

PM SHRI KV RAJOURI
SUBJECT : MATHEMATICS
SUMMER VACATION HOMEWORK
Session: 2026-27

CLASS VIII

Textbook : Ganit Prakash (Class VIII)

Topics : Squares and Cubes | Power Play | Creative Mathematics

Note : To be completed in a separate Holiday Homework Notebook.

Chapter : Squares and Cubes

- Q1.** Find the square root of 7056 by the prime factorisation method. [2M]
- Q2.** Find the cube root of 13824 by prime factorisation. [2M]
- Q3.** Is 1024 a perfect square? Is it a perfect cube? Justify your answer. [2M]
- Q4.** The area of a square field is 5929 m². Find the side of the field using square root. [3M]
- Q5.** Find the smallest number by which 1800 must be multiplied to make it a perfect square. Also find the square root of the resulting number. [3M]
- Q6.** The volume of a cube is 9261 cm³. Find the length of its side and its surface area. [3M]

Chapter : Power Play (Exponents and Powers)

- Q7.** Simplify and write in standard form: $(5^2 \times 5^4) \div 5^3$ [2M]
- Q8.** Express 0.000007286 in standard form. [1M]
- Q9.** Evaluate: $[2^3 \times 3^2 \times (4^0 + 5^0)] \div 6^2$ [2M]
- Q10.** Simplify: $[(3/2)^3 \times (2/3)^2] \div (1/2)^4$ [2M]
- Q11.** The mass of Earth is 5.97×10^{24} kg and the mass of Moon is 7.35×10^{22} kg. How many times is Earth heavier than the Moon? Express in standard form. [3M]

Creative Mathematics

- Q12.** Create a table of squares and cubes of numbers 1 to 15. Highlight all numbers that are both perfect squares and perfect cubes. [3M]
- Q13.** Investigation: Is the sum of two perfect squares always a perfect square? Check for 5 pairs and write your conclusion with examples. [5M]
- Q14.** Without using a calculator, arrange in ascending order: 2^{10} , 3^7 , 5^5 , 10^4 . Show your working using powers of 10. [3M]

Q15. Real-life Connect: Find the approximate distance from Earth to at least 3 planets in km. Express each in standard form and compare using powers of 10. [4M]

(शारीरिक एवं स्वास्थ्य शिक्षा)

Written Work (Long Answer):

Write a detailed answer (150–200 words):

“Importance of Yoga for Physical and Mental Health”

→ Include stress relief, concentration, and fitness.

Yoga Practical:

Practice daily:

Surya Namaskar (5 rounds)

Padmasana

Paschimottanasana

Anulom Vilom + Bhramari

Write a daily reflection (8–10 lines for 7 days):

Mental and physical benefits

Any improvements noticed

Activity Task:

Make a brief project (3 pages):

History of Yoga

Importance in student life

Diagrams of 3–4 asanas

हिन्दी

साक्षात्कार (Interview): अपने घर के किसी बड़े सदस्य से पूछें कि उनके बचपन की गर्मियों की छुट्टियाँ कैसी होती थीं? इसे संवाद (Dialogue) के रूप में लिखें।

विज्ञापन लेखन: 'पर्यावरण संरक्षण' या 'जल बचाओ' पर एक आकर्षक रंगीन विज्ञापन (Poster) बनाएँ।

लेखन: 'एक टोकरी भर मिट्टी' पाठ को ध्यान में रखकर अपने आस-पास के किसी कारीगर (जैसे- कुम्हार, बुनकर) के संघर्ष पर एक अनुच्छेद लिखें।

संस्कृतम् (Sanskrit)

डिजिटल-भारतम्: 'डिजीभारतम्' पाठस्य आधारेण पञ्च आधुनिक-यन्त्राणां (Gadgets) नामानि संस्कृतभाषायां लिखत।

कथा-लेखनम्: 'संगच्छध्वं संवदध्वं' कथायाः सारांशं स्वशब्देषु लिखत।

रचनात्मक-कार्यम्: 'सुभाषितरसं पीत्वा' पाठस्य २ श्लोकद्वयं स्मरत।

MUSIC

English:

Identify sounds and differentiate between:

Tat Vadya

Ghan Vadya

Tantra Vadya

Sushir Vadya

Make a chart on these categories.

