



# MAYOR WORLD SCHOOL

## JALANDHAR CITY

### GRADE IX (HOLIDAY HOMEWORK 2022-23)

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## ENGLISH

### General Instructions:

- All the tasks should be done properly and neatly.
  - Use A4 size sheets to complete your first task and fourth task.
  - All the sheets to be properly arranged in an office folder.
  - For the second task, use a thin note-book.
- I. Read the story and create a comic version of The Adventures of Toto given in your Supplementary Reader- Moments  
Your comic strip should -
- have minimum six panels
  - include dialogue writing in each panel
  - be beautiful and attractive
- II. Watch one of the following movies and write a film review for the same in about 150-200 words:
- The sound of Music
  - Interstellar
  - Life of Pi
  - The Mysterious Island

Comment on the story, characters, theme, music and ending. Give a catchy title to your review.

- III. Choose one of the following topics to speak on for 1-2 minutes and record your video speaking on the topic you have chosen.
- What happiness means to me
  - What rights should animals have?
  - If I could change one thing in the world, it would be.....
  - My secret life as a spy
  - The strangest person I have ever met

The video must be sent on following e-mail ids:

IX A:

[mws.anuradhawadhawan@gmail.com](mailto:mws.anuradhawadhawan@gmail.com)

IX B:

[mws.shubhangikhosla@gmail.com](mailto:mws.shubhangikhosla@gmail.com)

IX C:

[mws.ruhanidhindsa@gmail.com](mailto:mws.ruhanidhindsa@gmail.com)

#### **IV. Create your Portfolio using the following guidelines:**

1. Index should be written in a tabular form along with serial number and content .
  2. Describe yourself (built, appearance, etc.) along with the pictures.
  3. A complete SWOT analysis should be written. (mention your strengths, weaknesses, goals/aims, threats)
  4. Samples of your contribution in literary field. (poems/stories/articles)
  5. Samples of your contribution in art work (paintings/ sketches/drawings)
  6. Your achievements of last five years/ certificates/ medals/ scholarships
- The portfolio will be assessed using the following parameters:

1. Neatness
2. Creativity
3. Visual appeal
4. Inclusion of all relevant work

## **MATHEMATICS**

- Part - A is the project.
- Part - B is the revision sheet, which is recapitulation of the work which has been done so far
- Do the revision worksheet and questions from Exemplar Book in the Mathematics Exemplar notebook.
- Attempt all the questions neatly and in serial order.
- Kindly submit the holiday homework after summer break by 18th July 2022.

### **PART A**

#### **Project Work**

#### **IDENTIFY AND COLOUR**

Draw a grid of 10 rows and 10 columns on a A4 sheet and fill the boxes with numbers starting from 1 to 100 and indicate the following categories with different colours (you can colour the boxes also)

- Prime Numbers
- Perfect Square Numbers
- Perfect Cubic Numbers
- Fibonacci Series

#### **Activity : Area of Circle by Coiling Method**

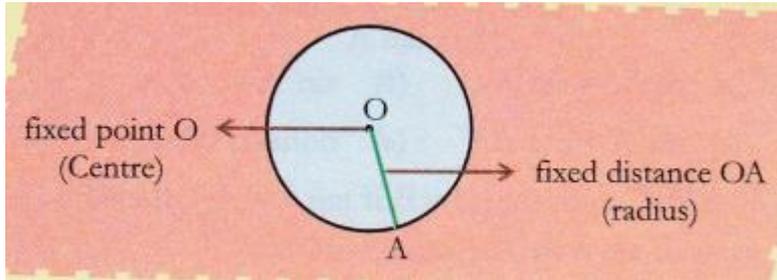
Note : Complete the activity in the Mathematics register

#### **Objective**

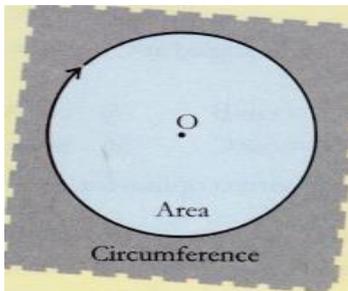
To obtain the formula for area of a circle i.e.  $\pi r^2$  by coiling method.

