ASIAN INTERNATIONAL SCHOOL
SUMMER HOLIDAY HOMEWORK
CLASS IX
SESSION :2022-2023

SUBJECT	TASK ASSIGNED	21ST CENTURY SKILLS
ENGLISH	Practise handwriting for two pages from a newspaper in your language copy. Write a book or film review of 100-120 words in your language copy. Solve worksheets no. 3 and 4	Creative and critical thinking skills -Cognitive skills -Analytical skills -Problem solving skills -Writing skills -Literary skills -Research skills
2ND LANGUAGE (HINDI)	कक्षा-नवीं ग्रीष्मकालीन अवकाश गृहकार्य हिंदी परियोजना कार्य पाठ-दो बैलों की कथा टॉपिक-पाठ में हीरा नरम दल और मोती गरम दल का नेतृत्व करते नज़र आ रहे हैं। आप भी स्वतंत्रता आंदोलन के समय के नरम दल और गरम दल के किन्हीं तीन-तीन नेताओं का सचित्र वर्णन करें।	Cognitive skill(संज्ञानात्मक कौशल)
2ND LANGUAGE (BENGALI)	জীবনপঞ্জি:- ১) সত্যজিৎ রায় - জন্ম, পারিবারিক ইতিহাস , কর্মজীবন ,চলচ্চিত্র জীবন সাহিত্যকর্ম ,পুরস্কার	Information literacy skill
MATHEMATICS	Maths Holiday Homework: Maths Projects **Project 1**: To represent some irrational number on number line	Analytical skill

Materials Required

1. Two cuboidal wooden strips
2. Thread
3. Nails
4. Hammer
5. Two photocopies of a scale
6. A screw with nut
7. Glue
8. Cutter

Prerequisite Knowledge

1. Concept of number line.
2. Concept of irrational numbers.
3. Pythagoras theorem.
4. Representation of rational number on number line.

Theory

1. The concept of number line refer to Activity 1.
2. For concept of irrational numbers refer to Activity 1.
3. For Pythagoras theorem refer to Activity 1.
4. Representation of Irrational Number on Number Line.

We know that a real number is either rational or irrational. So, we can say that every real number is represented by a unique point on the number line.
Also, every point on the number line represents a unique real number. So, we can locate some of the irrational number of the form $\sqrt{n}$, where n is a positive integer on the number line by using following steps.
Step I – Write the given number (without root) as the sum of the squares of two natural numbers (say a and b, where a > b).
Step II – Take the distance equal to these two natural numbers on the number line (a on number line and b vertically) starting from 0 (say OA and AB) in such a way that one is perpendicular to other (say AB ⊥ OA).

Project 2: Verify the algebraic identities $(a+b)^2 = a^2+b^2+2ab$ $(a-b)^2 = a^2+b^2-2ab$

OBJECTIVE

To verify the algebraic identity $(a+b)^2 = a^2 + 2ab+b^2$.

Materials Required

1. Drawing sheet
2. Pencil
3. Cello-tape
4. Coloured papers
5. Cutter
6. Ruler

Prerequisite Knowledge

1. Square and its area.
2. Rectangle and its area.

Theory

1. A square is a quadrilateral whose all sides are equal and all the angles are 90°.

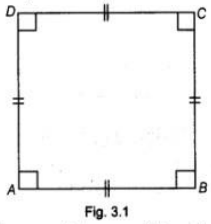


Fig. 3.1

2. A rectangle is a quadrilateral whose opposite sides are equal and all the angles are 90°

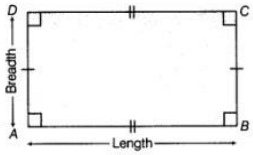


Fig. 3.2

Area of rectangle = Length x Breadth

Procedure

1. From a coloured paper, cut out a square whose length of each side is a units and name it as square PQRS. (see Fig. 3.3)

