LK SINGHANIA EDUCATION CENTRE

GOTAN

HOLIDAY ASSIGNMENT

SESSION : 2026-27

CLASS - IX

“Climb every mountain, ford every stream,
Follow every rainbow, till you find your dream.”

Dear Students,

Wishing you a happy and blessed summer time!

You are the torch bearers of change. Put in your sincere efforts and do some unique and creative work for the society. The tiny efforts of each soul are the remarks of gratitude to Nature.

The entire team of LKSEC teachers has put all will and might in designing "The Holiday Assignment", where certain aspects are kept in mind like use of technology, wise use of paper and resources from surroundings. Put your shoulder to the wheel in making the projects creative, attractive and cost effective with appropriate information.

While preparing the assignment, keep in mind following points:

1. **All the assignments should be original.**
2. **Use technology wisely and correctly.**
3. **Values and virtues bring enrichment in bonds among members of the family. So, as a piece of advice, involve your parents in the process.**
4. **Use poster colours, sketch pens etc.**
5. **Grammatical accuracy also carries weightage.**
6. **Sincere and honest efforts will be appreciated.**
7. **The cover page must include details like student's name, class and section, subject and name of the teacher it is to be submitted to.**

Make this summer special, innovative and enthralling.

Educationally Yours,

R C Joshi
Principal


Resilience
Nurture
Confidence
Creativity
Love
of
Learning
Community

SUB - SCIENCE

CLASS – IX

Student Details:

- ✓ **Name : _____**
- ✓ **Class & Section : _____**
- ✓ **Roll Number : _____**

Chemistry

Theme: The Investigative World of Mixtures

Objective: To understand the nature of matter, distinguish between types of mixtures, and master the art of separation through hands-on investigation and creative expression.

Section A - The "Kitchen Lab" Investigations

Perform the following two experiments at home and record your findings.

Note- The activity given below needs the parent's assistance.

1. **The Saturation Challenge:**
   - ✓ **Take 100 mL of water at room temperature. Add salt one teaspoon at a time, stirring constantly, until no more dissolves.**
   - ✓ **The Experiment: Heat the solution and see if more salt can be dissolved.**
   - ✓ **Inquiry: Record the total amount of salt added. Explain the difference between an unsaturated and a saturated solution.**
   - ✓ **Calculation: Calculate the concentration of your solution using the formula:**

$$Concentration\% = \left(\frac{\text{Mass of Solute}}{\text{Mass of Solution}}\right) \times 100$$

Section B - Conceptual Questions

Answer the following questions:

1. **Define a mixture. Give two examples.**
2. **Differentiate between homogeneous and heterogeneous mixtures.**
3. **What is a solution? Name its components.**
4. **Define solute and solvent with examples.**
5. **What is meant by concentration of a solution?**
6. **List any three properties of a true solution.**
7. **What are suspensions?**
8. **Define colloids and give one example.**
9. **What is the Tyndall effect?**
10. **Why air is considered a mixture?**

Section C - Thinking Skills (HOTS)

1. **Why can't we separate salt from water using filtration?**
2. **A student wants to separate a mixture of iron filings and sand. Which method should be used and why?**
3. **How will you separate:**
    a) **Oil and water**
    b) **Cream from milk**

BIOLOGY

🧬 CELL-TASTIC ADVENTURE HOMEWORK 🧬

🎯 Mission Brief

Congratulations! You have been selected as a Microscopic Explorer 🚀

Complete the fun tasks below to explore the world of cells!

Choose any two tasks from task 1 to task 4. Task 5 is compulsory.

🎭 **Task 1: Interview a Cell**

🎤 Imagine you are interviewing a cell.

Write:

- ✅ 5 Funny Questions

- ✅ 5 Scientific Questions

👉 Cover:

- Discovery of cell

- Cell shape

- Cell size

🖍️ Bonus: Give your cell a name _____

🎨 Task 2: Meme / Comic Strip

Draw a 4–6 panel comic or memes on:

✔ Diffusion vs Osmosis

✔ Cell Membrane as a Security Guard

✔ Nucleus as the Boss

🎬 Task 3: Cell as a City

Draw or explain a Cell City 🌆

Cell Part| City Role

Nucleus| _____

Cell Membrane| _____

Cytoplasm| _____

Cell Wall| _____

🖍️ Write 5–6 lines explaining your diagram:

🧪 Task 4: Mini Experiment – Osmosis

🍖 Materials: Potato, sugar solution

Observation: Exosmosis and Endosmosis

What happened?

