

**New Era Public School, Mayapuri**  
**Holiday Homework (2021-22)**  
**Class:IX**  
**Subject:English**

1. Maintain a journal and pen down your thoughts on day-to-day life. Minimum 10 entries.
2. What's a vacation without having read some books? You might have read it on the Internet or rummaged through your shelves and chanced upon some old comics/ short stories. Pour out your thoughts as a write-up on any specific book of your choice.
3. Prepare an Instagram feed on any text/author that you have read in the syllabus and briefly describe what you like/dislike about the text. You can be as creative as you want.

**Subject: Mathematics**

**(A) PROJECT (To be done on A4 size sheet)**

The word **mandala** is a **Sanskrit** term that means “circle” or “discoid object”. A mandala can be defined in two ways: externally as a schematic visual representation of the universe and internally as a guide for several psychophysical practices that take place in many Asian traditions, including meditation.

Mandalas include a variety of geometric shapes using patterns that have evolved from different symbols. Mandalas come in many styles and can be created using an unlimited array of materials:



**TASK 1**

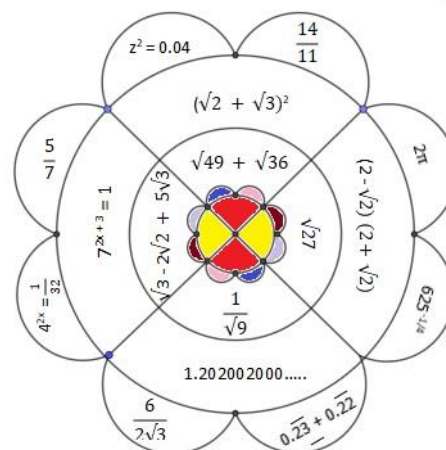
Draw a Mathematical Mandala Art on an A4 size sheet using few geometrical shapes example circles, semi-circles, polygons etc and colour it.



**TASK 2**

Make the mathematical mandala art as shown in the adjoining figure on A4 sheet. Solve the questions given in it and colour it according to the type of decimal expansion.

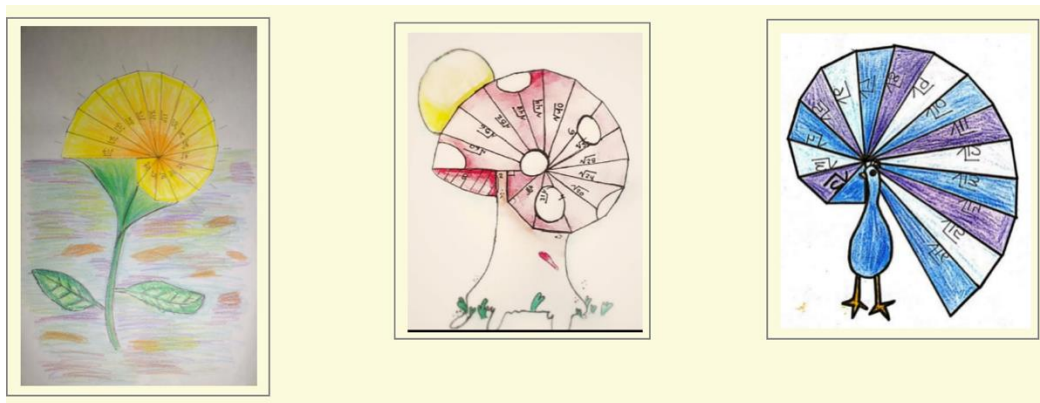
Note: If answer is terminating then colour the area red, if it is non-terminating repeating then colour green and if it is non-terminating non-repeating then colour blue.



**TASK 3**

Draw any one art of your choice by using square root spiral (at-least till  $\sqrt{10}$  ) on an A4 size sheet. Use your own creativity.

Some examples for your reference are given below.



**(B) ASSIGNMENT (To be done in Mathematics Register)**

1. Find three rational numbers between the given rational numbers.

(i)  $\frac{1}{3}$  and  $\frac{5}{4}$       (ii)  $\frac{3}{7}$  and  $\frac{2}{7}$       (iii)  $\left(\frac{-3}{5}\right)$  and  $\left(\frac{-1}{3}\right)$

2. Find three irrational numbers between the given numbers.

(i) (-11) and (-12)      (ii)  $\frac{11}{4}$  and  $\frac{13}{5}$       (iii)  $\sqrt{2}$  and  $\sqrt{3}$

3. Express the following in the form of  $\frac{p}{q}$  where p, q are integers,  $q \neq 0$

(i)  $0.03\overline{27}$       (ii)  $4.3\overline{8}$       (iii)  $1.\overline{314}$

