

**SURAJ
SCHOOL
PATAUDI**

**SURAJ
EDUCATION**

*Summer
Vacation*

Class: 8th F, F1

HOLIDAY HOMEWORK

SESSION 2026-27

Make your vacation
meaningful, fun-filled
and full of learning!



Name : _____

Class & Section : _____

Roll No. : _____

EXPLORE

LEARN

ENJOY

GROW

READ

LEARN

GROW

Greetings from SURAJ!!!!

Vacations are not solely intended for exploring the world beyond our homes; rather, they also provide an invaluable opportunity for introspection, self-discovery, and personal rejuvenation. Therefore, let this summer vacation become a meaningful journey filled with reading, physical exercise, meditation, dancing, and other constructive pursuits that channelise energy in a productive and positive direction.

General Instructions for Students

The following activities will assist students in making their vacations both enjoyable and intellectually stimulating:

- * Engage in indoor recreational activities such as Ludo, Carom Board, Scrabble, Chess, and similar games that enhance cognitive and analytical abilities.
- * Extend assistance to your parents in routine household responsibilities such as organising cupboards, watering plants, and making beds. Such acts cultivate empathy, gratitude, discipline, and a sense of responsibility towards family members who tirelessly support and nurture you throughout the academic year.
- * Complete the Holiday Homework diligently and in strict accordance with the prescribed instructions.
- * Develop the habit of reading newspapers daily in order to enhance awareness, comprehension, and vocabulary.
- * Revise all concepts covered thus far to reinforce understanding and academic proficiency.

- * Parents are earnestly requested to encourage their wards to complete their assignments independently in order to foster self-reliance and confidence.
- * Necessary guidance and constructive supervision may be extended wherever required.
- * Originality, creativity, neatness, and sincere effort in the completion of work shall be highly appreciated.
- * Kindly regulate excessive screen exposure and discourage prolonged indulgence in mobile phones, video games, and other digital distractions. Instead, motivate children to engage in creative, productive, and skill-enhancing activities.

Lastly, always remember that “A smile is the only curve that sets everything straight.” Face every challenge with courage, optimism, and resilience.

Wishing you all a safe, refreshing, and delightful Summer Vacation. Stay healthy and blessed.

Regards

Sangita Das

Principal

Suraj School, Pataudi

HOLIDAY HOMEWORK – MATHEMATICS (CLASS VIII)

Topics Covered

1. Square and Cube Numbers
2. Power Play
3. A Story of Numbers (Mayan, Chinese, European Number Systems)
4. Number Play (Divisibility Tests)
5. We Distribute Things Yet Multiply

General Instructions

- 1 Complete the work neatly in a separate holiday homework notebook.
- 2 Show all rough work and steps clearly.
- 3 Attempt all HOTS questions independently.
- 4 Use coloured pens/pencils for activities and charts.
- 5 Avoid copying directly from the internet.
- 6 Submit the homework on the reopening day.

SECTION A – SQUARE AND CUBE NUMBERS

Practice Questions

- 1 A perfect square ends with 6. What could be the possible digits at its unit place before squaring? Explain.
- 2 Can a perfect square have 3 zeros at the end? Why or why not?
- 3 The square of a number is divisible by 121. What can you conclude about the number?
- 4 Explain why every even perfect square is divisible by 4.
- 5 Find the least number that must be multiplied by 720 to make it a perfect square.
- 6 Find the least number that must be divided by 972 to make it a perfect cube.
- 7 Two consecutive integers have squares differing by 41. Find the integers.
- 8 The sum of two perfect squares is 145. Find all possible pairs.
- 9 A cube number ends in 7. What are the possible unit digits of the original number?
- 10 Explain whether 99980001 is a perfect square without using a calculator.

HOTS Questions

- 1 A number has exactly 15 factors. Can it be a perfect square? Justify.
- 2 The product of two consecutive integers is increased by 1. Prove that the result is always a perfect square.
- 3 The difference between two square numbers is 45. Find all possible pairs.
- 4 If $n^2 + 2n$ is added to 1, the result becomes a perfect square. Explain why.
- 5 A classroom has 441 students standing in a square arrangement. How many students stand along one side? If 43 more students join, can they still form a square?

