This domain recognizes the child’s search for meaning as the basis for intellectual development. The focus is on children’s curiosity about the world and their ability to acquire, organize, and use information in increasingly complex ways. The component areas of this domain are mathematical and logical thinking, scientific thinking and problem-solving, and social systems understanding.

**Strategies FAMILY MEMBERS can use to facilitate children’s MATHEMATICAL AND LOGICAL THINKING:**

- Provide opportunities for children to explore number, measurement, and patterns using household materials and experiences
- Provide opportunities for children to count, group, and order household objects and materials
- Provide opportunities for conversation using everyday words to indicate space, location, shape, and size of objects
- Read children’s books together about numbers, counting, shapes, and other concepts

**Strategies TEACHERS and CAREGIVERS can use to facilitate children’s MATHEMATICAL AND LOGICAL THINKING:**

- Provide opportunities for children to explore number, measurement, and patterns through developmentally appropriate play and learning
- Provide opportunities for children to count, group, and order materials through developmentally appropriate play and learning
- Provide opportunities for conversation using positional and comparative words related to children’s play and activities
- Provide opportunities to develop an understanding of space (e.g., filling and emptying, building, observing from different viewpoints)
- Discuss the sequence of daily and special family events
- Provide opportunities to experience and describe time (e.g., seasons, daily and weekly events)
**EARLY CHILDHOOD INDICATORS OF PROGRESS**

Children show progress in **MATHEMATICAL AND LOGICAL THINKING** when they:

**Number Concepts and Operations**
1. Demonstrate increasing interest in and awareness of numbers and counting
2. Demonstrate understanding of one-to-one correspondence between objects and number
3. Demonstrate ability to count in sequence
4. Demonstrate ability to state the number that comes next up to 9 or 10
5. Demonstrate beginning ability to combine and separate numbers of objects

**Patterns and Relationships**
6. Recognize and duplicate simple patterns
7. Sort objects into subgroups by one or two characteristics
8. Order or sequence several objects on the basis of one characteristic

**Spatial Relationships/Geometry**
9. Identify and name common shapes
10. Use words that show understanding of order and position of objects

**Measurement**
11. Recognize objects can be measured by height, length, weight, and time
12. Make comparisons between at least two groups of objects

**Mathematical Reasoning**
13. Use simple strategies to solve mathematical problems

*These indicators apply to children in the preschool period of ages three to five. They are based on expectations for children approximately four years of age.*

---

**Strategies COMMUNITY MEMBERS can use to promote children’s COGNITIVE DEVELOPMENT:**

- Provide toy lending libraries with materials for play and exploration
- Provide make-and-take events for parents and children to make and share learning materials
- Provide accessible, natural spaces for parents and children to visit and explore
- Provide opportunities for children and families to work on community service projects
- Encourage community leaders and members to become involved with early childhood programs
- Support peaceful conflict-management and problem-solving strategies

---

**Strategies POLICYMAKERS can use to promote children’s COGNITIVE DEVELOPMENT:**

- Recognize the importance of healthy and supportive adult-child relationships in children’s cognitive development
- Promote early childhood education and care programs to support children’s cognitive development and readiness for school
- Provide resources for safe, natural spaces and places for children and families to visit and explore
- Provide resources for community activities and projects that involve children and families
This domain recognizes the child’s search for meaning as the basis for intellectual development. The focus is on children’s curiosity about the world and their ability to acquire, organize, and use information in increasingly complex ways. The component areas of this domain are mathematical and logical thinking, scientific thinking and problem-solving, and social systems understanding.

**Strategies FAMILY MEMBERS can use to facilitate children’s SCIENTIFIC THINKING AND PROBLEM-SOLVING:**

- Take walks in the neighborhood or community to observe natural objects and events
- Help children experience the world of nature
- Discuss objects and events that have been observed indoors and outdoors
- Encourage children to ask questions and find answers through active experimentation
- Encourage sand and water play and try growing things

**Strategies TEACHERS and CAREGIVERS can use to facilitate children’s SCIENTIFIC THINKING AND PROBLEM-SOLVING:**

- Experience the natural world with children
- Provide opportunities to explore natural objects and events
- Encourage children to experiment and discuss what they discover
- Share information on observations pictorially, verbally, and through other representations
- Discuss objects and events that have been observed
- Encourage children to ask questions and seek answers through active exploration and reflection on what they learn
- Observe nature and make predictions about natural events (e.g., growing seeds, caring for animals, charting weather)
- Encourage and provide materials for a variety of sensory experiences
EARLY CHILDHOOD INDICATORS OF PROGRESS*

