Ursuline Convent Sr. Sec. School

Holiday Homework 2026-27

Class: X

ENGLISH

I. Art Integrated Activity (GROUP)

1.

THANGKA PAINTINS OF ARUNACHAL PRADESH

All the odd groups (1, 3 …) will prepare a powerpoint presentation on the Thangka paintings of Arunachal Pradesh with proper explanation. The roles of the students are divided for your convenience. These can be changed according to the need and division of the group by the group leader. Make sure all the students participate in the activity and the work is submitted on time.

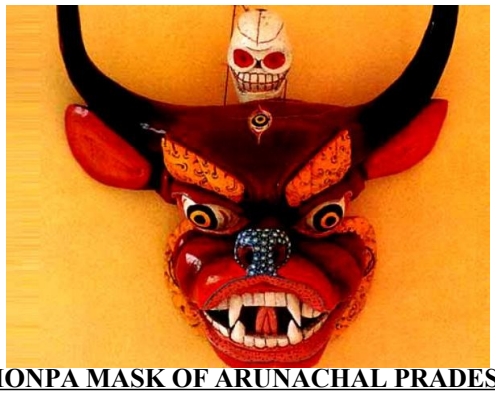
Student 1 & 2: Researchers
The students will search the internet for the data about the origin, evolution, process, stories attached to it etc.

Student 3: Art Director
The student will arrange researched data, images, videos etc. into presentable format. He/she will compare the Thangka paintings with other type of painting like Gond, Pattachitra, Madhubani (any 1)

Student 4 and 5: Artist and writer:
The students will assist Art Director in writing, presentation, design, drawing etc.

The group will prepare a ppt and present it in the class at the end of the activity.

2.



MONPA MASK OF ARUNACHAL PRADESH

All the even groups (2, 4 …) will prepare a power point presentation on the Monpa Masks of Arunachal Pradesh with proper explanation. The roles of the students are divided for your convenience. These can be changed according to the need and division of the group by the group leader. Make sure all the students participate in the activity and the work is submitted on time.

Student 1 & 2: Researchers
The students will search the internet for the data about the origin, evolution, process, stories attached to it etc.

Student 3: Art Director
The student will arrange researched data, images, videos etc. into presentable format. He/she will compare the Monpa Masks with similar mask making technique and storytelling techniques of other states or countries (any 1)

Student 4 and 5: Artist and writer:
The students will assist Art Director in writing, presentation, design, drawing etc.

The group will prepare a ppt and present it in the class at the end of the activity.

II. PORTFOLIO ACTIVITIES:

a. Portfolio activity 1: FIRE AND ICE:
Collect war photographs depicting damage and destruction caused by wars. Use them to build a photo journal with annotations and commentary.

Example:

During the 1991 Desert Storm war, the retreating Iraqi military lit more than 600 Kuwaiti oil wells on fire to hinder the allied forces' advance, leading to an environmental catastrophe. It took nearly 10 months before all the fires were extinguished.

b. Portfolio activity 2:
Prepare a project on the following Unsung heroes of India (**PADMA SHRI 2026 AWARDEES**):

1. **A E Muthunayagam – Science & Engineering (Kerala) (Roll No. 1 to 10)**
2. **Armida Fernandez – Medicine (Maharashtra) (Roll No. 11 to 20)**
3. **Gambir Singh Yonzone – Literature & Education (West Bengal) (Roll No. 21 to 30)**
4. **Brij Lal Bhat – Social Work (Jammu & Kashmir) (Roll No. 31 to 40)**
5. **Charan Hembram – Literature & Education (Odisha) (Roll No. 41 to 50)**

General Instructions:
1. Use A4 interleaf sheets.
2. Cover page with the title of the project and details of the student
3. The project should be of at least 1 (cover page) +3 pages, and cover all relevant points
4. The project should be hand written
5. Paste pictures to support your findings

c. **Portfolio activity 3: Writing**
You are Mahesh / Madhu, a devotee of Lord Shiva and want to go on a pilgrimage to the Mount Kailash. Write a letter of enquiry to the tourism department New Delhi asking for details for the pilgrimage. You can ask details like tour cost, duration, health checkups required, accommodations available, articles required, etc.