Activity: Create a 3x3 magic square using perfect squares only and explain the row, column and diagonal sums.

SECTION B – POWER PLAY

Practice Questions

- 1 Simplify: $2^5 \times 2^3 \div 2^4$
- 2 Evaluate: $(3^2)^3$
- 3 Express 4096 as a power of 2.
- 4 Find the value of: $5^0 + 10^0 + 100^0$
- 5 Compare: 3^4 and 4^3
- 6 Simplify: $(7^5 \times 7^2) \div 7^4$
- 7 Write 1,000,000 in exponential form.
- 8 Find the smallest number by which $2^5 \times 3^3 \times 5^2$ should be multiplied to make a perfect cube.
- 9 Without actual calculation, determine which is greater: 9^{10} or 3^{21}
- 10 Simplify: $(2^3 \times 2^4)^2$

HOTS Questions

- 1 Explain why $a^m \times a^n = a^{(m+n)}$ using repeated multiplication.
- 2 If $2^x = 128$, find x .
- 3 The population of bacteria doubles every hour. If initially there are 50 bacteria, how many will there be after 8 hours?
- 4 Which grows faster: linear growth or exponential growth? Explain with examples.
- 5 In a chessboard problem, grains of rice double on every square. How many grains are on the 10th square?

Activity: Prepare a one-page illustrated report on exponential growth in real life.

SECTION C – A STORY OF NUMBERS

Practice Questions

- 1 Write the numbers 7, 19, 24 and 63 in Mayan numerals.
- 2 Research why Mayans used dots and bars.
- 3 Compare Roman numerals and the Hindu-Arabic number system.
- 4 Write 49, 94, 399 and 2026 in Roman numerals.
- 5 Why is the Hindu-Arabic system more useful than Roman numerals?
- 6 Investigate how Chinese merchants used rods for calculations.
- 7 Write any 10 Roman numerals greater than 100.
- 8 Explain how the invention of zero changed mathematics.

- 9 Compare Mayan, Chinese and European number systems on the basis of symbols, place value and use of zero.
- 10 If Roman numerals had no place value, how did traders manage calculations?

HOTS Questions

- 1 Imagine a world without zero. Write five mathematical problems that would arise.
- 2 Design your own number system using symbols.
- 3 How would mathematics change if place value did not exist?

Activity: Create a colourful chart comparing Mayan, Chinese and European number systems.

SECTION D – NUMBER PLAY (DIVISIBILITY TESTS)

Practice Questions

- 1 Explain divisibility tests for 2, 3, 4, 5, 6, 8, 9 and 11 with examples.
- 2 Find all numbers between 100 and 200 divisible by both 6 and 9.
- 3 Determine whether 987654 is divisible by 9 and 11.
- 4 Create a 6-digit number divisible by 2, 3, 5 and 9.
- 5 What is the greatest 4-digit number divisible by 12?
- 6 Find the smallest number to be added to 7654 to make it divisible by 11.
- 7 Can a number be divisible by both 8 and 9? Explain.
- 8 Find a number divisible by 3 but not by 9.
- 9 Write three numbers divisible by 11 using the divisibility rule.
- 10 Explain how divisibility tests save time in calculations.

HOTS Questions

- 1 A number leaves remainder 2 when divided by 5 and remainder 3 when divided by 7. Find possible numbers.
- 2 Design a divisibility rule for 7 and test it.
- 3 Can two consecutive numbers both be divisible by 2? By 3? Explain.

Activity: Create a divisibility test wheel using chart paper.

SECTION E – WE DISTRIBUTE THINGS YET MULTIPLY

Practice Questions

- 1 Expand: $(x + 5)(x + 3)$
- 2 Simplify: $(2a + 3)(a + 4)$
- 3 Find the product of $(x - 2)(x + 2)$.

- 4 Multiply: $(3x + 1)(2x - 5)$
- 5 Verify distributive property using numbers.
- 6 Find the area of a rectangle with sides $(x + 3)$ cm and $(x + 5)$ cm.
- 7 Explain why multiplication distributes over addition.
- 8 Simplify: $5(a + 2b - 3c)$
- 9 Find the missing term: $(x + \underline{\hspace{1cm}})(x + 4) = x^2 + 9x + 20$
- 10 Represent algebraic multiplication using area models.

