

SAINIK SCHOOL CHITTORGARH, RAJASTHAN

SUMMER VACATION HOMEWORK(2026–27)

SUBJECT NAME : MATHEMATICS

CLASS & SECTION : IX A, B, C

TEACHER NAME : DHARMENDRA SINGH YADAV

GENERAL INSTRUCTIONS

1. Complete all work in **Mathematics Notebook**.
2. Maintain **neatness, proper steps, and correct mathematical presentation**.
3. Show **complete working** for all calculations—answers without steps will not be awarded marks.
4. Use **blue pen** for writing and **pencil for diagrams/rough work**.
5. Submit homework on the **first day after vacation**.
6. Practice questions sincerely—this work will be part of **internal assessment**.
7. Parents are requested to **guide and monitor** but not complete the work on behalf of the child.

ASSIGNMENT

CHAPTER 1 :REAL NUMBERS

1. Classify the following numbers as rational or irrational:
(i) $\sqrt{2}$, (ii) $7/8$, (iii) -3.5 , (iv) $\sqrt{16}$
2. Represent $\sqrt{3}$ on the number line using geometric method.
3. Find three rational numbers between 1 and 2.
4. Write the decimal expansion of $5/6$. Is it terminating or non-terminating?
5. Write $0.777\dots$ in the form of p/q .
6. Express $1.272727\dots$ as a rational number.
7. Rationalize the denominator of $1/\sqrt{5}$.
8. Simplify: $\sqrt{50} + \sqrt{8} - \sqrt{18}$
9. Find the value of: $(3 + \sqrt{2})(3 - \sqrt{2})$
10. If $x = \sqrt{2} + 1$, find the value of $x^2 - 2x + 1$.
11. Simplify and find the value of: $(\sqrt{5} + \sqrt{2})^2$
12. Convert 4.125 into a rational number.
13. Is $\sqrt{49}$ an irrational number? Why?
14. Simplify: $1 / (\sqrt{2} - 1)$
15. Find two irrational numbers between 2 and 3.
16. Write two numbers whose squares are irrational.
17. Show that $(2 + \sqrt{3})^2$ is irrational.

CHAPTER 2 :POLYNOMIALS

SECTION-A

1. Write the degree of the given polynomials :

i) $(2x + 4)^3$

ii) $(t^3 + 4)(t^3 + 9)$

2. Write the coefficient of x^4 and x in $4x^3 - 5x^4 + 2x^2 + 3$.

3. Find the zeroes of $f(z) = z^2 - 2z$.

4. Find the product using suitable identities: $(4 + 5x)(4 - 5x)$.

5. What is the value of k in polynomial $x^2 + 8x + k$, if -1 is a zero of the polynomial?

SECTION-B

6. Show that $x + 1$ and $2x - 3$ are factors of $2x^3 - 9x^2 + x + 12$.

7. If $a^2 + b^2 + c^2 = 20$ and $a + b + c = 0$, find $ab + bc + ca$.

8. If $9x^2 + 25y^2 = 181$ and $xy = -6$, find the value of $3x + 5y$.

9. Evaluate using identities:

i) $\frac{7.83 \times 7.83 - 1.17 \times 1.17}{6.66}$

ii) $29^3 - 11^3$

10. Simplify: $(x^2 + y^2 - z^2)^2 - (x^2 - y^2 + z^2)^2$

SECTION-C

11. Evaluate using identities:

i) $(0.99)^2$

ii) 117×83

iii) $(a^2b - b^2a)^2$

12. Simplify :

$$\frac{(a^2 - b^2)^3 + (b^2 - c^2)^3 + (c^2 - a^2)^3}{(a - b)^3 + (b - c)^3 + (c - a)^3}$$

13. Let P and Q be the remainders when the polynomials $x^3 + 2x^2 - 5ax - 7$ and $x^3 + ax^2 - 12x + 6$ are divided by $x + 1$ and $x - 2$ respectively. If $2P + Q = 6$, find the value of a .

