Mukand

MUKAND LAL PUBLIC SCHOOL, SAROJINI COLONY YNR

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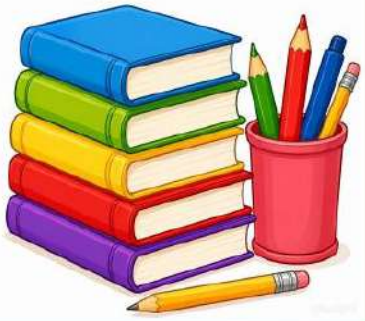
Holidays HOMEWORK

SESSION (2026-27)

CLASS IX

Learn, Explore, Grow
Make your holidays meaningful!



Dear Parents

Greetings

As we welcome the much-awaited summer break, we are delighted to share the Holiday Homework for the Academic Session 2026–27.

Summer vacation offers children a wonderful opportunity to explore, reflect, and learn beyond the boundaries of the classroom. Keeping this spirit in mind, the assignments have been carefully planned to ignite curiosity, inspire creativity, and foster empathy among our learners.

In accordance with the vision of the National Education Policy (NEP) 2020, these activities emphasize experiential, value-based, and project-oriented learning. They are designed to help students relate academic concepts to everyday life experiences. Each task encourages learners to discover their interests, strengthen essential life skills, and develop a broader understanding of the world around them.

With your constant support and encouragement, we are confident that this summer break will become a meaningful journey of learning, growth, and joyful experiences for every child.

Principal

ENGROSSING ENGLISH

Group 1 (Roll No. 1–8)

Model: Prepare a Timeline of Communication Evolution

- Make a 3D or chart timeline

Stages:

* Pigeons → Letters → Telegram → Telephone → Internet → Podcasts → Chatbots

Add: Small labels + pictures

(A moving arrow or string timeline)

Group 2 (Roll No. 9–16)

Creative Writing Display: "Diary Through Time"

What to create: A series of diary entries/messages from different eras:

Ancient messenger (pigeon message) Freedom fighter (letter)

1980s person (telegram/phone)

Modern teen (WhatsApp/chat)

- **Display in scroll/flipbook format**

Group 3 (Roll No. 17–24)

Make Interactive Model:

Make props for "Communication Booth"

Old telephone (cardboard)

Letter box

Fake podcast mic

Group 4 (Roll No. 25–32)

Poster Series: "Then vs Now"

Make split posters:

Pigeon vs Email

Letter vs Chat

Radio vs Podcast

Group 5 (Roll No. 33–42)

Poem + Hanging Display: "Voice of Communication"

- Write a poem like: "From wings that carried words in sky,

Present as:

Hanging cards

Speech bubbles

Decorative strings

हर्षाति हिंदी

अनुक्रमांक (1- 10)

पुरानी नैतिक कहानियों और आधुनिक डिजिटल तकनीक का सुंदर संगम दर्शाने वाला एक कलात्मक कोलाज तैयार कीजिए, जिसमें "तब और अब" की झलक दिखाई दे।

अनुक्रमांक (11 -20)

चित्रात्मक और शाब्दिक प्रस्तुतिकरण के माध्यम से एक कॉमिक स्ट्रिप की रचना कीजिए जिसका शीर्षक हो 'मोबाइल वाला बंदर' जिसमें एक बंदर मोबाइल और गेम की दुनिया में खो जाता है। बाद में उसे समझ आता है कि तकनीक का संतुलित उपयोग ही सही है।

अनुक्रमांक(21-30)

दो पात्रों — एक कबूतर संदेशवाहक तथा एक ई-मेल रोबोट — के बीच संवाद लिखिए। संवाद में पुराने एवं आधुनिक संचार माध्यमों की विशेषताओं, सुविधाओं, कठिनाइयों तथा उनके महत्व को रोचक ढंग से प्रस्तुत कीजिए।

लेखन में यह स्पष्ट होना चाहिए कि समय के साथ संदेश भेजने के तरीकों में किस प्रकार परिवर्तन आया है तथा आधुनिक तकनीक ने संचार को कैसे प्रभावित किया है। संवाद में भावनात्मक जुड़ाव, गति, सुविधा तथा तकनीक के सुरक्षित उपयोग जैसे बिंदुओं को भी शामिल कीजिए।