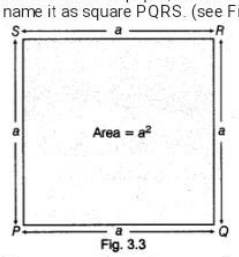


Fig. 3.3

2. From same coloured paper as in step 1st, cut out another square whose length of each side is b units (a > b) and name it as square RFGH. (see Fig 3.4)

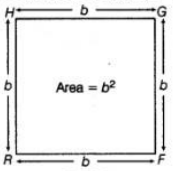


Fig. 3.4

3. From different coloured paper, cut out a rectangle of length a units and breadth b units and name it as rectangle SRHE. (see Fig. 3.5)

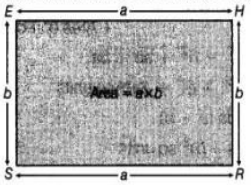


Fig. 3.5

4. From same coloured paper as in step 3rd cut out a rectangle of length b units and breadth a units and name it as rectangle QIFR. (see Fig. 3.6)

Fig. 3.6

5. Arrange the above cutted figures (squares and rectangles) as shown in figure and paste it on drawing sheet using cello-tape, (see Fig. 3.7).

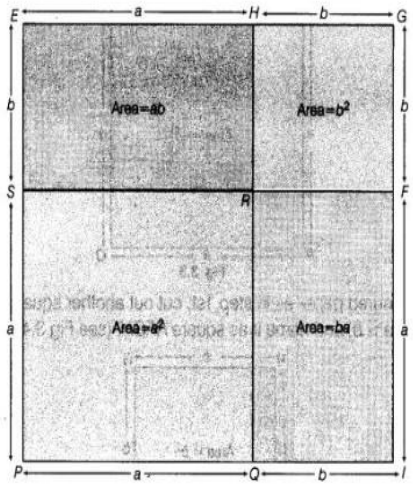


Fig. 3.7

figure, it is clear that we have obtained a square PIGE of side (a + b).

Demonstration

From Fig. 3.7, area of PIGE
= Area of square PQRS + Area of square RFGH + Area of rectangle SRHE + Area of rectangle QIFR
= $a^2 + b^2 + ab + ba$
= $a^2 + 2ab + b^2$ sq units ,..(i)
Also, PIGE is a square of side (a + b).
So, area of PIGE= $(a+b)^2$ sq units ...(ii)
Hence, from Eqs. (i) and (ii), we can write $(a+b)^2 = a^2 + 2ab+b^2$.

Project 3 : Verify the sum of the angles of a triangle is 180 degree

Materials Required

1. Cardboard sheet
2. White chart paper
3. Geometry box
4. Scissors
5. Adhesive
6. Drawing sheet
7. Tracing paper

Prerequisite Knowledge

1. Knowledge of straight angle
2. Concept of triangle and its properties

Theory

1. For straight line angle refer to Activity 11.
2. **Triangle**
   A plane figure closed by three intersecting lines is called a triangle, here Tri' means 'three'. A triangle has three sides, three angles and three vertices and it is denoted by the symbol 'Δ'. A ΔABC is shown in Fig. 12.1.

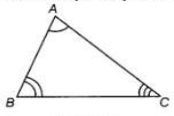


Fig. 12.1

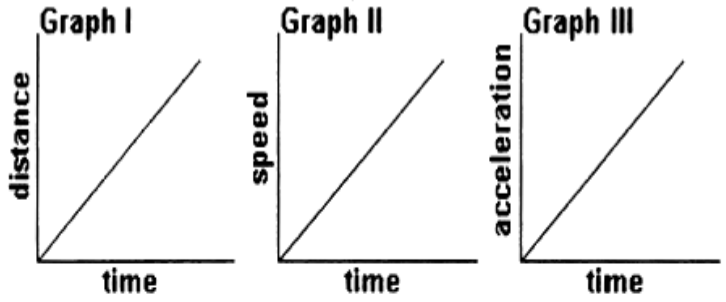
Some basic properties of triangles are given below:

