As per New Syllabus of Diploma in Elementary Education (DEIEd) Recommended by West Bengal Primary Education Board & NCTE

MATHEMATICS

(DElEd Part-I • CPS-03)

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CPS-03: MATHEMATICS

Maximum Marks = 100 (Internal = 30 + External = 70)

Pass Marks = 40% of Full Marks in each of the External & Internal Evaluation Student Contact = 90 hours

Unit-1: Perspective about Mathematical Knowledge-1

- Meaning, nature and characteristics of mathematics. (2 hours)
- Processes in mathematics—mathematical representations, mathematical relations, mathematical reasoning, problem solving in mathematics and communication in mathematics. (5 hours)

• Goals of Mathematics Education: Cognitive, affective and Psychomotor domain. (2 hours) **Unit-2: Perspective about Mathematical Knowledge-2 Class-10 hours**

- Aims of teaching mathematics—disciplinary, utilitarian, recreational. (3 hours)
- Objectives of mathematics education of elementary level in terms of competencies/learning outcomes, development of interest and appreciation. (5 hours)
- Effect of socio-cultural background of children on mathematical knowledge. (2 hours)

Unit-3: Pedagogic Content Knowledge-1

- Number: Number concepts, counting, place value, rational numbers, Arithmetic operations, Fractions, ecimals. (4 hours)
- Spatial understanding and Shapes: vocabulary of special relationship, basic geometrical shapes and their characteristics, Triangle, Rectangle, Square, Circle, Sphere, Cylinder and Cone, Rectangular parallelepiped, cube. (3 hours)

Unit-4: Pedagogical Content Knowledge-2

- Measurement: Length, perimeter and area of square & rectangle circle, weight, volume, Time and money. (4 hours)
- Data handling: Collection and representation of data through various methods-tables, tallies, pictogram and bar graph-interpretation of idea. (2 hours)

Unit-5: Elementary Statistics

- Basic concept in statistics. (1 hour)
- Tabulation of Data. (2 hours)
- Graphical presentation thereof. (2 hours)
- Measure of Central Tendency and dispersion. (3 hours)

Unit-6: Conceptualization of Mathematics

- Constructivist Approach in Mathematics. (2 hours)
- Activity based learning, strategies for concept formation and concept attainment, structuring activities for inductive thinking and inquiry based learning, structuring learning, activities using manipulative, story problems, games, outdoor activities and real life situations. (5 hours)
- Co-operative learning strategies (learning together technique). (1 hour)
- Theory of Mathematics learning: Piaget, Vygotsky, Dienes, Bruner. (4 hours)
- Concept of Estimation: Measurement related. (1 hour)

• Use of out of School Mathematics for conceptualization of Formal Mathematics. (2 hours)

Unit-7: Resource in Mathematics Learning

- Preparation and use of learning materials in mathematics. (4 hours)
- Principles of selection and effective use of LTM. (2 hours)

Unit-8: Learning Methods and Approaches of Mathematics

• Observation, experimentation, Demonstration, Problem Solving. (4 hours)

- Project. (3 hours)
- **Unit-9: Planning for Teaching Mathematics**
 - Unit-wise process based lesson planning, Preparation of lesson notes on the basis of competencies. (8 hours)

• Planning for Teaching: Addressing problems in mathematics teaching and their probable solutions. (2 hours) **Class-12 hours**

Unit-10: Assessment of mathematics Learning

- Meaning and purpose of assessment and evaluations. (2 hours)
- CCE in mathematics, Formative and Summative. (4 hours)
- Tools of assessment in mathematics: Achievement test and diagnostic test in mathematics construction and use. (4 hours)
- Assessment of misconceptions in Mathematics. (2 hours)