अनुक्रमांक (31-40)

प्राचीन जंगल सभा की जगह अब सोशल मीडिया समूह ने ले ली है। इस परिवर्तन को रोचक संवादों और घटनाओं द्वारा कहानी रूप में प्रस्तुत कीजिए।

*कल्पना कीजिए कि पंचतंत्र का जंगल अब एक डिजिटल स्मार्ट सिटी बन गया है, जहाँ शेर ऑनलाइन सभा का संचालन करता है और मोर सोशल मीडिया स्टार बन गया है। बुद्धिमान कछुआ साइबर सुरक्षा विशेषज्ञ के रूप में सभी जानवरों को सुरक्षित इंटरनेट उपयोग की शिक्षा देता है, जबकि चालाक सियार फेक न्यूज़ फैलाकर भ्रम पैदा करने का प्रयास करता है। जंगल के सभी जानवर AI तकनीक और मोबाइल ऐप्स के माध्यम से अपनी समस्याओं का समाधान खोजते हैं। इस कल्पना को आधार बनाकर 4–5 पृष्ठों की रोचक कहानी अथवा नाटक लिखिए, जिसमें तकनीक के लाभ, हानि और नैतिक शिक्षा को रचनात्मक ढंग से प्रस्तुत किया गया

MAJESTIC MATHEMATICS

1)Which of the following expressions are polynomials in one variable
i)$4x^2-3x+7$ ii)$y^2+\sqrt{2}$ iii)$3\sqrt{y}+y\sqrt{2}$ iv)$t^2 + t$
2)$(\sqrt{a}+\sqrt{b})^2$=
3)Every rational number is a whole number.True/False
4)Name of horizontal line is_____and name of vertical line is_____ drawn to determine the position of any point in the Cartesian plane.
5)i)x-coordinate is called the _____. ii)y-coordinate is called the_____.
6)Locate the following points on number line-
$\sqrt{11}$, $\sqrt{29}$, $\sqrt{5}$
7)Find the decimal expansions of 10/3,7/8 and 1/7
8)The sum of a two digit number and the number obtained by reversing the digits is 66.If the digits of the number differ by 2,find the number.How many such numbers are there?

9)A lending library has a fixed charge for the first 3 days and an additional charge for each day thereafter.Shilpa paid rs 27 for a book kept for seven days while Sushmita paid rs 21 for the book she kept for 5 days.Find the fixed charge and the charge for each extra day.
10)Show that the points (1,7),(4,2),(-1,-1) and (-4,4)are the vertices of square.
11)Show that 1.272727…. can be expressed in the form p/q, where p and q are integers and q is not equal to 0.
12)i)The distance of a point from the y-axis is called its x-coordinate or _____ and the distance of the point from the x-axis is called its y-coordinate or _____.
ii)The coordinates (x,0) lies on ___ -axis, the coordinates (0,y) lies on ___-axis.
iii)The point of intersection of the axis is called the _____.
iv)The abscissa of (4,-3) is ____. ii)The ordinate of (-7,-8)_____.
13)Add $2\sqrt{2}+5\sqrt{3}$ and $7\sqrt{2}-4\sqrt{3}$
14)The midpoints of the sides of triangle ABC are the points D,E and F.Given that the coordinates of D,E and F are (5,1),(6,5) and (0,3) respectively, find the coordinates of A,B and C.
15)Point W has x coordinate equal to -5.Can you predict the coordinates of point H which is on the line through W parallel to the y-axis?Which Quadrants can H lie in?
16)Find the degrees of polynomials i)$3x^3-5x^2+3x+5$ ii)-10 iii)0
17)Write the polynomial of degree 4 in the variable x,in which the coefficient of the x^2 terms in -8.
18) Without performing division, determine whether the decimal expansion of 18/125 is terminating or non terminating.If it terminates ,state the number of decimal places.
19)Convert 2.357777… into the form p/q.
20)Find three distinct rational numbers that lie strictly between -1/2 and ¼.
21)If we multiply a number by 5/2 and add 2/3 to the product,we get -7/12.Find the number.
22)Draw the graphs if y=1/3x, y =3x and y=2x by selecting suitable points on these lines.
23) Find the values of y for which the distance between the points P(2,-3) and Q(10,y) is 10 units.
24)Find the coordinates of the points which divide the line segment joining A(-2,2) and B(2,8) into two equal parts.
25) Simplify
i)$\sqrt{13} \times \sqrt{13}$ ii)$\sqrt{13}+\sqrt{13}$ iii)$2\sqrt{13}-\sqrt{13}$ iv)$3\sqrt{13}+2\sqrt{13}-4\sqrt{13}$

