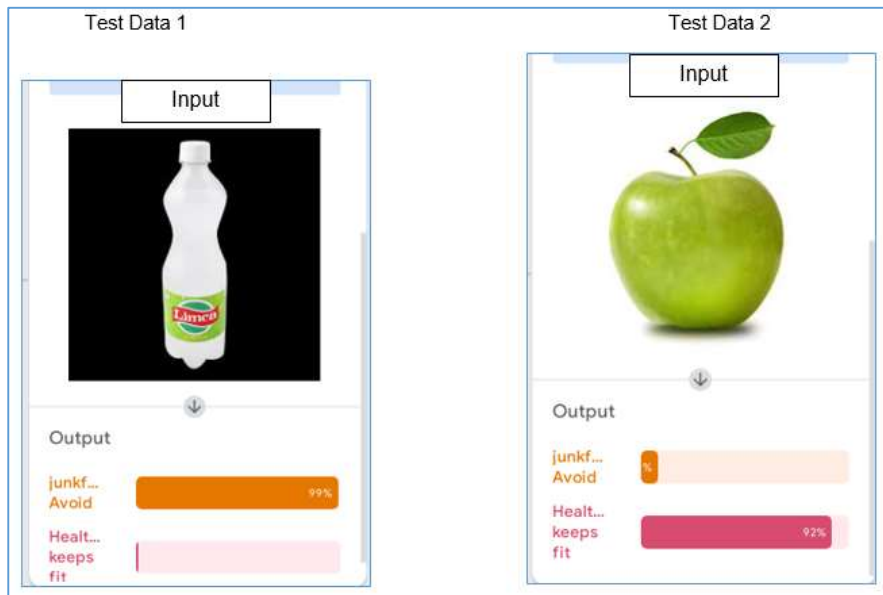
8. Once training done, we can provide input to trained model either through Webcam or by uploading stored image files



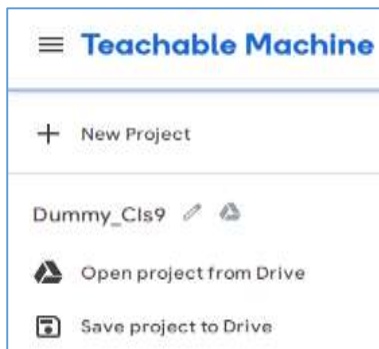
OR



The evaluation stage is shown below based on certain input test data in the example used above



9. Save your project to Drive. **(Guidance will be given during project)**



## **Rubrics for Evaluation**

Criteria	Marks: 4	Marks: 3	Marks: 2	Mark: 1/0
Problem Scoping –(4)	Crafted an excellent problem statement using 4W canvas template	The problem statement was somewhat clear through 4W canvas template	The problem statement was somewhat through wrong 4W canvas template	The problem statement was not at all explained using 4W canvas template
Data acquisition – (4)	Detailed research work/ survey to collect valuable data	Moderate research work/ survey to collect reasonable data	Research work/ Survey was done but with less data than as asked in the project	no research work/ no survey done
Data exploration – (4)	Analysis of data done effectively and using digital tool generated excellent tabular and visual representation	Analysis of data done moderately and using digital tool generated good tabular and visual representation	Limited data analysis done and using digital tool generated less effective tabular and visual representation	inappropriate data analysis done and generated ineffective tabular and visual representation
AI Modeling – (4)	Effectively used guided digital tool to create excellent AI model.	Moderately used guided digital tool to create good AI model.	Limited use of guided digital tool leads to less effective AI model	Limited/no use of guided digital tool leads to ineffective AI model
Team Work and authenticity – (4)	All members have worked unitedly and produced an original/ authentic project within time.	Few members have worked unitedly and produced an original/ authentic project within time.	Team work was missing during the project OR/AND Not completed within time.	The project is a copied project from another source.