General Instructions:
1. Use A4 white ruled sheet.
2. Write the given question at the top.
3. Then, write the letter below it.

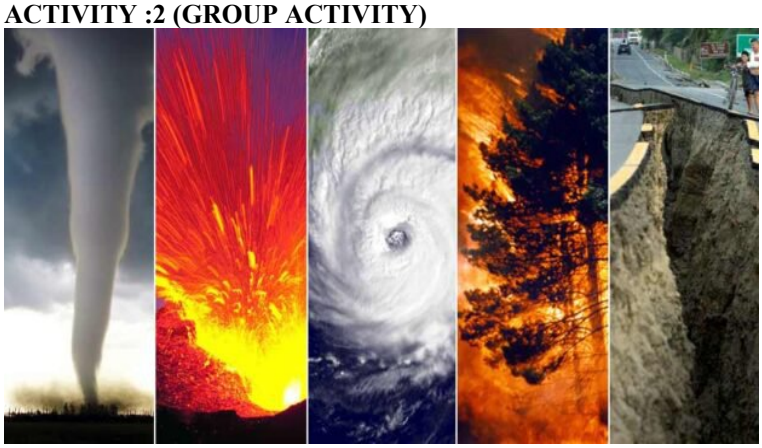
d. Portfolio activity 4: Worksheets
Instructions for Students:

1. Complete the worksheets on grammar, unseen passages, and literary devices.
2. The worksheets will be shared in the respective WhatsApp groups.
3. Students must take a printout of the worksheets.
4. The grammar and literary devices sections should be solved directly on the printed worksheets.
5. The answers to the unseen passages should be written separately on A4 ruled sheets.

SOCIAL SCIENCE

Activity: 1 Create a concept map or flowchart on an A3 size sheet, showing key events **OF THE NATIONALISM IN INDIA**. Also write a short profile on any two **EMINENT LEADERS (YOUR CHOICE.)** and explain their contributions. **(TO BE PASTED IN THE RESPECTIVE NOTEBOOKS)**
Objective: To help students explore the development of nationalism in INDIA, understand the role of Leaders and **THEIR CONTRIBUTIONS** relate to present-day LEADERS AND THEIR CONTRIBUTIONS. Learning Outcomes: ● Students will understand the historical roots of nationalism in INDIA and its impact. ● Develop analytical and comparative thinking. ● Improve research, creative expression, and critical reflection skills.

ACTIVITY :2 (GROUP ACTIVITY)



Objective: To enable students to understand the causes, impacts, and management strategies of different disasters with a focus on developing practical disaster preparedness skills and awareness.
Instructions:
• Choose any one type of disaster from the following categories:
• Natural Disasters: Earthquake, Flood, Cyclone, Tsunami, Landslide
• Biological Disasters: Pandemic (COVID-19), Epidemic (Swine Flu), etc.
• Man-Made Disasters: Nuclear accident, Industrial hazard (Bhopal Gas Tragedy), Oil spill
Prepare a project file or PowerPoint presentation on the selected disaster including the following details:
I. Project Components:
1. Cover Page
2. Title of the project
3. Name, class, roll number
4. Illustration or photo related to the disaster.

II. Introduction
Definition and type of disaster, Brief background of the selected disaster
III. Main Content
a) Causes – Natural, human-made, or both
b) Geographical location – Use maps to show where it occurred/is likely to occur

c) Impact – On people, environment, economy, infrastructure
d) Response Measures – By government, local bodies, international agencies
e) Preparedness and Safety Tips – For individuals and communities
f) Role of students and citizens – How young people can help

IV. Illustrations

Include any maps, charts, diagrams, photos, newspaper clippings, or infographics 5. Conclusion Key learning and takeaways from your research

V. Bibliography

List of sources used (books, websites, news articles, etc.)

