CLASS 9 PROJECT WORK 2023-24
GUIDELINES

i. **All project must be handwritten except for Computer Application.**
ii. **The cover page should show the school's Name, Logo, Student's name, Class, Section and Subject. The cover page should be typed.**
iii. **The second page should be acknowledgement.**
iv. **The third page should be the content headings with their page numbers.**
v. **Each topic should be written on a new page.**
vi. **Use pictures and captions wherever possible.**
vii. **Last page should contain bibliography.**

English language

NOTE:

- The English Language project is based on ORAL and AURAL skills.

English Literature

- **All project must be handwritten**
- **Use Pictures and captions wherever possible.**
- **Marks will be deducted for spelling and grammatical errors.**
- **Word limit is 300 to 400 words.**

Attempt any two topics from the topics given below.

a) Do you think that the title Julius Caesar is appropriate for Shakespeare's play by that name? Give reasons for your answer.
b) Bring out the dramatic significance of the opening scene of Julius Caesar. Does this scene strike the key note of the whole play.
c) Life and works of Shakespeare.
d) Write a brief character-sketch of Brutus.
e) Give character sketch of Bonku Babu in the story Bonku Babu's friend.'
f) Bring out the theme of 'Bullying' in the lesson Bonku Babu's friend. How relevant is the theme according to you in modern time.

हिंदी परियोजना कार्य

1. 'एक और एक ग्यारह' इस उक्ति के आधार पर लगभग 400 शब्दों में प्रस्ताव या कहानी लिखिए l

2. किसी ऐसे प्राचीन अथवा मध्यकालीन ऐतिहासिक स्थल (वाराणसी या आस-पास के क्षेत्र) का सजीव वर्णन कीजिए जिसे आपने देखा हो l (शब्द-सीमा 400)

3. अपने मित्र को पत्र लिखकर बताइए कि आपने अभी-अभी कौन-सी फ़िल्म देखी है और उसमें क्या अच्छा लगा और क्या बुरा ? (शब्द-सीमा 200)

4. 'बात अठन्नी की'- पाठ का सारांश और संदेश अपने शब्दों में लिखते हुए, कथाकार 'सुदर्शन' जी का जीवन परिचय एवं साहित्यिक परिचय दीजिए l (शब्द-सीमा 400)

5. भक्तिकाल का सविस्तार परिचय देते हुए, प्रसिद्ध संत कवि 'कबीरदास' का जीवन परिचय एवं साहित्यिक परिचय दीजिए l(शब्द-सीमा 400)

MATHEMATICS
(Any two of the following)

1. Conduct an online survey of group of students and represent it graphically their heights, weights, number of family members, their pocket money etc. **USE PIE CHART AND HISTOGRAM**
2. Use flat cutouts to form cube, cuboid s and pyramids to obtain formulae for volume and total surface area.
3. Make a detailed chart of **NUMBER SYSTEM giving special emphasis on the Rational and Irrational numbers with at least 5 examples on each, their definition, properties etc**
4. Study ways of raising a loan to buy a car or house, e.g. bank loan or purchase a refrigerator or television set through hire purchase.

Physics

I. **Using basic concepts of physics, Make a working model or ppt on any renewable resources of energy MINMUM 20 SLIDES Solar energy, Hydro energy, wave energy, Wind energy , geothermal energy, Biogas plant, Tidal energy**

II. **Plan to go to a place by a vehicle. Take readings of odometer and speedometer after every 5minutes till you reach your destination. Record these observations in tabular form; plot graphs between distance-time and speed time. State whether this motion is uniform or non-uniform.**