## विषय : अंतरिक्ष अनुसंधान

भारत ने अंतरिक्ष अनुसंधान में अपनी सक्रिय भूमिका को प्रभावी रूप से स्थापित किया है और आने वाले वर्षों में और अधिक महत्वपूर्ण योगदान देने की क्षमता रखता है। भारत के किसी भी प्रदेश का योगदान समस्त भारतवासियों को अंतरिक्ष अनुसंधान में सक्रिय भूमिका निभाने के लिए प्रोत्साहित करता है। अंतरिक्ष यात्री का कार्य तकनीकी रूप से चुनौतीपूर्ण होने के साथ-साथ शारीरिक, मानसिक और भावनात्मक रूप से भी बहुत कठिन होता है। अंतरिक्ष में अनुसंधान और खोज के लिए जाने वाले अंतरिक्ष यात्रियों की सुरक्षा और उनके मिशन में सफलता सुनिश्चित करने के लिए भारतीय अंतरिक्ष अनुसंधान में पश्चिम बंगाल, तमिलनाडु और महाराष्ट्र के वैज्ञानिकों और इंजीनियरों द्वारा विकसित अभिनव समाधानों के उल्लेख सहित अंतरिक्ष यात्री सुनीता विलियम्स के समक्ष उपस्थित चुनौतियों और उनके अनुभवों के विभिन्न पहलुओं को आधार बनाकर एक सचित्र परियोजना कार्य तैयार करें।

### आवश्यक निर्देश

प्रत्येक कक्षा को 6 समूहों में विभाजित किया जाएगा।

समूह 1, 2, 3 अंतरिक्ष अनुसंधान में पश्चिम बंगाल और तमिलनाडु के योगदान और अंतरिक्ष यात्री की चुनौतीपूर्ण भूमिका पर काम करेंगे।

समूह 4, 5, 6 अंतरिक्ष अनुसंधान में पश्चिम बंगाल और महाराष्ट्र के योगदान और अंतरिक्ष यात्री की चुनौतीपूर्ण भूमिका पर काम करेंगे।

### संकेत बिन्दु

- प्रत्येक राज्य से प्रमुख तकनीकी नवाचार या योगदान और अनुसंधान में शामिल उल्लेखनीय व्यक्ति का परिचय।
- इन राज्यों में विशिष्ट मिशनों, उपग्रह कार्यक्रमों या अंतरिक्ष से संबंधित संस्थानों का उल्लेख।
- अंतरिक्ष यात्री सुनीता विलियम्स द्वारा अंतरिक्ष मिशन के दौरान सामना की जाने वाली शारीरिक, मानसिक और भावनात्मक चुनौतियों की सचित्र प्रस्तुति।

### Learning Objective

- भारत के अंतरिक्ष कार्यक्रम के मूल उद्देश्य से अवगत कराना।
- अंतरिक्ष अनुसंधान के क्षेत्रीय संस्थानों के योगदान के प्रति सजगता का विकास।
- अंतरिक्ष यात्रियों की चुनौतीपूर्ण परिस्थितियों की अभिव्यक्ति संबंधी सृजनात्मकता का विकास।
- अनुसंधान, लेखन और सहयोग कौशल संबंधी स्थितियों की परख तथा उपयुक्त भाषा-कौशल का विकास।

### Learning Outcomes

- भारत के अंतरिक्ष कार्यक्रम और उसके मूल उद्देश्य से परिचित हुए।
- क्षेत्रीय संस्थानों द्वारा अपनाए गए अत्याधुनिक उपायों से परिचित हुए।
- वैज्ञानिकों और इंजीनियरों द्वारा विकसित अभिनव समाधानों की सचित्र अभिव्यक्ति के लिए उपयुक्त भाषा-कौशल का विकास हुआ।

