APEX PUBLIC SCHOOL

CLASS X

SESSION 2025-26

HOLIDAY HOMEWORK

SUBJECTS: HINDI, ENGLISH, MATHS, SCIENCE, SOCIAL SCIENCE, ARTIFICIAL INTELLIGENCE, FRENCH and ART AND CRAFT

It's Summertime!

Dear Parents,

As the summer vacation approaches, we are pleased to share that we have designed some engaging and enriching holiday homework for your children. This homework aims to reinforce learning, encourage exploration, and provide opportunities for personal development during the break.

Purpose of Holiday Homework:

Maintain Learning: Keep students' knowledge and skills active and prevent knowledge decay over the summer.

Encourage Exploration: Foster curiosity and a love for learning through diverse activities.

Develop Skills: Enhance critical thinking, creativity, and problem-solving abilities.

Prepare for the New Year: Help students get back into the academic routine smoothly when school resumes.

Support and Encouragement:

We encourage you to support your child in completing the homework.

Create a study environment that is free from distractions and promotes focus.

Encourage your child to take ownership of their learning.

Help them set a schedule and manage their time effectively.

Consider making the homework a family activity, perhaps involving reading together or discussing projects.

हिंदी

नोटः- ग्रीष्मकालीन अवकाश गृहकार्य हेतु एक अलग कॉपी बनाएं।

कार्य सुंदर ढंग से पूरा करें।

1. कबीर के दोहे नैतिकता का पाठ पढ़ाते है। आप इस बात से कितना सहमत है? कबीर और रहीम के दोहों की तुलना अपने शब्दों में कीजिए।

2. प्रेमचंद की चर्चित किन्हीं भी दो कहानियों का अध्ययन करें। साथ ही उनका सारांश अपने शब्दों में लिखे।

3. "हरिहर काका" कहानी वर्तमान के अनेकों बुजुर्गों की कहानी है। आप अपने अनुभव के आधार पर किसी एक बुजुर्ग की दयनीय स्थिति का वर्णन अपने
शब्दों में करें और आप उनकी सहायता किस प्रकार करेंगे, इसका वर्णन भी करें।

4. '1947 से पहले ही भारत आजादी का उत्सव मना चुका था' "डायरी का एक पन्ना" पाठ के आधार पर इस कथन की पुष्टि कीजिए।

5. समाज में चेतना जागृत करने हेतु निम्न से किसी एक विषय पर विज्ञापन तैयार करें:- (ए3 शीट का प्रयोग करें)

क. शिक्षा का महत्व

ख. ग्लोबल वार्मिंग

ग. चंद्रयान (चाँद की ओर बढ़ता कदम)

घ. जनसंख्या नियंत्रण

6. ग्रीष्मकालीन अवकाश का आनंद आपने किस तरह से उठाया? अपने अनुभवों को अपने शब्दों में साझा

करें। साथ ही सुंदर तस्वीरें भी चिपकाएं।

7. आस पास के वातावरण से प्रेरित होकर किसी भी विषय पर स्वरचित कविता का सृजन करें।

8. मीरा के पद पर सचित्र परियोजना कार्य (मीरा का जीवन परिचय, भाषा शैली, पद आदि) तैयार कीजिए ।

ENGLISH

Instructions:

- **Attempt all tasks neatly in a separate notebook or as instructed.**
- **Be creative, original, and thoughtful in your responses.**

1. Book Review Project

Objective: Enhance reading and analytical skills.

Task: Read any one novel from the CBSE Reading List (like Diary of a Young Girl by Anne Frank or The Story of My Life by Helen Keller).

Activity: Write a book review including:

- Title, author
- Summary
- Main characters
- Your opinion
- A moral or message learned

OR

Read and Summarize:

Choose any two chapters from the First Flight textbook. Write:

- A short summary
- Character sketch (if applicable)
- One moral/lesson learnt

2. Creative Writing Portfolio

Objective: Improve narrative and descriptive writing.

