

NOTRE DAME SCHOOL, NAJAFGARH
SUMMER VACATION HOMEWORK (2026-27)
CLASS X



"We want that education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet"
-Swami Vivekananda

Dear Students

Summer vacation is an exciting time for students to relax, unwind and enjoy their break from school. It provides an opportunity to recharge, explore new activities, and spend quality time with family and friends.

Summer vacation is a time of adventure, relaxation, exploration, and connection. It's a season to embrace growth, cultivate gratitude, and find inspiration in the simplest of joys.

To maintain the educational continuum and to keep in view the rejuvenation you need, an enriching homework for the holiday is designed to keep you constructively busy and put boredom at bay....

BE A WONDERFUL HUMAN BEING: KEEP IN MIND TO

Pray to almighty daily and thank for the blissful life that you enjoy.

Do the homework/assignments following the guidelines/instructions given and prepare for your first term examination.

Follow a schedule during holidays. Be a good time manager.

Read newspapers daily and stay updated with current affairs.

Do the homework independently, only ask for assistance from your parents or guardians.

Give time to pursue your hobby.

Appreciate nature and go for "Nature Walks", plant trees and spread the message of Nature Conservation"

Remember to have a wide mouth container filled with water outside your house for the birds to get respite from the scorching heat.

Be a helping hand to your parents and learn the skill of shared responsibility

Spend time with your parents and grandparents. Their rich experience will help you overcome challenges of life in future.

Minimize the use of gadgets.

REQUEST TO PARENTS

Summer vacation time is an opportunity to spend the quality time with your child and make him/her feel special of his unique identity. So please spare sometime and do the following:

Talk about Omni presence God and humility being developed with regular prayers and doing good deeds as to offer best prayer to the God. Take them some religious places.

Let them feed the poor and share things with needy people with love, let them enjoy the Art of Giving.



Physics & Chemistry (Do the given work in Science register):-

- 1) What is chemical equation? What are its type?
- 2) Write any 2 examples of each type of chemical reactions.
- 3) Differentiate between:-
 - a) Displacement reaction & double displacement reaction
 - b) Corrosion & rancidity

e) Combination & decomposition reaction

f) Oxidation reaction & reduction reaction

PROJECTS / IDEAS for Science Exhibition: (On A-4 size paper) (any two)

1. Project based on quantum physics
2. Solar cooker.
3. Li-Fi Audio Transmission: Build an optical wireless communication model that transmits sound or audio signals through an LED light beam and a solar panel.
4. Pinhole Camera: Design a cardboard box with tracing paper to observe rectilinear propagation and inverted image formation.
5. Periscope: Construct a tube with angled mirrors 45° to observe objects that are out of the direct line of sight.
6. NOTE : Write first three experiment of physics and first three experiment of chemistry from lab manual.

COMPETENCY BASED QUESTIONS:

1. Ram was doing an experiment in the Chemistry lab. The teacher told him to heat 1g of Cu in a test tube. He observed that the colour of the copper turns from brown to black. When Hydrogen gas is passed over it again changes to brown colour.

a) Name the type of reaction involved.

b) Name the black colour substance formed.

c) Write the balanced chemical reactions.

2. What happens when dry Barium chloride and dry Sodium sulphate are mixed together? What should you do make the reaction possible? Write the balanced chemical equation for the chemical reaction. Write the symbols of the ions present in the compound precipitated in the reaction.

3. On heating Lead nitrate in a boiling tube, lead oxide, oxygen gas and a brown gas "X" is formed. Identify the type of reaction and the gas "X". Also write the balanced chemical equation of the reaction.

4. Sunita took about 2 g of Ferrous sulphate crystals in a dry boiling tube and heat the boiling tube over the flame of a burner.

a) What is the colour of the ferrous sulphate crystals?

- b) Write the changes observed during heating of the crystals.
- c) Name the type of the reaction and define it. Also write the balanced chemical equations.

Biology :-

1. Learn and revise the chapters done.
2. Portfolio sheets
 - i) Flow chart on double circulation in humans.
 - ii) Nephron diagram.
3. Practical file
4. Write an article on A4 size sheet on - Microplastic :“ The invisible threat.”



1. Concept Practice & Assignments

Create a dedicated notebook and solve the following problem types from your early chapters:

- **Real Numbers:** Practice finding the HCF and LCM using prime factorization and Euclid's division algorithm. Prove that numbers like $\sqrt{2}$ or $5 + 2\sqrt{3}$ are irrational.
- **Polynomials:** Find the zeroes of quadratic polynomials and verify the relationship between zeroes and coefficients.
- **Linear Equations:** Solve pairs of linear equations in two variables both algebraically and graphically.