Why did it happen? (Osmosis)

Diagrams

Pl. click photographs of the above activity done by you and paste them .

⚡ **Task 5: Challenge yourself**.

1. If you could design an ideal cell, what special features would you add and why?

2. “All Living organisms are made up of cells, yet no two cells are exactly alike, “Explain with examples.

3. Why do you think multicellular organisms evolved instead of all organisms remaining unicellular.?

4. Suppose the cell membrane allowed every substance to enter freely. Would life be possible? Give reasons.

5. Imagine you are a scientist observing a cell for the first time. What observations would help you conclude that it is living?

🎉 BONUS

Create a fun slogan on cells

💡 Reminder:

👉 Be creative, neat, and original!

👉 Think like a scientist… or even like a cell 😄

PHYSICS

Theory:

Do the back exercise of Chapter: Motion in the classwork notebooks

(PDF of the back exercises has already been shared in the class groups)

Activities:

Instruction*:*

Do any two activities of your choice

ACTIVITY 1: “PHYSICS FILM STUDIO”

Task : Create a presentation explaining motion and various terms related to motion

Include:

Rest & Motion

Distance and Displacement

Speed and Velocity

Acceleration

You may:

- Document your report via slides or handwritten scripts
- Record yourself
- Use toys/models
- Add slow-motion clips
- Add background narration/music

Present it like a:

- TED Talk
- Science YouTube channel
- Discovery documentary

Submission:

- Video or Graphics
- Presentation
- Written or typed summary

ACTIVITY 2: SCIENTIFIC POSTER MAKING

"Motion in the Modern World"

Create a large poster on ONE topic:

- Motion in sports
- Motion in space travel
- Motion in roller coasters
- Motion in Formula 1
- Motion in robotics
- Motion in video games

Your poster should include:

- Infographics
- Diagrams

- Facts
- Real-life applications
- Scientific explanations

Add:

At least 3 Physics terms from the chapter

ACTIVITY 3: PHYSICS QUIZ SHOW

Create a quiz with:

- 10 MCQs
- 5 Assertion-Reason questions
- 5 Visual questions

Themes:

- Speed vs velocity
- Distance vs displacement
- Graphs of motion
- Acceleration

Use one of the following for references:

- Canva
- PowerPoint
- Kahoot
- Quizizz

ACTIVITY 4: VIRTUAL MOTION LAB

“Become a Digital Scientist”

Use the simulation from PhET Interactive Simulations

Simulation:

- Moving Man

Task:Explore

- Position
- Velocity
- Acceleration

Investigate:

1. What happens when velocity increases?
2. How does negative velocity appear?

3. Can an object move with zero acceleration?

Submission:

- Short Summary
- Observations table
- Short conclusion

Challenge:

Create a motion pattern where:

- Acceleration changes
- Direction changes
- Speed remains constant for some time

SUB - ENGLISH

CLASS – IX

General Instructions:

* Complete all tasks neatly in a separate notebook/file
* Focus on creativity, clarity, and originality
* Word limit must be followed

SECTION A : Creative Writing

1. Life Skills Journal

Task : Maintain a 7-day journal where you learn one life skill daily

Examples:

- ✓ Cooking a simple dish
- ✓ Managing money
- ✓ Helping at home
- ✓ Learning any new skill or managing hobby

Add reflection: What did I learn? Why is it important? You can follow the given format for journal writing 👇

FORMAT - Journal Writing Format

1. Date & Day

2. Title (Optional but recommended)

3. Opening Line

Begin with a natural expression of your feeling or situation.

4. Main Content (Body)

Write 2–3 paragraphs including:

What happened -

-Your thoughts and feelings

-What you learned or observed

-Keep it personal, honest, and reflective

5. Closing Line

2. Twist the Tale - Rewrite the ending of any one story from your textbook or a known story.

*Change the climax

* Turn the villain into a hero

Word Limit: 200–250 words

SECTION B : Expression & Speaking

3. Podcast / Interview Task

Task: Conduct a short interview with: Grandparents / elders / local worker/ House help

Topic: "Life Then vs Now"

- ✓ Write a report or transcript in about 100 - 120 words.