Task: Submit a mini portfolio including:

- 1 diary entry from the perspective of a character in First Flight.
- 1 short story (original or inspired by the prose / poems in the textbook).
- 1 poem on a topic of your choice.

OR

A. Poem Writing:

Write a poem on any one topic:

- Nature
- Peace

- My Dream India

B. Formal Letter Writing:

Write letter to the Editor of a national newspaper expressing concern about (choose any 2 topics):

- Rising cases of cyberbullying among teenagers.
- The importance of gender equality in society
- Need for practical learning in school curriculum
- Mobile addiction among students
- Poor condition of roads in your area

3. Poster Making & Slogan Writing

Objective: Integrate art and language.

Task: Design 2 posters and a slogan (A 4 size) from the following:

A. Environment and Nature

- Save Earth, Save Life
- Say No to Plastic
- One Tree, One Life
- Beat Air Pollution
- Save Water, Every Drop Counts

B. Social Issues

- Stop Child Labour
- Say No to Bullying
- Education for All
- Unity in Diversity
- Empower Girls, Empower the Nation

C. Health and Hygiene

- Clean India, Healthy India
- Wash Hands, Stay Safe
- Say No to Junk Food
- Mental Health Matters
- Fitness is Wealth

D. Technology and Media

- Use Technology Wisely
- Cyber Safety is a Must
- Think Before You Click
- Social Media: Friend or Foe?
- Screen Time vs. Green Time

MATHEMATICS

1. Two tankers contain 850 litres and 680 litres of petrol respectively. Find the maximum capacity of a container which can measure the petrol of either tanker in exact number of times. [CBSE 2016]
2. Explain whether the number $3 \times 5 \times 13 \times 46 + 23$ is a prime number or a composite number. [CBSE 2016]
3. Three bells toll at intervals of 12 minutes, 15 minutes and 18 minutes respectively. If they start tolling together, after what time will they next toll together? [CBSE 2015]
4. Show that 9^n can not end with digit 0 for any natural number n. [CBSE 2014]
5. Find HCF of 378,180 and 420 by prime factorisation method. Is HCF x LCM of three numbers equal to the product of the three numbers? [CBSE 2016]
6. An army contingent of 1000 members is to march behind an army band of 56 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march? [CBSE 2011]
7. The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number. [CBSE 2012]
8. The HCF of 45 and 105 is 15. Write their LCM. [CBSE 2010]
9. Find the [HCF X LCM] for the numbers 100 and 190. [CBSE 2009]
10. The HCF and LCM of two numbers are 9 and 360 respectively. If one number is 45, write the other number. [CBSE 2008]
11. Find the sum of exponents of prime factors in the prime factorisation of 196. [CBSE 2020]
12. HCF of two numbers is 27 and their LCM is 162. If one of the numbers is 54, then find the other number, [CBSE 2020]
13. What is the HCF of smallest primer number and the smallest composite number? [CBSE 2018]
14. If HCF(336, 54) = 6, find LCM(336, 54). [CBSE 2019]
15. Explain why 13233343563715 is a composite number? [CBSE 2016]
16. Calculate the HCF of $3^3 \times 5$ and $3^2 \times 5^2$. [CBSE 2007]
17. If HCF (a,b) = 12 and a×b = 1,800, then find LCM (a,b). [CBSE 2019]
18. Find the least number that is divisible by all numbers between 1 and 10 (both inclusive). [CBSE 2010]
19. Find HCF of the numbers given below:
    k, 2k, 3k, 4k and 5k,, where k is a positive integer. [CBSE 2015]
20. Find the HCF and LCM of 510 and 92 and verify that HCF × LCM = Product of two given numbers. [CBSE 2011]
21. If α, β are the zeroes of a polynomial, such that $\alpha + \beta = 6$ and $\alpha\beta = 4$, then write the polynomial. [CBSE 2010]
22. If one zero of the polynomial $x^2 - 4x + 1$ is 2+√3, write the other zero. [CBSE 2010]
23. For what value of k, -4 is a zero of the polynomial $x^2 - x - (2k + 2)$? [CBSE 2009]
24. Write the polynomial, the product and sum of whose zeroes are $\frac{-9}{2}$ and $\frac{-3}{2}$ respectively. [CBSE 2009]
25. If 1 is a zero of the polynomial $p(x) = ax^2 - 3(a - 1)x - 1$, find the value of a. [CBSE 2009]
26. The sum and product of the zeroes of a quadratic polynomial are $-\frac{1}{2}$ and -3 respectively. What is the quadratic polynomial? [CBSE 2008]
27. Prove that (4√2+5/3) is an irrational number, given that 2 is an irrational number. [CBSE 2025]
28. Prove that $(\sqrt{3} + \sqrt{5})^2$ is an irrational number. [CBSE 2015]
29. Show that $2\sqrt{2}$ is an irrational number. [CBSE 2014]
30. Show that reciprocal of $3+2\sqrt{2}$ is an irrational number. [CBSE 2016]