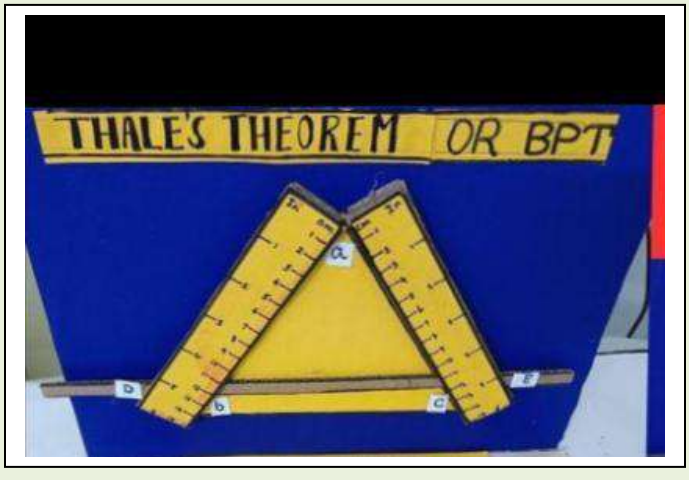
Projects

Roll no. 1 -10

Create a park where swings are circles, pathways are parallel lines, gardens are triangles and lawns are square etc.

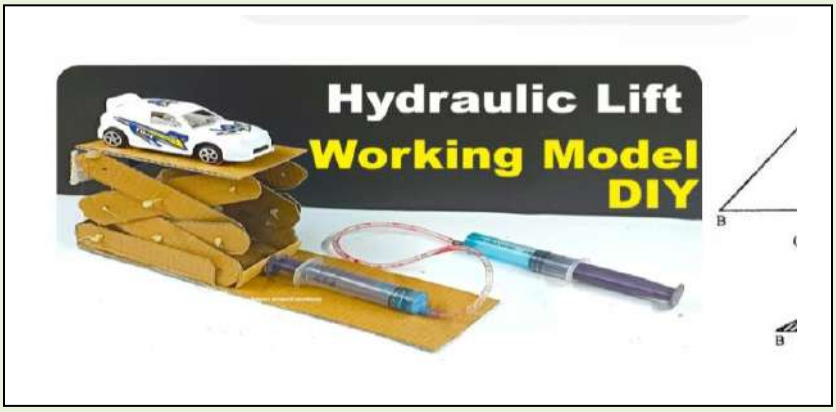
Roll no. 11-20

Make a model of thales theorem or BPT

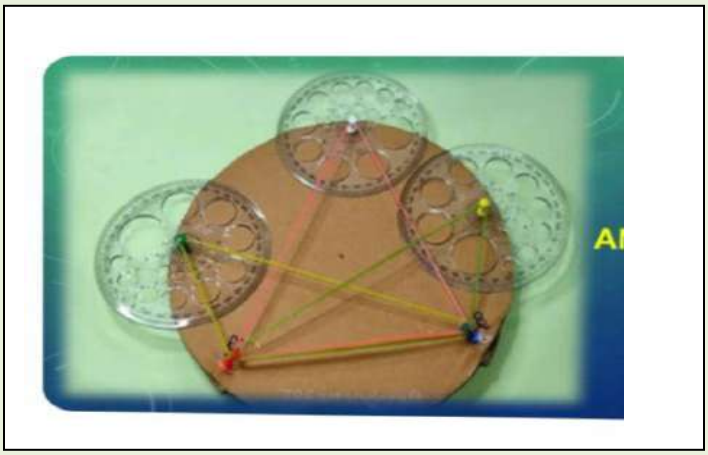


Roll no. 21 to 30

Make a hydraulic lift working model



Roll no 31-40
Make a working model of angles in the same segment in a circle are equal.