ACTIVITY 3 (To be done separately and MANDATORY)

THEME -1: CONSUMER AWARENESS

THEME-2: SUSTAINABLE DEVELOPMENT

GENERAL INSTRUCTIONS

• It is an individual activity.
• The student can choose ANY ONE theme- either theme 1 or Theme 2- and undertake the Project and Case study as pe the theme of their choice.
• Both the project and Case study should be from ONE theme only.
• The project to be handwritten only.
• It should be well researched and presented with proper illustrations
• Project Report should contain 14-15 pages.
• Project should be structured as follows:

1. Cover Page
2. Contents
3. Subject Matter
4. Conclusion
5. Bibliography

ACTIVITY 4

MUN SIMULATION

Committee: UNHRC (United Nations Human Rights Council) or SOCHUM (Social, Cultural, and Humanitarian Committee)

"Addressing Intersectional Discrimination: Protecting the Rights of Marginalized Women and Girls"

FOCUSSING THE FOLLOWING COUNTRIES:

- **INDIA**
- **PAKISTAN**
- **SRI LANKA**
- **BANGLADESH**

PREPARE A SPEECH FOR 90 SECONDS AND WRITE AS AN ESSAY IN A4 SHEET. INDIVIDUAL PRESENTATION IS MANDATORY. STUDENTS CAN CHOOSE ANY ONE COUNTRY AND REPRESENT ON BEHALF OF IT.

NOTE: THE ABOVE-MENTIONED ACTIVITY SHOULD BE FOCUSED UPON UPCOMING MUN

4. Work sheets and Map works (To be posted in the class group)

5. Art Integrated Activity (Group) –Arunachal Pradesh (Based on the discussion in the class)

ARTIFICIAL INTELLIGENCE

ACTIVITY I

This activity is designed to engage Class 10 students in exploring topics related to ethical living, sustainability, and social impact through the website https://www.my-goodness.net. It aims to develop critical thinking, creativity, and awareness of global and community issues.

Activity 1: Article Exploration + Discussion

Objective: Develop awareness of social and environmental issues.

Instructions:

- Visit the website and choose one article or story.

- Read it thoroughly.
- Answer the following questions:
  1. What is the article about?
  2. What problem is being addressed?
  3. What solution is proposed?
  4. What values do you think are highlighted in the article?
  5. Would you support the initiative? Why or why not?

Extension: Students present a short summary to the class or in small groups.

Activity 2: Create Your Own "Goodness" Project

Objective: Encourage students to think like change-makers.
Instructions:
- After exploring the website, design your own project that helps the community, school, or environment.
- Your project must include:
  1. Identification of a problem.
  2. A proposed solution.
  3. Steps for implementation.
  4. A poster or digital presentation to pitch your idea.

ACTIVITY II

AI in Daily Life – Comic Strip
Subjects Integrated: AI, English, Art
Activity:
Create a comic strip/storyboard showing a day in the life of a person using AI — voice assistants, navigation, recommendations, etc.
Focus on storytelling with illustrations, humor, or thought-provoking elements.
Include a panel that explains the AI behind each use.

ACTIVITY III

This activity is designed for Class 10 students to explore digital creativity using https://www.piskelapp.com — a free online tool for creating pixel art and animations. These activities integrate art, storytelling, and computer science skills.**Subject Integration Ideas**

• Computer Science – Game design, sprite creation, animation
• Art & Design – Pixel art creation, color theory
• English/Languages – Visual storytelling, character design
• ICT – Digital creativity, basic design tools

Activity 1: Design a Game Character

Objective: Students will design a pixel art character for a fictional game.
Instructions:
- Go to https://www.piskelapp.com
- Use the editor to create a pixel character
- Name your character and write a short description:
  • What is their story?
  • What are their powers or role in a game?
- Export the sprite and submit it with the description

Activity 2: Create a 4-Frame Pixel Animation

Objective: Understand basic animation using frame-by-frame tools.
Instructions:
- On Piskel, create a new sprite with at least 4 frames
- Make a simple animation (e.g., a bouncing ball, blinking face, walking character)
- Export the animation as a GIF
- Submit the GIF and write a sentence about what you animated

Activity 3: Create a Pixel Art Story Scene

Objective: Combine art with storytelling.