## Prerequisite Knowledge

1. **Definition of circle** : A circle is the locus of a point in a plane which moves in such a way that its distance from a fixed point remains constant. Fixed point is known as centre and the fixed distance is known as radius of the circle.



2. **Area of the circle** : It is the measure of the region of a plane enclosed by it.
3. **Circumference of the circle**: Total length of its boundary  
( $C = 2\pi r$ , where  $r$  is radius of the circle)



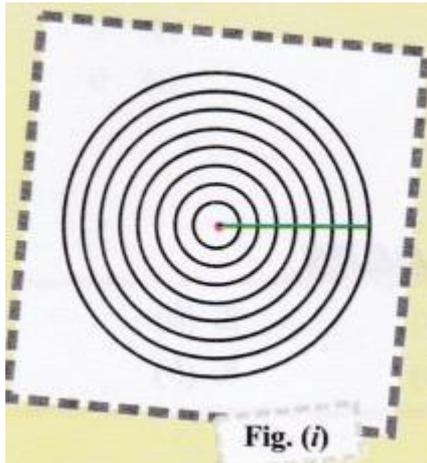
4. **Area of triangle** :  $\frac{1}{2} \times \text{Base} \times \text{height}$
5. **Concentric circles** : Circles having same centre.

### Materials Required

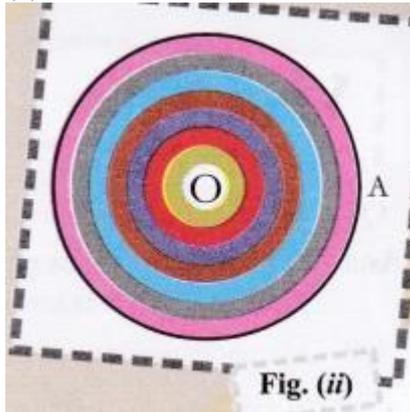
Thick string or coloured threads, cutter, a pair of scissors, fevicol, geometry box.

### Procedure

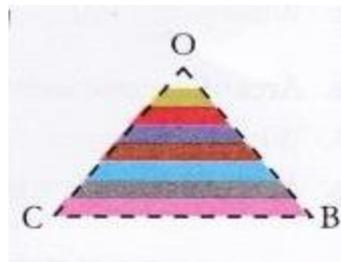
1. Construct a circle of radius  $r$ , (take  $r = 3.5$  cm) using compass and draw concentric circles of smaller radius as shown in fig. (i).



- Fill the area of drawn circle with concentric circles made of different coloured strings or thread, so that there is no gap between the threads as shown in fig. (ii).



- Last smallest circle be a point circle.
- With the help of scissors, cut the coloured circular threads along the radius OA.
- Open all the threads and arrange each thread as a straight line.
- Place each thread one over another starting from thread of the largest circle to the smallest circle in such a way that it forms a triangular shape as shown in fig.



#### Observation

- The triangular shape so formed out of the threads, area of the circle is the same as the area of triangular shaped.
- Base of the triangle is the circumference of the circle (The largest thread) i.e.  
Base of triangle =  $2\pi r$
- Vertical height of the triangular shape = radius of the circle.
- Area of triangle =  $\frac{1}{2} \times B \times H = \frac{1}{2} \times 2\pi r \times r$   
=  $\pi r^2$

$$\therefore \text{area of the circle of radius } r = \pi r^2$$

#### Result

The figure formed in this activity is almost the shape of the triangle, therefore the area of this triangle so formed is equal to the area of the circle i.e.  $\pi r^2$  sq. units.

#### Learning Outcome

Students observe that the area of the circle is  $\pi r^2$  i.e. half the product of its circumference and radius.

#### Activity Time

Using the above activity find the area of circle taking radius as 4.2 cm.

## Part B

**I. Enhance your Practice Skills:** Do the following questions from NCERT Exemplar Book. They are to be done in Mathematics Exemplar notebook.

