

SUBJECT- MATHEMATICS

Grade – IX (2023-24)

Topic: POLYNOMIALS

Brief Description: In this chapter students will be taught about polynomials, algebraic identities, factors of a polynomial, zeroes or roots of a polynomial, factor theorem, factorization of a quadratic polynomial, factorization of cubic polynomials by factor theorem .

Previous Knowledge:

Algebraic expressions, Algebraic identities, Factorization by rearranging (regrouping), taking common, splitting the middle term and using identities.

Specific Learning Objectives

To enable the students to:

S1) Identify Polynomials, terms related to polynomials. **K (Recognizing)**

S2) Find zeroes of a polynomial **U (Understanding)**

S3) To check for zeroes of the polynomials **U (Understanding)**

S4) Factorisation of Polynomials. **AY (Analysing)**

S5) Understand and apply factor theorem. **A (Execute)**

S6) understand and apply algebraic identities. **A (Execute)**

Behavioral Objectives:

B1) Students will apply regrouping/ rearrangement method of factorization into real life situation.

A(Implementing)

B2) To rearrange/ manipulate the available resources to obtain the desirable result/ outcome.

A(Implementing)

Activity: -

A1) To verify the algebraic identity $(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$

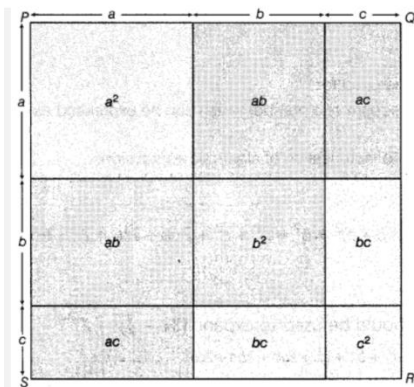
Materials Required:

1. Plain paper
2. Geometry box
3. Different colors

Previous Knowledge:

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

Observation:



Area of square PQRS = Sum of areas of all the squares and rectangles

$$(a + b + c)^2 = a^2 + b^2 + c^2 + ab + ab + bc + bc + ca + ca$$

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$$

Assessment

Marks	Description
3	Complete activity with accuracy and neatness.
2	Construction of square with given dimension with proper division of squares and rectangles and their areas.
1	Construction of square with given dimension with proper division of squares and rectangles

A2) To verify the algebraic identity $a^2 - b^2 = (a + b)(a - b)$

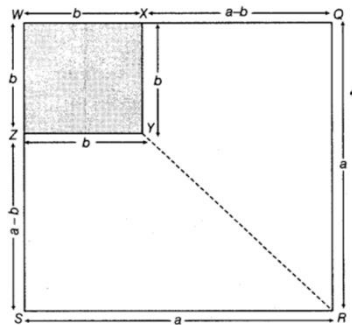
Materials Required:

1. A piece of cardboard
2. Geometry box
3. Different colors
4. Sheet of colored paper

Previous Knowledge:

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

Observation:



Area of square ABCD = Sum of areas of all the squares, trapezium and rectangles

Expected Learning Outcomes:

Students would be able to:

- 1) Define polynomials and recall terms related to polynomials. **K (Recognizing)**
- 2) Classify the polynomials on the basis of their degrees and terms. **U(Classifying)**
- 3) Find zeroes of a polynomial. **U (Exemplifying)**
- 4) Apply factor theorem. **A (Implementing)**
- 5) Factorize polynomials. **AY (Attributing)**
- 6) Check for zeroes of the polynomials **U**

Placement of Objectives, Instructional Activities and Assessment

KNOWLEDGE	UNDERSTANDING	APPLICATION	ANALYSIS	SYNTHESIS	EVALUATION
S1	S2	S3 S5	S4		S6
		B1 B2			
		ACT 2	ACT 1		
		A1	A1		