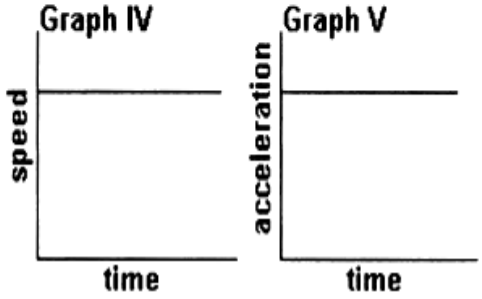
1. The sum of all the angles of a triangle is always 180°.
2. Angles opposite to equal sides of a triangle are equal.
3. The sides opposite to equal angles in a triangle are equal.

4. In a triangle, the angle opposite to longer side is larger and vice-versa.
5. The sum of two sides of a triangle is greater than the third side.
6. The exterior opposite angle in a triangle is equal to sum of opposite interior angles.

SCIENCE	**PHYSICS** **Question 1:** *Read the following paragraph and any four questions from (i) to (v).* Distance is the length of the actual path covered by an object, irrespective of its direction of motion. Displacement is the shortest distance between the initial and final positions of an object in a given direction. Distance is a scalar quantity. Displacement is a vector quantity. Distance covered can never be negative. It is always positive or zero. Displacement may be positive, negative or zero. **(i) _____ is the actual path covered by an object.** (a) Speed (b) Motion (c) Velocity (d) Distance **(ii) _____ is the shortest distance between the initial and final positions of an object.** (a) Displacement (b) Acceleration (c) Distance (d) Motion **(iii) Which of the following is a scalar quantity?** (a) Displacement (b) Distance (c) Velocity (d) Acceleration **(iv) Distance covered _____** (a) can never be negative. (b) can never be positive. (c) can never be zero. (d) can be positive or negative. **(v) Which of the following is vector quantity?** (a) Displacement (b) Velocity (c) Acceleration (d) All of these **Question 2:**	critical thinking, problem solving, and information literacy

	The speed of an object need not be constant. In most cases, objects will be in non-uniformmotion. Therefore we describe the rate of motion of such objects in terms of their average speed. The average speed of an object is obtained by dividing the total distance travelled by the total time taken. That is, average speed =total distance travelled / total time taken. Answer the following. **(i)An object travels 20 m in 5 s and then another 20 m in 5s. What is the average speed in m/s of the object?** (a)4 (b) 5 (c) 6 (d) None of these **(ii) An object travels 20 m in 5 s and then another 40 m in 5s. What is the average speed in m/s of the An object travels 20 m in 5 s and then another 40 m in 5s. What is the average speed in m/s of the object?** (a) 4 (b) 5 (c) 6 (d)None of these **(iii)A man starts walking from a point P on a circular field of radius 7 km and after 1 hour later he comes to same point P after one complete round. find his speed. (take pi=22/7)** (a) 30km/hr (b) 40km/hr (c) 44km/hr (d) 33km/hr **(iv) A man travelled on square field of side 10m .he completed one round of field by taking time 2s, 3s 1s and 2s respectively for each side. Find his average speed.** (a) 4m/s (b) 5m/s (c) 6m/s (d) 7m/s **(v) What happens when a body is moving with constant speed?** (a)acceleration is non uniform (b)velocity is uniform (c)velocity is changing (d)none of these During the practice for the periodic test exam Amit, of class IX, was given some graphical questions from his teacher (graphs shown below). From where Amit had to find out the real life examples of objects under motion for the respective graphs. Follow the graphs given below for five different objects. They are respectively s-t, v-t, a-t, v-t and a-t. The graphs below shows the relation between the two physical quantities but never tells you much about the real objects. However we can observe the nature of the graph and predict the real life examples which will suit the graphs.	





