

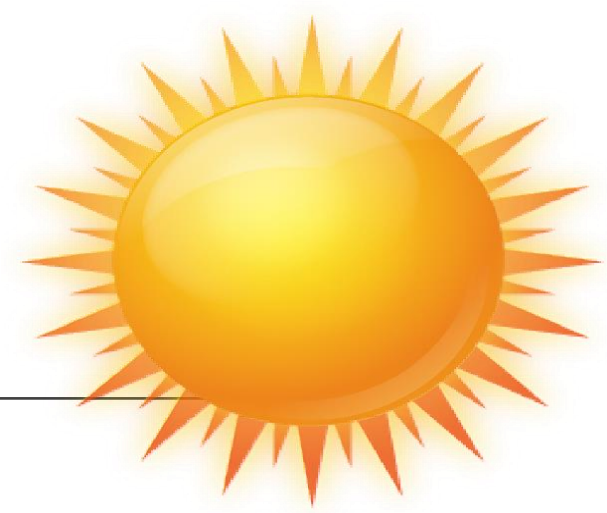
**SANMATI HIGHER SECONDARY SCHOOL,
INDORE**

**SUMMER
VACATION
HOMEWORK/
ASSIGNMENT/
PROJECT**

GRADE IX

"IT IS OUR ATTITUDE AT THE BEGINNING OF A DIFFERENT TASK WHICH, MORE THAN ANYTHING ELSE, WILL AFFECT ITS SUCCESSFUL OUTCOME."

ENGLISH



INSTRUCTIONS-

- Make all the presentation in an Impressive and catchy way.
- Originality and creativity is highly appreciated while doing the assignment.
- Do any four of the following tasks.

Presentation

- Make a presentation for the soft board of your class on a colored A4 size sheet. You can choose any of the following theme for the same:
- Write motivational quotes on Discipline/Hard work/ Dedication
- Any Poetry on Patriotism/Nature/ Grandparents
- Classroom Code of conduct.

Interview

Conduct an Interview with your parents or grandparents and find out how things have changed over time.

You can ask the following questions; Interviewer can add on question of his/her choice as well.

1. Which Music they listened the most in their youth?
2. Which Movies did they loved to see?
3. Was there any television show they enjoyed and did not want to miss?
4. When your parents were your age, what were they not allowed to do?
5. Who were the people your parents admired when they were teenagers?
6. How much money did they have for themselves as pocket money?
7. What are their expectations from you when you will grow up?
8. Will they allow you to go abroad for higher studies?
9. What they think is the better option between online shopping or to visit market and do shopping? Why?
10. Which is the one thing they think is not existing now a days and they want to change as per their school days?

Collage, Tree & Card

- Make a collage of Newspaper Headlines (English Newspaper).
- Draw a beautiful tree of English Grammar Topics like eight parts of speech, different kinds of sentences, degrees of adjectives, kinds of noun, different collective nouns, types of adverb etc.
- What are your strategies/planning to score and fetch better marks and grades than the previous class? (100 -150 words)
- Make a beautiful card for your Mother for Mother's Day. Write any five things for you are thankful to her.

Reading Corner:

Read books of any of the genre of your choice, some recommendations are:

1. Wings of Fire by A.P.J Abdul Kalam
2. The Man who knew Infinity by Paulo Coelho
3. Swami and Friends by R.K.Narayan
4. The Room on the Roof By Ruskin Bond
5. The Adventures of Tom Sawyer by Mark Twain
6. Great Expectations By Charles Dickens
7. To Kill a Mocking bird by Harper Lee
8. You can Win by Shiv Khera

Special Note: Proper guidance and directions are given in the classroom for how to attempt the assignment. Make sure to bring and submit the assignment within three days of re-opening the school after summer vacation.) ALL THE BEST....STAY HEALTHY & KIND.

HINDI

- आप इस ग्रीष्मावकाश में जहाँ भी घूमने जाएँ वहाँ का यात्रा वृत्तांत चित्र - सहित लिखें।
इसमें निम्नलिखित जानकारी समाहित करें -
 - उस स्थान को देखने जाने का उचित समय
 - होने वाले खर्च का अनुमान
 - ठहरने की जगह
 - देखने योग्य स्थल
 - आपके शहर व उस शहर के तापमान, प्रदूषण के स्तर, खान-पान व्यंजन, अभिवादन का तरीका आदि में अंतर
 - उस शहर की वह बात जो आपको बहुत अच्छी लगी, जो आप चाहते हैं कि आपके भी शहर में हो।

