

# **Unit 3**

## **Chapter 3: Science Domain**

### **Getting Ready for the Unit and Connecting to Experience**

#### **Course: Introduction to Curriculum**

##### Student Learning Outcomes:

- Recognize developmentally appropriate teaching strategies and apply them in supervised settings with young children.
- Use the ongoing cycle of curriculum development to plan, implement, and evaluate early childhood activities and environments.

##### Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.
- Observe and document children at play and propose appropriate activities and possibilities for expanding children's learning in a variety of curriculum areas.
- Identify ways in which development in all domains and learning in all content areas can be integrated across the curriculum.

##### Content and Topics:

- Observation and assessment strategies as they apply to curriculum planning and evaluation.
- Innovative and best practices in teaching
- Program models and approaches (Reggio, Montessori, High Scope, Creative Curriculum, Waldorf, Bank Street, etc.)

#### **Course: Principles and Practices of Teaching Young Children**

##### Student Learning Outcomes:

- Interpret best and promising teaching and care practices as defined within the field of early care and education's history, range of delivery systems, program types and philosophies and ethical standards.
- Examine the value of play as a vehicle for developing skills, knowledge, dispositions, and strengthening relationships among young children.

##### Objectives:

- Identify components of a play-based curriculum which is developmentally, culturally and linguistically appropriate and supports the development of all young children.
- Investigate various foundations and theories in the field of early childhood education as a basis for forming a personal philosophy of teaching and developing professional goals.

**Course: Principles and Practices of Teaching Young Children – Continued**

Objective:

- Demonstrate basic observational skills.

Content and Topics:

- Addressing the needs of the “whole child” (physical, cognitive, social-emotional)
- Characteristics and roles of an effective teacher in an early childhood setting

**Course: Observation and Assessment**

Student Learning Outcomes:

- Compare the purpose, value and use of formal and informal observation and assessment strategies.
- Complete systematic observations using a variety of methods of data collection to assess the impact of the environment, interactions, and curriculum on children’s development and behavior.

Objectives:

- Identify and apply basic quantitative and qualitative observation and recording techniques.
- Use observation tools to identify quality in play-based environment, curriculum, and care routines, and to detect trends and anomalies in individuals and groups.

Content and Topics:

- Historic and current tools of observation and assessment
- Utilization of observation and assessment data to create appropriate curricula and environments
- Observation as part of the on-going process of curriculum and planning that support all children.

**Course: Practicum-Field Experience**

Student Learning Outcomes:

- Apply a variety of effective approaches, strategies and techniques supporting positive relationships with children and adults.
- Critically assess one’s own teaching experiences to guide and inform practice.

Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Analyze classroom space and daily routines in terms of their effect on the behavior and interactions of children and teachers.
- Analyze classroom space and daily routines in terms of their effect on the behavior and interactions of children and teachers.

### **Course: Practicum-Field Experience – Continued**

#### Content and Topics:

- Authentic assessment and documentation
- Self reflection and self-assessment through team collaboration and portfolio documentation
- Ongoing Curriculum Development Cycle
  - a. Observation
  - b. Planning
  - c. Implementation
  - d. Evaluation
  - e. Documentation
- Content Areas:
  - Science
- California State Learning Standards and tools

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### **Chapter 3: Science Domain**

#### **Key Topic 1 – Organization and Rationale of the Science Domain**

##### **Course: Child Growth and Development**

###### Student Learning Outcomes:

- Describe major developmental milestones for children from conception through adolescence in the areas of physical, psychosocial, cognitive, and language development.

###### Objectives:

- Demonstrate knowledge of the physical, social/emotional, cognitive and language development of children, both typical and atypical, in major developmental stages.
- Demonstrate knowledge of current research as it applies to child development.

###### Content and Topics:

- Major current and historical theoretical frameworks of child development
- The role and influence of family and caregivers

##### **Course: Child, Family and Community**

###### Student Learning Outcomes:

- Describe effective strategies that empower families and encourage family involvement in children's development.

###### Objectives:

- Describe contemporary social issues and their effects on families and children.

###### Content and Topics:

- Interrelatedness of family, school and community as agents of socialization
- Teachers' and caregivers' influences on children and families

##### **Course: Introduction to Curriculum**

###### Student Learning Outcomes:

- Identify play-based curriculum models and approaches, standards for early learning, and indicators of quality.

###### Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.
- Identify ways in which development in all domains and learning in all content areas can be integrated across the curriculum.

