ITL PUBLIC SCHOOL

Summer Engagement Programme

Session 2026-27

Class X

Theme: Computation Thinking and AI

Topic: Sustainable Cities and Smart Living: Planning to Progress

SUMMER ENGAGEMENT PROGRAMME
Class X

Interdisciplinary Project: Computational Thinking & AI

Dear Students
In today's rapidly evolving digital world, Computational Thinking (CT) and Artificial Intelligence (AI) have become essential skills for learners. They help students think critically, solve problems creatively, and design innovative solutions for real-world challenges.
Computational Thinking is a logical and systematic way of solving problems using concepts commonly used in computer science — even without using a computer. It goes beyond coding and encourages students to connect subjects like Science, Social Science, and English to create meaningful, data-driven solutions.

The four core pillars of Computational Thinking are:
1**. Decomposition** – Breaking a complex problem into smaller, manageable parts.
2. **Pattern Recognition** – Identifying repeated trends or logical sequences.
3. **Abstraction** – Focusing only on important information while ignoring unnecessary details.
4. **Algorithmic Thinking** – Creating step-by-step solutions to solve problems effectively.

Summer vacations provide a wonderful opportunity to explore new ideas and learn beyond textbooks. Through this project, you will act as a young innovator, study a real-life problem, and suggest smart and sustainable solutions using creativity, observation, and critical thinking.

General Instructions:

1. Each subject to be done on different coloured A4 size sheets as per the colour and subject mentioned below:
Maths- light Blue
Science- light green
SST- light yellow
English- light pink
2nd language- mauve/ light purple
AI- white

2. All the subject sheets to be punched together and inserted into **one project file**.

3. The project file to **covered with a golden / silver handmade sheet** and labelled properly as mentioned below:

SUBJECT ENRICHMENT ACTIVITY

Interdisciplinary Project

Theme: Computational Thinking and AI

Topic :
Sustainable Cities and Smart Living:
Planning to Progress

Name.....
Class.....

4. **English Book Trailer** to be brought in a pen drive

5. **Separate Project file** to be made for **SST CBSE Compulsory Project**: Consumer Rights

6. Each student should submit 2 project files to their **class teacher** on **1st July 2026**:
● Interdisciplinary project file
● SST CBSE Compulsory Project

SUBJECT INTEGRATION

Topic: Sustainable Cities and Smart Living: Planning to Progress

Problem Statement:

Rapid urbanization and excessive consumption of resources are resulting in pollution, traffic congestion, waste accumulation, and environmental imbalance, highlighting the need for smarter, sustainable, and technology-driven solutions for future-ready cities and responsible living.

MATHS

Instructions: Use pen, calculator, and real data from home/street. Show all calculations. Hand-draw graphs in boxes. Max 4 pages.

PART A: DECOMPOSITION – Break Down a Smart City
Goal: Measure 4 parts of sustainable living for 1 day.

S. NO.	CITY PART	Total consumption	Data calculation Total consumption/no of people at home	PER PERSON
1	ENERGY	_____ kwh		_____kwh/person
2	WATER	_____ litres		_____l/person
3	TRANSPORT	_____km (by car/bike)		_____km/person
4	WASTE	_____ kg		_____kg/person

No. of people at home = _____

PART B: PATTERN RECOGNITION – Track 5-Day Trends
Goal: Spot patterns in resource use.

DAY	DATE	ELECTRICITY-KWH	WATER-LITRES	TRAVEL-KM	WASTE-KG
MON					
TUES					
WED					
THURS					
FRI					

Statistics:
1. Mean Electricity = ____ kWh Range = ____ kWh
2. Mean Water = ____ Litres Range = ____ Litres

Line Graph: Plot Electricity kWh + Water Litres vs Days on a graph sheet

Pattern Observed:
1. Highest usage day: _____
2. Do electricity and water increase together? Yes/No because

_____
_____
_____

PART C: ABSTRACTION – Build Your Smart City Score
Goal: Convert all data into 1 number.
UN Benchmarks: 5 kWh/person/day, 135 L/person/day
Formula:

$$100 - \left[\left(30 \times \frac{KWh}{5}\right) + \left(30 \times \frac{Litres}{135}\right) + \left(25 \times \frac{KWh}{10}\right) + \left(15 \times \frac{Kg}{0.5}\right)\right]$$

Your Data: Mean kWh = ____ , Mean Litres = ____ , Mean km = _____
Calculation:
Score = 100 - (0.4 × _/5 + 0.4 × _/135 + 0.2 × _) = ____ /100