**RUBRICS FOR C LASS 9 HINDI PROJECT**

मानदंड	5	4	3	2
विषय-वस्तु का प्रभावी और सृजनात्मक वर्णन (5)	विषय सामग्री से जुड़े तथ्यों पर गहरा शोध और लेख में सटीक एवं विषयानुरूप वर्णन भूमिका और निष्कर्ष के साथ है।	एक या दो तथ्यात्मक त्रुटियों के अलावा अधिकांश तथ्य सही एवं विषयानुरूप है। भूमिका और निष्कर्ष त्रुटियों के साथ है। प्रश्नोत्तर से पहले भूमिका स्पष्ट नहीं थी।	कुछ तथ्य विषयानुरूप है पर तीन से अधिक त्रुटियाँ पाई गई हैं।	प्रयुक्त लेखों में विषय सामग्री स्पष्ट नहीं है।
तकनीक एवं इंटरनेट संसाधनों का रचनात्मक प्रयोग एवं चित्र संकलन (5)	परियोजना के विषय की प्रभावी अभिव्यक्ति के लिए ग्राफिक्स, इंटरनेट संसाधनों, तस्वीरों का अच्छा उपयोग।	परियोजना के विषय की प्रभावी अभिव्यक्ति के लिए ग्राफिक्स, इंटरनेट संसाधनों, तस्वीरों का कुछ उपयोग।	परियोजना के विषय की प्रभावी अभिव्यक्ति के लिए ग्राफिक्स, इंटरनेट संसाधनों, तस्वीरों का कम उपयोग।	परियोजना के विषय की प्रभावी अभिव्यक्ति के लिए ग्राफिक्स, इंटरनेट संसाधनों, तस्वीरों का उपयोग नहीं किया गया।
भाषा का प्रयोग (5)	प्रस्तुतीकरण में वाक्य-विन्यास, वर्ण-विन्यास एवं विराम चिह्न संबंधी त्रुटियाँ न होना। सहज एवं बोधगम्य भाषा का उपयुक्त प्रयोग।	प्रस्तुतीकरण में वाक्य-विन्यास, वर्ण-विन्यास एवं विराम चिह्न संबंधी कुछ ही त्रुटियों का होना।	प्रस्तुतीकरण में वाक्य-विन्यास, वर्ण-विन्यास एवं विराम चिह्न संबंधी त्रुटियों के कारण भाषा की उपयुक्तता का अभाव पाया जाना।	प्रस्तुतीकरण में वाक्य-विन्यास, वर्ण-विन्यास एवं विराम चिह्न संबंधी त्रुटियों के कारण विषयानुसार भाषा का प्रयोग न हो पाना।
समग्र प्रस्तुति (5)	परियोजना का समग्र प्रभाव रोचक और आकर्षक।	परियोजना का समग्र प्रभाव ध्यान आकर्षण के लिए पर्याप्त।	परियोजना की समग्र प्रस्तुति को आकर्षक बनाने के लिए कुछ ही प्रयास किया गया।	समग्र प्रस्तुति को रोचक बनाने के लिए विद्यार्थी ने किसी प्रकार का प्रयास नहीं किया।





# LAKSHMIPAT SINGHANIA ACADEMY

## INTEGRATED PROJECT

### TERM -II ( 2024-25)

#### CLASS-IX

#### SUBJECT – BENGALI

#### অন্তরীক্ষ অভিযান :

মহাকাশ গবেষণায় ভারত কার্যকরভাবে তার সক্রিয় ভূমিকা প্রতিষ্ঠা করেছে। আগামী দিনে আরো বেশি উল্লেখযোগ্য অবদানের সম্ভাবনা রয়েছে বিস্তর। এই মহাকাশ গবেষণায় বিভিন্ন রাজ্যের ভূমিকাও কম নয়। একজন মহাকাশচারীকে শুধুমাত্র প্রযুক্তিগত দিক থেকেই বিভিন্ন প্রতিকূলতার সম্মুখীন হতে হবে এমনটা নয়, তার সাথে সাথে শারীরিক, মানসিক নানা প্রতিকূলতার জন্য নিজেদের প্রস্তুত রাখতে হয়। ভারতীয় মহাকাশ গবেষণায় পশ্চিমবঙ্গ, তামিলনাড়ু ও মহারাষ্ট্রের অবদান কিছু কম নয়। মহাকাশ গবেষণা ও অন্বেষণে মহাকাশচারীদের নিরাপত্তা, ও সাফল্য এবং এই প্রসঙ্গে মহাকাশচারি সুনিতাউইলিয়ামসের অভিজ্ঞতা ও তিনি যে যে প্রতিকূলতার সম্মুখীন হয়েছিলেন তার বিভিন্ন দিকগুলি অবলম্বন করে একটি সচিত্র পত্রিকা তৈরি কর। যাতে থাকবে