C EXPERIMENT simple pendulum

Principle

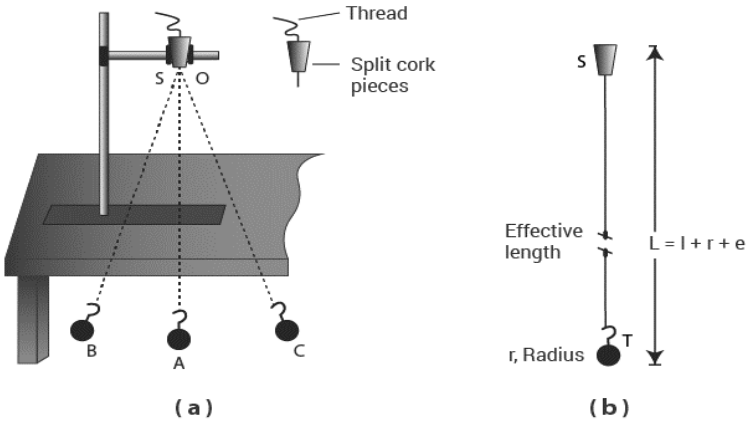
The simple pendulum exhibits Simple Harmonic Motion (SHM) as the acceleration of the pendulum bob is directly proportional to the displacement from the mean position and is always directed towards it. The time period (T) of a simple pendulum for oscillations of small amplitude, is given by the relation

$$T=2\pi\sqrt{l/g}$$

Where L is the length of the pendulum and g is the acceleration of gravity

Procedure

1. Place the clamp stand on the table. Tie the hook attached to the pendulum bob, to one end of the string of about 150 cm in length and the other end of the string through two half-pieces of a split cork.
2. Clamp the split cork firmly to the clamp stand such that the line of separation between the two pieces of the split cork is at right angles to the line OA along which the pendulum oscillates as given in the figure. Mark the edge of the table a vertical line parallel to and just behind the vertical thread OA, the position of the bob at rest. Take care that the bob hangs vertically (about 2 cm above the floor) beyond the edge of the table so that it is free to oscillate.
3. Measure the effective length of the simple pendulum as shown in the figure.



1. Displace the bob not more than 15 degrees from the vertical position OA and then gently release it. If you notice the stand to be shaky, put a heavy object on its base. Make sure that the bob oscillates in a vertical plane about its rest and does not (i) spin about its own axis (ii) move up and down while oscillating (iii)revolve in an elliptic path around its mean position.
2. Keep the pendulum oscillating for a few minutes. After the completion of few oscillations, start the stopwatch as the thread attached to the bob crosses the mean position. Consider it as a zero oscillation.
3. Keep counting the oscillation 1,2,3…*n* every time the bob crosses the mean position. Stop the stopwatch at the count of *n* oscillations. For better results, *n* should be chosen such that the time take to complete n oscillations is 50 s or more. Read the total time taken for *n* oscillations. Repeat the observation a few times by noting down the time for the same *n* number of oscillations. Once noted down, take the mean of the readings. Calculate the time for one oscillation, i.e., the time period T (= t/n) of the pendulum.
4. Change the length of the pendulum, by about 10 cm. Repeat step 6 again for finding the time (t) for about 20 oscillations or more for the new length and find the mean time period. Take 5 or 6 more observations for different lengths of the pendulum and find the mean time period in each case.

5. Report observations in the tabular form with proper units and significant figures.
6. Take effective length L along the x-axis and T^2 (or T) along the y-axis, using the observed values from the table. Choose suitable scales on these axes to represent L and T^2 (or T). Plot a graph between L and T^2 as shown in figure 2 and also between L and T as shown in figure 1.

Observation

S. No	**Effective length,L cm**	**Number of oscillations counted, n**	**Time for n oscillations t (s)**	**Time period T (= t/n)**	T^2	$g=4\pi^2L\backslash T^2$

Plotting Graph

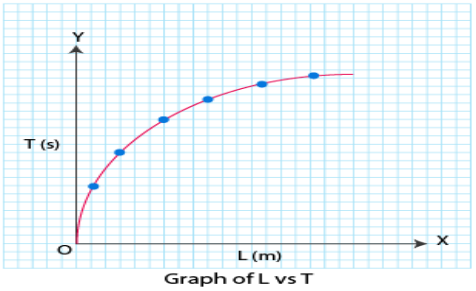
(i) *L* vs *T* Graph

Plot a graph between L versus T from observations recorded in the table above, taking L along x-axis and T along the y-axis. You will find that this graph is a curve, which is part of a parabola as shown in Figure 1.