(i) In the first graph the object is
(a) at rest
(b) at motion uniformly
(c) at motion non-uniformly
(d) moving in a circular track
(ii) In the second graph the best suitable example is
(a) a train running with 120 km/h
(b) an aeroplane taking off from the airport
(c) rotation of the hands of the clock
(d) a boy dropped a stone from the roof of a tall building
(iii) In the third graph the best suitable example is
(a) a train running with 120 km/h
(b) an aeroplane taking off from the airport
(c) rotation of the hands of the clock
(d) a boy dropped a stone from the roof of a tall building
(iv) In the fourth graph the best suitable example is
(a) a train running with 120 km/h
(b) an aeroplane taking off from the airport
(c) rotation of the hands of the clock
(d) a boy dropped a stone from the roof of a tall building
(v) In the fifth graph the best suitable example is
(a) a train running with 120 km/h
(b) an aeroplane taking off from the airport
(c) rotation of the hands of the clock
(d) a boy dropped a stone from the roof of a tall building

CHEMISTRY

1. COMPLETE THE FIRST CHEMISTRY EXPERIMENT IN LAB MANUAL. FOLLOW THE INSTRUCTIONS GIVEN IN LAB MANUAL.
2. PREPARATION OF a) A TRUE SOLUTION OF COMMON SALT,SUGAR AND ALUM b) A SUSPENSION OF SOIL, CHALK POWDER AND FINE SAND IN WATER c) A COLLOIDIAL SOLUTION OF STARCH IN WATER AND EGG ALBUMIN/MILK IN WATER AND DISTINGUISH

BETWEEN THESE ON THE BASIS OF TRANSPARENCY FILTRATION CRITERION AND STABILITY

CLASS IX CHEMISTRY CHAPTER 1 – MATTER IN OUR SURROUNDINGS CASE STUDY QUESTIONS

1. In an experimental activity, crushed ice was taken in a beaker. A thermometer is fitted in such a way that its bulb was thoroughly surrounded by ice. The beaker is now slowly heated and temperature was regularly noted. Temperature rises gradually as the heating is continued and becomes constant when ice starts changing into liquid.

Select the correct answers for the following questions:

i) What name is associated with conversion of ice into water?

a) Evaporation b) Sublimation c) Freezing d) Fusion of Solid

ii) What specific name is given to the constant temperature?

a) latent heat of fusion b) Boiling Point c) Melting Point d) Condensation point

iii) The heat added to the system at constant temperature is called

a) specific heat b) latent heat c) residual heat d) none of the above

iv) Where does the heat energy go when the temperature does not rise?

a) It makes the molecular motion of the liquid faster b) It raises the temperature of the beaker only. c) It is utilised for bringing out the complete change of state d) It slows down the molecular motion

2. A hot air balloon has three major parts: the basket, the burner, and the envelope. The basket is where passengers ride. The basket is usually made of wicker. This ensures that it will be comfortable and add little extra weight. The burner is positioned above the passenger's heads. The envelope is the colourful fabric balloon that holds the hot air. The pilot can control the upand-down movements of the hot air balloon.

Answer the following questions.

1. What keeps a hot air balloon flying?

2. How the balloon’s pilot can control the balloon’s altitude?

3. Using the passage as a guide, it can be inferred that which of the following statements is not true? (a) Air goes up and out the top of a chimney when you light a fire. (b) Cool air collects about the ceiling when you open a refrigerator. (c) Smoke from a candle rises after you blow out the flame. (d) Cold air coming from an air conditioning vent settles about the floor

4. According to the author, wicker is

I. Comfortable II. light weight III. Durable

a) I only b) I and II only c) II and III only d) I , II and III 3. Temperature can be expressed in three important scales. These are Celsius scale (°C), Fahrenheit scale (°F) and Kelvin scale (K). Kelvin scale is often used to express temperature in scientific data. Temperature in any one scale can be easily converted into another scale by using the following equations.