CASE STUDIES

CASE STUDY 1

The below picture are few natural examples of parabolic shape which is represented by a quadratic polynomial. A parabolic arch is an arch in the shape of a parabola. In structures, their curve represents an efficient method of load, and so can be found in bridges and in architecture in a variety of forms.

1. In the standard form of quadratic polynomial, $ax^2 + bx + c$, a, b and c are
   a) All are real numbers. b) All are rational numbers.
   c) 'a' is a non-zero real number and b and c are any real numbers. d) All are integers.

2. If the roots of the quadratic polynomial are equal, where the discriminant $D = b^2 – 4ac$, then
   a) D > 0 b) D < 0 c) D d) D = 0

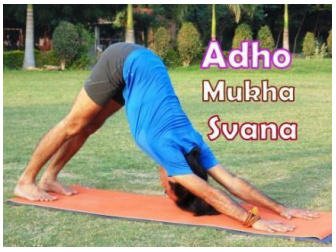
3. If α and $\frac{1}{\alpha}$ are the zeroes of the quadratic polynomial $2x^2 – x + 8k$ then k is
   a) 4 b) $\frac{1}{4}$ c) $\frac{-1}{4}$ d) 2

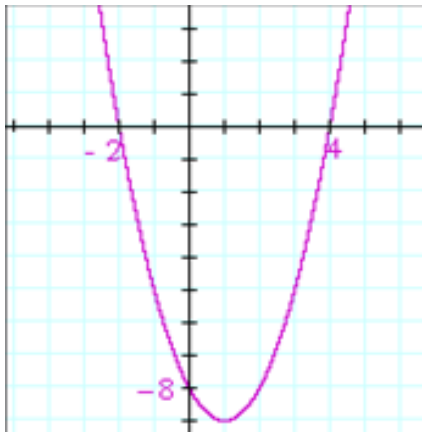
4. The graph of $x^2+1 = 0$
   a) Intersects x-axis at two distinct points. b) Touches x-axis at a point.
   c) Neither touches nor intersects x-axis. d) Either touches or intersects x- axis.

5. If the sum of the roots is –p and product of the roots is $-\frac{1}{p}$, then the quadratic polynomial is
   a) $k(-px^2 + \frac{x}{p} + 1)$ b) $k(px^2 - \frac{x}{p} - 1)$ c) $k(x^2 + px - \frac{1}{p})$ d)) $k(x^2 - px + \frac{1}{p})$

CASE STUDY 2

An asana is a body posture, originally and still a general term for a sitting meditation pose, and later extended in hatha yoga and modern yoga as exercise, to any type of pose or position, adding reclining, standing, inverted, twisting, and balancing poses. In the figure, one can observe that poses can be related to representation of quadratic polynomial.