SAINIKSCHOOLCHITTORGARH
SUMMERSHOLIDAYHOMWORK

INFORMATION

SUBJECTNAME: English

CLASS&SECTION: IXA,B and C

SUBJECTTEACHERNAME:JAYANTI SAXENA

INSTRUCTIONS:

1. The holiday homework will be considered as your English project work.
2. The marks awarded for this will be counted towards Internal –assessment.
3. Project will be done in a file (plastic strip file with A4 sheet may also be used) Q2 and Q3.
- 4 . Note-book of at least 100 pages Q1, Q4 , Q5 and Q6.
4. On page 1: write -English Project Work, name, class, roll number, topic etc.

ENGLISH PROJECT WORK

NAME:

CLASS:

SCHOOL NUMBER:

HOUSE:

SECTION

5. Last page of the project will carry the following certificate

CERTIFICATE

This is to certify that I _____ OF Class _____. Have done the English project work on my own. It is my own original work as per the guidelines provided by _____ (Name of the teacher).

Signature
Name:

ASSIGNMENT

SubjectName:English

Reading Activity

Q1.Read –a) The Hindu b) Watch the Wion News c) Read magazines like- Frontline

Learn at least 10 words daily and use it in sentences of your own. Do come prepared with two hundred words and sentences written in a separate note-book of at least 100 pages.

Creative -writing

Q2.PORTFOLIO: PREPARE A PORTFOLIO WITH THE FOLLOWING – (Prepare a file with A4 size sheets)

- Introduction (1 Page each)
- My strengths (1 Page each)
- I need to improve on... (1 Page each)
- My achievements (1 Page each)
- I have participated in... (1 Page each)
- The books I have read (1 Page each)
- The book I wish to read (1 Page each)

Q3.Write two book reviews of the books which you will read during summer vacation

Q4..Write two descriptive paragraphs on famous personalities and monuments and two Informal Invitation .

Q5. You have just read a poem (a) Bharat Our land

(a) Theme /Central Idea (b) Summary (c) Meanings of words

Q6.. Questionnaire Making :(i)Prepare 15 multiple choice questions from the story a) How I Taught My Grandmother b) The Pot Maker

Q7 English Language Lab ; Complete First Five units from module 7 (H.W has been assigned on line)

.The deadline for submission of the above work is July 1, 2026 within the subject period.

SAINIK SCHOOL CHITTORGARH
SUMMER VACATION HOMEWORK
SOCIAL SCIENCE
CLASS IX

Topic: Early Humans and Beginning of Civilisation

Very Short Answer Questions

1. Why is the term “Neolithic Revolution” considered appropriate for the transition from food gathering to food production?
2. Name the archaeologist who first recognized the historical significance of the Indus Valley Civilization excavations in 1924.
3. How did standardized brick sizes reflect administrative efficiency in the Harappan Civilization?
4. Which features of Homo erectus distinguish it significantly from earlier hominins?
5. Why is the Great Bath of Mohenjo-Daro considered evidence of ritualistic practices rather than ordinary public utility?

Short Answer Questions

1. Explain the significance of bipedalism in the evolution of early humans. How did it influence later human development?
2. Analyse the major technological advancements introduced during the Neolithic Age and explain their social consequences.
3. Compare the urban planning of Harappa and Dholavira with special reference to settlement design and defensive architecture.
4. Discuss the importance of trade in the Harappan economy. How do archaeological findings prove the existence of international trade relations?
5. Examine the role of environmental factors in the decline of the Indus Valley Civilization. Which factor appears most convincing and why?

Long Answer Questions

1. Trace the evolutionary journey of human ancestors from early hominins to Homo sapiens. Discuss the biological and cultural developments associated with each stage.
2. Critically evaluate the causes and consequences of the Neolithic Revolution. Why is it regarded as one of the most transformative developments in human history?
3. Describe the salient features of town planning in the Indus Valley Civilization. How do these features reflect administrative sophistication and civic consciousness?
4. Analyse the social and economic organization of the Harappan Civilization. How did agriculture, trade, craft specialization, and social hierarchy contribute to urban prosperity?