2. Math Projects & Activities

Complete one or two of the following creative projects on an A4 sheet or in a file folder:

- **Indian Mathematicians:** Research the chronology and historical contributions of mathematicians like Aryabhata or Srinivasa Ramanujan.
- **Pythagorean Triplets:** Visually generate and demonstrate Pythagorean triplets.
- **Geometry in Daily Life:** Create a report or chart highlighting how geometric shapes and algebraic identities are applied in your surroundings.
- **Note – Complete first 10 practical from maths lab manual in practical file.**

3. PORTFOLIO WORKS (To be written A-4 size paper)

Q.1. Read the life history of any five famous Indian Scientists and write about them and their discovery. (A report in about 200 words)

Q.2. Write all the equations of Chapter 1 (Chemical reactions and equations).

4. Do the following task:-

A. Solve the following questions in your homework copy

1. Find the HCF and LCM of 6, 72 and 120 using fundamental theorem of arithmetic.
2. Find the largest number that divides 2053 and 967 and leaves a remainder of 5 and 7 respectively.
3. Two numbers are in the ratio 21 : 17. If their HCF is 5, find the numbers.
4. Prove that $\sqrt{5}$ is an irrational number.
5. Find HCF and LCM of 404 and 96 and verify that $\text{HCF} \times \text{LCM} = \text{Product of the two given numbers}$
6. Given that $\sqrt{2}$ is irrational, prove that $(5 + 3\sqrt{2})$ is an irrational number.
- 7.(a) On a morning walk three persons step off together and their steps measure 40 cm, 42 cm, 45 cm, what is the minimum distance each should walk so that each can cover the same distance in complete steps?

(b) There are 576 boys and 448 girls in a school that are to be divided into equal sections of either boys or girls alone. Find the total number of sections thus formed.
8. Find the zeroes of $\sqrt{3}x^2 + 10x + 7\sqrt{3}$
9. Find a quadratic polynomial whose zeroes are -9 and $1/9$
10. If the sum of the zeroes of the quadratic polynomial $ky^2 + 2y - 3k$ is equal to twice their product, find the value of k .
11. If the product of the zeroes of the polynomial $ax^2 - 6x - 6$ is 4, then find the value of a . Also find the sum of zeroes of the polynomial.

12. Find the zeroes of $p(x) = 4x^2 + 24x + 36$ quadratic polynomials and verify the relationship between the zeroes and their coefficients.

13. If α and β are zeroes of the quadratic polynomial $4x^2 + 4x + 1$, then form a quadratic polynomial whose zeroes are 2α and 2β .

14. If α, β are zeros of quadratic polynomial $2x^2 + 5x + k$, find the value of k such that $(\alpha + \beta)^2 - \alpha\beta = 24$.

15. If α, β are zeroes of polynomial $p(x) = 5x^2 + 5x + 1$ then find the value of

(i) $\alpha^2 + \beta^2$ (ii) $1/\alpha + 1/\beta$ (iii) $\alpha^3 + \beta^3$

B. Read and practice yourself chapter 3,4,5,6,7 during summer holiday.

C. Write any four projects out of given topic in maths activity copy elaborately with colourful work: (Atleast 1000 words for each project)

Topic list

1. To develop Heron's formulae for area of a triangle.
2. Story of π .
3. Development of Number Systems with their needs.
4. Chronology of Indian Mathematicians with their contributions.
5. Chronological development of solution of a quadratic equations.
6. Development of Formula for the area of a cyclic quadrilateral.
7. Pythagoras Theorem-Proofs other than given in the present textbook.
8. Extensions of Pythagoras Theorem.
9. With rectangle of given perimeter finding the one with a maximum area and with rectangle of given area, finding the one with least perimeter.
10. Knowledge and classification of solid figures with respect to surface areas and volumes.
11. Sum of the exterior angles of a polygon taken in an order.
12. Generation of Pythagorean triplets.
13. Magic squares.
14. With cuboids of given surface area, finding the one with maximum volume and with cuboids of given volumes finding one with least surface area.
15. Mathematical designs and patterns.

16. Indian Mathematicians and their contributions.
17. To prepare a list of quotations on mathematics.
18. Ramanujan number (1729)
19. Mathematical Crosswords
20. Application of Geometry in day-to-day life
21. Application of Algebra in day-to-day life.
22. Application of Mensuration in day-to-day life.