HOTS Questions

- 1 Prove algebraically that $(a + b)^2 = a^2 + 2ab + b^2$.
- 2 Explain how distributive property is useful in mental maths.
- 3 Create a real-life situation where algebraic multiplication is used.
- 4 If the side of a square increases by 2 cm, how does its area change?

Activity: Create algebra tiles using coloured paper and demonstrate algebraic multiplication.

Parents' Note:

Encourage your child to complete the work independently and creatively. Focus should be on understanding concepts and developing logical reasoning skills rather than rote learning.

Attempt all questions independently.

Use logical reasoning and mathematical thinking skills.

Section A – Logical & Number Reasoning

1. Find the next number in the pattern:

3, 6, 12, 24, ____, ____

2. Which number does not belong to the group?

16, 25, 36, 49, 54, 64

3. If $A=3, B=2, C=3\dots$, then find the value of:

MATH = ?

4. A number is multiplied by 5 and then 12 is added. The result is 47. Find the number.

5. Arrange the following numbers in ascending order:

$\frac{3}{4}, 0.65, \frac{5}{8}, 72\%$

6. Find the missing number:

2, 5, 10, 17, 26, ____

7. If the perimeter of a square is 64 cm, find its area.

8. Which of the following numbers is both a perfect square and a perfect cube?

64, 81, 100, 144

9. A clock shows 3:15. What is the angle between the hour hand and minute hand?

10. Find the smallest number divisible by both 12 and 18.

Section B – Higher Order Thinking Skills (HOTS)

1. A two-digit number has digits whose sum is 11. When the digits are reversed, the number increases by 27. Find the number.

2. A shopkeeper gives 10% discount on a bag costing ₹800 and then charges 5% GST. Find the final price.

3. Three consecutive integers have a sum of 72. Find the integers.

4. A rectangular garden is 5 m longer than its width. If its perimeter is 50 m, find its dimensions.

Quit India Movement Independence

of India

Activity Task:

Use charts, sketches, symbols, or printed pictures to make the timeline attractive.

2. Diary Writing Activity

Imagine you are:

a farmer, a soldier, or a student living

during British rule. Write a one-day

diary entry describing:

your daily life, problems

faced, and feelings about

British rule.

ગ્રીષ્મકાલીનઅવકાશગહકાર્ય કક્ષા - આઠવી

विषय - हिंदी

प्रश्न 1:हिंदी पाठ्यपुस्तक के पाठ 1 से 4 याद करें।

प्रश्न 2:हिंदी व्याकरण के पाठ 1 से 5 याद करें।

प्रश्न 3: साफ और सुंदर लेख में 10 सुलेख लिखिए तथा रोजाना एक पेज पढ़िए।

प्रश्न 4: रचनात्मक लेखन (Creative Writing) अपने गर्मी की छुट्टियों के अनुभव पर 150-200 शब्दों का निबंध लिखिए। शीर्षक: “मेरी गर्मी की छुट्टियाँ”

प्रश्न 5: चित्र वर्णन (Picture Description) किसी भी एक प्राकृतिक दृश्य (जैसे पहाड़, नदी, बगीचा) का चित्र बनाइए और उसका 10-12 पंक्तियों में वर्णन कीजिए।

प्रश्न 6: शब्द संग्रह• रोज़ 5 नए हिंदी शब्द लिखिए और उनके अर्थ लिखिए।• यह कार्य 15 दिनों तक कीजिए।

प्रश्न 7: संवाद लेखन (Dialogue Writing) विषय: “दो मित्रों के बीच पढ़ाई पर बातचीत”

प्रश्न 8: डायरी लेखन (Diary Writing) अपने किसी एक खास दिन की डायरी लिखिए। उदाहरण: "पिकनिक का दिन"

प्रश्न 9: पर्यावरण गतिविधि• 5 पेड़-पौधों के नाम लिखिए और उनके लाभ बताइए।•
एक पोस्टर बनाइए: “पेड़ बचाओ, जीवन बचाओ”

प्रश्न 10: कविता पाठअपनी पसंद की कोई एक छोटी हिंदी कविता लिखिए और उसका भावार्थ समझाइए।

Class 8 Holiday Homework

Subject: Science

Chapters:

Health and Hygiene

Electricity

Structure of Atom

General Instructions-

.Complete the work neatly in a separate notebook/file.