5. Discuss the religious beliefs and cultural practices of the Harappan Civilization. To what extent can archaeological evidence help historians reconstruct Harappan religion?

SAINIK SCHOOL CHITTORGARH
SUMMER VACATION HOMEWORK

SUBJECT - HINDI

CLASS & SECTIONS: 9 (A, B, C)

SUBJECT TEACHER

RAMESH SAH

INSTRUCTIONS: सामान्य निर्देश-

- सभी प्रश्नों को क्रमानुसार हल करें।
- अवकाश के बाद विद्यालय आने पर गृहकार्य जमा करना अति आवश्यक है।
- यह अवकाश कार्य आप के आंतरिक मूल्यांकन के अंतर्गत बहु-मूल्यांकन (Multiple Assessment) का एक अंग है।

प्रश्न 1. 'मेरी दिनचर्या' - यात्रा वृत्तांत / कहानी के रूप में: अपने अवकाश के दौरान किसी एक दिन को चुनें। उस दिन सुबह उठने से लेकर रात सोने तक की अपनी दिनचर्या को एक मनोरंजक कहानी या एक छोटे-से यात्रा वृत्तांत के रूप में लगभग 200-250 शब्दों में लिखिए। इसमें अपनी भावनाओं और छोटे-मोटे अनुभवों को भी शामिल करें।

प्रश्न 2. हिन्दी साहित्य के किसी भी कवि की कोई भी एक छोटी, प्रेरणादायक कविता (जो आपके पाठ्यक्रम में न हो) चुनिए। उस कविता को फ़ाइल में सुंदर अक्षरों में लिखिए। साथ ही, 100 शब्दों में यह भी लिखिए कि उस कविता का संदेश आपको क्यों अच्छा लगा और वह आपके जीवन में कैसे उपयोगी हो सकता है।

प्रश्न 3. आप अपने घर और आस-पास पर्यावरण को स्वच्छ और हरा-भरा रखने के लिए कौन से 5 व्यावहारिक उपाय अपना रहे हैं या अपनाना चाहते हैं? उन उपायों को लिखिए और बताइए कि इससे समाज और प्रकृति को क्या लाभ होगा।

प्रश्न 4. अपने बचपन के किसी पुराने दोस्त या किसी ऐसे रिश्तेदार को एक पत्र लिखिए जिनसे आपकी बहुत दिनों से बात नहीं हुई है। इसमें अपनी वर्तमान पढ़ाई, भविष्य के सपनों और पुरानी यादों का जिक्र करें।

प्रश्न 5. आजकल 'रील्स' (Reels) और 'शॉर्ट्स' का ज़माना है। क्या आपको लगता है कि इससे हमारी पढ़ने की आदत (Reading Habit) कम हो रही है? इस विषय पर अपने विचार पक्ष या विपक्ष में एक तार्किक लेख (150 शब्द) के रूप में लिखें।

प्रश्न 6. कल्पना कीजिए कि आज से 10 साल बाद आप एक सफल व्यक्ति बन चुके हैं। आप अपने आप को कैसा देखना चाहते हैं? अपने 'भविष्य के स्वरूप' को एक डायरी के पन्ने के रूप में लिखें, जिसमें आपकी उपलब्धियाँ और आपके संस्कारों का वर्णन हो।

SAINIK SCHOOL CHITTORGARH
SUMMER VACATION HOMEWORK

SUBJECT : CHEMISTRY

CLASS & SECTION: IX A

SUBJECT TEACHER NAME: TONY ABRAHAM

INSTRUCTIONS:

- 1. Attempt all the questions**
- 2. Draw coloured diagrams and write equations where necessary**
- 3. Prepare a separate homework note book for chemistry**

