

Padagogy plan.Class-10
Subject -Mathematics
Topic- Real numbers

Energize Learner -before starting class

Ice breaker activity-students will recognize number from slip box.

To start class (objectives)

- Students will be able to find out H.C.F of two given numbers using Euclid's Algorithm
- Students will be able to find H.C.F and L.C.M using prime factorisation
- Students will be able to use the formula $H.C.F \times L.C.M = \text{product of two number}$
- Students will be able to prove \sqrt{p} is an irrational number
- Students will be able to recognise the numbers are terminating or non terminating rational numbers.

Navigate content

Lecture cum explanation method.

<https://youtu.be/t1ME5P3Tfkw>

Review -<https://youtu.be/HM2s0p86Qpk>

Roll play on Number system

Generate meaning-

- students are able to find out HCF of two numbers using euclid's algorithm
- students are able to find HCF and LCM using prime factorization
- students are able to use formula $H.C.F \times L.C.M = \text{product of two numbers}$
- students are able to prove \sqrt{p} is an irrational number

students are able to recognise the numbers are terminating or non terminating rational numbers.

Apply to real life - demonstrate skill

https://diksha.gov.in/play/content/do_31279854059268505616683?referrer=utm_source%3Ddiksha_mobile%26utm_content%3Ddo_312796455240941568116824%26utm_campaign%3Dshare_content

Gauge the learning -

Students will make the crossword puzzle on A4 colour sheet and solve it.

extended learning-

- MLL (minimum level learning worksheet for slow learners)
- worksheet for average students
- worksheet for extra ordinary students.

Pedagogy Plan

Class-x Subject- Maths
Ch-2 Polynomial

Energize learners	Before starting class	dog and bone activity
	to start class	<ul style="list-style-type: none"> ● students will be able to recognise variables constant and polynomial. ● students will be able to understand the difference between zeros and roots. ● students will be able to find the zeros of the polynomial. ● students will be able to make the quadratic polynomial if zeros are given. ● students will be able to divide the given polynomial by the another polynomial.
navigate content	teach	lecture cum demonstration method, handouts related to the chapters.
	review	https://youtu.be/wP-DrNWikmY
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> ● students are able to recognise the constant variable algebraic expression and polynomial. ● students are able to understand how to find the zeros of polynomial and relation between zeros and coefficient. ● students are able to make the quadratic polynomial if zeros are given. ● students are able to

		divide the given polynomial by another polynomial.
apply to real life	demonstrate skills	Q1. if one zero of the polynomial $5x^2+13x-p$. is reciprocal of the other ,then find p. Q2. write a quadratic polynomial sum of whose zeros is $2\sqrt{3}$ and product is 5.
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio /journal.	students will make PPT on the topic polynomial.
Extend	extended activities	https://youtu.be/k5mCwH6FZtA

Pedagogy Plan Ch- 6(Triangle) Class - X

energize learners	before starting class	Teacher will bring object of different shape and size for explaining similarity.
	to start class	<ul style="list-style-type: none"> • Students will be able to recognise the different type of triangles. • Students will be able to recognise similar figures. • Students will be able to differentiate similarity and congruence. • Students will be able to identify the condition that define the similarity of triangle. • Students will be able to understand the theorem BPT ,Area ratio theorem, Pythagoras theorem and Converse of Pythagoras theorem.
navigate content	Teach	lecture and demonstration method, handouts related to the chapter and videos. https://youtu.be/Am4mYSnhflc .
	review	tessellation activity. https://youtu.be/M_r3JuF8MoY
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> • Students are able to recognise the different type of triangles. • Student are able to recognise the similar figures. • Students are able to differentiate similarity

		<p>and congruence.</p> <ul style="list-style-type: none"> • Students are able to find the condition that define the similarity of triangle. • Students are able to understand the theorems BPT, Area ratio theorem, Pythagoras theorem and Converse of Pythagoras theorem.
apply to real life	demonstrate skills	<p>Q1- An aeroplane leaves an airport and flies due north at a speed of 100 km per hour at the same time another aeroplane leaves the same airport and flies due West at a speed of 1200 km per hour. How far apart will be the two planes after 1 hour 30 minutes?</p>
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal.	<p>Making working model of Pythagoras theorem.</p> <p>https://youtu.be/rCvVSDX25hY</p>
extend	extended activities	<p>Student will explain the properties of different shape by integrating art.</p> <p>https://youtu.be/USEEoLYQ9Yw</p>

