

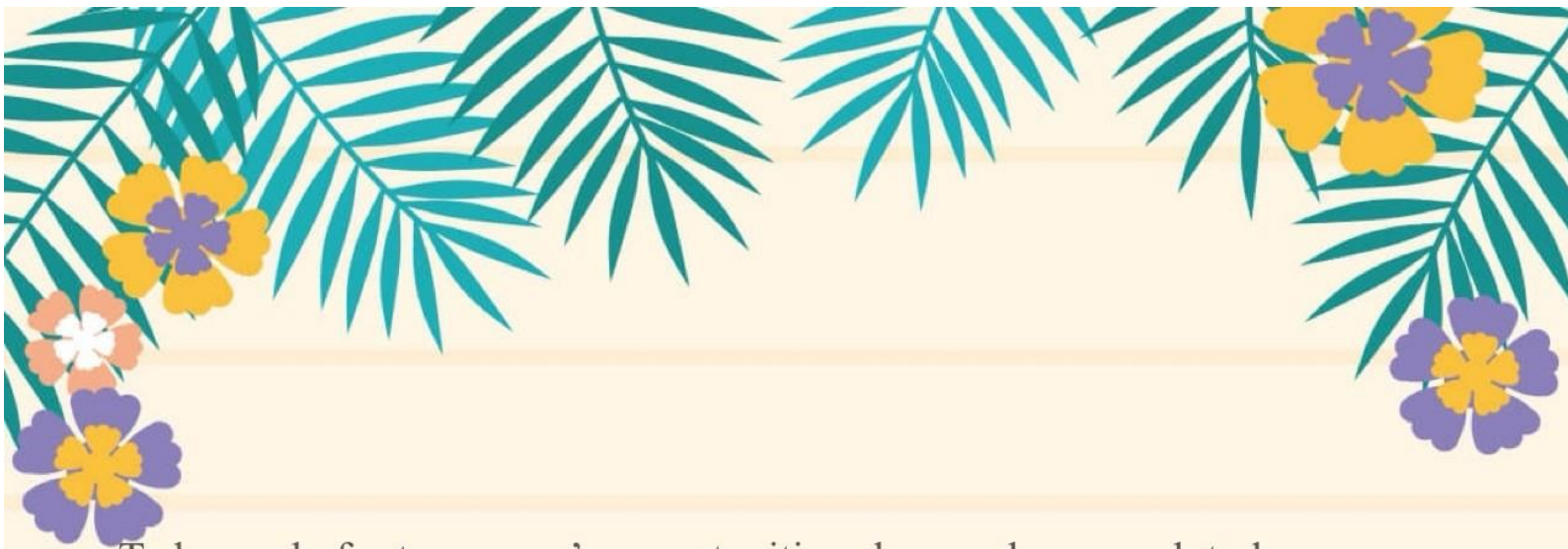
**Ghaziabad
Public School**



Transforming Education, Empowering Students

SUMMER HOLIDAY HOMEWORK

GRADE: X



To be ready for tomorrow's opportunities, do your homework today. Learn, refine your skills and focus on your growth.

Dear Students,

Summer has arrived and brought with it your amazing and fun-filled holidays. Summer break is a well-deserved opportunity to relax and unwind by indulging in various activities. Your Holiday Homework has been specially designed for you to be creative, innovative and imaginative while completing your tasks. It will also enable you to recapitulate what was taught in the classrooms. We hope you will play, learn, research, analyze, experiment, imagine, think, value, appreciate and above all enjoy during your holidays. Wishing you happy holidays!

Instructions for the students:

- * Mention date and day when you do your work.
- * Use your creativity and imagination wherever required.
- * Submit your holiday homework when the school re-opens.



1. Make a Portfolio file including the topics:
 - Critical analysis of the poem 'The Ball Poem'.
 - Bio-sketch of Anne Frank.
 - Detailed analysis of 'The Thief's Story'.

Note: Use A4 Size sheets and compile them in a transparent file with proper introduction.