4. Simplify the following:

(i)  $(5 + \sqrt{7})(2 + \sqrt{5})$       (iii)  $(2\sqrt{3} + 6\sqrt{5})(5\sqrt{2} - 3\sqrt{3})$

(ii)  $(\sqrt{11} + \sqrt{7})(\sqrt{11} - \sqrt{7})$       (iv)  $(8\sqrt{2} + 3\sqrt{5})(3\sqrt{2} - 6\sqrt{3})$

5. Rationalize the denominator of the following:

(i)  $\frac{25}{\sqrt{2} + \sqrt{5}}$       (ii)  $\frac{3}{\sqrt{7} - \sqrt{2}}$       (iii)  $\frac{4\sqrt{3} + 3\sqrt{2}}{6\sqrt{2} - 3\sqrt{5}}$       (iv)  $\frac{8}{3\sqrt{2} + 7\sqrt{3}}$

6. Simplify the following:

(i)  $\left(\frac{64}{125}\right)^{-\frac{2}{3}} + \left(\frac{625}{256}\right)^{\frac{1}{4}} + \frac{\sqrt{25}}{\sqrt[3]{64}}$

(ii)  $\sqrt{16} \times 25^{-\frac{1}{2}}$

(iii)  $\sqrt[4]{81} - 8\sqrt[3]{216} + 15\sqrt[5]{32} + \sqrt{225}$

7. Simplify:

(i)  $\frac{2\sqrt{6}}{\sqrt{3} + \sqrt{2}} + \frac{6\sqrt{2}}{\sqrt{6} + \sqrt{3}} - \frac{8\sqrt{3}}{\sqrt{6} + \sqrt{2}}$       (ii)  $\frac{4 + \sqrt{5}}{4 - \sqrt{5}} + \frac{4 - \sqrt{5}}{4 + \sqrt{5}}$

(iii)  $\frac{3}{5 - \sqrt{3}} + \frac{2}{5 + \sqrt{3}}$

8. Find the value of p if,

(i)  $2^{5p} \div 2^p = 2^{20}$       (ii)  $(27)^p = 9 \div 3^p$

9. Represent  $\sqrt{10}$ ,  $\sqrt{13}$ , and  $\sqrt{17}$  on the number line.

10. If  $a = 2$  and  $b = 3$ , find the values of each of the following.

(i)  $a^a + b^b$       (ii)  $a^b + b^a$       (iii)  $a^b$       (iv)  $\left(\frac{a}{b}\right)^a$       (v)  $\left(\frac{1}{a} + \frac{1}{b}\right)^a$

11. Solve for x:  $4^{2x} = \frac{1}{32}$

12. If  $x = 2 + \sqrt{3}$ , find the value of  $x^3 + \frac{1}{x^3}$ .

13. If  $x = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}}$  and  $y = \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$  then find the value of  $x + y + xy$ .

14. Represent  $\sqrt{3.5}$  and  $\sqrt{9.4}$  on the number line.

15. If  $x = 1 - \sqrt{2}$  then find the value of  $\left(x - \frac{1}{x}\right)^3$

**(C) Practical Activities (To be done in Mathematics practical file)**

**Activity 1: Corresponding angles are equal.**

**Activity 2: Co-interior angles are supplementary.**

## Subject: Science

### GENERAL INSTRUCTIONS

1. The holiday homework is divided into two parts
  - (a) Activity based on **chapter 2- Is Matter around us pure.**
  - (b) Assignment based on **chapter 1- Matter in Our Surroundings.**
2. The assignment should be done neatly in the Science register
3. Both activity and assignment are to be done individually.

### **(A) ACTIVITY**

As we know that the petrol and diesel prices are shooting up each month, apart from this, these fuels are polluting the environment by emitting harmful gases.

**Thus it becomes necessary to look for a better alternative like CNG, which serves in terms of economy and health**

### **Objectives:**

- To know the origin, mechanism of production, composition of CNG .
- To enlist the CNG plant locations in India.
- To understand the advantages of CNG.

### **Methodology**

1. Students are going to prepare a brief research report on CNG. They may include the following points:
  - Origin
  - CNG plant locations In India (preferably on a map).
  - Mechanism of production.
  - Capacity.
  - Cost.
  - Precautions while transportation .
  - It's advantages.
2. They will record everything in a file / PPT / scrapbook. If possible, they will justify their research report with pictures/diagrams to make it more presentable and creative.

### **Evaluation:**

- Each student will be evaluated on the basis of:
  - Active participation.
  - Honesty and Dedication.
  - Presentation.
  - Innovation.