Children show progress in SCIENTIFIC THINKING AND PROBLEM-SOLVING when they:

**Observing**
1. Use senses to explore materials and the environment
2. Identify and/or describe objects by physical characteristics

**Questioning**
3. Express wonder about the natural world
4. Ask questions and seek answers through active exploration
5. Make predictions about objects and natural events

**Investigating**
6. Use tools (e.g., magnifying glass, binoculars, maps) for investigation of the environment
7. Make comparisons between objects that have been collected or observed

* These indicators apply to children in the preschool period of ages three to five. They are based on expectations for children approximately four years of age.

Strategies COMMUNITY MEMBERS can use to promote children’s COGNITIVE DEVELOPMENT:

- Provide toy lending libraries with materials for play and exploration
- Provide make-and-take events for parents and children to make and share learning materials
- Provide accessible, natural spaces for parents and children to visit and explore
- Provide opportunities for children and families to work on community service projects
- Encourage community leaders and members to become involved with early childhood programs
- Support peaceful conflict-management and problem-solving strategies

Strategies POLICYMAKERS can use to promote children’s COGNITIVE DEVELOPMENT:

- Recognize the importance of healthy and supportive adult-child relationships in children’s cognitive development
- Promote early childhood education and care programs to support children’s cognitive development and readiness for school
- Provide resources for safe, natural spaces and places for children and families to visit and explore
- Provide resources for community activities and projects that involve children and families
This domain recognizes the child’s search for meaning as the basis for intellectual development. The focus is on children’s curiosity about the world and their ability to acquire, organize, and use information in increasingly complex ways. The component areas of this domain are mathematical and logical thinking, scientific thinking and problem solving, and social systems understanding.

**Strategies FAMILY MEMBERS can use to facilitate children’s SOCIAL SYSTEMS UNDERSTANDING:**

- Help children describe and appreciate their own characteristics and those of others in the family
- Help children understand family roles, jobs, rules, and relationships
- Discuss family events and relationships within the family
- Participate as a family in community service projects
- Talk about the jobs people do in the community
- Discuss how people affect the environment
- Help children recall recent and past events and relationships about the family
- Explore and talk about land, water, and other features in the community
- Discuss technology used at home and in the neighborhood

**Strategies TEACHERS and CAREGIVERS can use to facilitate children’s SOCIAL SYSTEMS UNDERSTANDING:**

- Help children describe and appreciate their own characteristics and those of others
- Help children understand family roles, jobs, rules, and relationships
- Involve children in service-learning and social action projects
- Invite leaders and workers in the community to come to the program
- Discuss how people have changed the environment
- Support children’s understanding of recent and past events
- Create maps of the school, local area, or neighborhood
- Discuss technology used in the classroom
EARLY CHILDHOOD INDICATORS OF PROGRESS*

Children show progress in **SOCIAL SYSTEMS UNDERSTANDING** when they:

**Human Relationships**
1. Recognize and appreciate similarities and differences between self and others from diverse backgrounds
2. Understand various family roles, jobs, rules, and relationships
3. Participate in activities to help others in the community

**Understanding the World**
4. Recognize and describe the roles of workers in the community
5. Share responsibility in taking care of their environment
6. Begin to recall recent and past events
7. Identify characteristics of the places where they live and play within their community
8. Begin to understand the uses of media and technology and how they affect their lives

* These indicators apply to children in the preschool period of ages three to five. They are based on expectations for children approximately four years of age.

---

**Strategies COMMUNITY MEMBERS can use to promote children’s COGNITIVE DEVELOPMENT:**

- Provide toy lending libraries with materials for play and exploration
- Provide make-and-take events for parents and children to make and share learning materials
- Provide accessible, natural spaces for parents and children to visit and explore
- Provide opportunities for children and families to work on community service projects
- Encourage community leaders and members to become involved with early childhood programs
- Support peaceful conflict-management and problem-solving strategies

---

**Strategies POLICYMAKERS can use to promote children’s COGNITIVE DEVELOPMENT:**

- Recognize the importance of healthy and supportive adult-child relationships in children’s cognitive development
- Promote early childhood education and care programs to support children’s cognitive development and readiness for school
- Provide resources for safe, natural spaces and places for children and families to visit and explore
- Provide resources for community activities and projects that involve children and families