2. Complete the following Worksheet Units of Together with English:-
1, 2, 36, 37, 54, 55, 56, 57, 66, 67, 68, 76, 77, 78 and 79

हिंदी ग्रीष्म अवकाश गृह कार्य

प्रश्न 1 निम्नलिखित विषयों में से किसी एक विषय पर अनुच्छेद 80 से 100 शब्दों में लिखिए।

- (क) ग्लोबल वार्मिंग मनुष्य के लिए खतरा
- (ख) वाणी का महत्व

प्रश्न 2 परियोजना कार्य- निम्नलिखित में से किसी एक लेखक के जीवन पर आधारित।

- (क) तुलसीदास
- (ख) सूरदास
- (ग) प्रेमचंद

प्रश्न 3 निम्न में से किसी एक विषय पर विज्ञापन तैयार कीजिए।

- (क) आपके क्षेत्र में साइकिल की नई दुकान खुली है प्रीत साइकिल स्टोर एक विज्ञापन बनाइए।
- (ख) ए० सी० की विशेषताएं बताते हुए एक विज्ञापन बनाइए।

प्रश्न 4 प्रेमचंद जी की किसी एक कहानी को पढ़कर उसका वर्णन अपने शब्दों में करिए।

प्रश्न 5 भारत के पूर्वोत्तर राज्यों में से किसी एक की भाषा व संस्कृति को समाहित कर एक पी०पी०टी० तैयार कीजिए।

प्रश्न 6 पाठ्य पुस्तक व व्याकरण पुस्तक में कराया गया संपूर्ण कक्षा कार्य याद करें।

निर्देश- सभी प्रश्नों के उत्तर रंगीन A4 शीट पर लिखकर एक फाइल तैयार कीजिए।

* कृपया लेख का ध्यान अवश्य रखिए।

1. Make a model on any one topic:-

a) Parabola with thread art / string art.

b) A clinometer and model given in link related to trigonometry. (<https://youtu.be/HAL2vMQnCDs?si=qPpAUIRBNGo0KPHu>)

c) Cartesian plane (https://youtu.be/T_v7e1py1B0?si=XgO12glcy6cNiU8G)

2) Prepare a formula chart (on A-3 size sheet] for chapters 1 to 8.

3) Solve NCERT exemplar (from ch: 1 to ch: 5] for practice.

4) Solve the given worksheet in your Maths notebook.

WORKSHEET

Q1. Prove that $3 + 2\sqrt{5}$ is irrational.

Q2. Given that $\text{HCF}(306, 657) = 9$, find $\text{LCM}(306, 657)$.

Q3. An army contingent of 616 members is to march behind an army band of 32 members in parade. The two groups are the same in numbers of columns. What is the maximum no. of columns in which they can march?

Q4. Find the zeros of quadratic polynomials $p(x) = 4x^2 + 24x + 36$ and verify the relationship between the zeros and their coefficient.

Q5. If α, β are zero of quadratic polynomials $kx^2 + 4x + 4$, find the values of k such that $(\alpha + \beta)^2 - 2\alpha\beta = 24$.

Q6. If α, β are zero of quadratic polynomials $2y^2 + 7y + 5$, write the values of $\alpha + \beta + \alpha\beta$.

Q7. A train covered a certain distance at a uniform speed. If the train would have been 6km/hr faster, It would have taken 4 hrs less than the scheduled time. And if the train were slower by 6km/hr. it would have taken 6 hrs more than the scheduled time. Find the length of the journey.

Q8. The sum of the two digit numbers is 12. The number obtained by interchanging the two digits exceeds the given number by 18. Find the number.

Q9. Abdul travelled 300 km by train and 200 km by taxi taking 5 hrs 30 minutes but if he travels 260 km by train and 240 by taxi he takes 6 minutes longer. Find the speed of the train and that of the taxi.

Q10. If one of the roots of $5x^2 + 13x + k = 0$ is reciprocal of the other then find the value of k .

Q11. The difference between two numbers is 5 and the difference of their squares is 65. Find the larger number.

Q12. The numerator of a fraction is less than its denominator. If 3 is added to each of the numerator and denominator, the fraction is increased by $\frac{3}{28}$. Find the fraction.