Which 3 details did you ignore to calculate this?
1. _____ 2. _____ 3. _____

PART D: ALGORITHM – Design a Smart City Rule
Goal: Write an if-then rule to solve 1 city problem.
Pick ONE: Water leak / Traffic signal / Garbage truck / Streetlight

Problem Chosen: _____

My Smart City Algorithm:
1. INPUT: Check _____
2. IF _____ > _* THEN *_____
3. ELSE IF _____ = _* THEN *_____
4. OUTPUT: Estimated Monthly Savings for 100 houses = ___

Show Savings Math: If your rule saves _____ units/day,
Total for 100 houses in 30 days = ____ × 30 × 100 = _____ units

PART E: AI + MATHS LINK & REFLECTION
1. AI Task: Ask any AI: "How do smart cities use data to reduce traffic jams?"
   Write 1 maths concept used: _____
2. Reflection: "Computational thinking helped me see my city as _____
   because _____"

SCIENCE

Activity:

1. Create a Flowchart/Mind Map showing: Urban Growth → Problems Created → Environmental Impact → Smart Solutions

(Step 1 of Computational Thinking: **Decomposition** – breaking urban issues into smaller interconnected problems.)

2. Prepare a comparative table on: Traditional Cities vs Smart Sustainable Cities on the basis of transport, waste management, energy usage, water conservation, and green spaces.

(Step 2 of Computational Thinking: **Pattern Recognition** – identifying patterns in urban problems and smart solutions.)

3.. Write 5 important principles for sustainable and responsible living in cities.
(Step 3 of Computational Thinking: **Abstraction** – focusing only on the most effective ideas for sustainable living.)

* Create a step-by-step action plan titled "How to Build a Smart and Sustainable City."
(Step 4 of Computational Thinking: **Algorithmic Thinking**– arranging solutions in a logical sequence of steps.)

Submission Guidelines:
* Use coloured A4 size sheets
* Include diagrams, charts, illustrations, and creative layouts wherever required.
* Maintain neatness, creativity, and originality.
* Use clear, scientific, and meaningful language.
* Avoid direct copying from internet sources.

Assessment Criteria:

Understanding of Concept – 5 Marks
Application of Computational Thinking – 5 Marks
Creativity & Presentation – 5 Marks
Scientific Analysis – 5 Marks
Originality & Awareness – 5 Marks
Total: 25 Marks

SOCIAL SCIENCE

Activity:

1. Divide the concept of a sustainable city into different sectors such as transport, waste management, water conservation, energy usage, pollution control, housing, and public spaces. Present the information through a mind map/web diagram.

(Step 1 of Computational Thinking: **Decomposition** – breaking the larger issue of sustainable cities into smaller sectors and problems.)

2. Conduct observations/surveys in your locality and identify repeated urban problems such as traffic jams, garbage accumulation, water wastage, or excessive electricity usage. Present your findings through a graph or table.

(Step 2 of Computational Thinking: **Pattern Recognition** – identifying common trends, like-lack of citizen's participation, migration leading to overwhelming presence of slums, government policies and other recurring urban challenges.)

3. Select the 5 most important causes responsible for unsustainable urban living and suggest practical measures for improvement.

(Step 3 of Computational Thinking: **Abstraction** – focusing only on the most relevant causes and solutions.)

4. Design a "Smart City Awareness Campaign" by creating: a campaign title, logo, and 3 smart solutions using AI or technology for sustainable urban living.

(Step 4 of Computational Thinking**: Algorithmic Thinking** – organising ideas and solutions in a structured and logical manner.)

AI Application:
* Explore how AI and smart technologies help in: traffic management, pollution monitoring, waste collection, water conservation, and energy monitoring.
* Students may use apps/tools such as: Google Maps, Waze, Swachhata App, IQAir, SAFAR-Air, Jal Shakti App, Smart Water Meter Apps, or Google Home Energy Monitoring for reference and idea generation.

Submission Guidelines:
* Use coloured A4 size sheets
* Include graphs, charts, illustrations, maps, and creative layouts wherever required.
* Maintain originality, creativity, and neat presentation.
* Use relevant examples, facts, and practical solutions.
* Avoid direct copying from internet sources.