कहाँ करें - A-4 रंगीन शीट में

कैसे करें - अपनी घूमने की फोटो लगाकर, रंगीन व आकर्षक

HINDI

- अपने घर के आस-पास पक्षियों के लिए उचित स्थान पर दाना पानी रखें। बचे हुए नारियल के खोलों या अन्य सामान से उनके लिए घोंसलों का निर्माण कर के पेड़ों पर लगाएं। इन सभी की फोटो खींच कर प्रोजेक्ट फाइल में लगाएं। ऐसा करके आपको कैसा महसूस हुआ अपने स्वानुभव को लगभग 100 शब्दों में लिखें।
कहाँ करें - A-4 शीट में
कैसे करें - सुंदर लेख में, चित्रों के साथ
- आपकी पाठ्यपुस्तक संचयन में पाठ 'गिल्लू' को पूरा पढ़ें। उसके पश्चात आज के जमाने में पशु पालन उचित या अनुचित विषय पर अपने विचार ट्वीट के रूप में लिखिए। (ट्वीट संबंधी नियम देखने के लिए आप गूगल का प्रयोग करें।)
इस संबंध में लगभग 100 शब्दों में चित्र सहित जानकारी ट्वीट लोगो (Twitter logo) बनाकर दीजिए।
कहाँ करें - गतिविधि पुस्तिका में
कैसे करें - सुंदर लेख में, रंगीन चित्रों के साथ, चारों तरफ ट्विटर लोगो बनाएं।
- प्रतिदिन 10 नए शब्द पाठ्यक्रम या समाचार पत्र से गतिविधि पुस्तिका में लेकर वर्तनी अभ्यास करें।
- नैतिक मूल्यों पर आधारित पंचतंत्र, उपनिषदों आदि की कहानियाँ पढ़ें। अवकाश के पश्चात कक्षा में सुनाएं।

MATH

Instructions:

- Complete your assignment in assignment copy.
 - * Neat and clean work
 - * Date of Submission :
- 1. Make a modal on any one from the following
 - Solid shapes their volume and surface area
 - Polygons
 - Algebraic identities
 - Types of angles
 - Types of quadrilaterals
 - Finding LCM
 - Types of triangles

- An interesting Math activity to learn coordinate geometry.
- Draw the following picture by plotting & joining the points in a Cartesian plane (use a graph paper and the height and width should match the given figure)



3. Here is a two-player game with rational and irrational numbers. First player will pick either a rational or irrational number along with one of the 4 basic mathematical operations (addition, subtraction, multiplication, division); the second player should pick a number, either a rational or irrational number, so that the answer obtained with the selected operation belongs to the number set other than what is selected by the first player. E.g.: If the first player selects a rational number and addition, the second player should select a number from the real number set so that adding them results in an irrational number. In the same example, if the first one had selected an irrational number, now the answer should be rational.

Fill in the blanks with the correct numbers to match with the operation, and by obeying the rules of the game.

Sl.No.	No. given by Player 1	Number is	Operation	No. selected by Player 2	Answer	Answer is
1	$\frac{2}{3}$	Rational	\div	$\sqrt{2}$	$\frac{\sqrt{2}}{3}$	Irrational
2	$\sqrt{36}$		\times			
3	$-\sqrt{21}$		$+$			
4	0.15		$-$			
5	$\frac{8\pi}{5}$		\times			
6	$\frac{\sqrt{225}}{7}$		\div			

1. Explain each of the following in $\frac{p}{q}$ form:

2. (i) 0.675 (ii) $0.3\bar{2}$ (iii) $0.12\bar{3}$ (iv) $0.003\overline{52}$ (v) $4.\overline{32}$ (vi) 2.317317317.....

3. Find two irrational numbers and two rational numbers between 0.5 and 0.55

4. Simplify each of the following by rationalizing the denominator.

5. (i) $\frac{7 + 3\sqrt{5}}{7 - 3\sqrt{5}}$ (ii) $\frac{2\sqrt{3} - \sqrt{5}}{2\sqrt{2} + 3\sqrt{3}}$ (iii) $\frac{7\sqrt{3} - 5\sqrt{2}}{\sqrt{48} + \sqrt{18}}$