Class-9 Hours

Class-6 hours

Class-7 hours

Class-8 hours

Class-15 hours

Class-7 hours

Class-10 hours

Class-6 hours

CONTENTS

1. PERSPECTIVE ABOUT MATHEN	IATICAL KNOWLEDGE - 11-20
 Introduction 1 1.1. Meaning, Nature and Characteristics of Mathematics 1 1.1.1. Meaning of Mathematics 1 1.1.2. Definition of Mathematics 3 1.1.3. Nature of Mathematics 3 1.1.4. Abstract Nature of Mathematics 3 1.1.5. Axiomatic Nature of Mathematics 4 1.1.6. Characteristics of Mathematics 5 1.2. Process in Mathematics 7 1.2.1. Mathematical Representations 7 1.2.2. Mathematical Relations 8 1.2.3. Mathematical Reasoning 9 1.2.4. Problem-Solving in Mathematics 10 	 1.2.4.1. Steps in Problem-Solving/Procedure for Problem-Solving 10 1.2.5. Communication in Mathematics 10 1.2.5.1. Features of Mathematical Language 11 1.3. Goals of Mathematics Education 11 1.3.1. Cognitive Domain 13 1.3.2. Affective Domain 13 1.3.3. Psychomotor Domain 14 1.3.4. Goals of Mathematics Education Based on Domains 14 Based on Cognitive Domain 14 Based on Affective Domain 14 Based on Psychomotor Domain 15 Exercise 15
2. PERSPECTIVE ABOUT MATHEM	IATICAL KNOWLEDGE-221-35
 Introduction 21 2.1. Aims of Teaching Mathematics 21 2.1.1. Disciplinary Aim 22 2.1.2. Utilitarian Aim 23 2.1.3. Recreational Aim 24 Entertainment in Mathematics 24 2.1.4. Aims of Teaching Mathematics at Elementary Level 26 2.2. Objectives of Teaching Mathematics 26 2.2.1. Objectives of Teaching Arithmetic 28 	 2.2.2. Objectives of Teaching Algebra 29 2.2.3. Objectives of Teaching Geometry 29 2.2.4. Objectives of Teaching Mathematics at Elementary Level 30 2.2.5. Difference between Aims and Objectives of Teaching Mathematics 30 2.3. Effect of Socio-Cultural Background of Children on Mathematical Knowledge 31 Exercise 32
3. PEDAGOGICAL CONTENT KNO	WLEDGE – 1 36-86
Introduction 36 3.1. Number 36 3.1.1. Concept of Number 36 3.1.2. Number Line 37 3.1.3. Number System, Numeral and Notation 37 3.1.4. Radix or Base of Number System 38 3.1.5. Place Value 38 • For Indian System 39 • For International System 39 3.1.6. Real Number 40 3.1.6.1. Postulates of Real Numbers 41 3.1.6.2. Properties of Real Numbers 42 3.1.6.3. Types of Real Numbers 42 • Rational Number 42	 Irrational Number 43 3.1.7. Even Numbers and Odd Numbers 48 3.1.7.1. Set Representation of Even and Odd Numbers 48 3.1.7.2. Properties of Even and Odd Numbers 48 3.1.8. Prime Numbers and Composite Numbers 49 Prime Numbers 49 Composite Numbers 49 Composite Numbers 49 3.1.9. Divisibility Rules 50 3.1.10. Factors and Multiples 53 3.1.11. Highest Common Factor (HCF) and Least Common Multiple (LCM) 54 3.1.11. Highest Common Factor (HCF) 54

- 3.1.11.2. Least Common Multiple (LCM) 54
- 3.1.11.3. Relation between HCF and LCM 55
- 3.1.12. Basic Arithmetic Operations 56
- 3.1.13. BODMAS 57
 - 3.2. Spatial Understanding and Shapes 57
- 3.2.1. Concept of Geometry 57
- 3.2.2. Branches of Geometry 58
- 3.2.3. Space and Surface 58
- 3.2.4. Some Aspects Related to Geometry 59Point 59
 - Lines 59
 - Ray 60
 - Line Segment 60
- 3.2.5. Concept of Angles 60
- 3.2.5.1. Classification of Angles 61
- 3.2.6. Concept of Triangle 63
- 3.2.6.1. Meaning of Triangle 63
- 3.2.6.2. Properties of Triangle 63
- 3.2.6.3. Classification of Triangle 63