Assessment Criteria:

Understanding of Concept – 5 Marks
Application of Computational Thinking – 5 Marks
Creativity & Presentation – 5 Marks
Social Awareness & Analysis – 5 Marks
Originality & Practical Solutions – 5 Marks
Total: 25 Marks

Project Title: **Consumer Rights**
CBSE Compulsory Project

The overall objective of the project work is to help students gain an insight and pragmatic understanding of the theme and see all the Social Science disciplines from interdisciplinary perspective. It should also help in enhancing the Life Skills of the students. Students are expected to apply the Social Science concepts that they have learnt over the years in order to prepare the project report. If required, students may go out for collecting data and use different primary and secondary resources to prepare the project. If possible, different forms of Art may be integrated in the project work.

The main objective of the Consumer Protection Act is to provide better protection of consumers and establish a strong mechanism for the settlement of consumer disputes. The Consumer Protection Act seeks right to:

- protect against the marketing of goods which are hazardous to life and property;
- inform about the quality, quantity, potency, purity, standard and price of goods to protect the consumer against unfair trade practices;
- assure, wherever possible, access to an authority of goods at competitive prices;
- hear and to assure that consumers interests will receive due consideration at appropriate forums;
- Seek redressal against unfair trade practices or unscrupulous exploitation of consumers; consumer education.

Project file should be made in the given sequence-

1. Cover page with Title- **Consumer Right**
2. Index
3. Acknowledgement
4. Introduction of the topic- 10- 15 pages (only of Introduction)
5. Methodology- How will you conduct your research:
   - Sample Survey
6. Questionnaire- The questionnaire should have 15 questions. It can include-(anyone or both)
   -Open-ended questions -Close-ended Questions*
7. Observation and Data Analysis
   Interpret **ALL Questions** either through a Pie-Chart or a Bar-Diagram
8. Conclusion
9. Bibliography

Introduction of the Project shall include the following-

- Meaning of Consumer awareness and rights.
- Different types of consumer rights.
- How to seek redressal
- How can Consumers be more responsible consumers?

Important Instructions for Presentation of the Project-

- Students to do the Project as a Word file and submit it as a Pdf file.
- Font: Times New Roman Font Size: 12 Title: Bold (Size 14).
- Showcase your creativity in terms of cartoons, images etc for each Consumer Right.
- Blank side will be used to make diagrams on graph sheets (examples bar-diagrams, pie-charts, etc).
- Make use of mind maps, flow charts or any other diagrammatic representation
- In case of secondary data mention the source of the data.

***Using only Open-ended question in the questionnaire can lead to difficulty in data interpretation.**

ENGLISH

Activity Title : "The Green Times 2050: A 4-Page Newsletter from the Future"

Activity Overview:

Students will design and create a 4-page futuristic newsletter imagining how cities in the year 2050 have transformed into smart, sustainable, and eco-friendly urban spaces.

STRUCTURE OF THE NEWSLETTER

Page 1: Front Page — "Future City Headlines"

Students will design the front page of the newsletter with attractive headlines and visuals related to sustainable cities.

This page should include:

•Newsletter title/logo
•Main headline related to smart cities
•2–3 short news reports
•A future city photograph/drawing
•Weather report of the future city
•Awareness slogan/message

Sample Headlines:

•"Delhi Becomes India's First Zero-Waste Smart City"
•"AI Traffic Systems Reduce Pollution by 60%"
•"Solar Roads Power Entire Residential Areas"

SAMPLE

(Step 1 of Computational Thinking :Decomposition — Students break down the broader issue of sustainable living into smaller topics and present them through headlines and short reports.)

Page 2: Urban Problems and Their Impact

Students will focus on present-day urban challenges and explain their harmful effects on people and the environment through English writing tasks.

This page should include:

•Articles on pollution, traffic, waste, water shortage etc.
(Word Limit: 200–250 words)
•Causes and effects of unsustainable habits
•Citizen opinions/interviews
•Illustrations or cartoons with captions
•"Then vs Now" comparison of cities

Examples of issues:

•excessive use of private vehicles
•littering and plastic waste
•wastage of electricity and water

(Step 2 of Computational Thinking: Pattern Recognition - Students identify recurring environmental and urban problems and analyse repeated patterns affecting cities.)

Page 3: Future Citizen Special

Students will creatively imagine life in a sustainable city in 2050 through various English language activities.