If x is the temperature on Celsius scale , then x °C = (x+273) K and x°C = [(9/5)x + 32] °F

Answer the following questions using above information

i) What is the boiling point of water in Kelvin scale?

ii) If x°C = x°F, what is the value of x?

iii) Freezing point of water is

a) 0 K b) 0°F c) 273 K d) 273°F

iv) If temperature of certain oil is 65°C, what is the corresponding temperature on Kelvin scale?
a) 330 K b) 155 K c) 298 K d) 338 K

4. An ice cube weighing 100 g and having volume V is taken out of the freezer at -10°C and placed in a glass beaker. The beaker is slowly heated till the temperature becomes 25°C. Answer the following questions on the basis of given information.

i) If we measure the temperature of the content of beaker and plot it in a function of time, how will the graph appear?

ii) At what stage, the temperature will become constant for some time although heating is continued?

iii) The heat absorbed at the constant temperature during the process is called a) Heat capacity b) melting point c) heat of absorption d) latent heat of fusion

iv) Once the ice cubes completely get converted into water, the volume of water will be
a) equal to V b) more than V c) equal to 2V d) less than V

BIOLOGY

PRACTICAL FILE PREPARATION

INSTRUCTIONS TO MAKE PRACTICAL NOTE BOOK:

- Students must write their practical experiments in laboratory note book any one either in Shoelace file or hardbound file.
- Students must follow the proper format of experiments available in lab manual during writing.
- Diagrams need to be drawn on white page only (Left side) with proper labeling and caption.
- Insert content page at the beginning of practical file.
- Put experiment no. for each practical topic/experiment.

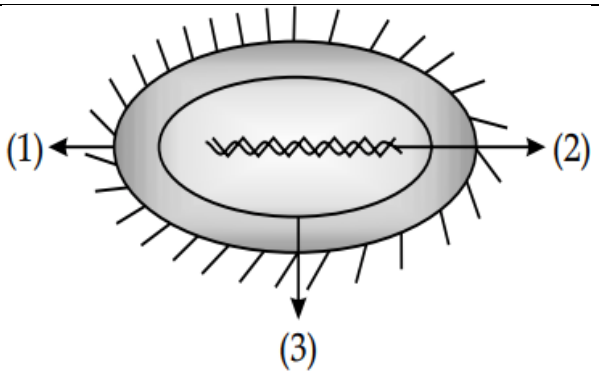
PRACTICAL TOPICS

1. Preparation of stained temporary mounts of (a) onion peel, (b) human cheek cells & to record observations and draw their labeled diagrams.
2. Identification of Parenchyma, Collenchyma and Sclerenchyma tissues in plants, striped, smooth and cardiac muscle fibers and nerve cells in animals, from prepared slides. Draw their labeled diagrams.

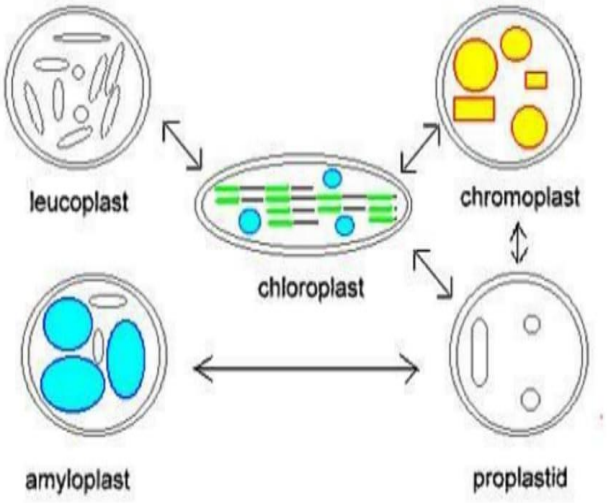
CASE STUDY BASED QUESTIONS SOLVING INSTRUCTION:

- Students must write the answers of case based questions in subject copy only.