STIMULATING SCIENCE

IX – A, B
BIOLOGY
COMPULSORY PROJECT**:"The Living Fabric – Tissue Spotlight"***
Turn your chart into a mini museum panel. Focus on ONE body tissue. Feature a detailed, colorful diagram under a magnifying glass effect, plus 4 key facts: structure, location, function, and one everyday example of it at work. Add borders, heading, and color to make it exhibition-ready!

(Roll No 1-3)
Human Brain Function Model
Prepare a simple model of the human brain showing different parts and their functions. Use colors or labels to identify each part clearly.
(Roll No 4-6)

Water Transport in Plants

Create a model showing how water moves from roots to leaves. Use pipes or straws to demonstrate the flow of water.
(Roll No 7-9)
Brain–Body Coordination Model

Prepare a model showing how the brain controls different body parts. Use lights or signals to represent communication between brain and organs. The model should demonstrate coordination and control.

(Roll No. 10-12)

Human Evolution Chart Model

Create a visual model showing the stages of human evolution. Arrange the stages in a sequence from early humans to modern humans.

(Roll No 13-15)
Animal Diversity Model
Create a model showing diversity among animals based on habitat or movement. Include aquatic, terrestrial, aerial, and amphibious animals. The model should clearly explain classification.
CHEMISTRY:

(Roll No.15-17)
Quantum Numbers Wheel

Explain principal, azimuthal, magnetic and spin quantum numbers using rotating charts.

Features
* Rotating paper wheel

* Different colors for each quantum number

* Easy explanation of each.

(Roll No.18-20)
Energy Level Transition Model

Show electrons jumping between energy levels and emitting light.

Extra Idea

Use small LED lights to represent energy release.

Explanation

* Electron absorbs energy → jumps up

* Electron releases energy → comes down

(Roll No. 21-23)
Electron Cloud Model
Demonstrate that electrons move in probability clouds instead of fixed paths.
Materials
(* Cotton, Transparent plastic ball, Small beads/lights)
Concept
Shows modern quantum model of atom.
PHYSICS:

(Roll No. 24-27)
Create a model of Space Debris Cleaner Satellite

(Roll No. 28-30)
Create a model of Spacecraft Health Monitoring System:Display temperature, pressure, battery levels.

(Roll No. 31-33)
Create a model of Gesture-Controlled Robot Arm that Simulate robotic operations in space missions.

(Roll No. 34-36)
Create a model of Touchless Quantum Door Lock.
(37 onwards)
Create a model of Smart Space Helmet with oxygen/temperature indicators.

IX -C, D
PHYSICS

(Roll No.1-3)
Create a model of AI-Based Smart Satellite that adjusts solar panels automatically.

(Roll No. 4-6)
Create a model of Automatic Space Weather Detector that have Sensor-based storm warning system.

(Roll No 7-9)
Create a model of AI Astronaut Assistant(Voice-controlled mini assistant using Arduino.)

(Roll No.10-12)
Create a model showing Communication Timeline
(● Past: Telegraph & Radio Waves
● Present: Fiber Optic Communication
● Future: Quantum Communication Network)
(Roll No.13-15)
Create a model showing Space Exploration Timeline
(● Past: First Rocket Launch
● Present: Mars Rover & Satellites
● Future: Human Colony on Mars.)
(Roll No. 16-18)
Create a model of Solar Sail Spacecraft.