This page should include:

•Interview with a future citizen/scientist/AI assistant
•Future lifestyle article (Word Limit: 150–200 words)
•Diary entry/speech/conversation based on life in 2050
•Green living tips and awareness slogans
•Grammar crossword puzzle or vocabulary puzzle based on Class X English topics

(Step 3 of Computational Thinking :Abstraction - Students focus on the most important aspects of sustainable living and communicate ideas clearly while ignoring unnecessary details)

Page 4 : Literature Reimagined — Julius Caesar in 2050

Students will creatively reimagine Julius Caesar in the futuristic world of 2050 while maintaining the original storyline and characters.

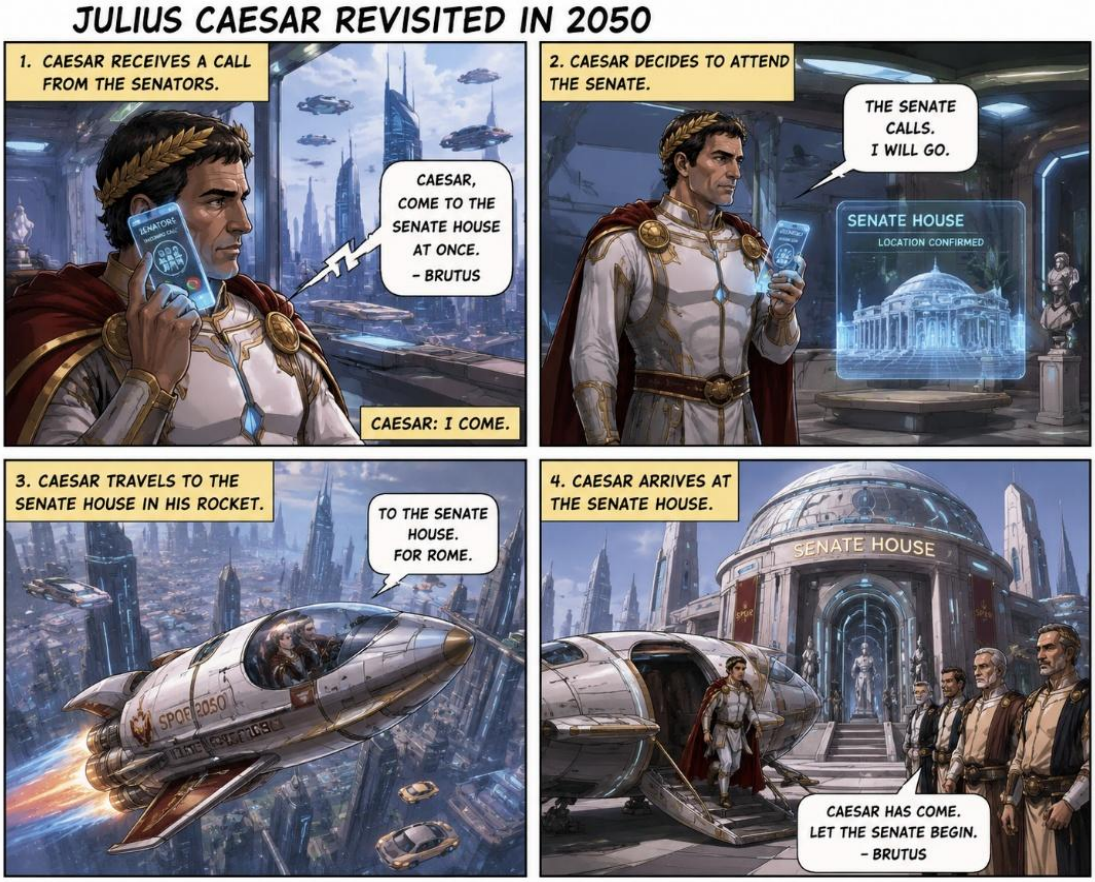
This page should include:

•A full-page comic strip on the play set in futuristic times
•Retention of all the major characters and key events
•Futuristic elements such as:
•AI rulers
•holograms
•robotic citizens
•smart cities
•virtual senate meetings

Students may creatively redesign:

•costumes
•settings
•dialogues
•technology used by characters

SAMPLE



NOTE : DON'T USE THE SAME COMIC STRIP AS GIVEN IN THE SAMPLE ABOVE

(Step 4 of Computational Thinking: Algorithmic Thinking — Students creatively redesign situations and events using futuristic and technology-based solutions while following the sequence of the original plot)

Submission Guidelines:

•The newsletter should be prepared neatly on A4 size sheets.