SECTION C : Language & Creativity

4. "My Emotion Dictionary"- Create 10 new words for emotions.

For each word:

* Give meaning

* Use it in a sentence

Example: "Examxiety – nervousness before exams"

SECTION D: Visual Writing - “Movie Scene Recreation”

* Pick a scene from any inspirational movie or story from any novel or book

* Rewrite it in modern language OR local setting in 100- 150 words.

Example: Shakespeare in a school setting

6 Script writing :

1. Robot in the Classroom - A robot joins a school as a student. Write a script showing:

-How students react
-A funny or emotional moment
-What the robot learns about humans

OR

2. Earth’s Complaint Box - Write a script where Mother Earth calls a meeting with humans to complain about pollution, climate change, etc. Include at least 3 characters (Earth + humans).

SUB - MATHEMATICS

CLASS : IX

✨ Introduction

Dear Students,

> ***"Learning is the beginning of wealth, Learning is the beginning of health, Learning is the beginning of spirituality. Searching and learning is where the miracle process begins."***
>
> ***Summer holidays are a time we eagerly await – to relax, to enjoy, and to empower ourselves. This holiday homework is designed with the motto "Fun and Learn", helping you grow while enjoying your vacation.***

📘 Topic: Coordinate Geometry

🎯 Learning Outcomes

By completing this assignment, students will:

- **Recall the Cartesian coordinate system.**
- **Apply it in real-life situations.**
- **Explore the famous Odissi dance of Odisha.**

📝 Activity 1: Summer Personality Test

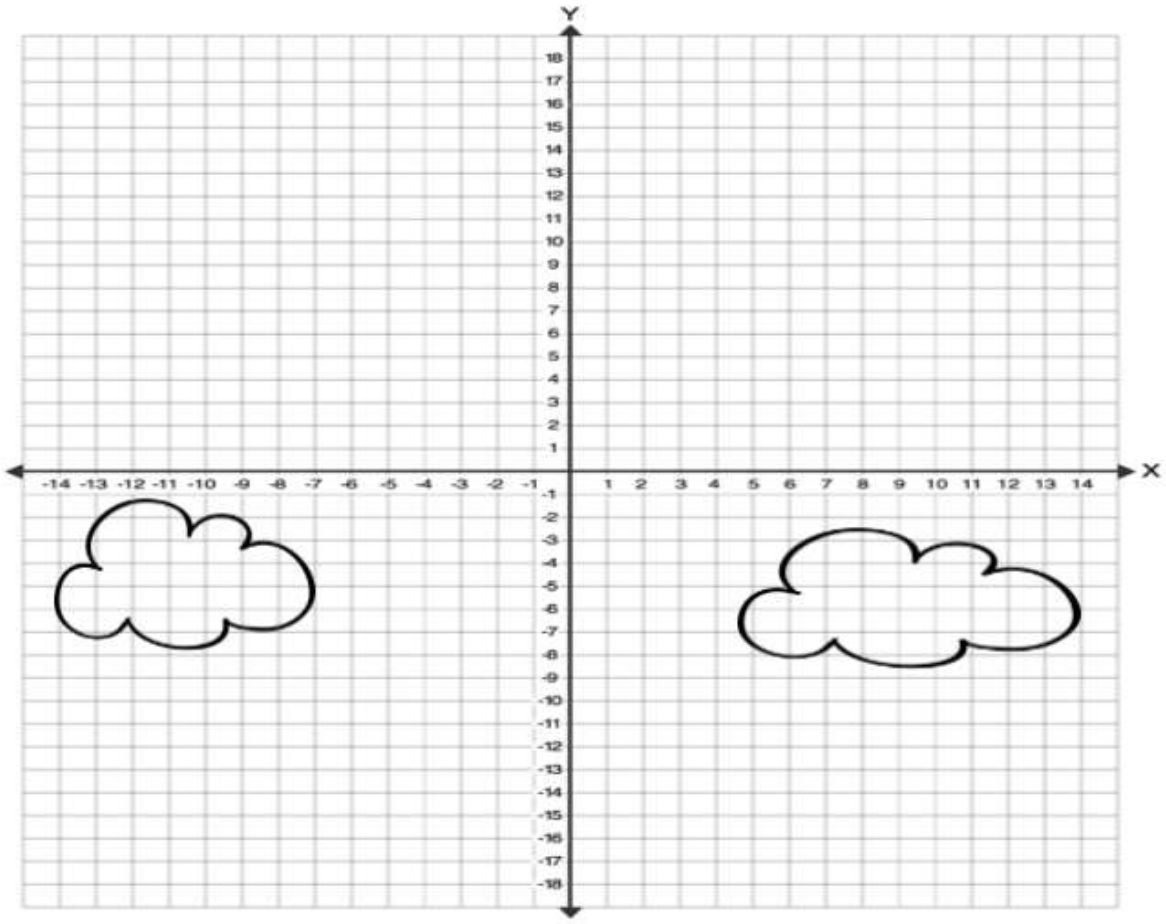
- **Read the given statements carefully.**
- **If you agree, circle the color in the *Agree* column.**
- **If you disagree, circle the color in the *Disagree* column.**
- **Connect the given points on the coordinate grid using the color you circled.**