CHEMISTRY
(Roll No. 19-21)
Aufbau Principle Tower
Create a staircase showing how electrons fill orbitals.
Levels
1s → 2s → 2p → 3s → 3p …
Fun Idea
Use colored balls for electrons.
(Roll No. 22-24)
Periodic Table & Electron Configuration Model

Interactive periodic table with electron shell arrangement.
Extra Feature
Pressing an element lights up its shells.
(Roll No. 25-27)
Electron Excitation and Relaxation Model
A moving electron jumps upward when energy is supplied and glows when it comes back.
(Materials
* Springs/wires, * LED lights, * Battery)
Concept
Absorption and emission of energy.

BIOLOGY
COMPULSORY PROJECT: *"The Living Fabric – Tissue Spotlight"*
Turn your chart into a mini museum panel. Focus on ONE body tissue. Feature a detailed, colorful diagram under a magnifying glass effect, plus 4 key facts: structure, location, function, and one everyday example of it at work. Add borders, heading, and color to make it exhibition-ready!
(Roll No.28-30)
Energy from Human Movement
Design a simple model showing how movement can produce energy. Use basic circuits to light an LED using motion
(Roll No.31-33)

Food web Model
Prepare a model showing the food chain in an ecosystem. Clearly represent producers, consumers, and decomposers.

Roll No.34-36)
Vertical Forest (Urban Cooling)

- Innovation: Bio-architecture to fight climate change.
- The Model: A 3D model of a skyscraper covered in real moss and small plants, featuring a "greywater" recycling system that waters the plants automatically.

(37 onwards)
Mitochondria: The Fusion Reactor of the Cell
A working 3D model showing how glucose and oxygen "fuse" through cellular respiration to create ATP. Use LED lights to represent energy release, moving from the "flame" of raw nutrients to the "fusion" of usable energy.
IX -E, F, G
CHEMISTRY
(Roll No. 1-3)
Hydrogen Spectrum Model
Show how different electron transitions produce different colors of light.
Working
* Different colored LEDs represent spectral lines
* Electron falls from higher to lower energy levels

(Roll No.4-6)
Periodic Table & Electron Configuration Model
Interactive periodic table with electron shell arrangement.
Extra Feature
Pressing an element lights up its shells.
(Roll No.7-9)
Do Research on

'How quantum chemistry is applicable in Drug discovery and designing.
(Roll No.10-12)
Research and frame a report on how quantum chemistry is used in Battery Technology?
Hint: Researchers model the complex interactions between electrolytes and battery materials to design safer, higher-capacity, and faster-charging batteries.
(Roll No.13-15)
Electron Cloud Model
Demonstrate that electrons move in probability clouds instead of fixed paths.
Materials:
* Cotton
* Transparent plastic ball
* Small beads/lights
Concept
Shows modern quantum model of atom.

BIOLOGY

COMPULSORY PROJECT: "Organ Spotlight"

Shine the spotlight on ONE human body organ. Your chart should feature a bold, colored, labelled diagram plus a "Fast Facts" corner covering its function, size, location, and one tip to keep it healthy Creativity, color, and clarity will earn top marks!
(Roll No.16-18)
Photosynthesis vs Respiration Model
Create a comparative model showing differences between photosynthesis and respiration. Use diagrams or flow systems. The model should clearly highlight both processes.
(Roll No.19-21)
Plant Root System Model
Prepare a model showing different types of roots and their functions. Use diagrams or 3D structures. The model should explain absorption and support.
(Roll No.22-24)
Biodiversity in Different Habitats Model
Prepare a model showing biodiversity in different habitats such as desert, forest, aquatic, and mountain regions. Include different plants and animals found in each habitat. The model should highlight adaptation and variety of life forms.
(Roll No.25-28)
Plant Diversity Model
Design a model showing different types of plants such as herbs, shrubs, trees, climbers, and creepers. Use real leaves or creative materials to represent them. The model should explain differences in structure and growth.

PHYSICS

(Roll No.29-31)
Create a model showing Human Exploration Timeline
Past: Telescope Discovery Era
Present: Space Telescopes
Future: Deep Space Exploration)
(Roll No.32-34)
Create a model showing Communication Satellites Timeline
(Past: Signal Flags & Letters
Present: GPS & Internet Satellites
Future: Quantum Internet)
(Roll No.35-38)
Create a model that Show how quantum computers are different from classical computers.