Instructions:

- Design a scene in Piskel (e.g., a forest, spaceship interior, cityscape)
- Use it as the background for a short story (100–150 words)
- Export your pixel image and submit it with your story

ACTIVTY IV

Python Programming

SCIENCE

PHYSICS

1. Revise Chapter-Light-Reflection and Refraction
2. NCERT Back Exercise and Intext Questions and Answers
3. **ACTIVITY IN A SCRAP FILE:**

(a). Draw Ray Diagram for various position of objects for concave and convex mirror.

(b). Application of Reflection and Refraction of light- In Modern World Scientific Instruments (Description of any one instrument with Real life Photograph and Small description, how it uses Lens and Mirrors for its working (e.g James Webb Reflecting Telescope)

(c). Draw the ray diagrams for all possible cases in convex and concave lens.

(d). Draw the ray diagram showing refraction in a glass slab and give it's explanation. Label lateral displacement and the discuss the factors affecting it.

Do the following Worksheet in your Physics Notebook:

TOPIC – LIGHT – REFLECTION THROUGH SPHERICAL MIRRORS

Numerical Problems:

1. A parallel beam of light is made to fall on a concave mirror. An image is formed at a distance of 7.5 cm from the mirror. What are the focal length and the radius of curvature of the mirror?
   [Ans. f – 7.5 cm, R = –15 cm]
2. An object is placed at a distance of 10 cm from a concave mirror of focal length 12 cm. What is the position, and nature of the image formed?
   [Ans. v = 60 cm, virtual, erect and enlarged]
3. An object 1 cm in height is placed at 20 cm from a concave mirror. A real, inverted image 2 cm in height is formed at 40 cm from the mirror. Draw a to-the-scale ray diagram and calculate (a) its focal length (f), and (b) magnification produced by the mirror.
   [Ans. f – 13.3 cm, 2]
4. Find the position and nature of the image formed when an object is placed at a distance of 5 cm from a concave mirror of focal length 15 cm. What is its magnification?
   [Ans. v = 7.5 cm behind the mirror, virtual, erect, M = 1.5]
5. A real image, 1/5th the size of the object is formed at a distance of 18 cm from a mirror. What is the nature of the mirror? Calculate its focal length.
   [Ans. concave mirror, f = – 15 cm]
6. A concave mirror has a focal length of 40 cm. Determine the position of the object for which an erect and four times the size of the object image is formed.
   [Ans. u = – 30 cm]
7. A convex mirror has a focal length of 20 cm. Find the position of the object for which the image will be half the size of the object.
   [Ans. u = – 20 cm]
8. An object of size 5 cm is placed at a distance of 25 cm from the pole of a concave mirror of radius of curvature 30 cm. Calculate the distance and size of the image so formed. What will be the nature of the image?

[Ans. Real, inverted and enlarged of 7.5 cm]

9. A square wire of side 3 cm is placed 25 cm away from a concave mirror of focal length 10 cm. What is the area enclosed by the image of the wire? The centre of the square lies on the principal axis and perpendicular to the axis.
   [Ans. 4 cm2]

Some Important Numericals (For Practice):