- প্রতিটি রাজ্য থেকে উল্লেখযোগ্য প্রযুক্তিগত উদ্ভাবন বা অবদান এবং গবেষণার সাথে সম্পর্কযুক্ত উল্লেখযোগ্য ব্যক্তিদের পরিচয়
- রাজ্যগুলির নির্দিষ্ট মিশন, সহযাটেলাইট প্রোগ্রাম, ও মহাকাশ সম্পর্কিত প্রতিষ্ঠানের উল্লেখ
- মহাকাশচারী সুনিতা উইলিয়ামসের মহাকাশ অভিযানের অভিজ্ঞতাও শারীরিক মানসিক বিভিন্ন প্রকার প্রতিকূলতা ও তার সমাধানের উপায়ের সচিত্র তথ্য

#### প্রকল্পের উদ্দেশ্য :

- ভারতের মহাকাশ কর্মসূচীর মূল উদ্দেশ্য সম্পর্কে সচেতন করা।
- মহাকাশ গবেষণায় আঞ্চলিক প্রতিষ্ঠানের অবদান সম্পর্কে সচেতনতার বিকাশ ঘটানি।
- মহাকাশচারীদের প্রতিকূল পরিস্থিতি ও তার সমাধানের উপায় সম্পর্কিত নানা তথ্য সম্পর্কে অবহিত করা।
- ভাষাগত দক্ষতার বিকাশ ঘটানো।

#### প্রকল্পের ফলাফল:

- ভারতের মহাকাশ কর্মসূচী এবং তার মূল উদ্দেশ্যের সাথে শিক্ষার্থীরা পরিচিত হবে।
- এই বিষয়ে বিভিন্ন আঞ্চলিক প্রতিষ্ঠান ও তাদের অবদান সম্পর্কে সম্যক ধারণা লাভ করবে।

- মহাকাশচারীদের বিভিন্ন প্রযুক্তিগত উদ্ভাবন ও প্রতিকূলতার সমাধানগুলিত সচিত্র তথ্য প্রকাশের উপযুক্ত ভাষার দক্ষতা বিকশিত হবে।

RUBRICS:

Skills– দক্ষতা	Competency – যোগ্যতা			
	4	3	2	1
Content (4 marks)	সকল বিষয় সঠিক ভাবে লেখা হবে এবং প্রতিটি ক্ষেত্র আলাদা ভাবে প্রতিফলিত হবে	বিষয়বস্তুর উল্লেখে অপ্রতুলতা	প্রয়োজনীয় বিষয়ের প্রতিটি ক্ষেত্রের উল্লেখ নেই	অসম্পূর্ণ কাজ
Research (4 marks)	বিষয়ের স্পষ্ট ও যথাযথ উল্লেখ	প্রয়োজনীয় বিষয়ের অসম উল্লেখ	প্রয়োজনীয় বিষয়ের অনুপস্থিতি	ভুল পদ্ধতি বেছে নেওয়া
Creativity (4 marks)	বিষয়বস্তুর সাথে সমতা বজায় রেখে মৌলিক চিন্তাশীলতা	বিষয়বস্তুর সাথে সমতা বজায় থাকলেও মৌলিকতার অভাব	বিষয়বস্তু ও নামকরণে সমতার অভাব	নামকরণের অনুপস্থিতি
Art Integration (4 marks)	পরিচ্ছন্ন কাজ, উপযুক্ত প্রচ্ছদ ভাবনা, উপযুক্ত শিল্পভাবনা	উপযুক্ত প্রচ্ছদ কার্যের অপ্রতুলতা, সৃজনশীলতার অভাব	উপযুক্ত প্রচ্ছদের অভাব	প্রচ্ছদের অনুপস্থিতি
Overall Presentation (4 marks)	সুন্দর, পরিচ্ছন্ন উপস্থাপনা	সুন্দর, পরিচ্ছন্ন উপস্থাপনা, কার্যে আত্মবিশ্বাসের অভাব	কার্যে পরিচ্ছন্নতার অভাব	বানান ভুলের বাহুল্য