### **(B) ASSIGNMENT**

Q1. A sample of water under study was found to boil at  $102^{\circ}\text{C}$  at normal temperature and pressure. Is the water pure? Will this water freeze at  $0^{\circ}\text{C}$ ? Comment.

Q2. Water as ice has a better cooling effect . Why?

Q3. (a) Conversion of solid to vapour is called sublimation. Name the term used to denote the conversion of vapour to solid.

(b) Conversion of solid state to liquid state is called fusion; what is meant by latent heat of fusion?

Q4 It is a hot summer day, Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?

Q5. Comment on the following statements:

(a) Evaporation produces cooling.

(b) Rate of evaporation of an aqueous solution decreases with increase in humidity.

(c) Sponge though compressible is a solid.

Q6. Why does the temperature of a substance remain constant during its melting point or boiling point?

Q7. Is there any similarity in materials that you see around yourself?

Q8. Why do we see water droplets on the outer surface of a glass containing ice cold water?

Q9. Why do trees acquire more leaves during summer?

Q10. 'A small volume of water in a kettle can fill a kitchen with steam'. Explain why.

## **Subject: Social Science**

Prepare a Power Point Presentation with following details:

1. The total length of the project should not be more than **10- 15 slides**.
2. The project should be developed and **presented in this order**
  - a) **Cover page slide** showing project title, student information, school and year.
  - b) **List of contents**
  - c) **Certificate page**
  - d) **Acknowledgements** (acknowledging the institution, offices and libraries visited and persons who have helped).
  - e) **Chapters** with relevant headings.
  - f) **Summary and conclusion** based on findings.
  - g) **Bibliography**: should have the title, author, publisher and if a website has been visited, the name of the website with the specific website link which has been used must be mentioned.

### **Marks Distribution**

Total Marks will be allocated over the different aspects of the Project Work in the following manner:-

<b><u>S.NO.</u></b>	<b><u>ASPECTS</u></b>	<b><u>(Marks)</u></b>
1	Content accuracy and originality and analysis	2
2	Presentation and creativity	2
3	Viva or written test for content assimilation	1
	Total Marks for one project	5

### Suggested Projects [Choose any one topic]

Q1) i). Identify the different hazards your area is prone to and list them into three broad headings: natural, socio-natural and human induced. Enumerate ways to reduce their impact.

ii) Preparedness for a disaster – Are you prepared? Identify your role as a student, as a family member and as a member of RWA in pre, during and post disaster situation.

iii) Mitigation strategy for natural disasters like floods, earthquakes, landslides and cyclones.

iv) Community gets the first-hand experience of sufferings at the time of a disaster and becomes a saviour of lives at the same time. Discuss the community's disaster preparedness and response plan with suitable case studies.

Q2) Prepare a report on any specific disaster that has occurred in India and highlight the measures taken to help the disaster affected people. e.g:

- The Locust attack,
- Cyclone Nisarga,
- Uttarakhand forest fire,
- Uttarakhand glacier burst.

**Note-The project has two parts. Q1 has four topics, any one is to be done.Q2 is compulsory for everyone.**



## विषय-हिंदी

1. हिंदी समाचार पत्रों एवं अपनी पाठ्य-पुस्तक (स्पर्श व संचयन) के पाठों का मौन वाचन कर उनमें से प्रतिदिन दो-दो अनुस्वार, अनुनासिक युक्त शब्द तथा उपसर्ग एवं प्रत्यय युक्त शब्दों को छँटकर भाषा की उत्तर-पुस्तिका में लिखें।
2. 'एवरेस्ट' पर्वत का नाम एवरेस्ट क्यों पड़ा?— यह जानकारी प्राप्त कर उत्तर-पुस्तिका में लिखें तथा बचेंद्री पाल के विषय में जानकारी एकत्र कर उनके एवरेस्ट-अभियान से संबंधित चित्रों का कोलाज तैयार करें।
3. 'कीचड़ का काव्य' पाठ का मौन वाचन करें व कीचड़ में पैदा होने वाली फसलों की जानकारी प्राप्त कर उनके नाम ए-4 शीट पर लिखें तथा भारत के मानचित्र में दिखाएँ कि धान की फसल प्रमुख रूप से किन-किन प्रांतों में उपजाई जाती है।

## **Subject : Computer Science**

Share your experiences through a self recorded video on the following topics:

From Middle School- to Higher School

or

Importance of Self-Discipline In Our Life.

**(Software to be used-Any video editing software like vita/inshot/Filmora/Ms Powerpoint)**