### **Course: Introduction to Curriculum – Continued**

#### Content and Topics:

- Innovative and best practices in teaching
- Use of current research
- Strategies for family involvement
- Content areas (science)

### **Course: Principles and Practices of Teaching Young Children**

#### Student Learning Outcomes:

- Assess early childhood settings, curriculum, and teaching strategies utilizing indicators of quality early childhood practice that support all children including those with diverse characteristics and their families.

#### Objectives:

- Investigate various foundations and theories in the field of early childhood education as a basis for forming a personal philosophy of teaching and developing professional goals.
- Describe the characteristics of effective relationships and interactions between early childhood professionals, children, families, and colleagues including the importance of collaboration.

#### Content and Topics:

- Characteristics and roles of an effective teacher in an early childhood setting
- Collaboration and partnerships with families, colleagues, and health care professionals

### **Course: Practicum-Field Experience**

#### Student Learning Outcomes:

- Evaluate the effectiveness of early childhood curriculum, classrooms, teaching strategies and how teachers involve families in their children's development and learning to improve teaching practices for all children.

#### Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Analyze classroom space and daily routines in terms of their effect on the behavior and interactions of children and teachers.

#### Content and Topics:

- Self reflection and self-assessment through team collaboration and portfolio documentation
- Content Areas:
  - Science
- California State Learning Standards and tools
- Family involvement in early childhood programs

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**Key Topic 2 – Getting to Know Environmental Factors That Support Science**

**Course: Child, Family and Community**

Student Learning Outcomes:

- Describe effective strategies that empower families and encourage family involvement in children’s development.

Objectives:

- Identify how the child develops within a system and is influenced by numerous factors of socialization including the role of the family, childcare, schooling and the community.

Content and Topics:

- Interrelatedness of family, school and community as agents of socialization
- Teachers’ and caregivers’ influences on children and families

**Course: Introduction to Curriculum**

Student Learning Outcomes:

- Recognize developmentally appropriate teaching strategies and apply them in supervised settings with young children.
- Demonstrate an understanding of the many aspects of the teachers’ role in early childhood programs.
- Identify play-based curriculum models and approaches, standards for early learning, and indicators of quality.
- Use the ongoing cycle of curriculum development to plan, implement, and evaluate early childhood activities and environments.

Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.
- Demonstrate ability to select safe and appropriate materials and equipment.
- Identify ways in which development in all domains and learning in all content areas can be integrated across the curriculum.

Content and Topics:

- Developmental theory as it applies to curriculum development.
- Innovative and best practices in teaching
- Effective use of learning centers and integrated curriculum
- The effect of environment on behavior
- Content areas (math, science, literacy, social studies, creative arts)

### **Course: Principles and Practices of Teaching Young Children**

#### Student Learning Outcomes:

- Assess early childhood settings, curriculum, and teaching strategies utilizing indicators of quality early childhood practice that support all children including those with diverse characteristics and their families.
- Analyze the relationship between observation, planning, implementation and assessment in developing effective teaching strategies and positive learning and development.

#### Objectives:

- Identify components of a play-based curriculum which is developmentally, culturally and linguistically appropriate and supports the development of all young children.
- Identify children’s developmental processes and describe adaptations to curriculum and environments needed to support all children.
- Describe the relationship of observation, planning, implementation, and assessment in effective programming.

#### Content and Topics:

- Addressing the needs of the “whole child” (physical, cognitive, social-emotional)
- Characteristics and roles of an effective teacher in an early childhood setting
- The influence of environment on behavior and learning (environment as third teacher)
- Quality indicators of programs (e.g., accreditation, assessment tools)

### **Course: Observation and Assessment**

#### Student Learning Outcomes:

- Complete systematic observations using a variety of methods of data collection to assess the impact of the environment, interactions, and curriculum on children’s development and behavior.

#### Objectives:

- Use observation tools to identify quality in play-based environment, curriculum, and care routines, and to detect trends and anomalies in individuals and groups.

#### Content and Topics:

- Utilization of observation and assessment data to create appropriate curricula and environments
- Observation as part of the on-going process of curriculum and planning that support all children.

### **Course: Practicum-Field Experience**

#### Student Learning Outcomes:

- Integrate understanding of children’s development and needs to create and maintain healthy, safe, respectful, supportive and challenging learning environments for all children.
- Evaluate the effectiveness of early childhood curriculum, classrooms, teaching strategies and how teachers involve families in their children’s development and learning to improve teaching practices for all children.

#### Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Analyze classroom space and daily routines in terms of their effect on the behavior and interactions of children and teachers.
- Integrate content areas and opportunities for development across the curriculum.