ASSIGNMENT

UNIT 1

1. What is a mixture? Give one example.
2. Define a pure substance.
3. What is the difference between a homogeneous and heterogeneous mixture?
4. What is meant by solubility?
5. Define suspension with one example.
6. What is a colloid? Give one example.
7. What is the Tyndall effect?
8. What is meant by saturated solution?
9. Define alloy with an example.
10. What is decantation?
11. Differentiate between true solution, colloid, and suspension.
12. Explain the process of filtration with a suitable example.
13. What is chromatography? Write one application.
14. How can you separate a mixture of sand and ammonium chloride?
15. What is centrifugation? Where is it used in daily life?
16. Explain the process of evaporation and factors affecting it.
17. What is the difference between evaporation and boiling?
18. Explain how you would separate cream from milk.
19. Describe the method of distillation. How is it different from fractional distillation?
20. To complete the projects as indicated below:-
 - A: Luv House ----- "Evolution of Atomic Structure"
 - B: Kush House ----- Model: Rutherford's Gold Foil Experiment
 - C: Pratap House ----- 3D Model: Bohr's Atomic Structure.
 - D: Jaimal House ----- Subatomic Particles. "Study of Protons, Neutrons, and Electrons"
 - E: Badal House ----- "Simple Water Purification by Distillation"
 - F: Hamir House ----- "Preparation and Study of Colloids (Milk & Starch Solution)"
 - G: Kumbha House ----- "Growing Crystals of Sugar and common salt"
 - H: Sanga House ----- "Methods of Separation in Daily Life"
 - J: Padmini House ----- Create atomic models of Carbon, Oxygen, Nitrogen and write paragraphs on them

SAINIK SCHOOL CHITTORGARH

SUMMER VACATION HOLIDAY HOMEWORK : 2026-27

INFORMATION

SUBJECT NAME: BIOLOGY

CLASS & SECTION: IX A, IX B, & IX C

SUBJECT TEACHER NAME: BHUPENDRA BIHARI VYAS

INSTRUCTIONS : THE GIVEN HOME ASSIGNMENT IS DIVIDED INTO FOUR SECTIONS. ATTEMPT ALL SECTIONS.

ASSIGNMENT

CHAPTER : THE FUNDAMENTAL UNIT OF LIFE

Section A: Cell Structure and Organelles

1. If the organization of a cell is destroyed due to some physical or chemical influence, what will happen?
2. Why is the plasma membrane called a "selectively permeable membrane" rather than a "completely permeable" one?
3. What would happen to the life of a cell if there was no Golgi apparatus?
4. A person takes concentrated solution of salt, after some time he starts vomiting. What is the phenomenon responsible for this situation?
5. Why are lysosomes known as "suicide bags" of a cell? Under what specific condition do they perform this function?
6. Mitochondria are strange organelles in the sense that they have their own genetic material. What does this suggest about their origin?
7. If you are provided with some vegetables to cook, you generally add salt to them. After adding salt, vegetables release water. Why?
8. Why do plant cells possess a large central vacuole while animal cells have small, temporary ones?
9. How does a plant cell withstand much greater changes in the surrounding medium than an animal cell?
10. A cell's nucleolus is removed. Which specific process in the cell will be most immediately affected?

Section B: Membrane Transport and Osmosis

11. Why does the skin of your fingers shrink when you wash clothes for a long time?

12. Dried raisins, when soaked in water for some time, swell up and later sit in a concentrated sugar solution to shrink. Explain the phenomena involved.
13. Why is endocytosis found only in animal cells and not in plant cells?
14. How do substances like CO₂ and water move in and out of the cell? Use the concept of diffusion and osmosis.
15. If a red blood cell (RBC) is placed in distilled water, it eventually bursts, but a plant cell does not. What protects the plant cell?
16. Why are "pickles" and "jams" preserved with high concentrations of salt and sugar respectively?
17. What will happen if a marine fish is placed in a freshwater aquarium?
18. A cell is placed in a solution and it neither swells nor shrinks. What can you conclude about the nature of the solution?