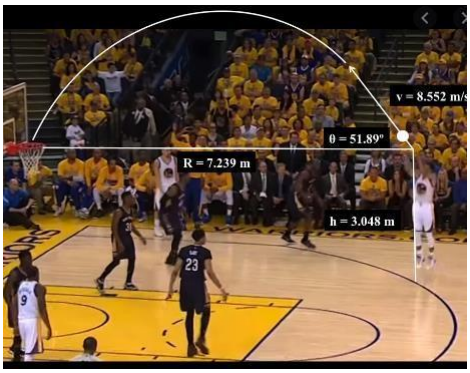




1. The shape of the poses shown is
   a) Spiral b) Ellipse c) Linear
   d) Parabola
2. The graph of parabola opens downwards, if _____
   a) $a \geq 0$ b) a = 0 c) a < 0
   d) a > 0
3. In the graph, how many zeroes are there for the polynomial?
   a) 0 b) 1 c) 2 d) 3

CASE STUDY 3

Basketball and soccer are played with a spherical ball. Even though an athlete dribbles the ball in both sports, a basketball player uses his hands and a soccer player uses his feet. Usually, soccer is played outdoors on a large field and basketball is played indoor on a court made out of wood. The projectile (path traced) of soccer ball and basketball are in the form of parabola representing quadratic polynomial.



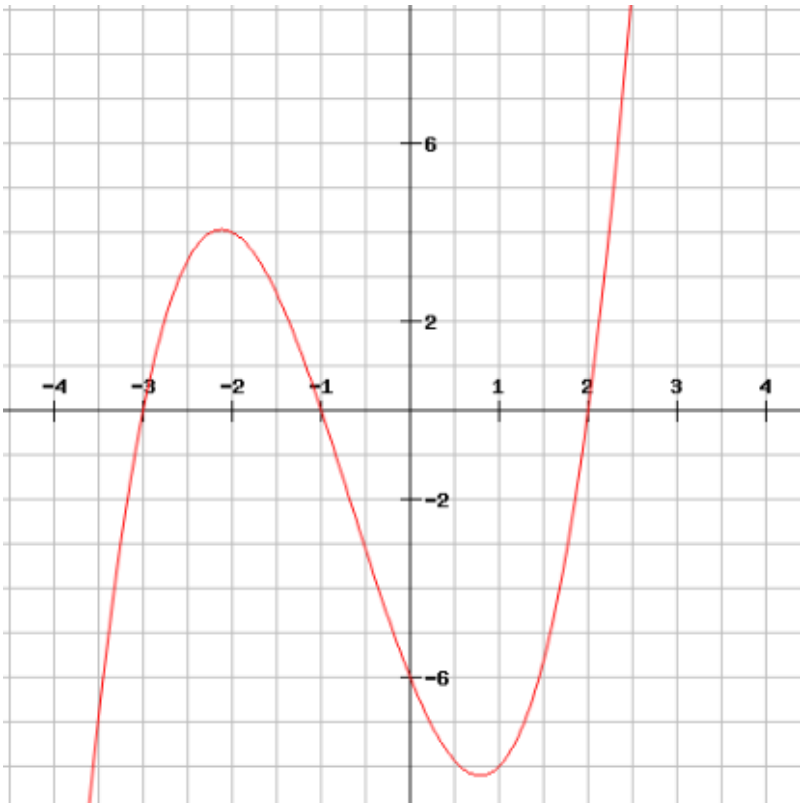
1. The shape of the path traced shown is

a) Spiral b) Ellipse c) Linear d) Parabola

2. The graph of parabola opens upwards, if _____

a) a = 0 b) a < 0 c) a > 0 d) a ≥ 0

3. Observe the following graph and answer



In the graph, how many zeroes are there for the polynomial?

a) 0

b) 1

c) 2

d) 3

4. The three zeroes in the above shown graph are

b) 2, 3,-1

c) -2, 3, 1

d) -3, -1, 2

e) -2, -3, -1

5. What will be the expression of the polynomial?

a) $x^3 + 2x^2 - 5x - 6$

b) $x^3 + 2x^2 - 5x + 6$

c) $x^3 + 2x^2 + 5x - 6$

d) $x^3 + 2x^2 + 5x + 6$

Subject Enrichment Activity

1. **Few Activities mentioned below. (To be done in the Lab Manual.)**
   Activity no- 2 , 5 , 7 , 8 ,10