6. Simplify:- a) $3\sqrt{5} + -\sqrt{5} + \sqrt{180}$ (b) $\sqrt{54} + \sqrt{150}$

7. Give an example each of two irrational numbers, whose

(i) difference is a rational number

(v) product is a rational number

(ii) difference is an irrational number

(vi) product is an irrational number

(iii) sum is a rational number

(vii) quotient is a rational number

(iv) sum is an irrational number

(viii) quotient is an irrational number

8. Without actual division decide which of following rational numbers have terminating decimal representation:-

(i) $\frac{33}{375}$

(ii) $\frac{15}{28}$

(iii) $\frac{16}{45}$ (iv) $\frac{12}{35}$

(v) $\frac{80}{27}$

(vi) $\frac{123}{1250}$

9. Examine whether the following numbers are rational or irrational

10. (i) $\frac{3\sqrt{8}}{\sqrt{2}}$ (ii) $\left(\sqrt{2} + \frac{1}{2}\right)^2$ (iii) $\frac{22/7}{5\pi}$ (iv) $(3 + \sqrt{2})(2 - \sqrt{3})(3 - \sqrt{2})$
 $(2 + \sqrt{3})$

11. Represent $\frac{8}{5}$ and $\sqrt{20}$ on a number line.

12. (a) Represent $\sqrt{5.2}$ on a number line. (b) Visualize 0.436 on the number line

13. Insert 6 rational numbers between $-\frac{2}{3}$ and $\frac{3}{4}$

14. Find two irrational numbers between $\sqrt{3}$ and 2.

15. Rationalise the denominator of $\frac{1}{1 - \sqrt{7}}$

16. Given $\sqrt{3} = 1.732$ app., find to three places of decimal the value of $\frac{1 + 2\sqrt{3}}{2 - \sqrt{3}}$

17. Find the values of 'a' and 'b' if

18. (a) $\frac{5 + 2\sqrt{3}}{7 + 4\sqrt{3}} = a + b\sqrt{3}$ (b) $\frac{5 + \sqrt{3}}{\sqrt{5} - \sqrt{3}} = \frac{1}{2}a + 3b\sqrt{15}$

19. Simplify:- (a) $\frac{3}{\sqrt{5} - \sqrt{3}}$ (b) $\frac{2\sqrt{7}}{\sqrt{5} + \sqrt{3}}$

21. Evaluate:- a) $(390625|6561)^{1/2}$ (b) $(1296)^{1/4} \times (1296)^{1/2}$

SCIENCE (PHYSICS)

1. Motion Around You – Observation Journal Activity Type: Investigative & Practical

Task:

- Maintain a Motion Observation Journal for 5 consecutive days.
- Observe and record the motion of at least 5 different objects each day (like a car, ceiling fan, falling object, person walking, etc.)
- For each object, note:
 - Type of motion (uniform/non-uniform, linear/circular/oscillatory)
 - Estimated speed (approximate, with reasoning)
 - Any changes in motion (acceleration/deceleration)
 - Sketch or photo (if possible)

2. Graph It Out – Distance-Time & Velocity-Time Graphs Activity Type: Artistic & Subject-Oriented

Task:

- Choose two daily activities (e.g., walking to the park, cycling, school bus ride).
- Draw distance-time and velocity-time graphs based on your observation.
- Clearly label axes and explain the type of motion shown.
- Make it creative with colors or digital design (optional).

3. Concept Poster – “Speed vs Velocity vs Acceleration” Activity Type: Artistic & Conceptual

Task:

Create a visually engaging poster/chart that explains the difference between speed, velocity, and acceleration.

Include:

- Definitions
- Formulas
- Real-life examples
- Diagrams
- A creative tagline or title

4. Investigatory Project – Make a Toy Car Speedometer Activity Type: Practical & Fun

- Using simple materials (ruler, stopwatch, small toy car), conduct an investigation:
- Measure the time your toy car takes to move across different distances (1m, 2m, etc.).
- Calculate average speed using the formula $\text{Speed} = \text{Distance}/\text{Time}$
- Present your data in a table and draw a graph of your results.
- Share pictures or short video clips (optional)

Concept Quiz (Self-Prepared MCQs) Activity Type: Knowledge-Boosting

- Create a 10-question multiple-choice quiz based on concepts from the chapter.
- For each question, write the correct answer and explain why it is correct in 1–2 lines.
- Exchange your quiz with a classmate and solve each other's quiz after vacation.

Bonus (Optional): Motion in Sports

- Choose any sport (e.g., cricket, football, gymnastics, athletics) and describe how different types of motion (linear, circular, oscillatory) are involved in that sport.
- Add visuals or drawings for better explanation.