(37 onwards)
Create a model showing Smart Space Colony on Mars.

SCIENCE AIL PROJECTS

ROLL NUMBER WISE DISTRIBUTION FOR IX—A, B

- **Roll no. 1 to 14 will do Chemistry project**
- **Roll no. 15 to 28 will do Biology project**
- **Roll no. 29 to the last roll will do Physics project**

ROLL NUMBER WISE DISTRIBUTION FOR IX—C, D

- **Roll no. 1 to 14 will do Biology project**
- **Roll no. 15 to 28 will do physics project**
- **Roll no. 29 to the last roll will do Chemistry project**

ROLL NUMBER WISE DISTRIBUTION FOR IX—E, F, G

- **Roll no. 1 to 14 will do physics project**
- **Roll no. 15 to 28 will do Chemistry project**
- **Roll no. 29 to the last roll will do Biology project**

BIOLOGY:

INSIDE THE CELL – MINI MAGAZINE"

Students create a creative magazine (4–5 A4 pages) where each page represents one part of the cell. They add headings like "Meet the Nucleus", "Energy Department", "Transport System" with drawings and short content.It should look like a real magazine, not notes.

PHYSICS:

Power Poster – "Who is More Powerful?"

Compare:

Human vs machine

CHEMISTRY:

Students design a 3D model of an atom showing:

Protons,neutrons,electrons , electronshells(Bohrmodel)

SIGNIFICANT SOCIAL SCIENCE

1.Traditional Safe Houses Model (Roll no 1 to 5)

Make a 3D model showing how traditional Indian houses protect people from disasters.

Examples:

- Bamboo houses of Assam → safe during floods & earthquakes
- Sloping roof houses of Kerala → protection from heavy rain
- Mud houses of Rajasthan → stay cool in heat & dust storms
- Kath-Kuni houses of Himachal Pradesh → earthquake resistant

Materials:

Cardboard, clay, ice-cream sticks, paint, chart paper.

Add:

- Labels
- Disaster type
- Safety features

2. “Before and After Disaster” Chart (Roll no 6 to 10)

Create a comparison chart showing:

- Ordinary House
- Disaster-Resistant House
- Weak foundation
- Strong foundation
- Flat roof
- Sloping roof
- Poor ventilation
- Emergency exits
- No safety planning
- Earthquake/flood-resistant design
- Use arrows, diagrams, and colors.

3. Smart Future City Poster (Roll no 11-15)

Design a poster of a future disaster-safe city.
Include:

- Earthquake-resistant buildings
- Solar panels
- Rainwater harvesting
- Flood drainage systems
- Green buildings
- Emergency shelters

4. Working Earthquake-Proof Building Model (Roll no 16 to 20)
Make a small model using:

- Straws
- Rubber bands
- Cardboard
- Show how flexible structures absorb earthquake shocks.
- You can also demonstrate:
- Base isolation technique
- Cross bracing

5. Scrapbook Project (Roll no 21 to 25)

Prepare a scrapbook with:

- Newspaper cuttings of disasters
- Photos of safe architecture
- Government safety rules
- Innovative building ideas
- Add short explanations for each page.

6. Disaster Safety Mini Booklet (Roll no 26 to 30)

Create a handmade booklet:
Topics:

- Earthquake safety
- Flood safety
- Cyclone safety
- Fire-resistant homes
- Traditional Indian architecture
- Decorate with drawings and facts.

7. Interview Activity (Roll no 31 to 35)

Interview:

- An architect
- Engineer
- Mason
- Grandparents (traditional homes)

Ask:

- Write the structure of old houses?
- What materials were used in building old houses?
- How were old houses safer?
- What modern technology helps today?
- Write answers in Q&A format.

8. Innovation Corner (Roll no 35 onwards)

Show modern technologies used in safe buildings:

- Shock absorbers in buildings
- Floating houses
- Dome shelters
- 3D-printed houses
- Eco-friendly materials

Roll No. 1 to 20

- Identify a problem in your neighborhood (e.g. waste collection or a local library system). Use a tool like Canva or Figma to design the interface for a mobile app that solves it. Create at least 5 screens (Home, Profile, Search, Action and Settings).