Step of Activities: 1. Aim 2. Materials required 3. Procedure 4. Observation 5. Conclusion)

Working Model

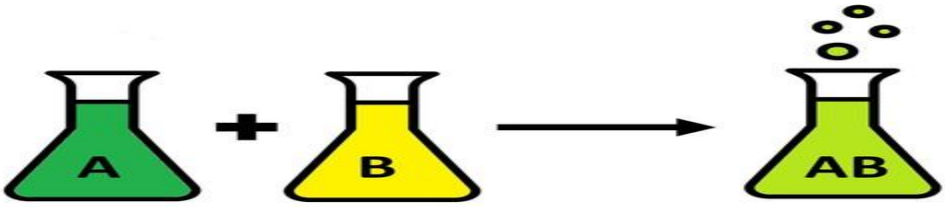
2.Make a working model based on the algebraic expressions with LED Lights.

3.Make a working model based on Real numbers.

SCIENCE

SECTION A: ACTIVITY

PART I- Find out at least 10 different chemical reactions happening in your daily life. Write down their balanced chemical equations and categorise them according to the type of reaction.



PART II- "Mirrors & lenses"

Prepare the Tabular display of all the cases of image formation by mirrors and lenses along with proper neat ray diagrams of the same.

SECTION B

Draw neat and well labelled diagram of the following: -

- Open and closed stomata
- Nutrition in Amoeba
- Human alimentary Canal
- Human respiratory system
- Schematic sectional view of the human heart
- Excretory system in human beings
- Structure of a nephron

NOTE: Attempt on white A-4 size sheets and prepare separate folders for section A and B.

SECTION C

Do the following worksheets in a separate notebook.

WORKSHEET – 1

BIOLOGY CHAPTER – LIFE PROCESS

Question 1: What is the role of salivary amylase in digestion of food?

Question 2: What is the function of HCL Acid in the stomach?

Question 3: Bile juice does not contain any enzymes but is essential for digestion. Why?

Question 4: Make a flow chart depicting the various steps of respiration when a glucose molecule is oxidized.

Question 5: Distinguish between arteries and veins.

Question 6: Explain the structure of a human heart with the help of neat and labelled diagram.

Question 7: Why pancreas is considered as both exocrine and endocrine in function?

Question 8: Draw a neat and labelled diagram of human digestive system and explain the various steps of holozoic nutrition.

Question 9: Define the terms systolic and diastolic blood pressure and name the instrument used to measure it.

Question 10: Explain the various steps of inhalation and exhalation taking place in human respiratory system.

WORKSHEET – 1 (Reflection of light)

PHYSICS CHAPTER – LIGHT

1. Explain why a ray of light passing through the centre of curvature of a concave mirror, gets reflected along the same path.

2. What is the nature of the image formed by a concave mirror if the magnification produced by the mirror is +3?

3. The outer surface of a hollow sphere of aluminium of radius 50 cm is to be used as a mirror. What will be the focal length of this mirror? Which type of spherical mirror will it provide?

4. State the two laws of reflection of light.

5. Define and show on a diagram, the following terms relating to a concave mirror:

(i) Aperture (ii) Radius of curvature

6. Distinguish between a real and a virtual image of an object. What type of image is formed (i) by a plane mirror, (ii) on a cinema screen?

7. What is the minimum number of rays required for locating the image formed by a concave mirror for an object? Draw a ray diagram to show the formation of a virtual image by a concave mirror.

8. Draw the ray diagram in each case to show the position and nature of the image formed when the object is placed: (i) at the centre of curvature of a concave mirror (ii) between the pole P and focus F of a concave mirror

9. An object 2 cm in size is placed 30 cm in front of a concave mirror of focal length 15 cm. At what distance from the mirror should a screen be placed in order to obtain a sharp image? What will be the nature and the size of the image formed? Draw a ray diagram to show the formation of the image in this case.