10. A virtual, erect and magnified image of an object is to be produced with a concave mirror of focal length 12 cm. Which of the following object distances should be chosen for this purpose?
    (i) 10 cm (ii) 15 cm (iii) 20 cm
    Give reasons for your choice.
    [Ans. 10 cm]
11. An object is kept at a distance of 5 cm in front of convex mirror of focal length 10 cm. Calculate the position and magnification of the image and state its nature.
    [Ans. 3.3 cm behind the mirror; virtual and erect]
12. An object is placed at a distance of 10 cm from a convex mirror of focal length 5 cm.
    (i) Draw a ray diagram showing the formation of image.
    (ii) State two characteristics of the image formed.
    (iii) Calculate the distance of the image from mirror.
    [Ans. (ii) virtual and erect; diminished (iii) 3.3 cm]
13. An object placed 20 cm in front of a mirror is found to have an image 15 cm (i) in front of it, (ii) behind the mirror. Find the focal length of the mirror and the kind of mirror in each case.
    [Ans. (i) concave mirror of focal length 60/7 cm,
    (ii) convex mirror of focal length 60 cm]
14. An object is placed at a distance of 10 cm from a concave mirror of focal length 20 cm.
    (i) Draw a ray diagram for the formation of image.
    (ii) Calculate the image distance.
    (iii) State two characteristics of the image formed.
    [Ans. (ii) 20 cm; (iii) virtual and erect; magnified]
15. An object is placed at a distance of 6 cm from a convex mirror of focal length 12 cm. Find the position and nature of the image.
    [Ans. 4 cm behind the mirror; virtual and erect]
16. What is the position of an image when an object is placed at a distance of 20 cm from a concave mirror of focal length 20 cm?
    [Ans. Infinity]
17. If an object of 10 cm height is placed at a distance of 36 cm from a concave mirror of focal length 12 cm, find the position, nature and height of the image.
    [Ans. – 18 cm; real and inverted; – 5 cm;]
18. If the magnification of a body of size 1 m is 2, what is the size of the image?
    [Ans. 2 cm]
19. An arrow 2.5 cm high is placed at a distance of 25 cm from a diverging mirror of focal length 20 cm. Find the nature, position and size of the image formed.
    [Ans. v = 11.1 cm; virtual and erect; 1.1 cm tall]
20. A converging mirror forms a real image of height 4 cm of an object of height 1 cm placed 20 cm away from the mirror.
    (i) Calculate the image distance.
    (ii) What is the focal length of the mirror?
    [Ans. (i) – 80 cm (ii) – 16 cm]

CHEMISTRY

Activity in Scrap File:
Observing a Chemical Reaction – The Vinegar and Baking Soda Reaction and identify gas evolved by using a suitable chemical test.

Do this worksheet in your chemistry notebook.
MULTIPLE CHOICE QUESTIONS:

1. Which of the following is an example of endothermic process?
(a) Formation of slaked lime
(b) Decomposition of vegetable matter into compost
(c) Dissolution of ammonium chloride in water
(d) Digestion of food in our body

2. In order to balance the following chemical equation, the values of the coefficients x and y are: x $Pb(NO_3)_2(s) \rightarrow 2PbO(s) + y\ NO_2(g) + O_2(g)$
(a) 2,4
(b) 2,2
(c) 2,3
(d) 4,2

3. Strong heating of ferrous sulphate leads to the formation of a brown solid and two gases. This reaction can be categorized as:s
(a) displacement and redox.
(b) decomposition and redox.
(c) displacement and endothermic.
(d) decomposition and exothermic.

4. A student took sodium sulphate solution in a test tube and added barium chloride solution to it. He observed that an insoluble substance has formed. The colour and the molecular formula of the insoluble substance is:
(a) Grey, Ba_2SO_4
(b) Yellow, $Ba(SO_4)_2$
(c) White, $BaSO_4$
(d) Pink, $BaSO_4$

5. $C_6H_{12}O_6(aq) + 6O_2(aq) \rightarrow 6CO_2(aq) + 6H_2O(l)$ + energy The above reaction is a/an
(a) Displacement reaction
(b) Endothermic reaction
(c) Exothermic reaction
(d) Neutralisation reaction

6. Which of the following statements about the following reaction are correct?
$MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$
(i) HCl is oxidised to Cl_2
(ii) MnO_2 is reduced to $MnCl_2$
(iii)$MnCl_2$ acts as an oxidising agent
(iv)HCl acts as an oxidising agent
(a) (ii), (iii) and (iv)
(b) (i), (ii) and (iii)
(c) (i) and (ii) only
(d) (iii) and (iv) only

ASSERTION-REASONING QUESTIONS

For the following questions, two statements are given-one labelled Assertion (A) and the other labelled Reason(R). Select the correct answer to these questions from the options (i) , (ii), (iii) and (iv)as given below:

(i)Both A and R are true and R is the correct explanation of the Assertion.

(ii)Both A and R are true but R is not the correct explanation of the Assertion.

(iii)A is true but R is false.

(iv)A is false but R is true.

7. Assertion: - Lead nitrate on thermal decomposition gives lead oxide, brown coloured nitrogen dioxide and oxygen gas.

Reason: - Lead nitrate reacts with potassium iodide to form yellow ppt of lead iodide and the reaction is double displacement as well as precipitation reaction.