Exercise	Question Number
Ex 1.2	3 and 4
Ex 1.3	7, 9, 10, 12, 14
Ex 1.4	3, 5 and 7
Ex 2.2	1 and 2
Ex 2.3	3, 9, 18, 20, 21, 28, 29, 35, 37, 38, 39
Ex 2.4	2, 3, 5, 7, 9

## **II. Practice Worksheet (To be done in Exemplar notebook)**

Q1. Is  $\sqrt{x+5}$  a polynomial? Give reasons

Q2. Show that  $(x+3)$  is a factor of the polynomial,  $p(x) = x^4 + x^3 - 7x^2 - x + 6$

Q3. Prove that  $(a+b+c)^3 - a^3 - b^3 - c^3 = 3(a+b)(b+c)(c+a)$

Q4. Find the value of  $a$  and  $b$  such that  $(x+1)$  and  $(x-3)$  are the factors of the polynomial.

$$x^3 + ax^2 + 5x + b.$$

Q5. Simplify (i)  $(a+b+c)^2 + (a-b+c)^2$  (ii)  $(a+b-c)^2 - (a-b+c)^2$

Q6. If  $p(x) = 4x^3 - 3x^2 + 2x - 4$ , evaluate  $\frac{p(2)}{p(0) \times p(1)}$ .

Q7. Find the value of  $k$  if (i)  $3x^2 + kx + 6$  is exactly divisible by  $(x+3)$

(ii)  $2y^3 + ky^2 + 11y + k + 3$  is exactly divisible by  $(2y-1)$

Q8. Find the remainder when  $p(x) = 3x^4 + 2x^3 - \frac{x^2}{3} + \frac{2}{27}$  is divided by  $\left(x + \frac{2}{3}\right)$ .

Q9. Check whether  $p(x)$  is multiple of  $g(x)$  or not:

$$p(x) = 2x^3 - 11x^2 - 4x + 5, \quad g(x) = 2x + 1$$

Q10. If  $x = 1 - \sqrt{2}$  find the value of  $\left(x - \frac{1}{x}\right)^3$

Q11. Find the value of  $a$  and  $b$  from  $\frac{5 + \sqrt{3}}{7 - 4\sqrt{3}} = a + \sqrt{3}b$ .

Q12. If  $x = \frac{\sqrt{7}}{x}$  and  $\frac{5}{x} = p\sqrt{7}$ , then find the value of  $p$ .

Q13. If  $x = 4 + \sqrt{15}$ , find the value of  $16x^2 + \frac{1}{x^2}$ .

Q14. Factorise  $2x^3 + 7x^2 - 3x - 18$

Q15. Simplify  $\frac{2\sqrt{3}}{\sqrt{3}-\sqrt{2}} + \frac{3\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ .

Q16. If  $\frac{3^{2x-8}}{225} = \frac{5^3}{5^x}$ , then find the value of x.

Q17. Find the value of  $\frac{(2.3)^2 - 0.027}{(2.3)^2 + 0.69 + 0.69}$ .

## SCIENCE

*Science is fun. The motive of the holiday homework in Science is to bring out the joy in observing experimenting and learning science. Let the children be left to their imagination – browse the net, draw a sketch, splash the colours and enjoy the holidays and complete their work.*

**Practicals:** Complete the following list of experiments in the Physics practical file and submit the same to your physics teacher.

- Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder.
- Establishing the relation between the loss in weight of a solid when fully immersed in
  - Tapwater
  - Strongly salty water with the weight of water displaced by it by taking at least two different solids.

**Where to do:** Physics practical file.

**What to write:**

**White page side-** AIM, MATERIAL REQUIRED, DIAGRAM. (Use pencil on white side).

**Ruled side-** AIM, MATERIAL REQUIRED, THEORY, PROCEDURE, PRECAUTIONS, RESULT.

**To be done by all students.**

**• Prepare a working model on the topic given below:**

**Roll no. 1-5**

### TRANSFORMATION OF ENERGY



**Examples of object can be- Fire crackers, Hydrogen bomb, Nuclear bomb, Dams, electric fan, bulb, Electric geyser, toaster, Electric motor, pedaling a bicycle, Pushing or pulling a almirah, Shooting a bullet from gun, Photosynthesis in plants, Cell, Petrol or diesel, Microwave oven etc**

<https://images.app.goo.gl/wNFS6QN4hAGW4hir5>

Roll no. 6-10

### INERTIA AND ITS TYPES WITH EXAMPLES

Same model you have to prepare like above in energy transformation

1 column -Examples like -

If pulled quickly, a tablecloth can be removed from underneath the dishes.

Seat belts tighten in a car when it stops quickly.