•Students will create the newsletter digitally also

Assessment Criteria :

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Content & Ideas	Highly creative, insightful and strongly connected to the theme	Relevant and meaningful ideas	Some relevant ideas but limited depth	Ideas unclear or unrelated
Language Usage	Excellent vocabulary, grammar, idioms and expressions used effectively	Good vocabulary and mostly correct grammar	Simple language with few errors	Frequent grammatical errors and weak vocabulary
Presentation Skills	Outstanding presentation and expression	Good presentation and expression	Average presentation with limited expression	Unclear or monotonous presentation
Creativity & Originality	Exceptionally innovative and engaging	Some creative elements included	Limited creativity	Minimal effort shown
Technical Quality	Clarity with excellent organization	Minor technical issues	Average quality	Poor quality
Visual Presentation	Neat, colourful, well-organized and correctly highlighted	Mostly neat and organized	Somewhat untidy	Poor presentation and incomplete highlighting

•Use attractive headings, borders, and creative layouts.
•Ensure proper grammar, spellings, and presentation.
•Relevant pictures, drawings, cartoons, and captions should be included.
•Content should be original, creative, and related to the given theme.
•Maintain clarity, neatness, and visual appeal throughout the project.

Fill up the Reflection Form given below, take out a print and attach it with the Newsletter

Reflection Form

"The Green Times 2050: A 4-Page Newsletter from the Future"
Reflection Questions

1. **What inspired you to create a Newsletter ?**

2. **What message did you want your readers to understand about the Green Times 2050?**

3. **Which part of the activity did you enjoy the most and why?**

4. **What challenges did you face while creating the Newsletter?**

5. **Mention any new vocabulary words, idioms or expressions you learned through this activity.**

6. **How did this activity improve your:**
    a. **creativity?**

    b. **expression?**

    c. **reporting skills?**

7. If given another opportunity, what would you improve in your Newsletter?

8. One important lesson I learned from this activity is:

Self-Assessment

(✓ Tick the option that best describes your work)

Statement	Yes	Somewhat	No
I contributed original ideas			
I used expressive language and vocabulary			
I made a rough draft before the final print			
I maintained clarity and lucidity			
I understood the importance of Green Times			

BOOK TRAILER

INSTRUCTIONS :

1. Students will select **ANY ONE** book from any category given in the reading list according to their interest and choice.
2. They will create a short and engaging **BOOK TRAILER** based on the selected book.
3. The trailer should highlight the main theme, characters, setting, and conflict of the story without revealing the ending.
4. Students may use images, video clips, background music, narration, dialogues, or text effects to make the trailer creative and impactful.
5. The final book trailer should be 2–3 minutes long and presented in the class.

REFERENCES

https://www.youtube.com/playlist?list=PLGTBqhN4e5ISvK09nZqWKBu-7IvQGJDY0

READING LIST			
Category	**Book**	**Author**	**About the Book**
	The Kite Runner	Khaled Hosseini	A boy's friendship is tested by betrayal in war-torn Afghanistan. Explores guilt, redemption, and loyalty.
	The Book Thief	Markus Zusak	A girl in Nazi Germany finds solace in books. Highlights the power of words and human resilience.
	Namesake	Jhumpa Lahiri	A young man struggles with identity between cultures. Explores belonging and self-discovery.
	Journey by Night	Norah Burke	A boy survives a dangerous jungle journey. Reflects courage and endurance.
	The Brass	Qazi	A historical narrative rooted in Indian culture. Explores honour and emotional conflict.

Realistic / General Fiction	Gong	Abdul Sattar	
	Old Man at the Bridge	Ernest Hemingway	An old man waits helplessly during war. Reflects loss and the cost of conflict.
	Last Orders	Graham Swift	Friends gather to fulfil a dying wish. Explores memory and relationships.
	In a Free State	V.S. Naipaul	Stories of displacement and identity. Highlights alienation and postcolonial struggles.
	The English Patient	Michael Ondaatje	Lives intersect during WWII. Explores love, memory, and war's impact.
	The Night Watchman	Louise Erdrich	A community resists injustice. Highlights identity and survival.
	The Overstory	Richard Powers	Lives connect through trees and nature. Emphasises environmental awareness.
	Salvation of a Saint	Keigo Higashino	A murder mystery with twists. Explores logic and human psychology.
	Things Fall Apart	Chinua Achebe	A tribal leader faces colonial change. Explores culture and identity.
	The Colour Purple	Alice Walker	A woman rises above oppression. Highlights empowerment and resilience.
	Gone with the Wind	Margaret Mitchell	A woman survives the Civil War's upheaval. Explores strength and change.
Fantasy & Adventure	The Lord of the Rings	J.R.R. Tolkien	A quest to destroy a powerful ring. Explores courage and friendship.
	Troy	Adele Geras	A humanised retelling of the Trojan War. Blends myth, love, and war.
	Gulliver's Travels	Jonathan Swift	Travels to strange lands reveal satire. Critiques human nature and society.
	Through the Looking Glass	Lewis Carroll	A surreal mirror-world adventure. Celebrates imagination and logic.
	The Invisible Man	H.G. Wells	A scientist turns invisible but loses control. Explores power and isolation.