10. It is desired to obtain an erect image of an object, using a concave mirror of focal length of 20 cm. (i) what should be the range of distance of the object from the mirror? (ii) Will the image be bigger or smaller than the object? (iii) Draw a ray diagram to show the image formation in this case.

WORKSHEET – 1

CHEMISTRY

CHAPTER – CHEMICAL REACTIONS AND EQUATIONS

1. Define a balanced chemical equation. Why should an equation be balanced?
2. Explain two ways by which food industries prevent rancidity.
3. Why decomposition reactions are called the opposite of combination reactions? Write equations for these reactions.
4. What happens chemically when quicklime is added to water filled in a bucket?
5. Write the chemical equation of the reaction in which the following changes have

taken place with an example of each:

(i) Change in colour (ii) Change in temperature (iii) Formation of a precipitate

6. 2g of ferrous sulphate crystals are heated in a dry boiling tube. (i) List any two observations. (ii) Name the type of chemical reaction taking place. (iii) 'Write the chemical equation for the reaction.

7. What is observed when a solution of potassium iodide solution is added to a solution of lead nitrate? Name the type of reaction. Write a balanced chemical equation to represent the above chemical reaction.

8. (a) Write one example for each decomposition reaction carried out with the help of (i) Electricity (ii) Heat (iii) Light (b) Which of the following statements is correct and why copper can displace silver from silver nitrate and silver can displace copper from copper sulphate solution.

9. A zinc plate was put into a solution of copper sulphate and kept in a glass container. It was found that the blue colour of the solution gets fader and fader with the passage of time. After a few days, when the zinc plate was taken out of the solution, a number of holes were observed on it.

(i) State the reason for changes observed on the zinc plate.

(ii) Write the chemical equation for the reaction involved.

10. A white salt on heating decomposes to give brown fumes and a residue is left behind.

(i) Name the salt.

(ii) Write the equation for the decomposition reaction.

- Revise all the notes.
- Read chapters from NCERT book.
- Complete all the experiments done in the lab in lab manual.

SOCIAL SCIENCE

Prepare a project on any of the following topic:

- Social Issues (History/ Political Science)

OR

- Sustainable Development (Geography)

OR

- Consumer Awareness (Economics)

Points to be noted

- The Project Report has to be handwritten
- The Project may include artwork, graphs, pictures and diagrams
- Students are expected to apply Social Science concepts that they have learnt over the years in order to prepare the project report.
- The projects prepared should be made from eco-friendly products without incurring too much expenditure.
- If possible, various forms of art may be integrated in the project work.

ARTIFICIAL INTELLIGENCE

1. Create a POSTER on an A3 size sheet on the theme Global Citizenship:

Ø It can include images of a diverse group of people standing together, holding hands in a circle, symbolizing unity and cooperation.

Ø It should contain some eye-catching phrases like Empower Change. Promote Justice. Support Sustainability, together let's build a better world for all,

Etc.

2. Create a PowerPoint presentation on “HOW AI HELPS ACHIEVE SUSTAINABLE DEVELOPMENT GOALS”.

Ø It should consist of a minimum of 10 content slides

Ø Print of all the slides should be pasted on cardboard covered with chart Paper.

3. Create an INFOGRAPHIC (MIND MAP) on the applications of AI around us. The students can

Use any software like CANVA, COGGLE, etc.

It should include a minimum of 8 AI applications.

Hardcopy (print on A4 size sheet) needs to be submitted at the time of submission.

FRENCH

- PRÉPARER UNE AFFICHE SUR LE THÈME: "LA CULTURE FRANÇAISE". (PREPARE CHART ON THE TOPIC: "LA CULTURE FRANÇAISE" (FRENCH CULTURE)).