Q13. A student purchased a pen for Rs 100. At the end of the 8 yrs it was valued Rs 20, Assuming the yearly depreciation is a constant amount, find the annual depreciation.

Q14. If $S_n = n^2p$ and $S_m = m^2p$, ($m \neq p$) in an A.P. Prove that $S_p = p^3$

Q15. The sum of the first n terms of an A.P is given by $S_n = 3n^2 - 4n$. Determine the A.P and its 12th term.

Q16. The sum of the 4th and 8th term of an A.P is 24 and the sum of the 6th and the 10th term is 44. Find the first three terms of the A.P.

Q17. The sum of the first six terms of an arithmetic progression is 42. The ratio of its 10th term to its 30th term is 1:3. Calculate the first and the thirteenth term of the A.P.

- Prepare a survey report on eye donation in India in tabular form (with in two pages)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10162385/>

- Construct binoculars using convex lenses.

<https://youtu.be/9KSviQuGgKM?si=6Suq6befF-EJCXH>

- Draw a well labelled colourful diagram of human eye on A4 sheet and paste in your fair notebook
- learn all syllabus done in the month of April and may.
- Solve the following case studies

Case study:1

We can see when the pencil is immersed in water it appears bent at the water air interface. Also, the letters appear to be raised when we see those letters through a glass slab placed over it. If the media used are different that means the bending of light is different in different media. And hence we can say that the light does not travel along a straight line path through different media. According to the velocity of light in that medium the bending of light takes place. Thus, we can say the phenomenon in which light bends or changes its direction when traveling from one medium to another is called refraction of light. And also we can observe that if the ray of light is traveling from rarer medium to denser medium it bends towards the normal whereas when the ray of light travels from denser medium to rarer medium it bends away from the normal. And the extent of bending of light in a particular medium depends on the refractive index of the medium mostly. More the refractive index more is the bending or denser is the medium and less will be the velocity of light in that medium.

If less is the refractive index then less will be the bending or medium is rarer and velocity of light will be more in that medium. Like the refractive index of air is found to be 1.0003 and that of water is found to be 1.33. And hence water is denser than air, air is rarer medium as compared to water. Thus, velocity of light in air medium is greater than velocity of light in water medium.

The absolute refractive index of the medium is given by

Absolute Refractive index= (speed of light in air)/(speed of light in medium) = c/v

Thus, for different media the refractive index is different and accordingly the velocity of light is also different.

- 1) If the refractive indices of glass and ice are 1.52 and 1.31 respectively. Then in which medium the velocity of light is more? What is its value?
(Velocity of light in air= 3×10^8 m/s)
- 2) How can you define a rarer and denser medium on the basis of optical density?
- 3) If the Refractive index of diamond is found to be highest i.e. 2.42 then what it indicates?
- 4) What would happen if we took a glass filled with kerosene instead of water? What would be the observations?

Case study: 2

We have, the object distance is the distance of the object from the pole of the mirror. And we always know that the object is placed in front of the mirror that means on the left side and hence object distance u is always taken as negative. The distance of the image from the pole of the mirror is taken as image distance. The image distance may be positive or negative on the basis of the nature of the image formed. And the distance of principal focus from the pole is called the focal length of the mirror. Thus, the relationship between the object distance u , image distance v and focal length f is given by mirror formula.

Thus,

Mirror formula:

$$1/v + 1/u = 1/f$$

And magnification in case of a mirror gives the extent to which the image is magnified as compared to object size. Magnification is given by the ratio of height of image (h') to the height of object (h).

Thus, magnification = (height of image)/(height of object)

Thus, $m = h'/h$

Also, in terms of object distance and image distance magnification is given by,

$$\text{Magnification } m = h'/h = -v/u$$

As we know, image height is positive if the image formed is virtual while height of image is negative for real images.

Similarly in case of lenses, lens formula is given by

$$1/v - 1/u = 1/f$$

And magnification in case of lenses is given by

$$\text{Magnification } m = h'/h = v/u$$

The power of a lens depends on the focal length of the lens and it is the ability of the lens to diverge or converge the number of rays incident on it. Also, power of lens is defined as the reciprocal of focal length of the lens.