HINDI

☐

🚀 अवकाश गृहकार्य परियोजना - 2

"रोबोटिक रेस्क्यू मिशन 2050"

(आपदा प्रबंधन में AI और स्मार्ट तकनीक का उपयोग)

🌍 परियोजना की कल्पना

कल्पना कीजिए कि वर्ष **2050** में पृथ्वी पर जलवायु परिवर्तन के कारण बाढ़, भूकंप और जंगल की आग जैसी समस्याएँ बढ़ गई हैं।

अब इंसानों की मदद के लिए **AI रोबोट, ड्रोन और स्मार्ट सेंसर** काम करते हैं।

आपको एक ऐसी **"स्मार्ट रेस्क्यू सिस्टम" की योजना** बनानी है जो लोगों की जान बचाए। आपको इसका **पोस्टर + रिपोर्ट + योजना** तैयार करनी है।

Computational Thinking के 4 चरण

1 Decomposition (समस्या को भागों में बाँटना)

पूरे रेस्क्यू मिशन को छोटे भागों में बाँटिए–

- खतरे की पहचान ,लोगों की लोकेशन पता करना ,भोजन और दवाइयाँ पहुँचाना ,सुरक्षित रास्ता ढूँढना ,घायल लोगों की मदद ,मौसम चेतावनी ,संचार व्यवस्था

📝 गतिविधि

एक तालिका बनाइए जिसमें हर समस्या के लिए अलग रोबोट या तकनीक लिखी हो।

2 Pattern Recognition (पैटर्न पहचान)

आज की आपदाओं को देखकर भविष्य के समाधान पहचानिए।

वर्तमान समस्या	भविष्य का समाधान
बाढ़ में लोग फँस जाते हैं	उड़ने वाले रेस्क्यू ड्रोन
जंगल में आग फैलती है	AI फायर रोबोट
भूकंप में संपर्क टूट जाता है	सैटेलाइट कम्युनिकेशन
एम्बुलेंस देर से पहुँचती है	ड्रोन मेडिकल डिलीवरी

💡 उदाहरण

"AI पहले से खतरे का अनुमान लगा लेगा।"

3 Abstraction (महत्वपूर्ण विचार चुनना)

केवल उन तकनीकों को चुनिए जो सबसे अधिक मदद करें–

- AI Rescue Drone
- Smart Heat Sensors
- रोबोटिक एम्बुलेंस
- स्मार्ट मैप
- Emergency Alert Watch
- Water Rescue Bots

4 Algorithm (चरणबद्ध योजना)

🛠 रेस्क्यू मिशन की प्रक्रिया

1. सेंसर खतरे का पता लगाएंगे
2. AI कंट्रोल रूम को सूचना भेजेगा
3. ड्रोन प्रभावित क्षेत्र की तस्वीरें लेंगे
4. रेस्क्यू रोबोट लोगों तक पहुँचेंगे
5. मेडिकल ड्रोन दवाइयाँ पहुँचाएंगे
6. सुरक्षित मार्ग दिखाया जाएगा
7. सभी लोगों को सुरक्षित स्थान पर पहुँचाया जाएगा

🌟 Creative Titles

- **सेफ सिटी 2050**
- **AI रक्षक मिशन**
- **भविष्य की जीवन रक्षा प्रणाली**
- **स्मार्ट आपदा प्रबंधन**
- **रोबो-सेवियर इंडिया**

📣 आकर्षक स्लोगन

“तकनीक जो जीवन बचाए।” “AI बने मानवता का रक्षक।” “स्मार्ट सोच, सुरक्षित जीवन।” “हर संकट का स्मार्ट समाधान।”

भविष्य के विज्ञापन (Classifieds)

☞ Rescue Drone X

“केवल 2 मिनट में मदद पहुँचाए!”