#### Content and Topics:

- Organization of physical environment, routine/schedule, and materials
- Positive interactions with children and adults
- Content Areas:
  - Science
- Environment as a teaching and learning tool
- California State Learning Standards and tools

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**Key Topic 3 – Getting to Know Interactions and Strategies  
That Support Science**

**Course: Introduction to Curriculum**

Student Learning Outcomes:

- Recognize developmentally appropriate teaching strategies and apply them in supervised settings with young children.
- Demonstrate an understanding of the many aspects of the teachers' role in early childhood programs.

Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.
- Identify ways in which development in all domains and learning in all content areas can be integrated across the curriculum.

Content and Topics:

- Developmental theory as it applies to curriculum development.
- Planning for diverse learning styles, motivations, interests, and abilities
- Innovative and best practices in teaching
- Components of effective learning environments
- Content areas (science)

**Course: Principles and Practices of Teaching Young Children**

Student Learning Outcomes:

- Assess early childhood settings, curriculum, and teaching strategies utilizing indicators of quality early childhood practice that support all children including those with diverse characteristics and their families.
- Examine a variety of guidance and interaction strategies to increase children's social competence and promote a caring classroom community.

Objectives:

- Identify components of a play-based curriculum which is developmentally, culturally and linguistically appropriate and supports the development of all young children.

Content and Topics:

- Addressing the needs of the “whole child” (physical, cognitive, social-emotional)
- The importance of developmentally, culturally, linguistically appropriate practice.
- Characteristics and roles of an effective teacher in an early childhood setting

### **Course: Practicum-Field Experience**

#### Student Learning Outcomes:

- Evaluate the effectiveness of early childhood curriculum, classrooms, teaching strategies and how teachers involve families in their children’s development and learning to improve teaching practices for all children.
- Critically assess one’s own teaching experiences to guide and inform practice.

#### Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Analyze classroom space and daily routines in terms of their effect on the behavior and interactions of children and teachers.
- Analyze student teaching experiences to inform and guide future teaching and collaborative practices.

#### Content and Topics:

- Application of developmentally, culturally, and linguistically appropriate practices
- Content Areas:
  - Science
- California State Learning Standards and tools

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#### **Key Topic 4 – Universal Design, Individualizing, and Family Partnerships**

##### **Course: Child Growth and Development**

Student Learning Outcomes:

- Differentiate characteristics of typical and atypical development.

Objectives:

- Examine and evaluate the importance of the early years.
- Examine and evaluate the role of family in facilitating children’s development.

Content and Topics:

- The role and influence of family and caregivers
- The role and influence of cultural and societal impacts

##### **Course: Child, Family and Community**

Student Learning Outcomes:

- Describe effective strategies that empower families and encourage family involvement in children’s development.

Objectives:

- Describe contemporary social issues and their effects on families and children.
- Develop appropriate strategies to assist families experiencing stress.

Content and Topics:

- Role of family in children’s developmental outcomes.
- Teachers’ and caregivers’ influences on children and families
- The influence of teachers’ and caregivers’ personal experience and family history on relationships with children and families.

##### **Course: Introduction to Curriculum**

Student Learning Outcomes:

- Recognize developmentally appropriate teaching strategies and apply them in supervised settings with young children.
- Demonstrate an understanding of the many aspects of the teachers’ role in early childhood programs.

### **Course: Introduction to Curriculum – Continued**

#### Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.
- Demonstrate how curriculum and environment can be designed and adapted for children’s unique and individual ages, stages, and needs.

#### Content and Topics:

- Consideration of cultural, linguistic, ethnic, economic, ability and gender diversity including the acquisition of English as a second language in planning for young children
- Planning for diverse learning styles, motivations, interests, and abilities
- Innovative and best practices in teaching
- Planning for children with special needs

### **Course: Principles and Practices of Teaching Young Children**

#### Student Learning Outcomes:

- Interpret best and promising teaching and care practices as defined within the field of early care and education’s history, range of delivery systems, program types and philosophies and ethical standards.

#### Objectives:

- Identify components of a play-based curriculum which is developmentally, culturally and linguistically appropriate and supports the development of all young children.
- Identify children’s developmental processes and describe adaptations to curriculum and environments needed to support all children.

#### Content and Topics:

- Attention to developmental needs of children of different ages (infant/toddler, preschool, school-age)
- The importance of developmentally, culturally, linguistically appropriate practice.
- Applying developmentally-appropriate practices to normative and atypical development

### **Course: Health, Safety, and Nutrition**

#### Student Learning Outcomes:

- Discuss the value of collaboration with families and the community.