Download the English Portfolio from the link

https://drive.google.com/file/d/1PPgKAYbCWn6Du66YVgCE0xpvFduCj_kBQ/view?usp=sharing . Kindly take a print of the portfolio and complete all the questions neatly by following the instructions given carefully.

Read the instructions properly.

Write the answers in a neat handwriting.

Complete all the given questions carefully.

1. Read, revise, complete and learn all the work done. Prepare for First Term Examination.

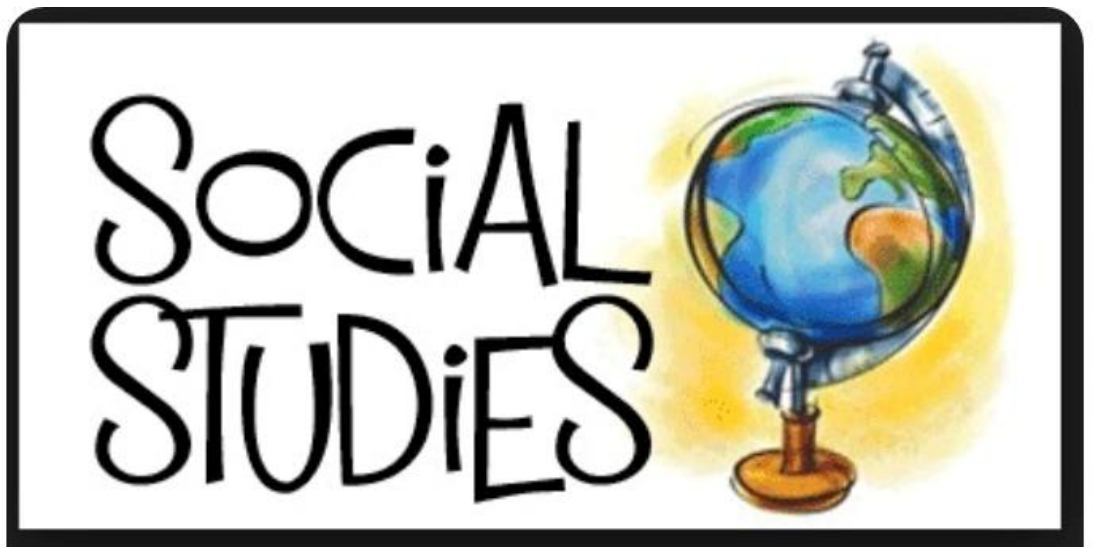
2. Write about major crops for plantation along with the map work on major crop production states of India on Indian political map.
 3. Make a poster on social issues
 4. Write about big four Indian National Congress sessions and mark the centres of sessions on Indian political map.
 5. - Write five differences between the job of formal workers and informal workers.
- If you had a choice, would you prefer a formal job or an informal job? Why?

Do all this work on A4 size sheet separately.



1. पी.डी.एफ के रूप में दिए गए कार्य को डाउनलोड करके प्रिंट आउट निकलवाएं और उसी में लिखित कार्य करें।

https://drive.google.com/file/d/1V7QJ1XlfGj1_g-T8IBbsF_-UwxL76Zji/view?usp=sharing



1. Read, revise, complete and learn all the work done. Prepare for First Term Examination.
2. Write about major crops for plantation along with the map work on major crop production states of India on Indian political map.
3. Make a poster on social issues.
4. Write about four important Indian National Congress sessions and mark the centres of sessions on Indian political map.
5. Write five differences between the job of formal workers and informal workers.
- If you had a choice, would you prefer a formal job or an informal job? Why?

Do all this work on A4 size sheet separate

6. Make a poster on SAY NO TO TOBACCO on A3 size sheet.
7. Write about the land area, weather, climate, population, food and culture of the two pairing states Sikkim and Assam on A4 size sheets with pictures.



1. Write an essay (200-250 words) on "Future of Artificial Intelligence".
2. Prepare a project file on "History and Evolution of AI" with pictures and examples.
3. Research different career opportunities in Artificial Intelligence and write a report.
4. Write the differences between AI, Machine Learning, and Deep Learning.
5. Design a simple chatbot conversation on paper.
6. Collect information about 5 AI-powered apps and explain their uses.
7. Write 10 ethical rules people should follow while using AI technology.

"Every action is important and every deed is vital....."

Wishing all the students a joyful learning and Happy Holidays.