Make your own musical instrument and identify its category.

Play it and make a proper video explaining your invention.

Learn the National Song – Vande Mataram.

हिंदी:

ध्वनियों को पहचानें तथा इनमें अंतर समझें:

तत वाद्य

घन वाद्य

तंत्र वाद्य

सुषिर वाद्य

इन पर एक चार्ट बनाइए।

अपना स्वयं का वाद्य यंत्र बनाइए और बताइए कि वह किस श्रेणी में आता है।

उसे बजाकर अपने आविष्कार का विवरण देते हुए वीडियो बनाइए।

राष्ट्रीय गीत – वंदे मातरम् सीखें।

ENGLISH

1-Letter Exchange Project*

* Write a formal letter to the Municipal Commissioner of Jammu about “One thing I want improved in my area this summer”. 120 words. Use the correct format.

* Write an informal letter to a friend in another city describing “How Jammu feels in summer”. 120 words. Compare both styles.

2- *‘‘Word of the Week’’ Challenge*

Choose 6 new English words over the break — from news, YouTube, parents, books.

- For each word: Meaning, pronunciation, 2 synonyms, 1 antonym, your own sentence, and a meme/doodle for it.

- At the end, use all 6 words in a short 100-word story.

3-. *Speaking: 30-Second Reel Script*

Topic: “If I could ban one thing for 24 hours, it would be...”

Write a 30-second script with a hook, 3 reasons, and a funny ending.

SCIENCE

1) India has a long history of biogas production. One of our Oldest biogas plant was set up in late 1850s. Find out about The Biogas Program initiated by the Ministry of New and Renewable Energy, Government of India. Make a report on it..

2) The deadly disease smallpox was eradicated by vaccination. Discover how this was done and why it worked. Write a report on it

3) Working model on “Potato Battery “

4) India is planning for a challenging lunar mission, Chandrayaan-4, which will bring back samples of soil from

The Moon. If the Moon had water, could plants grow in that

Soil? Think of some experiment that could help you explore Whether plant growth is possible on the Moon.

INSTRUCTIONS : Use a good Scrap book for making reports.

ART

Make **2 pages of designs**:

✓•✓ Mandala / geometric patterns

✓•✓ Border designs

Create **1 useful item** using waste material (pen stand, wall hanging, decorative item)

Draw **1 creative composition** on any theme:

✓•✓ Future city

✓•✓ Space world

✓•✓ My dream world

✓•✓ · Draw **any 3 objects** (bottle, cup, fruits, etc.)

✓•✓ · Show **light and shadow using pencil shading**

✓•✓ · Focus on neatness and proportion

SST

1. “My India Map Story” (Geography + Creativity)

- Draw a map of India.
- Mark:
 - 5 different geographical regions (mountains, plains, desert, plateau, coast)
- Add:
 - One interesting fact about each region
- Make it colorful with symbols (trees, camels, rivers, etc.)

2. “From Barter to Digital India” Comic Strip

- Create a **comic (6–8 boxes)** showing:
 - Barter system → Coins → Paper money → Digital payments
- Add dialogues between characters

3. Build a “Mahajanapada City Model” (3D)

- Make a small model of a city from the Mahajanapada period
- Include:

- Houses
- Market
- Roads
- Fort walls
- Use waste materials

4. Timeline Creation

- Make a timeline showing:
 - Barter system
 - Use of coins
 - Rise of cities
 - Mahajanapadas

5. Poster Making

Topic options: any one

- “Unity in Diversity of India”
- “Journey of Money”
- “Life in Ancient Cities”

Note - writing work complete on classwork notebook .

Vocational Education

General Instructions

- Maintain a neat notebook/file.
- Include drawings and observations.
- Focus on practical learning.

PART 1: VOCATIONAL SKILLS

- Draw your dream profession and explain skills required.
- Observe 5 occupations around you.
- Write about dignity of labour.

PART 2: HYDROPONICS PROJECT

- Define hydroponics.
- Make a simple hydroponic setup (draw diagram).

PART 3: OBSERVATION

- Write observations on hydroponic.
- Compare soil vs hydroponics.
- List benefits.

PART 4: FUN ACTIVITIES

- Tool identification.
- Poster: Skill is Wealth.

FINAL REFLECTION

- What did you learn?