- Classification of Triangles on the Basis of Sides 63
- Classification of Triangles on the Basis of Angles 64
- 3.2.7. Concept of Quadrilateral 65
- 3.2.7.1. Meaning of Quadrilateral 65
- 3.2.7.2. Types of Quadrilateral 65
 - 3.2.8. Concept of Circle 67
- 3.2.8.1. Meaning of Circle 67
- 3.2.8.2. Different Parts of Circle 67
- 3.2.8.3. Properties of a Circle 68
- 3.2.9. Concept of Solid Shapes 69
- 3.2.9.1. Meaning of Solid Shapes 69
- 3.2.9.2. Types of Solid Shapes 69
 - Sphere 69
 - Cylinder 70
 - Cone 70
 - Rectangular Parallelepiped or Cuboid 70
 - Cube 71
 - Exercise 73

4. PEDAGOGICAL CONTENT KNOWLEDGE – 2

87-120

Introduction 87

4.1. Measurement 87

- 4.1.1. Concept of Measurement 87
 - Meaning of Measurement 87
 - Objectives of Measurement 88
 - Characteristics of Measurement 88
- 4.1.2. Units of Measurement 88
 - System of Unit 88
 - International System of Unit 89
- 4.1.3. Length, Mass or Weight and Time Measurement 89
 - Unit of Length (Metre) 89
 - Unit of Mass (Kilogram) 90
 - Unit of Time (Second) 90
- 4.1.4. Perimeter and Area of Triangle 91
 - Equilateral Triangle 91
 - Isosceles Triangle 91
 - Scalene Triangle 92
 - Right Triangle 92
 - Isosceles Right Triangle 92
- 4.1.5. Perimeter and Area of Quadrilateral 93
 - Perimeter and Area of a Rectangle 93
 - Perimeter and Area of a Square 93
 - Perimeter and Area of a Parallelogram 93
 - Perimeter and Area of a Rhombus 94

- Perimeter and Area of a Kite 94
- Perimeter and Area of a Trapezium 94
- 4.1.6. Circumference or Perimeter and Area of Circle 95
- 4.1.7. Area and Volume of Different Types of Solid Shapes 96
 - Rectangular Parallelepiped 96
 - Cube 97
 - Cylinder 97
 - Cone 97
 - Sphere 97
 - Hemisphere 98
- 4.1.8. Money 98

4.2. Data Handling 99

- 4.2.1. Data 99
- 4.2.2. Types of Data 99
 - Based on the Sources of Data 99
 - Based on the Representation of Data 100
 - Based on the Characteristics of Data 100
- 4.2.3. Scales of Measurement 100
 - Nominal Scale 100
 - Ordinal Scale 100
 - Interval Scale 101
 - Ratio Scale 101
- 4.2.4. Collection of Data 102

4.2.4.1. Primary Data Collection Methods 103 4.2.4.2. Secondary Data Collection Methods 103 4.2.5. Organization of Data 104 4.2.5.1. Need for Data Organization 104 4.2.6. Representation of Data 105 4.2.6.1. Concept of Diagrammatic Presentation 105 Diagrammatic 4.2.6.2. Advantages of Presentation 105 4.2.6.3. Different Styles of Presentation of Data 106 **5. ELEMENTARY STATISTICS Introduction 121** 5.1. Basic Concept in Statistics 121 5.1.1. Meaning of Statistics 121 5.1.2. Definitions of Statistics 121 5.1.3. Characteristics of Statistics 122 5.1.4. Functions of Statistics 123 5.1.5. Importance of Statistics 123 5.1.6. Branches of Statistics 125 5.1.7. Limitations of Statistics 125 5.1.8. Some Basic Concepts Related to Statistics 125 5.2. Frequency Distribution 127 5.2.1. Meaning of Frequency Distribution 127 5.2.2. Characteristics of Frequency Distribution 127 5.2.3. Importance of Frequency Distribution 128 5.2.4. Types of Frequency Distribution 128 • Discrete Frequency Distribution 128 Continuous Frequency Distribution 128 5.2.5. Preparation of Frequency Distribution Table 129 5.3. Tabulation of Data 120 5.3.1. Meaning of Tabulation of Data 130 5.3.2. Objectives of Tabulation of Data 130 5.3.3. Rules of Tabulation of Data 130 5.3.4. Importance of Tabulation of Data 131 5.3.5. Types of Tabulation of Data 131 5.3.6. Tally Mark 132 • Simple Tabulation 131 • Complex Tabulation 132 5.4. Graphical Presentation of Data 133 5.4.1. Meaning of Graphical Presentation of Data 133 5.4.2. General Rules of Graphical Presentation of Data 134 5.4.3. Advantages of Graphical Presentation of Data 134 (xi)