Submission Format:

- Use an A4-size notebook or sheets
- Write neatly and label diagrams
- Add creativity with colors, sketches, or printed pictures

SCIENCE (CHEMISTRY)

1. Write the following practicals in your lab manual (Practical File)

1. Preparation of:

a) A true solution of common salt, sugar and alum ‘

b) A suspension of soil, chalk powder and fine sand in water

c) A colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of

- transparency
- filtration criterion
- Stability

2. Preparation of: a) A mixture b) A compound using iron filings and sulphur powder and distinguishing between these on the basis of:

- (i) Appearance, i.e., homogeneity and heterogeneity
- (ii) Behaviour towards a magnet
- (iii) Behaviour towards carbon disulphide as a solvent
- (iv) Effect of heat

3. Perform the following reactions and classify them as physical or chemical changes:

- a) Iron with copper sulphate solution in water
- b) Burning of magnesium ribbon in air
- c) Zinc with dilute sulphuric acid
- d) Heating of copper sulphate crystals
- e) Sodium sulphate with barium chloride in the form of their solutions in water

4. Determination of the melting point of ice and the boiling point of water.

5. Verification of the law of conservation of mass in a chemical reaction.

Worksheet

Q . Draw a setup showing camphor/sublime solid placed in an evaporating dish and being heated gently and answer the following questions.

Worksheet

Q . Draw a setup showing camphor/sublime solid placed in an evaporating dish and being heated gently and answer the following questions.

Q1. After heating, the solid camphor disappears without forming any liquid. What does this indicate about the nature of camphor?

Q2. Name the process involved in this activity. Define it in one sentence.

Q3. Which characteristic of particles of matter is being demonstrated in this activity?

Q4. Suggest another substance that shows the same behavior as camphor in this activity.

Q5. How does this activity support the idea that matter changes its state on the application of heat?

BIOLOGY

▶ LAB MANUAL

1. Preparation of plant cell slide by using onion peel.
2. Preparation of animal cell slide by using human cheek cells.
3. Osmosis in Raisins.
4. How to identify different types of plant tissues?
5. How to identify different types of animal tissues?

▶ *MODEL PREPARATION

- ▶ 1. Animal or plant or prokaryotic cell model.
- ▶ 2. model of cell organelles. Like Mitochondria, plastid, Golgi apparatus, ribosome, lysosomes,

Social Science

Theme: Understanding the Past, Present, and Future of India & the World

1. History – Chapter: The French Revolution

Activity Title: “Voices from the Revolution” – Create a Revolutionary Scrapbook

Task: Create a scrapbook (A4 or A3 size) imagining yourself as a young person living in France during the Revolution.

Include:

Diary entries from different classes: A peasant, a noble, a woman, a Jacobin.

Sketches/drawings of the storming of the Bastille, guillotine, and revolutionary symbols.

Make a small timeline with major events (1789–1799).

Paste a printed comic strip or create one about the key ideas of liberty, equality, fraternity.

Learning Outcome: Students will relate personally to the Revolution and understand its impact on political ideas and society.

Geography – Chapters: India – Size and Location & Population

“My India, My Pride” – Map Work + Population Investigation

Task: Part A (Art + Map Work):

On a political map of India, mark:

Tropic of Cancer

Indian Standard Meridian

Neighbouring countries and water bodies

States with the highest and lowest population densities

Part B (Research + Chart Making):

Create a population chart comparing India's population with 4 other countries (China, USA, Indonesia, and Brazil).

Mention current population, growth rate, youth population, urban-rural divide.

Investigate: How does population affect development? Write your opinion in 100 words.

Learning Outcome: : Helps students visualize India's location and understand demographic challenges.

Civics – Chapter: What is Democracy? Why Democracy?

Task:

Design a poster promoting democracy with slogans, artwork, and democratic symbols.

On an A4 sheet, answer these questions:

What are the key features of democracy?

Why is democracy better than other forms of government?

Should students have a say in school decisions? Justify your answer.

Bonus Task (Optional & Fun!):

Conduct a mini-survey (5 people) and ask: “What does democracy mean to you?” Present their answers creatively.

Learning Outcome: Builds understanding of democratic values through expression and discussion

General Instructions:

Neatness, originality, and creativity will be appreciated.

Use colored sheets, drawings, or digital tools (if preferred).

- All work must be done in the student's own words.
- Submit in a folder or handmade project file.

Artificial Intelligence

- 1. How do you think Artificial Intelligence can help you as you go about your daily life? Write any 5 areas where AI is used.**
- 2. What are the communication barrier ?**
- 3. How body language supports or contradicts a message?**

Deliverables:- A report or ppt of above questions and their answers- Use charts, tables, and visuals for better understanding.