LA AFFICHE DOIT INCLURE AU MOINS 5 SOUS-THÈMES DE LA LISTE CI-DESSOUS :(THE CHART MUST INCLUDE AT LEAST 5 SUB-TOPICS FROM THE LIST BELOW :)

LA CUISINE FRANÇAISE(FRENCH CUISINE)

LES FÊTES ET TRADITIONS (FESTIVALS AND TRADITIONS)

LES MONUMENTS CÉLÈBRES (FAMOUS MONUMENTS)

LA MODE FRANÇAISE(FRENCH FASHION)

LA MUSIQUE ET L'ART(MUSIC AND ART)

LA LANGUE ET LES EXPRESSIONS (LANGUAGE AND EXPRESSIONS)

LES SPORTS POPULAIRES(POPULAR SPORTS)

POUR CHAQUE SOUS-THÈME, ÉCRIVEZ 1 À 2 PHRASES EN FRANÇAIS, ACCOMPAGNÉES D'IMAGES OU DE DESSINS. (FOR EACH SUB-TOPIC, WRITE 1-2 SENTENCES IN FRENCH, ALONG WITH PICTURES OR DRAWINGS.)

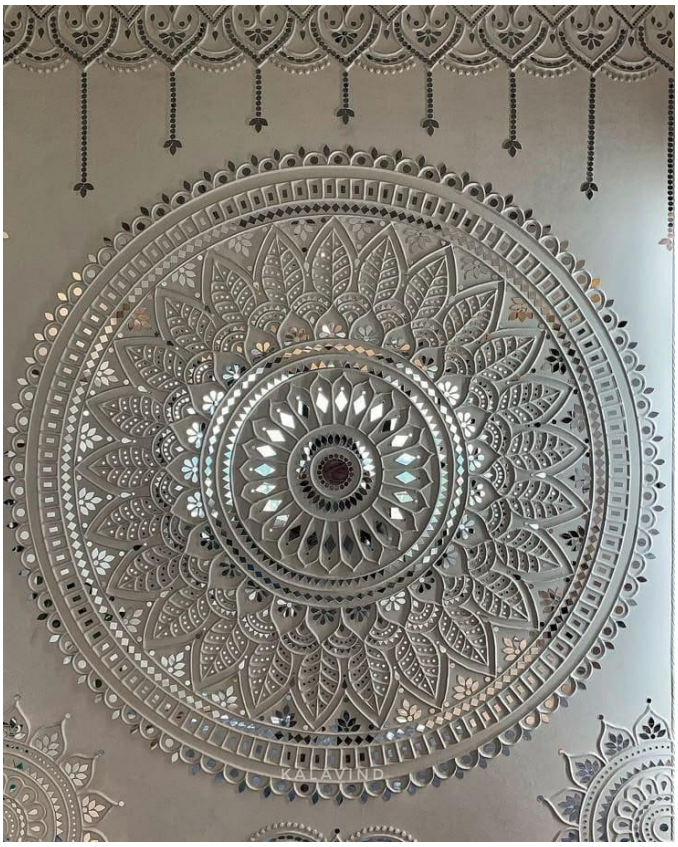
UTILISEZ DES COULEURS, DES ÉTIQUETTES, ET UNE ÉCRITURE SOIGNÉE POUR RENDRE LE TABLEAU AGRÉABLE.(USE COLORS, LABELS, AND NEAT HANDWRITING TO MAKE YOUR CHART PRESENTABLE.)

- THE FOLLOWING WORK NEEDS TO BE DONE IN FRENCH NOTEBOOK

1. 10 ADJECTIVES
2. 10 ER VERBES CONJUGATIONS IN PRESENT TENSE
3. 10 IR VERBES CONJUGATIONS IN PRESENT TENSE
4. 10 RE VERBES CONJUGATIONS IN PRESENT TENSE

ART AND CRAFT

- Lipan Art
- Materials to be used-
- Hard Board (12X12 inch)
  (Shape - square or round only)
- Fevicryl Mouldit
- Fabric Colours
- Mirrors
- Fevicol
- Decorative Accessories



LIPAN ART REFERENCE


have a happy
SUMMER