(This activity blends mathematics with self-reflection, making learning interactive.)

Statement	Agree	Disagree	Connect the points
I like Pastel Color	Yellow	Gray	(-12, 6) and (-12,0)
I like when the days get longer	Pink	Gray	(-14, 7) and (-14, 0)
I Like when it rains	Blue	Gray	(-9,-2) and (-8, 3)
I like when flower start to bloom	Pink	Gray	(-13,7) and (-10,14)
I enjoy gardening	Yellow	Gray	(-11, 4) and (-9, 8)
I enjoy going for walks in the sunshine	Yellow	Gray	(-8, -10) and (-6, 15)
I think flying a kite is fun	Pink	Gray	(-6, 17) and (0, 18)
I can spot 4-leaf clover	Green	Gray	(-8, -4) and (-7,0)
I like having a picnic	Yellow	Gray	(0,16) and (2,16)
I like the smell of flowers	Pink	Gray	(4, 17) and (8, 16)
I like seeing the trees become greener.	Green	Gray	(-6, 5) and (-4, 8)
I enjoy hearing the birds sing	Blue	Gray	(-7, 8) and (-3, 12)
I enjoy mowing the lawn	Green	Gray	(-3, 9) and (0, 10)
I enjoy going to parks	Pink	Gray	(11, 14) and (12, 11)