- Table 106
- Tally Mark 107
- Bar Diagram 107
- Pictogram 109
- 4.2.7. Analysis of Data 109
- 4.2.8. Interpretation of Data 110
- 4.2.8.1. Qualitative Data Interpretation 110
- 4.2.8.2. Quantitative Data Interpretation 111
 - Exercise 112

121-180

5.4.4. Disadvantages of Graphical Presentation of Data 134

•••

- 5.4.5. Graphical Presentation of Ungrouped Data 135
 - Line Graph 135
 - Bar Diagram or Bar Graph 135
 - Pie Chart or Pie Graph 136
 - Pictogram 137
- 5.4.6. Graphical Presentation of Grouped Data 137
 - Histogram 137
 - Frequency Polygon 138
 - Cumulative Frequency Graph 140
 - Cumulative Frequency Percentage Graph or Ogive 140

5.5. Measure of Central Tendency 142

- 5.5.1. Meaning of Central Tendency 142
- 5.5.2. Requirements of Central Tendency 142
- 5.5.3. Types of Measures of Central Tendency 142 • Mean 142
 - Median 143
 - Mode 145
- 5.5.4. Calculation of Mean 146
- 5.5.5. Calculation of Median 148
- 5.5.6. Calculation of Mode 151
- 5.5.7. Problems Related to Mean, Median and Mode 154

5.6. Measure of Dispersion 159

- 5.6.1. Meaning of Measure of Dispersion 159
- 5.6.2. Requirements of Measure of Dispersion 159
- 5.6.3. Types of Measure of Dispersion 160
 - Range 160
 - Average/Deviation (AD/MD) 161
 - Quartile Deviation (QD) 163
 - Standard Deviation (SD) 167
 - Exercise 171

6. CONCEPTUALIZATION OF MATHEMATICS

181-232

- Introduction 181 6.1. Constructivist Approach in Mathematics 181
- 6.1.1. Meaning of Constructivist Approach 181
- 6.1.2. Characteristics of Constructivist Approach 182
- 6.1.3. Activities Encouraged in Constructivist Classrooms 182
- 6.1.4. Constructivist Assessment 182
- 6.1.5. Usefulness of Constructivist Approach 183
- 6.1.6. Limitations of Constructivist Approach 183
- 6.1.7. Role of Constructivist Approach in Mathematics 184
- 6.1.8. Interpretation Construction (ICON) Model 185
- 6.1.9. 5E Instructional Model 1866.2. Activity Based Learning 187
- 6.2.1. Meaning of Activity-Based Learning 187
- 6.2.2. Features of Activity-Based Learning 188
- 6.2.3. Benefits of Activity-Based Learning 189
- 6.2.4. Advantages of Activity-Based Learning 189
- 6.2.5. Disadvantages of Activity-Based Learning 190
- 6.2.6. Examples of Activity-Based Learning 190
- 6.2.7. Impact of Activity-Based Learning in India 190
- 6.3. Concept Formulation and Concept Attainment 191
- 6.3.1. Meaning of Concept 191
- 6.3.2. Concept Map 192
- 6.3.3. Types of Concept 192
- 6.3.4. Components of Concept 192
- 6.3.5. Uses of Concept 193
- 6.3.6. Concept Formation 193
- 6.3.6.1. Meaning of Concept Formation 193
- 6.3.6.2. Types of Concept Formation 194
- 6.3.6.3. Principles of Concept Formation 194
- 6.3.6.4. Steps of Concept Formation 194
- 6.3.6.5. Process in Concept Formation 195
- 6.3.7. Concept Attainment 195
- 6.3.7.1. Meaning of Concept Attainment 195
- 6.3.7.2. Levels of Concept Attainment 196
- 6.3.7.3. Different Strategies of Concept Attainment 196
- 6.3.7.4. Concept Attainment Model 197