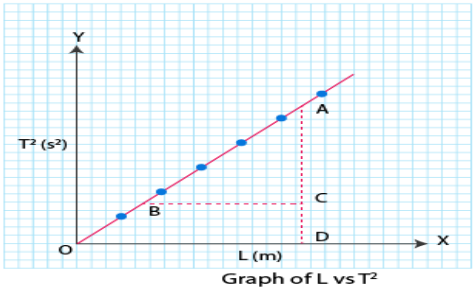
(ii) *L* vs T^2 Graph

Plot a graph between L versus T^2 from observations recorded in the table, taking L along the x-axis and T^2 along the y-axis. You will find that the graph is a straight line passing through the origin as shown in figure 2.

(iii) From the L versus T^2 graph, determine the effective length of the second's pendulum for $T^2 = 4s^2$.



Graph of L vs T



Graph of L vs T²

Result

The graph L versus T is curved, convex upwards.

The graph L versus T^2 is a straight line.

The effective length of the second's pendulum from the L versus T^2 graph is … cm.

Viva Voice

Define simple pendulum.

Answer: A pendulum is defined as a single isolated particle suspended by a weightless Flexible and inextensible string with frictionless support.

Why is the word ‘simple’ used in simple pendulum?

Answer: Because the simple pendulum consists of mass *m* hanging from a string of length *l* and fixed at a pivot point P. The pendulums used in the wall clocks are known as a compound pendulum, and they have a metallic string instead of a thread.

Define simple harmonic motion (S.H.M).

Answer: A motion is called simple harmonic motion when:

(i)the magnitude of its acceleration is directly proportional to the displacement *x* from the mean position.

(ii) the direction of the acceleration is always towards the mean position.

What is the relationship between frequency and time period?

Answer: The relationship between frequency and time period is given by $f = 1/T$

What is restoring force?

Answer: The force that brings a vibrating body towards the mean position is known as the restoring force.

Can we use a cricket ball in the place of the bob?

Answer: No, we cannot. The bob must be as small as possible.

Can we use a rubber band instead of a thread?

Answer: No, we cannot because it is not inextensible.

Chemistry

(Write on any 2 Topics)

1. How chemistry plays a critical role in medical diagnosis and drug development, enabling people to live longer and healthier lives

2 Briefly describe how human health is impacted by disease and hazardous chemicals in our food , water and the environment.

3. How chemistry offers new solutions for reducing pollutions and it's impacts on human health.

4. Describe ozone depletion in details and mention their causes , impacts and results.

5. Describe about 5' R , and their role in environment and human health.

Case study :

Q-2 You must have observed that iron articles are shiny when new, but get coated with a reddish brown powder when left for some time. This process is commonly known as rusting of iron. Some o metals also get tarnished in this manner. Have you noticed the colour of the coating formed on copper and silver? When a metal is attacked by substances around it such as moisture,

acids etc, it is said to corrode and this process is called corrosion. The black coating on silver and the green coating on copper are other examples of corrosion.

Answer the following questions based on above case-

A.) Explain one benefit of corrosion.

B) Write the formulas of corrosion of iron.

C) If corrosion occurs in the case of iron articles , why is the iron pillar at Qutub Minar not effected ?

D) Write any two ways to prevent rusting?

E) Write the chemical equation for corrosion of iron.

BIOLOGY

Make a project on ANY ONE of the following topics-

- Explain how individual health depends on social and mental well-being with the help of case study.
- Antibiotics are ineffective against viral diseases, explain with the help of case study.
- Health workers are more exposed to sick people. Make a project suggesting the safety measures for them.
- Briefly explain the causes of Encephalitis. How does it enter the body? Which organ does it infect? What are its symptoms?

HISTORY/CIVICS

Prepare a project on any one of the topics given below

• The Indian constitution protects the rights of children, women minorities and weaker sections. Elaborate on the basis of a case study.