.Draw diagrams with proper labels.

.Use coloured pens/pencils wherever required.

.Submit the homework after holidays.

Part A – Activity Work

1. Health and Hygiene Activity

“Healthy Lifestyle Chart”

Prepare a colourful weekly health chart showing:

Healthy food habits

Daily exercise routine

Personal hygiene habits

Sleep schedule

Paste pictures or draw illustrations.

2. Electricity Activity

“Simple Electric Circuit”

Make a simple electric circuit using:

Cell

Bulb

Switch

Wires

Draw the circuit diagram and write:

Materials used

Procedure

Observation

Conclusion

3. Structure of Atom Activity

“3D Atomic Model”

Make a model of any one atom:

Sodium

Oxygen

Carbon

Magnesium Use thermocol

balls/clay/paper.

Label:

Protons

Neutrons

Electrons

Shells

Part B – Multiple Choice Questions (MCQs)

Health and Hygiene Which vitamin

helps in blood clotting?

- a) Vitamin A
- b) Vitamin C
- c) Vitamin K
- d) Vitamin D

Deficiency of Vitamin D causes:

- a) Scurvy
- b) Rickets
- c) Goitre
- d) Anaemia

Which disease spreads through contaminated water?

- a) Malaria
- b) Cholera
- c) Tuberculosis
- d) Dengue

The process of keeping surroundings clean is called:

- a) Nutrition
 - b) Hygiene
 - c) Vaccination
 - d) Respiration
- ORS is used to prevent:
- a) Fever
 - b) Dehydration
 - c) Cold
 - d) Allergy

Electricity

A bulb glows due to the flow of:

- a) Water
- b) Air
- c) Electricity
- d) Heat

Which material is a conductor of electricity?

- a) Plastic
- b) Rubber

c) Copper

d) Wood

The device used to open or close a circuit is:

a) Cell

b) Bulb

c) Switch

d) Wire

The positive terminal of a cell is represented by:

a) –

b) +

c) $\times$

d) $\div$

Electric current flows only in a:

a) Open circuit

b) Closed circuit

c) Broken circuit

d) None of these

Structure of Atom The centre

of an atom is called:

a) Shell

b) Nucleus

c) Orbit

d) Electron Proton has:

a) Negative charge

b) Positive charge

c) No charge

d) Double charge

Atomic number is equal to the number of:

- a) Neutrons
- b) Electrons and protons
- c) Shells
- d) Orbits

Electrons revolve around the nucleus in:

- a) Layers or shells
- b) Water
- c) Waves
- d) Clouds

Neutron was discovered by:

- a) Rutherford
- b) Chadwick
- c) Bohr
- d) Thomson

Part C – Short Answer Questions

Health and Hygiene

- 1.What is hygiene?
- 2.Name any two deficiency diseases.
- 3.Why should we drink clean water?
- 4.What is vaccination?
- 5.Write two ways to prevent communicable diseases.

Electricity

1. Define electric circuit.
2. What is a conductor?

- 3.Name two insulators.
- 4.Why does a bulb glow?
- 5.What is the function of a switch?

Structure of Atom 1. Define

- atomic number.
 - 2.What is mass number?
 - 3.Name the three subatomic particles.
 - 4.What are valence electrons?
- Define isotope.

Part D – Long Answer Questions

Health and Hygiene

- 1.Explain the importance of balanced diet.
- 2.Describe different ways to maintain personal hygiene.
- 3.Explain communicable and non-communicable diseases with examples.

Electricity

- 1.Explain the working of a simple electric circuit with diagram.
- 2.Differentiate between conductors and insulators.
- 3.Write safety measures while using electricity.

Structure of Atom

- 1.Explain Rutherford's atomic model.
- 2.Differentiate between atoms, molecules and ions.
- 3.Explain isotopes and isobars with examples.

6. What is cybersecurity? Why is it important in today's world?
7. Explain the term cybercrime with examples.
8. Write any five ways to stay safe on the internet.
9. What is phishing? How can we protect ourselves from it?
10. Explain the importance of antivirus software.

and feelings about British rule.