Thus, $P = 1/f$

- 1) If the focal length of the lens is measured in meters, what will be the unit of power of the lens?
- 2) What is the sign of power of convex and concave lenses?
- 3) If the lenses placed in contact with powers P1, P2, P3, P4 are used then what is the net power of the lens system?
- 4) If the magnification produced is negative and positive in the case of mirrors then what about the nature of images formed there?

SUB: SCIENCE-086-CHEMISTRY

- A. Using a pH strip category the naturally occurring substances as acids, bases & neutral compounds (water, coffee, onion peel, milk, mustard oil, lemon juice, carbonated drink etc) OR prepare a detailed report on natural & man made acids.
- B. Prepare a 3D atomic structure model. (choose any one atom: sodium, aluminium, carbon, lithium, calcium, neon, Boron etc.

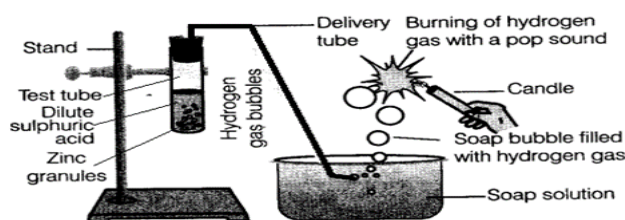
OR

Make a working model on electrolysis of water, Water treatment plant

- C. Solve the given questions in your notebook and learn all the questions.
 1. (a) State the law that is followed by balancing a chemical equation.
(b) Balance the following chemical equation: $\text{Na} + \text{H}_3\text{O} \rightarrow \text{NaOH} + \text{H}_2$
 2. Write balanced chemical equations for the following chemical reactions:
 - (a) Hydrogen + Chlorine \rightarrow Hydrogen chloride
 - (b) Lead + Copper chloride \rightarrow Lead chloride + Copper
 3. Study the following equation of a chemical reaction: $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$

- (i) Identify the type of reaction.
(ii) Write a balanced chemical equation of another example of this type of reaction.
4. State the type of chemical reactions, represented by the following equations :
- (a) $A + BC \rightarrow AC + B$ (b) $A + B \rightarrow C$ (c) $PQ + RS \rightarrow PS + RQ$ (d) $A_2O_3 + 2B \rightarrow B_2O_3 + 2A$
5. 1 g of copper powder was taken in a China dish and heated. What change takes place on heating? When hydrogen gas is passed over this heated substance, a visible change is seen in it. Give the chemical equations of reactions, the name and the colour of the products formed in each case.
6. A compound 'A' is used in the manufacture of cement. When dissolved in water, it evolves a large amount of heat and forms compound 'B'.
- (i) Identify A and B.
(ii) Write a chemical equation for the reaction of A with water.
(iii) List two types of reaction in which this reaction may be classified.
7. Mention with reason the colour changes observe when:
- (i) silver chloride is exposed to sunlight.
(ii) copper powder is strongly heated in the presence of oxygen.
8. Lead nitrate solution is added to a test tube containing potassium iodide solution.
- (a) Write the name and colour of the compound precipitated.
(b) Write the balanced chemical equation for the reaction involved.
9. Identify the type of reactions taking place in each of the following cases and write the balanced chemical equation for the reactions.
- (a) Zinc reacts with silver nitrate to produce zinc nitrate and silver.
(b) Potassium iodide reacts with lead nitrate to produce potassium nitrate and lead iodide.
10. Decomposition reactions require energy either in the form of heat or light or electricity for breaking down the reactants. Write one equation each for decomposition reactions where energy is supplied in the form of heat, light and electricity.
11. What is observed when carbon dioxide gas is passed through lime water
- (i) for a short duration?
(ii) for a long duration? Also write the chemical equations for the reactions involved.
12. (i) What happens when CO_2 is passed through lime water?
(ii) What happens when CO_2 is passed in excess through lime?
13. How do the following substances dissociate to produce ions in their solutions?
(i) Hydrochloric acid (ii) Nitric acid (iii) Sulphuric acid (iv) Sodium hydroxide
14. Complete and balance the following chemical equations :
- (i) $NaOH_{(aq)} + Zn_{(s)} \rightarrow$ (ii) $CaCO_{3(s)} + H_2O_{(l)} + CO_{2(g)} \rightarrow$
15. **ACTIVITY:** Take about 5 mL of dilute sulphuric acid in a test tube and add a few pieces of zinc granules to it. What do you observe on the surface of zinc granules? Pass the gas being evolved through the soap solution. Why are bubbles formed in the soap solution? Take a burning candle near a gas filled bubble. What do you observe?