Section C: Comparative Analysis and Function

19. "The structure and ability of a cell to perform functions are interdependent." Justify this statement with examples of a nerve cell and a muscle cell.
20. Why is the nucleus called the "Director of the Cell"? What would happen if the nucleus is removed from an Amoeba?
21. Differentiate between Rough Endoplasmic Reticulum (RER) and Smooth Endoplasmic Reticulum (SER) based on their functional roles in liver cells.
22. Bacteria do not have a defined nucleus, yet they perform all life functions. How is their genetic material organized?
23. If a cell's ribosomes are destroyed, which vital process will stop and how will it affect the cell's survival?
24. Chloroplasts are often called the "Kitchen of the Cell." If a plant is kept in the dark for a long period, which organelle will fail to function and why?

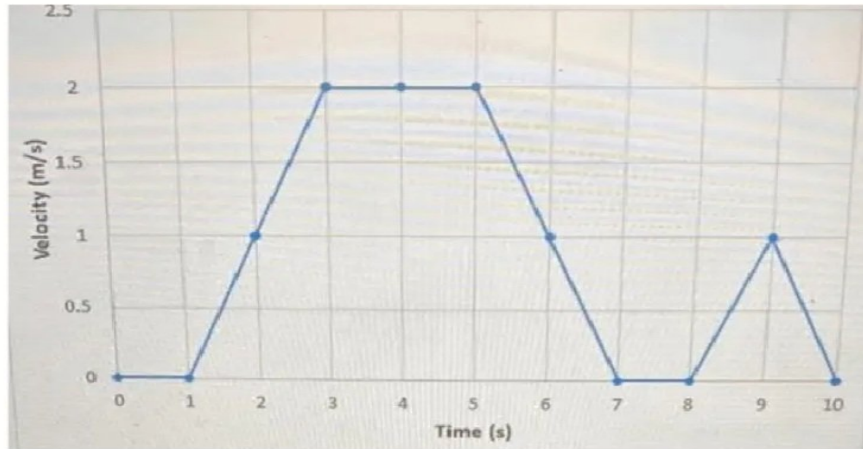
Section D: Application Based / Case Studies

25. A student soaked seeds in water overnight. He forgot to drain the water and left them for two days. The seeds started smelling foul. Explain the biological reason behind this.
26. Why is it advised not to fertilize a field during a drought? (Hint: Think about soil water concentration).
27. How does the presence of "Plasmodesmata" facilitate communication in plant cells despite having a rigid cell wall?
28. An athlete takes glucose for instant energy. How does the mitochondria use this glucose to provide energy? In what form is this energy stored?
29. What is "Membrane Biogenesis"? Which organelle is primarily responsible for this process?
30. Chromosomes are made up of DNA and proteins. If DNA is the functional unit, what is the role of the protein associated with it?

SAINIK SCHOOL CHITTORGARH
SUMMER VACATION HOMEWORK 2026
CLASS IX PHYSICS

- Q1. A particle moving up an inclined plane has its velocity change from 25 m/s to 10 m/s in 5 s. Calculate its acceleration.
- Q2. Velocity changes from 35 m/s to 60 m/s in 3 s. Find the acceleration.
- Q3. A train accelerates from 36 km/h to 54 km/h in 10 s. Find (i) acceleration and (ii) distance traveled.
- Q4. A truck traveling at 54 km/h slows to 36 km/h in 10 s. Find the retardation.
- Q5. A scooter speeds up from 10 m/s to 20 m/s in 4 s. Find acceleration.
- Q6. A body covers 4 m along a semicircular path. Calculate displacement magnitude and distance:displacement ratio.
- Q7. Particle starts at 8 m/s with 2.5 m/s^2 acceleration. Find displacement in next 4 s.
- Q8. Train at 40 km/h has brakes with -0.5 m/s^2 acceleration. Find distance before rest.
- Q9. Car starts from rest, reaches 54 km/h in 2 s. Find (i) acceleration and (ii) distance.
- Q10. Particle at 5 m/s ($t=0$) with 0.2 m/s^2 acceleration. Displacement in 15 s?
- Q11. Truck covers 90 km at 30 km/h. Speed for next 120 km for 60 km/h average?
- Q12. Cyclist on 100 m radius track completes revolution in 8 min. (a) Average speed? (b) Average velocity?