Pedagogy plan
ClassX

ch-8(Trigonometry)

energize learners	before starting class	<p>pre assessment quiz</p> <ul style="list-style-type: none"> define right angle triangle. tell the name of all sides of a right angle triangle. make all possible ratios with the help of all side of a right angle triangle.
	to start class	<ul style="list-style-type: none"> students will be able to know about the right angle triangle and Pythagoras theorem. students will be able to understand the meaning of trigonometry, trigonometric ratios reciprocal and complementary of trigonometric ratios. students will be able to find the value of trigonometric ratios at specific angles such as $0, 30^\circ, 60^\circ, 45^\circ, 90^\circ$. students will be able to use trigonometric identities to solve the questions.
navigate content	teach	<p>lecture cum demonstration method handouts related to chapter , video/visual.</p> <p>https://youtu.be/crGAznjUeeq</p>
	review	<p>https://youtu.be/xXGfp9PKdXM</p>
generate meaning	move to long term memory through reflection :ask the class the following and tell them to enter into their	<ul style="list-style-type: none"> students are able to know about the right angle triangle and Pythagoras theorem

	portfolio.	<ul style="list-style-type: none"> students are able to understand the meaning of trigonometry, trigonometric ratios reciprocal and complementary of trigonometric ratios. students are able to find the value of trigonometric ratios at specific angles such as $0^\circ, 30^\circ, 45^\circ, 60^\circ, 90^\circ$. students are able to use the trigonometric identities to solve the question.
apply to real life	demonstrate skills	
gauge the learning	look how much you have learnt ,all this also goes into the portfolio /journals.	students will make a PPT on the topic trigonometry.
extend	extended activities	<p>student will be asked to write about the two mathematician who introduced the Thales theorem and Pythagoras theorem.</p> <p>https://youtu.be/AhFjfCdG61Y</p>

energize learners	before starting class	Teacher will distribute the flash card among students on which trigonometry ratios and value of trigonometric table will be written. After this the students who are having flash cards of trigonometry ratios have to find the partners who are having flash cards of same value of trigonometric table.
	to start class	<ul style="list-style-type: none"> • student will be able to recognise the angle of elevation, angle of depression and line of sight. • students will be able to apply the trigonometric concept to find the height and the distance of an object. • students will be able to understand the problem related to height and distance of an object and solve it
navigate content	Teach	lecture cum demonstration method, handouts related to the chapter and videos https://youtu.be/v3U4vDfJ0IU
	review	Making of clinometer. https://youtu.be/qHeiueRpX7U
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> • And students are able to recognise the angle of elevation angle of depression and line of sight. • students are able to

		<p>apply trigonometry to find the height and distance of an object.</p> <ul style="list-style-type: none"> students are able to understand the problem related to height and distance and solve it.
apply to real life	demonstrate skills	<p>Q1- The angle of elevation of a jet plane from a point A on the ground is 60°. After a flight of 15 second ,the angle of elevation changes to 30°. If the jet plane is flying at constant height of $1500\sqrt{3}$m. find the speed of of jet plane.</p> <p>Q2- A boy standing on a horizontal plane finds a bird, flying at a distance of 100m from him at an elevation of 30°. A girl standing on the roof of 20m high Building find the angle of elevation of the same bird to be 45°.Both the boy and girl are on opposite sides of the bird . Find the distance of the bird from the girl.</p>
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal.	<p>make a working model on application of trigonometry with the help of given video</p> <p>https://youtu.be/a92elXtg-Os</p>
extend	extended activities	<p>podcast</p> <p>https://youtu.be/OVUZX3Fty1o</p>

Pedagogy Plan. Ch 10(Circle) Class -X

energize learners	before starting class	Explain the properties of circle by circular geoboard.
	to start class	<ul style="list-style-type: none"> • Students will be able to recognise the centre, radius, exterior, Interior points ,sector and segment of a circle. • Students will be able to prove that tangent from the external point are equal. • Students will be able to prove that tangent to the point of contact perpendicular to the radius of the circle.
navigate content	Teach	Lecture and demonstration method, handouts related to the topic and videos. https://youtu.be/aRMm_RTGqns
	review	Students will draw the tangent to a circle by paper folding. https://youtu.be/86q36f5cBoo
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> • Students are able to recognise the circle, Centre, radius, tangent, sector ,segment of a circle and point of contact. • Students are able to prove that the tangent from the external point of a circle are equal. • Students are able to prove that tangent to the point of contact are perpendicular to the radius of a circle.

apply to real life	demonstrate skills	Q1- In right angle triangle ABC right angled at B, BC is 12 cm and AB is 5 cm .calculate the radius of the circle inscribed in the triangle.
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal.	Students will make Mandala art. https://youtu.be/ZLA7IEtGEVc
extend	extended activities	Skit https://youtu.be/k4QlqbsNLVE