8. Assertion: After white washing the walls, a shiny white finish on walls is obtained after two to three days.

Reason: Calcium Oxide reacts with Carbon dioxide to form Calcium Hydrogen Carbonate which gives shiny white finish.

9. Assertion: Respiration is considered as an exothermic reaction

Reason: Exothermic reactions are those reactions in which heat is absorbed.

10. Assertion: -Corrosion of iron is commonly known as rusting.

Reason: -Corrosion of iron occurs in presence of water and air.

TWO MARKS QUESTIONS:

11. In the refining of silver, the recovery of silver from silver nitrate solution involved displacement by copper metal. Write down the reaction involved.

12. A white salt on heating decomposes to give brown fumes and a residue is left behind.

(a) Name the salt.

(b) Write the equation for the decomposition reaction.

13. Identify the type of reactions in each of the following reactions:

(i) $Zn+H2SO4 \rightarrow ZnSO4+H2$

(ii) $CaO+H2O \rightarrow Ca(OH)2$

(iii) $CaCO3 \rightarrow CaO+ CO2$

THREE MARK QUESTIONS:

14. What happens when food materials containing fats and oils are left for a long time? List two observable changes and suggest a way by which this phenomenon can be prevented.

15. 2 g of ferrous sulphate crystals are heated in a dry boiling tube.

(a) List any two observations.

(b) Name the type of chemical reaction taking place.

© Write balanced chemical equation for the reaction and name the products formed.

16. State the type of chemical reactions with chemical equations that take place in the following:

(a) Magnesium ribbon is burnt in air.

(b) Electric current is passed through water.

(c) Ammonia and hydrogen chloride gases are mixed.

FIVE MARK QUESTIONS:

17. (a) State the various characteristics of chemical reactions.

(b) State one characteristic each of the chemical reaction which takes place when:

(i) Dilute hydrochloric acid is added to sodium carbonate.

(ii) Dilute sulphuric acid is added to barium chloride solution.

(iii) Quick lime is treated with water.

18. An aqueous solution of metal nitrate P reacts with sodium bromide solution to form yellow precipitate of compound Q which is used in photography. Q on exposure to sunlight undergoes decomposition reaction to give the metal present in P and a reddishbrown gas. Identify P and Q. Write

chemical equation and the type of chemical reaction.

PREVIUOS YEAR BOARD QUESTIONS:

19. When copper powder is heated in a watch glass, a black substance is formed.
(a) Why is this black substance formed? Name it.
(b) How can this black substance be reversed to its original form?
20. Silver chloride kept in a china dish turns grey in sunlight.
(a) Write the colour of silver chloride when it was kept in the china dish.
(b) Name the type of chemical reaction taking place and write the chemical equation for the reaction.
(c) State one use of the reaction. Name one more chemical which can be used for the same purpose.
21. A shining metal 'M', on burning gives a dazzling white flame and changes to a white powder 'N'.
(a) Identify 'M' and 'N'.
(b) Represent the above reaction in the form of a balanced chemical equation.
(c) Does 'M' undergo oxidation or reduction in this reaction? Justify.
22. In the electrolysis of water
(a) Name the gases liberated at anode and cathode.
(b) Why is it that the volume of gas collected on one electrode is two times that on the other electrode?
(c) What would happen if dil. H_2SO_4 is not added to water?
23. Write the balanced chemical equations for the following reactions: -
(a) Sodium carbonate on reaction with hydrochloric acid in equal molar concentrations gives sodium chloride and sodium hydrogen carbonate.
(b) Sodium hydrogen carbonate on reaction with hydrochloric acid gives sodium chloride, water and liberates carbon dioxide.
(c) Copper sulphate on treatment with potassium iodide precipitates cuprous iodide, liberates iodine gas and also forms potassium sulphate.

BIOLOGY

Activity in Scrap File:

1. Prepare a temporary mount of a leaf peel to show stomata and write observation, Result, precautions along with related diagrams.
2. Sketch the human digestive system emphasizing the different digestive glands, and tabulate the different enzymes associated with breakdown of different food components.
3. Prove experimentally that CO_2 is necessary for photosynthesis.