When you stir coffee or tea and stop, the swirling motion continues due to inertia of \_\_\_\_\_.

and many more examples.

2 column- First law, Second law and third law

Roll no.11-15

### NEWTON LAWS OF MOTION

<http://www.commoncorematerial.com/2017/03/newtons-3-laws-of-motion-wheel-foldable.html?m=1>

Write all three Newton laws and real life examples in the form of model given below.

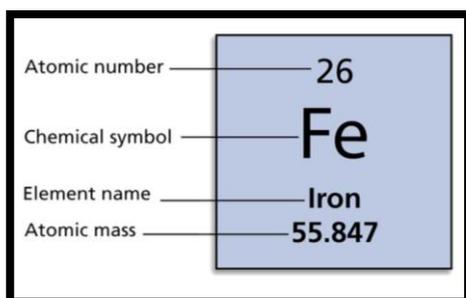


### CRITERIA FOR EVALUATION:

Presentation, Useful content, Innovation ,Creativity ,Research,Neatness.

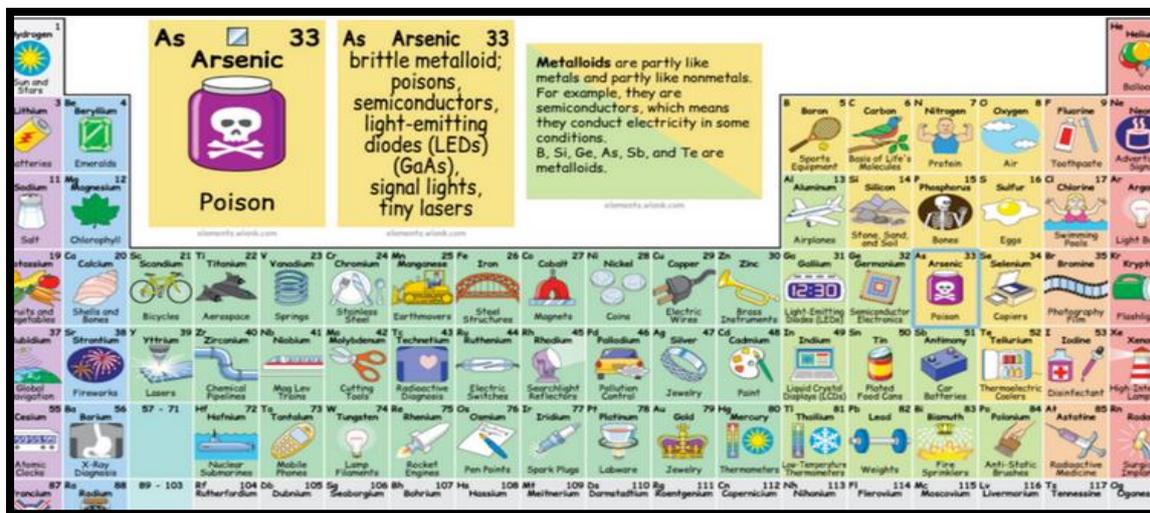
### CHEMISTRY

1. Design 3-D model of atomic symbol of elements 1-20 including their real life origin/application/source.



References:

Fig- ATOMIC SYMBOL



**Fig- PERIODIC TABLE SHOWING ELEMENTS ALONGWITH THEIR REAL LIFE APPLICATION**

**To be done by the roll no. :- 16-23**

**Note:-** Kindly submit your 3D model to your chemistry teacher.

2. Making Natural Colours with Flowers | Extracting Natural Pigments from plants | Preparing Eco Friendly Colours

Video links for reference: <https://youtu.be/XtwyeamFkBQ>  
<https://youtu.be/1aJ0I3EcehA>



**To be done by the roll no. :- 24-30**

**Note:-** Kindly submit the ivory sheet containing eco friendly colour samples to your chemistry teacher.

**CRITERIA FOR EVALUATION:**

**Neatness, Presentation, Useful content, Innovation ,Creativity , Research and Investigation**

3. Complete the following list of experiments in the chemistry practical file and submit the same to your chemistry teacher.