Write the observation about this activity in your notebook and write the balanced equation also.



16. Activity - Clean a magnesium ribbon about 2 cm long by rubbing it with sandpaper. Hold it with a pair of tongs. Burn it using a spirit lamp or burner and collect the ash so formed in a watch glass as shown in the figure, Burn the magnesium ribbon keeping it as far as possible from your eyes.

Write the observation about this activity in your notebook. Write the balance equation also



17. Out of HCl and CH₃COOH, which one is a weak acid and why? Explain with the help of an example.
18. (a) Three acidic solutions A, B and C have pH = 0, 3 and 5 respectively.
 - (i) Which solution has the highest concentration of H⁺ ions?
 - (ii) Which solution has the lowest concentration of H⁺ ions?
19. "Sodium hydrogen carbonate is a basic salt". Justify this statement. How is it converted into washing soda?
20. What is an indicator? How many types of indicators.

SUB: SCIENCE-086-BIOLOGY

1. Draw the mind map on A4 size sheet of the following topics -
 - a. Transportation in humans
 - b. Nutrition in humans
2. Prepare a working model any one of the following -
 - a. Heart
 - b. Respiratory system
 - c. Haemodialysis
 - d. Brain
3. Lab manual- Exp.-2 To show experimentally that carbon dioxide is given out during respiration .
4. Answer the following questions:
 - a. Write differences between arteries and veins.
 - b. Write the functions of blood.
 - c. How is aerobic respiration different from anaerobic respiration?
 - d. Explain the role of the mouth in the digestion of food.
 - e. Why is transpiration important for plants?
 - f. Describe the process of urine formation in kidneys.
 - g. Name components of the transport system in organised plants.
 - h. Compare the alveoli and nephron functioning, including structure.
 - i. Explain the process of nutrition in amoeba.
 - j. Why do the trachea walls not collapse when there is less air in them?
 - k. Explain the cause of cramps after excessive physical exercise.
 - l. What are the three types of blood vessels? Mention one important feature of each.

Do the above questions with answers in a biology notebook and learn it.

SUB: SOCIAL SCIENCE (087)

1. Prepare a project on any one of the following:
 - a. Any one Social Issue
 - b. Sustainable Development
 - c. Consumer Right

Guidelines for the project

- Collect information from different newspapers, photographs , articles , magazines, Internet Accounts
etc, .
 - Collect information for immediate response of government agencies like police, hospitals etc.
 - Discuss the role of authorities, Indian agencies (CRY, WHO, UNO) in the rehabilitation process.
 - You have to prepare this project according to the PPT form.
 - Paste maximum pictures , bars , data according to your project.
 - Project should be prepared of 25-30 pages , full of creativity and neat handwriting.
2. Show your creative instincts through MODEL presentation: - . Traditional concepts with a modern outlook. Some topics for Model presentational are given below, choose only one topic:--
- 3d model Digital India ,Model Showing Sectors of Indian Economy ,National Highway , Political Parties , G-20 , Hierarchy of Money , life line of economy , indian airport and seaport ,Meteorological stations,Type of soils,Any manufacturing industry.
3. Read the newspaper daily to update yourself.

SUB: INFORMATION TECHNOLOGY (402)

Practical 1: Designing Poster

Students,you all are supposed to design a poster on Child Labour day.Use images and quotes also.

Practical 2: Create a presentation in MS PowerPoint On the topic”Sustainable development “.Presentation should have 8-10 slides.

Parameter-creativity,originality,Overall presentation.

Practical 3: Using document templates create your own resume in writer.

Practical 4: Write the paragraph on the topic ”smartphone”.Use wrap options also to insert images in paragraphs.