• Discuss the art and architectural features of any three monuments. Buddhist Caves, Ajanta; Iron pillar, Mehrauli, Gol Gumbaz, Bijapur, Mattanchetty Synagogue, Cochin; Kamahya temple, Guwahati; St. Thomas Basilica, Chennai, Tower of Silence, Mumbai.

• Make a pictorial presentation of inventions and innovations as a result of the Industrial Revolution.

• Make a comparative study of the Harappan and Mesopotamian Civilization

GEOGRAPHY

PRACTICAL WORK/ PROJECT WORK

1. A record file having any three of the following exercises will be maintained. (The file will be evaluated out of 10 marks).

(a) Uses of important types of maps.

(b) Directions and how to identify them – an illustrative diagram.

(c) Reading and using statement of scale, graphic scale and scale shown by representative fraction method. (No drawing work, only explaining their meanings).
(d) Reading of one town guide map or an atlas map. (Recognising the symbols and colours used, identifying directions and distances).
(e) Drawing and recognising forms of important contours viz. valleys, ridges, types of slopes, conical hill, plateau, escarpment and sea cliff.
(f) Drawing at least one sketch map to organize information about visiting an important place, a zoo or a monument.
2. Candidates will be required to prepare a complete collection of world map contents from syllabus which is given in your textbook in last.

(The project will be evaluated out of 10 marks).

COMMERCIAL STUDIES

TOPIC 1: COMMERCIAL AND NON COMMERCIAL ACTIVITIES

Take and three commercial activities and three non commercial activities . Paste their pictures and explain in each category why they are considered to be economic or non economic.

TOPIC 2: COMMUNICATION

What is communication and its types. Discuss the various modes of communication used nowadays. Paste the relevant pictures.

TOPIC 3:Banking

Study different types of bank accounts (fixed deposits, recurring account, current account etc), any 5 types and find out what are the relevant documents required for opening such types of accounts, who all can open it and what is the difference in their rates of interests

Computer Applications

Instructions:

1. There will be 2 separate assignments (Project) as per the topics given. They will be kept in one file MS Word file. The print out needs to be submitted
2. Start with Acknowledgement, should be of one page, short and simple. Also write your name, class , section and roll no. below it. Don't make separate acknowledgement for each topic. There should be only one common acknowledgement.
3. Order of each topic:

• Name of the topic (one page)
• Index (only serial no. , content and page no. , should be of one page)
• Subject Matter of the topic (describe the topic with Introduction , relevant headings and sub headings, supported with pictures/diagrams/ graphs/ tables, as per the requirement. Should not be more than 4 to 5 pages.)
• Conclusion (one page)

• Bibliography (One page. Write the name of relevant websites and books consulted for the making of the assignment.)

Topics

1) How computers affect human beings focus upon the Ergonomic, psychological and social aspects. (2 pages A4) handout typed.

(2) Replacement of HR with AI(Artificial Intelligence).

(Not more than 5 slides).

Commercial Application

1.Visit to various sites for example www.sciencedirect.com, www.britanica.com etc and collect informations about the types of wastes, methods prevalent for their disposal.

2..Prepare a report on the basis of the informations collected, suggest measures to improve the environmental conditions. to ownership structures.

3.. Study the working of Fast-Moving Consumer Goods (FMCG) Industry in India - take any 4 firms of the industry and group them according to their Objectives (Profit/ Non-profit making).

4. Make a comparative study of different core industries in India - take any 5 industries (such as - cement, steel, paints, paper, and infrastructure) and group them according to various factors such as - growth, profit potential, etc.

5. Study any existing functional strategy for a small/medium/large scale organization with respect to its Marketing, Finance, Human Resource, Production, purchase and find the problems in the existing strategies.

6. Enact a play showing growing communication needs in today's organizations, depicting the possible problems that may occur due to poor communication.

Physical Education

Dear students please make a proper practical file and project of Volleyball.

- History of Games,
- Rules and Regulations,
- skills,
- Terminology,
- National and International Governing body
- National and International Tournament etc.

Please make sure cover all the topic and prepare chapter 1 and 2.