1. 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 colloidal solution of starch in water and egg albumin/milk in water and distinguish between

These on the basis of:-

- Transparency
- Filtration criterion
- Stability

2. Preparation of :-

- a) A mixture
- b) A compound

Using iron filings and sulphur powder and distinguishing between these on the basis of:

- (i) Appearance, i.e., homogeneity and heterogeneity
- (ii) Behaviour towards a magnet
- (iii) Behaviour towards carbon disulphide as a solvent
- (iv) Effect of heat

3. Perform the following reactions and classify them as physical or chemical changes:

- Iron with copper sulphate solution in water
- Burning of magnesium ribbon in air
- Zinc with dilute sulphuric acid
- Heating of copper sulphate crystals
- Sodium sulphate with barium chloride in the form of their solutions in water

**General Instructions:-**

- On blank side:- Date, Aim of experiment, Diagram, Observation table and Result
- On ruled side:- Date ,Aim of experiment, Procedure, Precautions and Result
- Use only pencil on white page/ blank page.
- On ruled page you can use black and blue ink accordingly.

**CRITERIA FOR EVALUATION: Content, Presentation and Neatness**

**To be done by the roll no. :- 1-30**

## **BIOLOGY**

“Science is telling us we can do phenomenal things if we put our minds and resources to it.”

- Anthony S. Fauci

**Activity: Prepare a Project Report on the Topic “Natural Resource”.**



**Instructions: 1. Use A-3 size file pages to write your Project report.**

**2. Project report must cover the following pages:**

- (i) Front page.
- (ii) Acknowledgement Page.
- (iii) Introduction of the topic.
- (iv) At least 5 pages of inner content of the topic with relevant pictures.
- (v) 2 Pages on recent studies of topic in India.
- (vi) References/ bibliography (websites names, links, journals, books name; at least 5)

**3. Cover Page of the Project report must include slogan related to the topic.**

**Along with that it must have the following information; School name, Grade/ Section, Project name, Name of the Student and Name of the Subject Teacher.**

S.No.	Name of the Topic	Potential/ Area to be covered	Allotted Roll number
1.	Introduction of Natural Resources	What are natural resources? Why we need to conserve them?	1,30
2.	Role of atmosphere	Air pollution and poor quality of air	2,29
3.	Ozone layer	Cause of depletion, Record breaking 2020 ozone hole closes	3,28
4.	Green House Effect	Causes of Green house effect, Is it harmful or useful?	4, 27
5.	Water Pollution	Cause, Prevention and control Act, 1974	5, 26
6.	Hydrological Cycle	Factors affecting hydrological cycle, Water table decline why?	6, 25
7.	Soil Health	Its Formation, Composition, Pollution and erosion.	7,24
8.	Bio –geo chemical cycle	Carbon, Nitrogen and Oxygen Cycle What are the reasons for imbalance?	8,16 and 23
9.	Recycled Water	Would you drink it? Pros and cons of storm water harvesting.	9,22
10.	Marine Parks	Why do we need marine parks? How do we balance the fishers with the need of the environment?	10,21
11.	Waste audit	Ways to reduce and dispose the solid waste	11,20
12.	Future Visioning	How can I save resources, Role of sustainable development	12,19
13.	Technology in agriculture	How is technology responsible for high yield but poor quality of food	13,18
14.	Marine debris( litter)	Cause of litter and ways to reduce it	14,17

## **CRITERIA FOR EVALUATION:**

**Neatness, Presentation, Useful content, Innovation, Creativity, Research and Investigation**

**Thank you.**

## **SOCIAL SCIENCE**

### **Geography**

Prepare a project file on any one of the following natural disasters: -

- Earthquake
- Forest Fire
- Landslides
- Floods
- Drought
- Cloud Burst

The project report should cover following points: -

- Causes
- Impact
- Mitigation strategies
- Case study (Recent evidences with pictures)

NOTE: - The project report should be presented in the following order: -

- Cover page showing project title, student information and year
- List of contents with page number

### **History**

Choose any one country starting with any letter of your first name. Eg. ANITA

A: Australia    N: New Zealand    I: India    T: Turkey    A: Afganistan

Explore the country from Google covering following:

1. Name of the country
2. Population
3. Area
4. National Flag
5. Type of Government
6. Capital
7. Currency
8. Cuisine
9. Culture
10. Tourist Places

Do activity on notebook and paste the picture as well.