- 6.3.7.5. Importance of Concept Attainment 1986.4. Inductive Thinking 199
 - 6.4.1. Meaning of Inductive Thinking 199
 - 6.4.2. Importance of Inductive Thinking 2006.5. Inquiry Based Learning 200
 - 6.5.1. Meaning of Inquiry Based Learning 200
 - 6.5.2. Characteristics of Inquiry Based Learning 200
 - 6.5.3. Benefits of Inquiry Based Learning 2016.6. Structural Learning 201
 - 6.6.1. Meaning of Structural Learning 201
 - 6.6.2. Characteristics of Structural Learning 201
 - 6.6.3. Example of Structural Learning 202
 - 6.6.4. Principles of Structural Learning 202
 - 6.7. Teaching of Mathematics through Storytelling 202
 - 6.7.1. Meaning of Storytelling 202
 - 6.7.2. Role of Storytelling 203
 - 6.7.3. Different Methods of Storytelling 203
- 6.7.4. Right Approach for Storytelling 204
- 6.7.5. Benefits of Storytelling 204
- 6.8. Mathematical Games 205
- 6.8.1. Meaning of Mathematical Games 205
- 6.8.2. Examples of Mathematical Games 205
 Math Bingo 205
 Hopscotch Math 205
- 6.8.3. Importance of Mathematical Games 205
- 6.9. Outdoor Activities and Real-Life Situations 206
- 6.9.1. Importance of Mathematics in Outdoor Activities and Real-Life Situations 206
- 6.9.2. Objectives of Outdoor Activities in Mathematics Learning 207
- 6.9.3. Importance of Outdoor Activities in Mathematics Learning 207
- 6.10. Cooperative Learning Strategy 207
- 6.10.1. Meaning and Definition of Cooperative Learning Strategy 207
- 6.10.2. Types of Cooperative Learning Strategy 208
 - Formal Cooperative Learning 208
 - Informal Cooperative Learning 208
 - Base Group Learning 208
- 6.10.3. Elements of Cooperative Learning Strategy 209
- (xii)

