



## Cognitive Development

### How Do Preschool Children Develop Strategies for Complex Thinking and Problem Solving?

Play is a vital component of cognitive development in preschool. Through play, children learn to cooperate, negotiate, resolve conflict, and use their imaginations to formulate new ideas about the world and the way things work. Children develop the ability to be flexible in their own thinking and behaviors and begin to consider the perspectives of adults and peers. Early care and education providers can support the cognitive development of preschoolers by providing extended opportunities for open-ended exploration and problem solving, collaboration, experimentation, celebrating mistakes, and trying again. These experiences build the foundation for the development of more advanced executive function skills such as symbolic thought and reasoning.

### Cognitive Development

**Memory:** recall information about objects; remember people; connect to past experiences; and working memory

**Symbolic Thought:** exploration; pretend play; identify and use symbols; and represent thinking and ideas

**Problem-Solving and Reasoning:** theories and ideas; simple and complex strategies; trial and error; ask questions; and critical thinking

**Cognitive Flexibility:** cause and effect; shift focus; modify actions; application; and adaptive behaviors



### Books to Promote Complex Thinking and Problem Solving

*10 Things I Can Do to Help My World*  
by Melanie Walsh

*Chalk* by Bill Thompson

*Duck! Rabbit!* by Amy Krouse Rosenthal and Tom Lichtenheld

*Going Places* by Peter H. Reynolds

*Not a Box and Not a Stick* by Antoinette Portis

*One Word from Sophia* by Jim Averbeck

*Possum Magic* by Mem Fox *Round Like a Ball* by Lisa Campbell

*Seven Blind Mice* by Ed Young

*Stuck* by Oliver Jeffers

*The Boy and the Airplane* by Mark Pett

*The Little Red Hen* by Byron Barton

*The Most Magnificent Thing* by Ashley Spires

*What To Do with a Box* by Jane Yolen

## Examples of Integrated Learning

How children may exhibit these skills	How early care and education providers can encourage these skills
<p>Play games like tag or hide-and-go-seek on the playground and explain how to play to a friend.</p>	<ul style="list-style-type: none"> <li>▪ Create consistent routines and procedures for daily activities and encourage children to predict what comes next. <i>Example:</i> “What did we do after we ate soup for lunch yesterday? Let’s check the schedule.”</li> <li>▪ Welcome questions and encourage children to attempt to try multiple strategies and solutions. <i>Example:</i> “What rules do you think might help make things fair? What helped us during yesterday’s game?”</li> <li>▪ Engage in playful experiences with children daily. Help them plan and sequence events, encourage them to try new ideas and consider multiple solutions to extend their thinking.</li> </ul>
<p>Draw two circles at the bottom of the page for wheels on a bike and circle at the top of the page for a sun. Says, “I’m going on a family bike ride and it’s so sunny.”</p>	<ul style="list-style-type: none"> <li>▪ Promote the creative expression of ideas through art, drama, drawing, pretend play, etc.</li> <li>▪ Practice storytelling by reading picture books together, inviting children to include labels or dictate a story to go with their painting or drawing, and listening to special family events from the weekend.</li> <li>▪ Show interest and delight in children’s creations, play scenarios, and attempts at problem solving. Praise efforts, flexibility, and adaptability.</li> </ul>
<p>Build a tall tower with blocks and knock it down with a toy construction vehicle. Repeat.</p>	<ul style="list-style-type: none"> <li>▪ Promote critical thinking and the examination of cause and effect by asking thoughtful, open-ended questions. <i>Example:</i> “What do you think will happen when you pour water into the funnel? I wonder what strategies we should use to make our structure taller?”</li> <li>▪ Be present and engaged in play and conversations with children. Model flexibility and adaptive thinking throughout the day. <i>Example:</i> “I think I’m going to try holding the scissors in one hand and moving the paper in the other to cut around the shape.”</li> <li>▪ Invite children to express their thoughts and ideas using a variety of methods and materials (such as construction, dramatic play, art, writing and sculpting) and explain their reasoning behind a strategy or a choice, why it worked or didn’t work and what they might do differently next time.</li> </ul>

## Tools and Resources

[Head Start ECLKC: Cognition Effective Practice Guide](#)

[NAEYC: Principles of Child Development and Learning and Implications That Inform Practice](#)

[NAEYC: Books That Stretch Children’s Thinking](#)

[Harvard University Center on The Developing Child: Play in Early Childhood: The Role of Play in Any Setting \(Video\)](#)