## HINDI

1. एक विल्लकुल हरे पेड़ को काटने के लिए कुछ लोग कुल्हाड़ियाँ लिए खड़े हैं। कल्पना के आधार पर उस पेड़ और उसे काटने के लिए आगे बढ़ रहे आदमी के बीच हुए संवाद को 60–70 शब्दों में लिखिए।
2. प्रसिद्ध कहानीकार मुंशी प्रेमचंद द्वारा लिखित किन्हीं दो कहानियों को पढ़ें तत्पश्चात् कहानी के भाव विषय पर चिंतन मनन करें। उन कहानियों से मिलने वाली शिक्षा पर अपने परिवार के सदस्यों के साथ चर्चा कीजिए। उस शिक्षा पर आधारित अपनी चर्चा पर आधारित स्वयं कहानी रचना कलमवद्ध करें।
3. पुस्तकालय या मेले का चित्र चिपकाकर 30–40 शब्दों में चित्र वर्णन कीजिए।
4. श्याम और श्वेत फिल्म और वर्तमान युग में चल रही पी.वी.आर सिनेमा की फिल्म के अंतर को अनुभव करते हुए सचित्र अपनी प्रतिक्रिया 50–70 शब्दों में लिखिए।
5. निम्नलिखित शब्दों में उचित स्थान पर अनुस्वार एवं अनुनासिक चिह्न का प्रयोग कीजिए।  
घूषट, कुआ, अगीठी, आशका, प्रारभ, कबल, महगाई, सदेह, हसी, क्रियाए।
6. दो दो पर्यायवाची शब्द लिखिए।  
खिड़की, ध्वनि, तपस्या, नींद, डगर, एकता।
7. अपने घर अथवा पड़ोस के किसी वरिष्ठ व्यक्ति के समय की शिक्षा प्रणाली पर चर्चा करते हुए अपनी आधुनिक शिक्षा प्रणाली के साथ तुलना करते हुए सारी बातचीत को रिकार्ड कीजिए।

## PUNJABI

ਨੋਟ-ਫ਼ਾਈਲ ਤੋਂ ਬਿਨ੍ਹਾਂ ਬਾਕੀ ਕੰਮ ਇੱਕ ਅਲੱਗ ਕਾਪੀ ਵਿਚ ਕੀਤਾ ਜਾਵੇ।

1. ਹੇਠ ਲਿਖੇ ਵਿਸ਼ਿਆਂ ਵਿਚੋਂ ਕਿਸੇ ਇੱਕ ਵਿਸ਼ੇ ਤੇ 6 ਤੋਂ 7 ਪੰਨਿਆਂ ਦੀ ਤਸਵੀਰਾਂ ਸਹਿਤ ਫ਼ਾਈਲ ਬਣਾਉ।  
ੳ. ਸੁਲੇਖ  
ਅ. ਦਿਨ-ਤਿਉਹਾਰ ਬਾਰੇ ਜਾਣਕਾਰੀ  
ੲ. ਪੁਰਾਤਨ ਸੱਭਿਆਚਾਰ ਬਾਰੇ ਜਾਣਕਾਰੀ  
ਸ. ਲੋਕ-ਗੀਤ  
ਹ. ਚਲੰਤ ਘਟਨਾਵਾਂ ਦਾ ਵੇਰਵਾ
2. ਆਪਣੀ ਕਾਪੀ ਵਿਚ ਦੋ ਦਫ਼ਤਰੀ ਅਤੇ ਦੋ ਨਿੱਜੀ ਪੱਤਰ ਲਿਖੋ।
3. ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ ਨਾਲ ਸੰਬੰਧਿਤ ਇੱਕ ਚਿੱਤਰ ਲਗਾ ਕੇ ਚਿੱਤਰ ਵਰਣਨ ਕਰੋ।
4. ‘ਯੂ-ਟਿਊਬ’ ਤੋਂ ‘ਪੰਜਾਬੀ ਕਲਾਸ’ ਚੈਨਲ ਤੋਂ ਵਿਸਾਖੀ ਦਾ ਮੇਲਾ ਦੀ ਵੀਡੀਉ ਦੇਖੋ ਤੇ ਉਸ ਦਾ ਵਿਸ਼ਾ ਲਿਖੋ।