6.10.4.	Techniques of Cooperative Learning	6.11.2.2. Significance of Vygotsky's Theory in
6.10.5.	Advantages of Cooperative Learning	6.11.3. Dienes' Theory 217
	Strategy 211	6.11.3.1. Psychological Theory 218
6.10.6.	Limitations of Cooperative Learning	6.11.3.2. Significance of Dienes' Theory in
	Strategy 211	Learning Mathematics 219
6.11 .	Theories of Mathematics Learning 211 Dispet's Theory 212	6.11.4. Bruner's Theory 220
0.11.1.	Different Stages of Cognitive	Learning Mathematics 221
0.11.1.1	Development 212	6.12. Concept of Estimation 221
6.11.1.2	. Significance of Piaget's Theory in	6.13. Use of Out of School Mathematics for
	Teaching-learning of Mathematics 214	Conceptualization of Formal
6.11.2.	Vygotsky's Theory 214	Mathematics 222
6.11.2.1	. Major Aspects Related to Social	• Exercise 223
	Constructivism 215	
7. R	ESOURCE IN MATHEMATICS I	EARNING 233-258
	Introduction 233	• Radio 237
7.1.	Preparation and Use of Learning	• Models 238
711	Materials in Mathematics 255 Meaning and Definition of Learning	• Charts 238
/.1.1.	Teaching Materials 233	• Pictures and Posters 239
7.1.2.	Purposes of Learning-Teaching Materials	• Television 240
	234	• Slides and Slide Projector 241
- 1 2		
7.1.3.	Characteristics of Learning-leaching	• Overhead Projector 241
7.1.3.	Materials 234	Overhead Projector 241 Motion Pictures or Cinemas 241
7.1.3. 7.1.4.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241
7.1.3. 7.1.4. 7.1.5.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242
7.1.3.7.1.4.7.1.5.7.1.6.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243
7.1.3.7.1.4.7.1.5.7.1.6.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243
7.1.3.7.1.4.7.1.5.7.1.6.7.1.7.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning Teaching Materials in	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1 Learning Teaching Materials 246
 7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255
 7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8.	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. LI	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. L	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236 EARNING METHODS AND APPRO Introduction 259 Observation Method 259	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1 Meaning of Experimentation Method 263
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. L1 8.1.1	Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236 EARNING METHODS AND APPRO Introduction 259 Observation Method 259 Meaning of Observation Method 259	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1. Meaning of Experimentation Method 263 8.2.2. Steps in Experimentation Method 264
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. Ll 8.1.1. 8.1.1. 8.1.2.	Characteristics of Learning-Teaching Materials 234Basic Criteria for Effective Learning- Teaching Materials 234Need of Learning-Teaching Materials 234Importance of Learning-Teaching Materials 235Classification of Learning-Teaching Materials 236Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 EARNING METHODS AND APPRO Introduction 259 Observation Method 259 Characteristics of Observation Method 259 Characteristics of Observation Method 260	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1. Meaning of Experimentation Method 264 8.2.3. Examples of Experimentation Method 264
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. Ll 8.1.1. 8.1.1. 8.1.2. 8.1.3.	Characteristics of Learning-Teaching Materials 234 Basic Criteria for Effective Learning- Teaching Materials 234 Need of Learning-Teaching Materials 234 Importance of Learning-Teaching Materials 235 Classification of Learning-Teaching Materials 236 Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236 • Blackboard 236 EARNING METHODS AND APPRO Introduction 259 Observation Method 259 Characteristics of Observation Method 260 Steps in Observation Method 260	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1. Meaning of Experimentation Method 264 8.2.2. Steps in Experimentation Method 264 8.2.4. Merits of Experimentation Method 264
 7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8. LI 8.1.1. 8.1.2. 8.1.3. 8.1.4. 	Characteristics of Learning-Teaching Materials 234Basic Criteria for Effective Learning- Teaching Materials 234Need of Learning-Teaching Materials 234Importance of Learning-Teaching Materials 235Classification of Learning-Teaching Materials 236Essential Learning-Teaching Materials in Teaching-Learning in Mathematics 236EARNING METHODS AND APPRO Introduction 259Observation Method 259 Characteristics of Observation Method 260 Steps in Observation Method 261	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1. Meaning of Experimentation Method 264 8.2.2. Steps in Experimentation Method 264 8.2.4. Merits of Experimentation Method 265 8.2.5. Demerits of Experimentation Method 265
7.1.3. 7.1.4. 7.1.5. 7.1.6. 7.1.7. 7.1.8. 8.1.1 8.1.1. 8.1.2. 8.1.3. 8.1.4. 8.1.5.	Characteristics of Learning-Teaching Materials 234Basic Criteria for Effective Learning- Teaching Materials 234Need of Learning-Teaching Materials 234Importance of Learning-Teaching Materials 235Classification of Learning-Teaching Materials 236Essential Learning-Teaching Materials 1 Materials 236Essential Learning-Teaching Materials 236Essential Learning-Teaching Materials 1 Materials 236Eaching-Learning in Mathematics 236Blackboard 236EARNING METHODS AND APPRO Introduction 259 Observation Method 259Meaning of Observation Method 259 Characteristics of Observation Method 260 Steps in Observation Method 260 Examples of Observation Method 261 Merits of Observation Method 263	 Overhead Projector 241 Motion Pictures or Cinemas 241 7.1.9. Use of Calculator and Computer in Teaching Mathematics 241 Calculator 242 Computers 243 Computer Assisted Instruction (CAI) 243 7.2. Principles of Selection and Effective Use of Learning-Teaching Materials 245 7.2.1. Learning-Teaching Materials 246 Exercise 255 ACHES OF MATHEMATICS 259-281 8.2. Experimentation Method 263 8.2.1. Meaning of Experimentation Method 264 8.2.2. Steps in Experimentation Method 264 8.2.3. Examples of Experimentation Method 265 8.2.4. Merits of Experimentation Method 265 8.2.5. Demerits of Experimentation Method 265 8.2.1. Meaning of Experimentation Method 265