Roll No. 21 onwards:

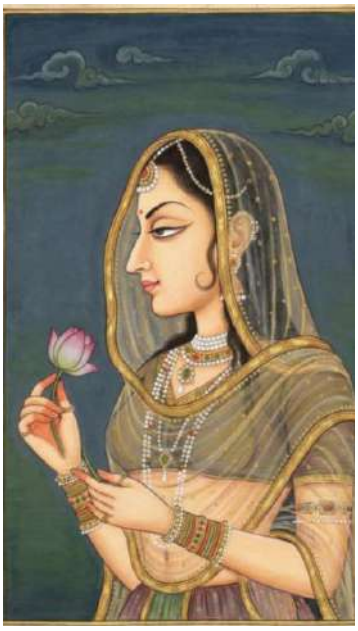
- Create simple games or animated stories with interactive characters. You can use the drag-and-drop block coding to make characters move, speak, and react to user input. (Using Pictoblox)

ARTISTIC ARTS

Let's get crafty these holidays. Your task is to make a beautiful "Thread Art " like the one in the picture.

No expensive stuff needed. Just use waste wooden board , iron nails , wool and your imagination. Also a TRADITIONAL ART of INDIA Mughal painting on A3 sheet with beautiful colour scheme . And bring your masterpiece after holidays

Thread Art



Mughal Paintings

Instructions: Please find portfolio attached below in the holidays. Complete the portfolio neatly and creatively. Preserve all holidays homework, worksheets, and project work in this file. Paste relevant photographs, certificates, or artwork wherever required. Submit the completed portfolio after the holidays.

Note: This portfolio is a sample template for reference only. Students may design and create their own portfolio using their creativity. The portfolio may be handmade or prepared in typed form.

STUDENT PORTFOLIO

MUKAND LAL PUBLIC SCHOOL

STUDENT PORTFOLIO TEMPLATE

MODE OF SUBMISSION: HANDWRITTEN/TYPED IN A PROJECT FILE

Session: 2026–27

COVER PAGE

Student Name: _____

Class & Section: _____

Roll No.: _____

Teacher's Name: _____

Student photograph

PAGE 1: WHO AM I?
Three Words That Describe Me

1. ---
2. ---
3. ---

My Superpowers (Tick or write your strengths, you can choose one or more options)
□ Creative Thinker
□ Problem Solver
□ Leader
□ Team Player
□ Tech Enthusiast
□ Artist
□ Athlete
□ Public Speaker
□ Helpful Citizen
□ Curious Learner
Mention if any other

My Dream Board
When I grow up, I want to become:

Because:

Draw, paste pictures, or add inspiration here.

My Personal Motto

"_____"

PAGE 2: MY ACHIEVEMENT

Mention all achievements

My Top 5 Proud Moments

☆ _____

☆ _____

☆ _____

☆ _____

☆ _____

Showcase Corner

Paste or attach a photo, certificate, artwork, project & class activities

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PAGE 3: MY SKILL METER

Rate Yourself from 1-5 points

Communication

☐ ☐ ☐ ☐ ☐

Confidence

☐ ☐ ☐ ☐ ☐

Leadership

☐ ☐ ☐ ☐ ☐

Creativity

☐ ☐ ☐ ☐

Teamwork

☐ ☐ ☐ ☐ ☐

Technology Skills

☐ ☐ ☐ ☐ ☐

Time Management

☐ ☐ ☐ ☐ ☐

Problem Solving

☐ ☐ ☐ ☐ ☐

My Biggest Challenge This Year

How did I overcome it?

One Skill I Mastered

One Skill I Will Develop Next Year

PAGE 4: MY REFLECTION CAPSULE

- The most important lesson I learned:

- A moment that made me happy:

- Someone who inspired me:

- How I helped my school/community:

➢ My Goals for Next Year

1. ---

2. ---

3. ---

A LETTER TO MY FUTURE SELF

Dear Future

Student Signature: _____

Parent Signature: _____

Teacher Signature: ____