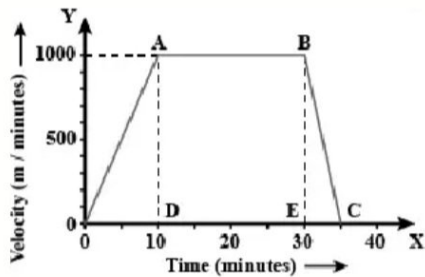
4. The velocity of a toy car is plotted below. What is the total distance travelled by the toy?



Q13. The velocity of a toy car is plotted as above. What is the total distance travelled by it?

Q 14. Do as directed

5. Velocity-time graph for a train is shown in figure.
 A. Find the total distance travelled by the train.
 B. Calculate the average velocity of the train.



Q15. A car moving at 72 km/h is brought to rest in 10s by applying brakes.

- Find its acceleration (retardation).
- Find the distance it travels before stopping.
- Uniform acceleration from rest

Q16. A body starts from rest and moves with uniform acceleration of 5 m/s^2

a. What will be its velocity after 6s

b. What distance will it cover in 6s?

Q17. A bus moving at 20m/s is stopped over 50 m by applying brakes.

a. Find its acceleration.

b. What time does it take to stop?

Q18. A car starts from rest, accelerates uniformly at 4 m/s^2 for 3s, then moves with constant velocity for 5s.

a. Find its final velocity at the end of 3s.

b. Find the total distance covered in 8s.

Q 19. A body starts from rest and covers 100m in 10s with uniform acceleration.

If the same body covers the same distance in 8s with a different uniform acceleration, find the new acceleration.

Q20. Two cars are 300m apart on a straight road. Car A starts from rest with acceleration 2m/s^2 car B moves towards A with constant velocity 10 m/s.

a. After how much time will they meet?

b. How far from A's starting point will they meet?

SAINIK SCHOOL CHITTORGARH

SUMMER VACATION HOMEWORK

LIFE SKILLS AND VALUE EDUCATION

CLASS & SECTION: 9 (All Sections)
Bishnoi

SUBJECT TEACHER NAME: Pratibha

INSTRUCTIONS: Complete all tasks sincerely. Video to be submitted on Gmail.
Written reflection to be submitted physically on the first day after vacation.

ASSIGNMENT

ACTIVITY 1: SHORT TRAVEL FILM

Create a short documentary-style film about a place you visited or travelled to during the summer vacation (or recently). Share your experience, observations, and reflections through the video.

Film Guidelines:

- Maximum duration: 5 minutes
- Language: Hindi, English, or Hinglish
- Must include: introduction of the place, your personal experience, something interesting you learned, and a conclusion with your takeaway
- Can be shot on a mobile phone — focus on content, not just video quality
- Add captions / title card with your name, class, and place visited

Submission of Video:

Send the video file to: bpratibhawork@gmail.com

Subject line of email: Travel Film – [Your Name] – Class 9[Section]

Submission deadline: On or before the first day of school after vacation.

WRITTEN REFLECTION (Mandatory along with the video):

Write a reflection of minimum 200 words on A4 sheet covering the following:

1. Name of the place and when you visited
2. Why did you choose to visit / travel there?
3. Three things that surprised or amazed you
4. What did this travel teach you about life, people, or the world?
5. How did the experience help you grow as a person?

ACTIVITY 2: DAILY DIARY WRITING

Maintain a personal diary throughout the summer vacation (11 May to 29 June 2026).

Daily Entry Format:

6. Date & Day
7. What did I do today that was meaningful or productive?

8. What did I learn — from any source (book, person, event, nature)?
9. A problem I faced and the decision I made
10. How did I demonstrate any Officer-like Quality or leadership today?
11. My honest reflection on myself today — strengths and areas to improve

Note: Write minimum 6–8 lines per day. Be reflective and honest. This diary is your personal growth journal.