- 8.3.2. Characteristics of Demonstration Method 266
- 8.3.3. Steps of Demonstration Method 266
- 8.3.4. Examples of Demonstration Method 267
- 8.3.5. Merits of Demonstration Method 268
- 8.3.6. Demerits of Demonstration Method 268
- 8.3.7. Ways to Implement Demonstration Method 269

8.4. Problem Solving Method 269

- 8.4.1. Meaning of Problem Solving Method 269
- 8.4.2. Steps in Problem Solving Method 270
- 8.4.3. Examples of Problem Solving Method 270

8.4.4. Merits of Problem Solving Method 271

- 8.4.5. Demerits of Problem Solving Method 272
- 8.5. Project Method 272
- 8.5.1. Meaning of Project Method 272
- 8.5.2. Characteristics of Project Method 272
- 8.5.3. Principles of Project Method 273
- 8.5.4. Steps of Project Method 273
- 8.5.5. Examples of Project Method 274
- 8.5.6. Merits of Project Method 275
- 8.5.7. Demerits of Project Method 276
 - Exercise 276

9. PLANNING FOR TEACHING MATHEMATICS

Introduction 282

- 9.1. Teaching 282
- 9.1.1. Meaning of Teaching 282
- 9.1.2. Nature of Teaching 283
- 9.1.3. Characteristics of Teaching 283
- 9.2. Micro-teaching 284
- 9.2.1. Meaning of Micro-Teaching 284
- 9.2.2. Definition of Micro-Teaching 284
- 9.2.3. Objectives of Micro-Teaching 285
- 9.2.4. Characteristics of Micro-Teaching 286
- 9.2.5. Steps of Micro-Teaching 286
- 9.2.6. Micro-Teaching Cycle 287
- 9.2.7. Time Duration for Micro-Teaching 287
- 9.2.8. Comparison between Micro-Teaching and Traditional Teaching 288
- 9.2.9. Advantages of Micro-Teaching 288
- 9.2.10. Limitations of Micro-Teaching 288
- 9.2.11. Steps in Micro-Teaching Lesson Plan 288
- 9.2.12. Role of the Supervisor in Micro-Teaching 289
- 9.2.13. Components of Micro-Teaching 290
 - Skills of Integrating Knowledge and Experience 291
 - Skill of Facilitating Child-centric Learning 293
 - Skill of Encouraging Learners to Enquire 295
 - Skill of Developing Observation in Learners 297
 - Skill of Integrating Performing Art with the Learning Situation 299

9.3. Preparation of Lesson Notes on the Basis of Competencies 301

282-321

- 9.3.1. Meaning of Lesson Plan 301
- 9.3.2. Definition of Lesson Plan 301
- 9.3.3. Objectives of Lesson Plan 301
- 9.3.4. Need of Lesson Plan 302
- 9.3.5. Importance of Lesson Plan 302
- 9.3.6. Characteristics of a Good Lesson Plan 302
- 9.3.7. Basic Guidelines for Preparation of a Good Lesson Plan 302
- 9.3.8. Advantages of Lesson Plan 302
- 9.3.9. Disadvantages of Lesson Plan 303
- 9.3.10. Different Approaches of Lesson Plan 303
- 9.3.11. Stages of Lesson Plan 304
 - Lesson Plan 1 305
 - Lesson Plan 2 307
 - 9.4. Planning for Teaching 309
- 9.4.1. Meaning of Planning for Teaching 309
- 9.4.2. Aims of Planning for Teaching 309
- 9.4.3. Characteristics of Planning for Teaching 309
- 9.4.4. Main Components of Planning for Teaching 309
 - 9.5. Addressing Problems in Mathematics Teaching and their Probable Solutions 310
- 9.5.1. Backwardness in Mathematics Teaching 310
 - Meaning and Definition of Slow Learners or Backward Learners 310