⌚ Smart Safety Watch

“खतरा आते ही परिवार को अलर्ट भेजे।”

🤖 FireBot 2050

“जंगल की आग बुझाने वाला AI रोबोट।”

🎨 Poster Decoration Ideas

- उड़ते हुए मेडिकल ड्रोन रोबोटिक एम्बुलेंस, AI कंट्रोल रूम ,स्मार्ट हेलमेट ,डिजिटल मैप
- बाढ़ बचाव रोबोट

📓 उपयोगी शब्दावली

English Word	सरल हिंदी
Disaster Management	आपदा प्रबंधन
Artificial Intelligence	कृत्रिम बुद्धिमत्ता
Rescue Drone	बचाव ड्रोन
Emergency Alert	आपात चेतावनी
Smart Sensor	स्मार्ट संवेदक
Satellite Network	उपग्रह नेटवर्क

“भविष्य की सबसे बड़ी ताकत केवल मशीनें नहीं, बल्कि मानवता और तकनीक का साथ होगा।” 🤖🦾

संस्कृतम्

परियोजना-कार्यम्

“AI-सक्षमः भविष्यस्य स्मार्ट्-नगरः”

विद्यार्थी एक Future Smart City Blueprint तैयार करेंगे, जिसमें वे एक ऐसे आधुनिक नगर की कल्पना करेंगे जो—

प्रदूषणमुक्तः

हरितः

ऊर्जा-संरक्षणयुक्तः

AI-आधारितः

सतत्-विकासयुक्तः च भवेत्।

वे चाहें तो इसे —

✓ 3D Model

✓ Digital Presentation

✓ Poster

✓ Comic Story

✓ Smart City Map

के रूप में प्रस्तुत कर सकते हैं।

१. समस्याविभाजनम्

अपने नगर की प्रमुख समस्याओं को विभाजित कीजिए —

प्रदूषणम्

यातायात-सङ्कटम्

अपशिष्ट-समस्या

जल-अभावः

२. प्रतिरूप-पहचानम्

निरीक्षण करके ज्ञात कीजिए कि कौन-सी समस्याएँ सबसे अधिक दिखाई देती हैं तथा उनका कारण क्या है।

३. सारतत्त्व-निर्धारणम्

नगर की मुख्य समस्या का मूल कारण संस्कृत में लिखिए।

उदाहरण —

“असन्तुलित-विकासः तथा संसाधनानाम् अपव्ययः।”

४. क्रमिक-समाधान-चिन्तनम्

भविष्यस्य स्मार्ट्-नगरस्य कृते चरणबद्ध समाधान लिखिए —

AI Traffic Control — कृत्रिमबुद्ध्या यातायातनियन्त्रणम्

Smart Dustbin System — बुद्धिमत् अपशिष्टपात्र-प्रणाली

Green Energy Stations — हरितऊर्जाकेन्द्राणि

Rainwater Harvesting — वर्षाजलसंग्रहणम्

विशेष-सृजनात्मक-कार्याणि

✓ संस्कृत टैगलाइन निर्माणम्

✓ स्मार्ट-नगरस्य मानचित्रम्

✓ AI आधारित समाधानस्य चित्रणम्

✓ पर्यावरण-संरक्षण-सन्देशाः

- सर्वम् संस्कृतभाषायाम्

FRENCH

Sustainable Cities and Smart Living: Planning to Progress

« Le progrès durable commence avec des villes intelligentes et responsables.-
"Sustainable progress begins with smart and responsible cities."

Objective:

Students will become aware about sustainable cities and smart living in India and France and understand how Artificial Intelligence (AI) and Computational Thinking can help solve real-life urban and environmental problems. Through an informative PowerPoint presentation, students will explore how smart technologies support traffic management, waste management, energy conservation, pollution reduction, water management, and sustainable urban development while promoting eco-friendly lifestyles, cultural understanding, and responsible citizenship for a cleaner, greener, and smarter future.

A. Decomposition – Break the problem into smaller parts:

• Traffic congestion in urban areas
• Air and noise pollution
• Waste management and plastic pollution
• Water scarcity and excessive resource consumption
• Climate change and rising carbon emissions
• Lack of sustainable transportation and green spaces

AI helps cities in India and France identify, monitor, and manage these environmental and urban problems efficiently.