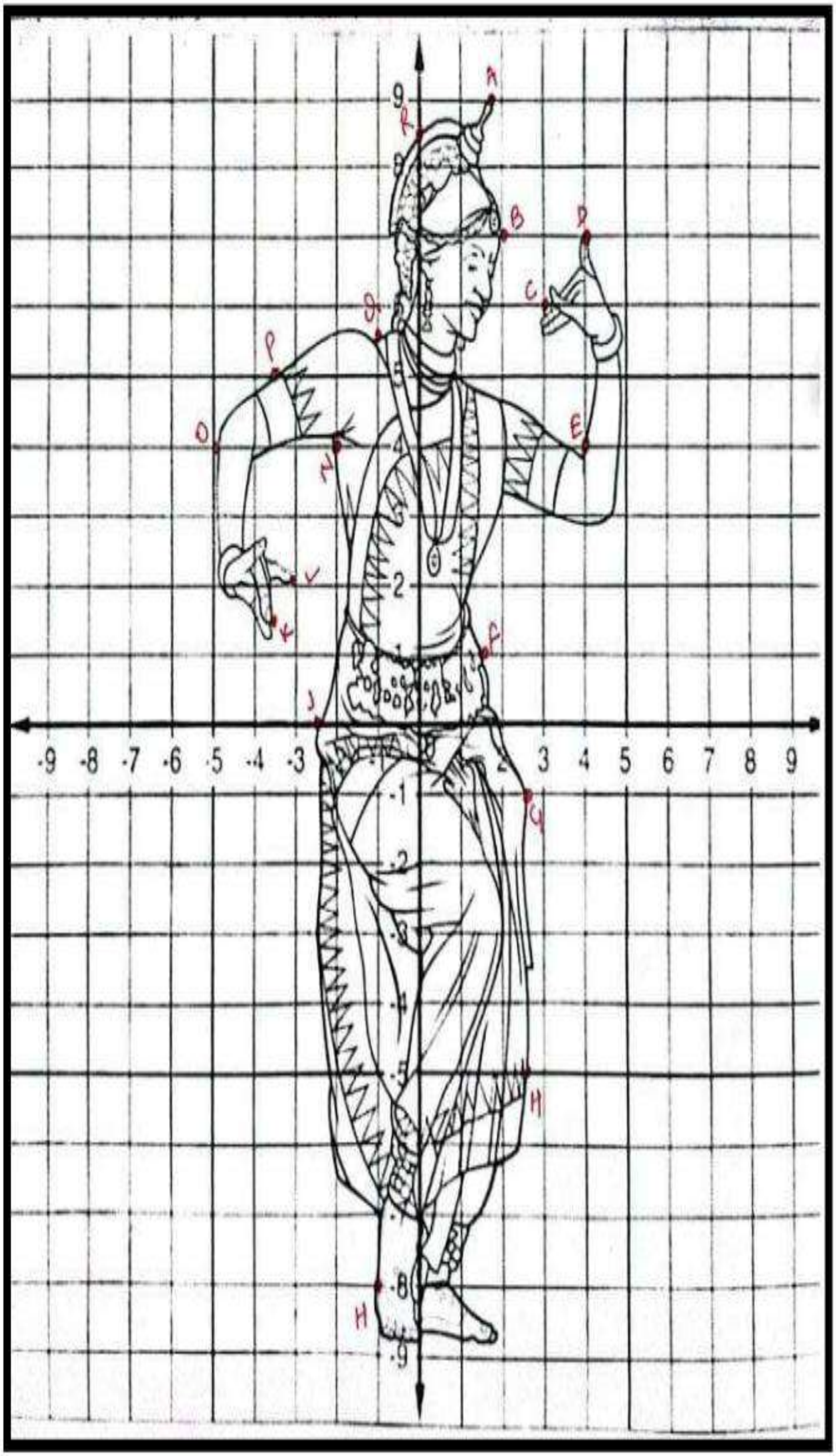
I like butterflies	Yellow	Gray	(5,14) and (6, 11)
I like basketball and cricket	Blue	Gray	(0, 13) and (2, 13)
I like to wear rubber boots	Blue	Gray	(7, 9) and (9,4)
I like playing in the mud.	Pink	Gray	(13, 7) and (14, 0)
I think baby ducks and chicks are cute.	Green	Gray	(2, 10) and (3, 9)
I enjoy cleaning.	Pink	Gray	(14, -1) and (14, -7)
I like the taste of honey.	Yellow	Gray	(10, 7) and (12, 0)
I like the sound of bees buzzing.	Yellow	Gray	(12, -2) and (12, -5)
I like the smell of freshly cut grass.	Green	Gray	(6, 6) and (8, 2)
I like to walk through buddies'	Blue	Gray	(10, 0) and (10, -4)
I like rainbows.	Green	Gray	(0, 8.5) and (9, -4)

SUMMER PERSONALITY TEST



🎭 Activity 2: Famous Dance Form of Odisha – Odissi

- **Explore the Odissi dance, one of India's classical dance forms.**
- **Locate the marked points in the provided pictures.**
- **Write all marked points on a sheet of paper and segregate them as per quadrants and axes.**
- **Write a short note about Odissi dance, highlighting its cultural importance.**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🌼 Presentation Tips

- **Take print out of the whole assignment on A-4 size pages along with cover page.**
- **Use color pens for marking quadrants.**
- **Add pictures of Odissi dance for visual appeal.**
- **Keep your work neat and creative – presentation matters!**

SUB – COMPUTER SCIENCE
CLASS – IX

INSTRUCTIONS

- ✓ Prepare a PowerPoint presentation on the topic “Good AI and Bad AI”.
- ✓ A PDF of the same topic is attached with this assignment for your reference.
- ✓ PPT should contains beautiful design, fonts, transition, animations, pictures and videos.
- ✓ Save this ppt in pen drive and submit to concern teacher after summer vacation.

Good AI and Bad AI

Navigating the dual nature of artificial intelligence

Part I: The Force for Good

Empowering Humanity

Healthcare

AI enables early disease detection, drug discovery, and robotic surgeries that save millions of lives.

Sustainability

Optimizing energy grids and monitoring climate change through satellite data and predictive models.

Education

Personalized learning paths for students, breaking down language barriers and accessibility hurdles.