NOTE: All the work of physics, chemistry and biology should be done in one scrap file.

ART (Art Integrated Activity to study Natural and synthetic indicators)
Natural Dye Extraction:
Study the CHEMISTRY of natural dyes used in traditional Arunachal Pradesh textiles. Collect plant specimens from the region and extract dyes using scientific methods. Create artworks using these natural dyes, experimenting with different mordants and dyeing techniques.
Note: Art Integrated Activity should be done in a separate scrap file creatively.

Complete the following worksheet in the biology notebook:
Study-Based Questions:

1. What is photosynthesis? Write the equation.
2. Compare the nutritional modes of plants and animals.
3. Describe the structure and function of the human digestive system.

Experimental-Based Questions:

1. Experiment: Investigate the effect of light on plant growth.
   - Hypothesis: _____
   - Variables: Independent: _____, Dependent: _____
   - Procedure: _____
2. Design an experiment: To test the effect of different nutrients on plant growth.
   - Materials: _____
   - Procedure: _____

Analysis and Conclusion:
1. Analyze the data from the experiment on light and plant growth. What conclusions can be drawn?
2. Based on your experiment, what recommendations would you make for optimizing plant growth?

Application-Based Questions:
1. How can the understanding of photosynthesis be applied in agriculture?
2. Design a balanced diet for a school-going student. Explain the importance of each nutrient.

Conceptual Questions:
1. What is the fundamental difference between autotrophic and heterotrophic nutrition? Provide examples.
2. How do plants adapt to optimize photosynthesis? Explain with examples.
3. Describe the role of enzymes in the digestive process. How do they facilitate nutrient absorption?

Critical Thinking Questions:
1. If a plant is placed in a dark room, what changes would you expect in its growth and development? Explain.
2. Compare and contrast the digestive systems of humans and ruminant animals (e.g., cows). How do their diets influence their digestive system structure and function?
3. What would happen if a plant's stomata were blocked, preventing gas exchange? Explain the impact on photosynthesis.

Application-Based Questions:
1. A farmer wants to increase crop yield. Suggest ways to optimize photosynthesis and promote plant growth.
2. Design a meal plan for an athlete, considering their nutritional requirements for optimal performance.

Diagram-Based Questions:
1. Label the parts of the human digestive system and describe their functions.
2. Draw a diagram of a plant cell, highlighting the organelles involved in photosynthesis.

MATHEMATICS

GENERAL INSTRUCTIONS:
· Complete all work neatly in a separate notebook.
· Draw diagrams using pencil and a ruler.
· Use graph paper wherever required.
· Maintain proper headings and sub-headings.
· Attempt all activities sincerely and creatively.
· Ensure originality — copied work will not be accepted.
· **Submission Date:** First day after summer vacation.

1. CHAPTER-WISE PRACTICAL APPLICATIONS
Write the name of every chapter from Term–1 and provide **at least one practical application (5–6 lines each)** explaining how the concept is used in daily life, technology, business, environment, or local culture. Write in your holiday homework notebook.
2. WORKSHEETS
Solve Worksheet – 1 and Worksheet – 2 in a separate notebook.

●Worksheets are attached/provided separately by the subject teacher.

3. ART-INTEGRATED ACTIVITY (This is a group activity)

Topic: Evolution of the Number System – Journey from Counting Numbers to Real Numbers

PARTICIPATION OF ALL GROUP MEMBERS IS COMPULSORY:

- Use imagination and art skills to visually represent the journey from natural numbers to real numbers.
- Support your artwork with a write-up explaining this journey.
- Reflect on: "Will this journey continue beyond the Real Number System? What do you think?"
- Additional Tasks:
- Explain the Properties of the Real Number System with examples and reasoning.
- Create a game or an activity based on Real Numbers.
- Design Real Life Problems based on the Number System.
- Relate your work to Arunachal Pradesh – include relevant cultural, mathematical or geographical aspects.