1. Study the given diagram of bacterial cell and answer any four questions from (i) to (v).



(i) Label the parts marked 1, 2, and 3.
(a) 1- Nucleus, 2-Cell wall, 3- Plasma membrane.
(b) 1-Cell wall, 2- Nucleoid, 3- Plasma membrane.
(c) 1- Cytoplasm ,2- Nucleus, 3- Cell wall.
(d) 1- Nucleus, 2-Cytoplasm, 3- Cell wall.
(ii) Which structure present in the region 2 of a living cell bear genes?
(a) Chromosome
(b) Plasma membrane
(c) Cytoplasm
(d) Cell wall
(iii) How nuclear region of a bacterial cell and nuclear region of an animal cell is different from each other?
(a) Nuclear region of bacterial cell is well defined but lacks any covering while nuclear region of an animal cell is poorly defined and membrane bound.
(b) Nuclear region of bacterial cell is poorly defined and has a covering while nuclear region of an animal cell is poorly defined and membrane bound.
(c) Nuclear region of bacterial cell is poorly defined and lacks any covering while nuclear region of an animal cell is well defined and membrane bound.
(d) Nuclear region of bacterial cell is poorly defined and lack any covering while nuclear region of an animal cell is well defined and membrane bound.
(iv) Which of the following statement is correct?
(a) A single cell cannot perform all the life processes independently.
(b) A single cell can perform all the life processes independently.
(c) A single bacterial cell always needs another cell to carry out the life processes.
(d) A bacterium is a multicellular organism.
(v) An example of single celled organism is :
(a) Bird
(b) Fish
(c) Snake
(d) Amoeba
2. Leucoplasts are colourless plastids. They store starch, oil, proteins. Chromoplasts are coloured plastids. They contain pigments. e.g. Chloroplasts contain green pigment present in the plant cell. Chromoplasts provide colour to various flowers and fruits.

	 (i) What is the function of leucoplasts? (a) They store starch, oil, proteins. (b) They provide colour various flowers and fruits. (c) They help in photosynthesis. (d) They give support to the plants. (ii) Which plastids provide colour to fruits and flowers? (a) Leucoplasts (b) Chromoplasts (c) Chloroplasts (d) Proteinoplast (iii) Which of the following statement is true? (a) Plastids are present in both plant and animal cell. (b) Plastids are absent in plant as well as animal cell. (c) Plastids are present only in plant cell. (d) Plastids are present only in animal cell. (iv) Which plastids contain green pigment? (a) Leucoplasts contain green pigment. (b) Chloroplasts contain green pigment. (c) Chromoplasts mainly contain green pigment. (d) None of the plastids contain green pigment. (v) Which plastids bring about the process of photosynthesis? (a) Leucoplasts (b) Chloroplasts mainly (c) Chloroplasts (d) None of the plastids bring about photosynthesis	
SOCIAL SCIENCE	**Disaster Management–CYCLONE TAUKTAE–A NaturalDisaster** **✓(Project content should be covered within 15 pages including coversheet, acknowledgement, Content, Bibliography)** **✓Omit using Colours like–Red, pink, orange** **✓Colours which could be used – Blue, Brown, Green, Violet, Black** **✓You can use newspaper clippings, maps, diagrams and other relevant material.** **✓The project has to be a handwritten project.** **✓Project should be done in Practical Sheets and tied in a lace file provided by the school**	Social Skill Critical Thinking Creative Informative

	The project should be done in the following chronology: **✓Cover Page –Name, Class, Section, Roll** **✓Acknowledgement** **✓Content** **✓Introduction –** **✓Definition of Cyclone** **✓Causes of Cyclone** **✓ Extent of damage to agriculture** **✓Steps taken by the Govt. to combat drought** **✓Organizations working to help the farmers** **✓Dos and don'ts for next time to avoid such disasters** **✓Conclusion** **✓Bibliography** **(Project should contain relevant information as guided above with pictures)**	
INFORMATION TECHNOLOGY	Make a PPT on Different Types of Employability Skills and their advantages and disadvantages. The ppt should contain at least 10 slides. First slide containing topic of the project and self introduction and last slide should have the Conclusion (your view on the topic). Take print out of all the slides file them in a practical file.	

N.B: Details of the Projects have been uploaded on ERP as well as shared on the official class What'app group.