Economic Transformation

40%

PRODUCTIVITY BOOST

Scaling Potential

AI automates repetitive tasks, allowing humans to focus on creative, high-value decision making. By 2030, AI could contribute up to $15.7 trillion to the global economy.

Part II: The Shadow Side

Algorithmic Bias

- **Data Prejudices:** AI learns from historical data, which often contains human biases regarding race, gender, and socioeconomic status.
- **Unfair Outcomes:** Biased algorithms in hiring, lending, and law enforcement can perpetuate systemic inequality.
- **Lack of Diversity:** Homogeneous developer teams may overlook critical cultural nuances, leading to exclusionary technology.

Security & Misinformation

Deepfakes

Hyper-realistic audio and video can be used for political manipulation, fraud, and damaging reputations.

Cyber Warfare

AI can automate sophisticated phishing attacks and discover software vulnerabilities faster than human hackers.

"The real risk with AI isn't malice but competence. A super-intelligent AI will be extremely good at accomplishing its goals, and if those goals aren't aligned with ours, we're in trouble."

— Stephen Hawking

The End of Privacy?

- **Mass Surveillance:** Facial recognition and behavior tracking enable unprecedented levels of public monitoring.
- **Data Exploitation:** Personal information is often harvested without explicit consent to train massive corporate models.
- **Vulnerability:** Centralized AI databases become high-value targets for data breaches and identity theft.

The Path to Accountability

2018

GDPR sets the standard for data privacy and "the right to explanation."

2021

Proposal of the EU AI Act to categorize AI risks.

2023

Generative AI boom prompts global Safety Summits.

2025+

Universal standards for ethical AI implementation and testing.

Good AI vs. Bad AI

Feature	Good AI (Ethical)	Bad AI (Malicious)
Goal	Human Empowerment	Exploitation or Control
Transparency	Open & Explainable	Opaque "Black Box"
Oversight	Human-in-the-loop	Unchecked Autonomy
Data Usage	Consented & Fair	Biased & Harvested

Thank You

Questions & Discussion

Toward a responsible future with Artificial Intelligence.

ग्रीष्मकालीन अवकाश रचनात्मक कार्य

विषय - हिन्दी

कक्षा – नवम

1. अपने परिवार के किन्हीं तीन सदस्यों के साथ बातचीत करें और उन्हें अलग-अलग संवाद शैली में लिखें।
2. अपने गांव/ शहर के किसी प्रसिद्ध स्थल के बारे में जानकारी एकत्र करें और उसके बारे में लिखें।

SUB : SOCIAL SCIENCE
CLASS : IX

Disaster Management based on an engaging, NEP-style activity approach

Subject: Disaster Management (Geography / Social Science)

🎯 Objective:

To understand different types of disasters, their causes, impacts, and preparedness measures through creative and practical activities.

📝 Part A: Project Work (Compulsory)

📌 Topic: "Understanding Disasters and Preparedness"

Prepare a project file (10–15 pages) including:

1. Introduction

- ✓ What is a disaster?
- ✓ Difference between natural and human-made disasters

2. Types of Disasters (Explain any 4 with examples)

- ✓ Earthquake
- ✓ Flood
- ✓ Cyclone
- ✓ Drought
- ✓ Fire / Industrial disaster

3. Case Study (Any ONE)

Example: Floods in India / Earthquake / Cyclone

- ✓ Causes
- ✓ Effects on people, environment, economy
- ✓ Government response

4. Disaster Preparedness

Before, during, and after a disaster

Safety tips (Do's and Don'ts)

5. Role of Government and Citizens

NDMA (basic idea)

Community participation

6. Conclusion

Importance of awareness and preparedness

👉 Add pictures, newspaper cuttings, diagrams, and maps

🎨 Part B: Activity Work

🎭 Activity 1: Slogan Writing

- ✓ Write 5 catchy slogans on disaster awareness

📦 Activity 2: Emergency Kit List

- ✓ Prepare a list of items for a disaster emergency kit
- ✓ Explain why each item is important

📚 Part C: Short Questions

Answer briefly:

- ✓ What is disaster management?
- ✓ Name any two natural disasters
- ✓ What should you do during an earthquake?
- ✓ Why is early warning important?

📌 Instructions:

- ✓ Use neat handwriting
- ✓ Make it creative and informative
- ✓ Submit after summer vacation
- ✓ Proper cover page with name, class, section