For Arunachal Pradesh linkage,use examples like:

- Tribal counting systems
- Apatani or Nyishi patterns and symmetry
- Geometric patterns in local textiles
- Real numbers in measurement of rivers, mountains, rainfall, distances
- Presentation Requirements:
- Prepare a PPT (8–10) slides and a well-decorated file.
- Submit the file in a simple folder, labeled with your Group Name and Number.

4. LAB ACTIVITIES

Refer to Activity Manual – Saraswati Publications.

Format for each activity:

1. Name of Activity
2. Objective
3. Materials Required
4. Procedure
5. Observations
6. Result / Conclusion

List of Activities:

1. To find the sum of first n natural numbers experimentally (Page No. 27–28)

2. To solve a system of linear equations graphically and investigate the conditions for a unique solution (Page No. 31–32, Part A only)

3. To investigate the conditions for consistency and inconsistency of a system of linear equations in two variables (Page No. 34–36)

4. To check experimentally whether a given sequence is an Arithmetic Progression (Page No. 37–39)

5. To factorize a quadratic expression $ax^2 + bx + c$, and solve the quadratic equation (Page No. 40–42)

6. To verify Basic Proportionality Theorem (Thales' Theorem) experimentally (Page No. 46–48)

7. To verify that the lengths of tangents drawn from an external point to a circle are equal (Page No. 52–53)

8. To verify experimentally that $\sin^2\theta + \cos^2\theta = 1$ (Page No. 58–60)

9. To verify that the sum of areas of three sectors of same radius 'r' formed at the vertices of any triangle equals the area of a circle sector (Page No. 75–76)

10. To make a cone of given slant height and base circumference (Page No. 82–83)

5.PORTFOLIO ACTIVITIES

1. Graphical representation of quadratic polynomial $x^2 + 2x - 3$

2. Solve graphically the system of linear equations; 4x – 5y + 16 = 0 and 2x + y -6 = 0. Determine

the vertices of the triangle formed by these lines and the x-axis. Also, find the area of the triangle.
3. To find a, b, c, D and nature of roots of the given quadratic equations.
i)$2x^2 - 3x + 5 = 0$ ii) $3x^2 - 4\sqrt{3}x + 4 = 0$ iii) $2x^2 - 6x + 3 = 0$
4. Tessellation of equilateral triangles.
Note: Ensure your work is neat, creative, and original. Enjoy your summer holidays while engaging meaningfully with mathematics

कक्षा-10

विषय - हिंदी

पोर्टफोलियो गतिविधियां

1-"युद्ध एक अभिशाप "इस विषय पर 200 शब्दों में एक निबंध लिखें।

2. साक्षरता अभियान पर नारा सहित एक पोस्टर बनाइए।

3. हिंदी महीनों के नाम और त्यौहार चित्र सहित बनाए।

4. वाक् चातुर्य पर (अकबर बीरबल, तेनालीराम, विक्रम वेताल ,मुल्ला नसीरुद्दीन) किसी एक पर सचित्र कहानी लिखिए।

5.सूरदास जी का चित्र सहित जीवन परिचय लिखिए।

6. वन संरक्षण पर दैनिक समाचार पत्र के संपादक को पत्र लिखिए।

7. विज्ञापन- भारतीय कला और संस्कृति विभाग की तरफ से आयोजित किए जाने वाली प्रदर्शनी का विज्ञापन

- प्रदर्शनी में आकर्षण
- आकर्षण केंद्र
- समय तथा स्थान की जानकारी

8. प्रकृति पर

(सचित्र)कोई एक कविता लिखिए ।कविता मौलिक होनी चाहिए ।

9. अपने बचपन की किसी एक घटना का जिसने आपके मन - मस्तिष्क पर प्रभाव डाला या जिसे याद करके आप खुश हो जाते हैं सचित्र वर्णन कीजिए।

* कला एकीकृत परियोजना

Art Integrated Activity

- अरुणाचल प्रदेश के पर्यटन विभाग की तरफ़ से पर्यटन को बढ़ावा देने के लिए अरुणाचल प्रदेश के त्योहार ,पर्व ,मेले तथा पर्यटन स्थलों आदि को चित्रित करते हुए एक विज्ञापन तैयार करें।