#### Objectives:

- Compare and contrast various methods of collaboration with teachers and families to promote health and safety in settings for all children.
- Plan early childhood curriculum on the topics of health, safety, and nutrition in accordance with culturally, linguistic and developmentally sound practice.

### **Course: Health, Safety, and Nutrition – Continued**

#### Content and Topics:

- Respecting the cultural, linguistic, and developmental differences of families, teachers and children
- Collaboration with families and health care professionals

### **Course: Teaching in a Diverse Society**

#### Student Learning Outcomes:

- Critically assess the components of linguistically and culturally relevant, inclusive, age-appropriate, anti-bias approaches in promoting optimum learning and development.

#### Objectives:

- Compare the historical and current perspectives involving diversity and inclusion and their impacts on children’s identity development and learning.
- Evaluate inclusive classroom environments, materials and approaches for developmental, cultural, and linguistic appropriateness.
- Investigate and develop strategies to create partnerships with families on issues of bias and injustice through building mutual, collaborative relationships.

#### Content and Topics:

- Culturally and developmentally appropriate classrooms: curriculum, environment; human relationships
- Environments and curriculums that respectively reflect children’s cultures and experiences and that expose children to the larger communities in which they live
- Teachers and families: teacher responsibility to assess power dynamics; and commitment to co-creation of anti-bias approaches

### **Course: Practicum-Field Experience**

#### Student Learning Outcomes:

- Integrate understanding of children’s development and needs to create and maintain healthy, safe, respectful, supportive and challenging learning environments for all children.
- Apply a variety of effective approaches, strategies and techniques supporting positive relationships with children and adults.

#### Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Analyze student teaching experiences to inform and guide future teaching and collaborative practices.

**Course: Practicum-Field Experience – Continued**

Content and Topics:

- Application of developmentally, culturally, and linguistically appropriate practices
- Adaptations for children with diverse abilities, learning styles, and temperaments
- California State Learning Standards and tools
- Family involvement in early childhood programs

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**Key Topic 5 – Exploring the Research Highlights of the  
Science Domain**

**Course: Child Growth and Development**

Student Learning Outcomes:

- Apply developmental theory to child observations, surveys, and/or interviews using investigative research methodologies.

Objectives:

- Demonstrate knowledge of current research as it applies to child development.
- Identify and describe biological and environmental factors that influence children's development from conception to adolescence across domains

Content and Topics:

- Contemporary social issues that impact children's development
- The role and influence of cultural and societal impacts

**Course: Introduction to Curriculum**

Student Learning Outcomes:

- Demonstrate an understanding of the many aspects of the teachers' role in early childhood programs.

Objectives:

- Identify and evaluate teaching behaviors for research-based best practices.

Content and Topics:

- Developmental theory as it applies to curriculum development.
- Use of current research
- The development of the whole child (physical, cognitive, and social/emotional development, including socialization, self-regulation, self-help skills for all children)

**Course: Principles and Practices of Teaching Young Children**

Student Learning Outcomes:

- Interpret best and promising teaching and care practices as defined within the field of early care and education's history, range of delivery systems, program types and philosophies and ethical standards.

### **Course: Principles and Practices of Teaching Young Children – Continued**

#### Objectives:

- Investigate various foundations and theories in the field of early childhood education as a basis for forming a personal philosophy of teaching and developing professional goals.

#### Content and Topics:

- Current and historic models, influences, and approaches in the field of early childhood
- Characteristics and roles of an effective teacher in an early childhood setting

### **Course: Teaching in a Diverse Society**

#### Student Learning Outcomes:

- Critique the multiple societal impacts on young children's social identity.

#### Objectives:

- Compare the historical and current perspectives involving diversity and inclusion and their impacts on children's identity development and learning.

#### Content and Topics:

- Anti-bias approaches to all curriculum arenas, materials, activities, goals, assessment
- Teachers and families: teacher responsibility to assess power dynamics; and commitment to co-creation of anti-bias approaches

### **Course: Practicum-Field Experience**

#### Student Learning Outcomes:

- Integrate understanding of children's development and needs to create and maintain healthy, safe, respectful, supportive and challenging learning environments for all children.
- Evaluate the effectiveness of early childhood curriculum, classrooms, teaching strategies and how teachers involve families in their children's development and learning to improve teaching practices for all children.

#### Objectives:

- Incorporate current research and understanding of developmental theories into the selection of learning materials and experiences for young children.
- Present and evaluate a variety of developmentally, culturally and linguistically appropriate play-based learning experiences.

#### Content and Topics:

- Self reflection and self-assessment through team collaboration and portfolio documentation
- Professional development skills
- California State Learning Standards and tool