•	 Characteristics of Slow Learners or Backward Learners 310 Characteristics of Slow Learners or Backward Learners 310 Types of Slow Learners or Backward Learners 311 Identification of Slow Learners or Backward Learners 311 Causes of Backwardness Learners 311 	9.5.2.	 Remedies for Backwardness 312 Mathematics Phobia 313 Meaning and Definition of Mathematics Phobia 313 Symptoms of Mathematics Phobia 313 Causes of Mathematics Phobia 313 Remedies for Mathematics Phobia 314 Exercise 315 	
10. ASSESSMENT OF MATHEMATICS LEARNING322-382				
10.1.1 10.1.2. 10.1.3.1 10.1.4.1 10.1.5.1 10.1.5.1 10.2.1.1 10.2.2.1 10.2.3.1 10.2.4.1 10.2.5.1 10.2.6.1 10.2.7.1 10.2.8.1 10.2.9.1	Introduction 322 Meaning and Purpose of Assessment and Evaluation 322 Meaning of Assessment 323 Objectives of Assessment 323 Functions of Assessment 323 Fundamental Components of Assessment 324 Types of Assessment 324 • Internal Assessment 325 • Self-Assessment 327 Meaning and Purpose of Evaluation 327 Meaning of Evaluation 327 Definition of Evaluation 328 Objectives of Evaluation in Mathematics 329 Characteristics of Evaluation in Mathematics 329 Scopes of Evaluation in Mathematics 330 Functions of Evaluation 331 Different Steps of Evaluation 331 Objective Evaluation 331 • Formative Evaluation 333 • Diagnostic Evaluation 335 • Placement Evaluation 336	$10.3.3. \\ 10.3.4. \\ 10.3.4. \\ 10.3.5. \\ 10.3.6. \\ 10.4. \\ 10.4.1. \\ 10.4.2. \\ 10.4.2. \\ 10.4.3. \\ 10.4.4. \\ 10.4.5. \\ 10.4.6$	Characteristics of Measurement 338 Scales of Measurement in Mathematics 338 • Nominal Scale 338 • Ordinal Scale 339 • Interval Scale 339 • Ratio Scale 339 Comparison between Different Types of Scales of Measurement 340 Difference between Measurement and Evaluation 341 Comparisons among Measurement, Assessment and Evaluation 341 Continuous and Comprehensive Evaluation in Mathematics 342 Background of Continuous and Comprehensive Evaluation (CCE) 342 Meaning and Definition of Continuous and Comprehensive Evaluation (CCE) 343 Objectives of Continuous and Comprehensive Evaluation (CCE) 343 Characteristics of Continuous and Comprehensive Evaluation (CCE) 343 Functions of Continuous and Comprehensive Evaluation (CCE) 344 Aspects of Continuous and Comprehensive Evaluation (CCE) 344 Aspects of Continuous and Comprehensive Evaluation (CCE) 344 Aspects of Continuous and Comprehensive Evaluation (CCE) 344	
10.2.10.	Difference between Evaluation and Examination 337	10.4.7.	Comprehensive Evaluation 345 Benefits of Continuous and	
10.3.]	Measurement 337 Meaning and Definition of Measurement 337	10.5.	Comprehensive Evaluation (CCE) to Learners and Teachers 346 Tools of Assessment in Mathematics 346	
10.3.2.	Objectives of Measurement 338	10.5.1.	Meaning of Test 346	
(XV)				

10.5.2. Definition of Test 347 10.5.3. Objectives of Test 347	10.5.7. Difference between Test and Examination 350		
10.5.4. Characteristics of Good Test 347	10.5.8. Types of Educational Test 350		
• Reliability 348	Diagnostic Test 368		
 Objectivity 349 Simplicity 349	 Prognostic Test 370 Survey Test 370 		
Comprehensive 349 Scorability 349	10.6. Assessment of Misconceptions in Mathematics 371		
• Usability 349	10.6.1. Sources of Misconception 371		
Administrability 349Practicability 349	10.6.2. Effects of Misconception 371 10.6.3. Examples of Misconception in		
10.5.5. Meaning and Definition of Examination 350	Mathematics 372 10.6.4. Remedial Measures for Misconception		
10.5.6. Objectives of Examination 350	in Mathematics 372		
• Exercise 375 DEIEd Exam (Part I) Mathematics Ouestion Papers 383-40			