Pedagogy Plan. Class -X. Ch-12(Area related to circle)

energize learners	before starting class	All the properties of circle will be explained with the help of circular geoboard.
	to start class	<ul style="list-style-type: none"> Students will be able to recognise the circle, sector, segment and code of a circle. students will be able to find the area and perimeter of 2D figures like circle square, rectangle and Triangle etc. students will be able to find the area of sector and segment.
navigate content	Teach	Lecture and demonstration method, handouts related to the chapter and videos. https://youtu.be/hMc_sdcqZuM
	review	Quiz based on formulas of 2D shapes.
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> Student are able to recognise the circle sector segment and chord of a circle. students are able to find the area and perimeter of 2D shapes like circle Triangle, rectangle and square etc. students are able to find the area of sector, segment and length of the arc also.
apply to real life	demonstrate skills	Q1- The wheel of a car are of diameter 70cm each. How many complete Revolutions does each wheel make in one minute when the car is travelling at a speed of 52.8

		Km per hour ? ($\pi = 22/7$)
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal.	<p>Students will verify that the area of a circle is πr^2 by paper cutting and pasting.</p> <p>https://youtu.be/zvyVHYGWei0</p>
extend	extended activities	Different type of worksheets for slow learner ,average and extraordinary student according to their level.

Pedagogy Plan. Ch-13(Surface area and volume) Class X

energize learners	before starting class	Explanation of the surface area and volume with live objects like pen ,pencil, book tube light, chalk box etc.
	to start class	<ul style="list-style-type: none"> • Students will be able to recognise all 3D shapes figure. • Students will be able to find the surface area and volume of the combination of solid figures. • Students will be able to find the surface area and volume of the frustum.
navigate content	Teach	lecture and demonstration method, handouts related to chapter visualisation of solid figures and video . https://youtu.be/BtrEVI7IxJo
	review	Students will present all the formulas of surface area and volume by wheel foldable activity. https://youtu.be/l-ZSPq8urtY
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> • Students are able to recognise all the 3D shapes figure. • Students are able to find the surface area and volume of the combination of solids. • Students are able to find the surface area and volume of the frustum.
apply to real life	demonstrate skills	Q-1 Kuldeep Made bird bath for his garden in the shape of a cylinder with hemispherical depression at

		<p>one end. The height of the cylinder is 1.45 cm and its radius is 30 cm. Find the total surface area of the bird bath.</p> <p>Q-2 A wooden article was made by scooping out a hemisphere from each end of a solid cylinder. if the height of the cylinder is 10 cm, and its base of radius 3.5 cm, find the total surface area of the article .</p>
Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal	<p>Students will prove that the surface area of sphere is $4\pi r^2$ by activity.</p> <p>https://youtu.be/JhLnSEEPydo</p>
extend	extended activities	<p>Extra questions of chapter 13 surface area and volume.</p> <p>https://physicscatalyst.com/Class10/surface-area-volume-worksheet.php</p>

pedagogy plan. Ch -14 (Statistic) Class- X.

energize learners	before starting class	Students will collect the data of the age of their class and find the mean ,median ,mode of the age of their class.
	to start class	<ul style="list-style-type: none"> ● student will be able to find the mean median mode of the ungrouped data. ● students will be able to find the mean of grouped data by direct method ,step deviation method and assumed mean method. ● students will be able to find the mode and median of the grouped data. ● students will be able to make ogive of the given data.
navigate content	Teach	Lecture and demonstration methods ,handouts related to the chapter, Kinesthetic learning and videos. https://youtu.be/gmrWSCoFoS
	review	Students will collect the information of the ages of teachers and and make frequency distribution table. and find the mean,median, mode of the the given data.
generate meaning	move to long term memory through reflection: ask the class the following and tell them to enter into their portfolio.	<ul style="list-style-type: none"> ● students are able to find the mean ,median mode of the ungrouped data. ● students are able to find the mean of the grouped data by direct method ,step deviation method and assumed mean

		<p>method.</p> <ul style="list-style-type: none"> • students are able to find the mode and median of the grouped data. • students are able to make the ogive of the given data. 														
apply to real life	demonstrate skills	<p>Q 1- The following data gives the information on the of observed lifetimes of 225 electrical components.</p> <table border="1"> <thead> <tr> <th>Life time .</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>0-20</td> <td>10</td> </tr> <tr> <td>20-40.</td> <td>35</td> </tr> <tr> <td>40-60.</td> <td>52</td> </tr> <tr> <td>60-80.</td> <td>61</td> </tr> <tr> <td>80-100.</td> <td>38</td> </tr> <tr> <td>100-120.</td> <td>29</td> </tr> </tbody> </table> <p>determine the mean ,mode and median of the components.</p>	Life time .	Frequency	0-20	10	20-40.	35	40-60.	52	60-80.	61	80-100.	38	100-120.	29
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Gauge the learning	look how much you have learnt ,all this also goes into the portfolio/ journal.	Students will make PPT on statics														
extend	extended activities	Students will compare the following data of Haryana and Telengana with the help of double bar graph : population ,Universities , Hospitals literacy rate and sex ratio														