B. Pattern Recognition – Identify repeated patterns:

• Daily traffic jams increasing pollution levels
• Increasing waste generation in cities
• Excessive use of electricity and water
• Rising carbon emissions from vehicles and industries
• Growing urban population and resource consumption
• Repeated use of non-eco-friendly products and practices

AI systems collect data and recognize patterns related to pollution, energy use, traffic, and waste management in both countries.

C. Abstraction – Focus on important information:

Focus only on the key causes and smart solutions related to sustainable cities and smart living.

Important Information:

✓ Smart transportation systems
✓ Renewable energy usage
✓ Waste segregation and recycling
✓ Smart water and energy management
✓ Green buildings and eco-friendly lifestyles
✓ AI technology for sustainable urban development

❌ Ignore unnecessary details unrelated to environmental sustainability and smart city planning.

AI focuses on the major urban challenges and suggests effective smart solutions for cleaner and greener cities.

D. Algorithmic Thinking – Write step-by-step instructions:

• Install AI-enabled smart traffic systems
• Monitor pollution levels using smart sensors
• Use AI-powered waste segregation and recycling systems
• Promote renewable energy through smart grids
• Reduce water and electricity wastage using smart meters
• Encourage public transport and eco-friendly mobility
• Spread awareness using AI chatbots and digital campaigns
• Encourage citizens to adopt sustainable and eco-friendly lifestyles

AI makes city planning and urban management smarter, faster, cleaner, and more sustainable.

窗体顶端

Presentation Instructions:

Students may present their research work in the form of a PowerPoint Presentation (8–10 slides).

• Students to prepare creative and visually attractive slides using impactful French vocabulary, smart city themes, and eco-friendly slogans.
• Students to design slides showing how Artificial Intelligence (AI) and technology can help in sustainable cities, traffic management, waste management, pollution reduction, energy conservation, and smart living.
• Students to include maps of India and France along with cultural and environmental comparisons between both countries.
• Students to include visuals, graphs, charts, icons, drawings, or printed images related to smart cities, green technology, and sustainable urban development given on any news paper or magazine.
• Students to use French vocabulary related to technology, environment, transport, sustainability, and smart living throughout the presentation.
• Students to mention real-life examples of smart city projects, AI-based solutions, and sustainable practices adopted in both countries.
• Students to maintain a neat, organised, and creative slide design with proper headings and subtitles.
• Students to mention their name, class, and section clearly on the title slide.

ARTIFICIAL INTELLIGENCE

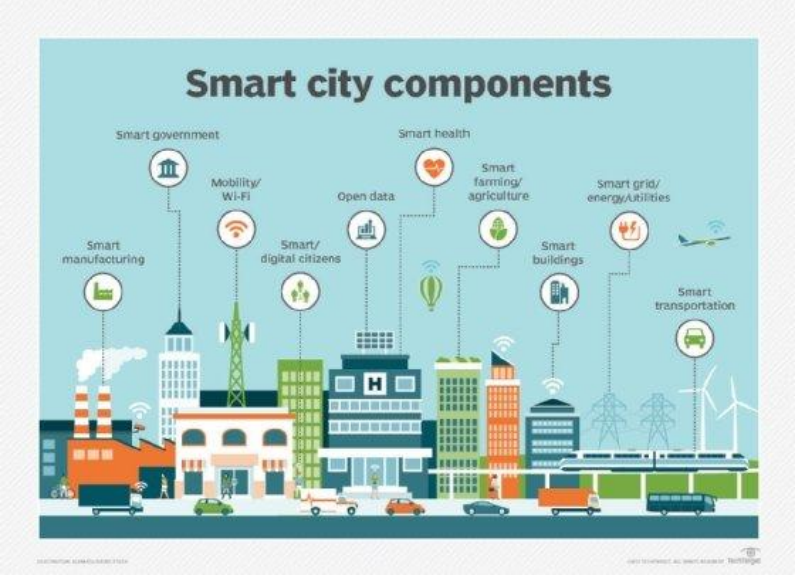
Project work :

Identify one major problem commonly faced by people in your city, such as traffic congestion, waste management etc.

Using **the AI Project Cycle**, explain how Artificial Intelligence can help in developing a smart and environmentally sustainable solution for the selected problem.

Use various online and offline methods to collect data related to the selected problem. Create and conduct an online or offline survey to gather responses from people. Include the survey questionnaire, collected responses, and a detailed analysis of the data in the project report.

Support each stage of the AI Project Cycle with relevant pictures, charts, graphs, or illustrations to make the project more informative.



Note : Submit the hardcopies in a well labelled AI file