

Threats to Physical Development ([page 139](#))

- Lack of outdoor play
- Lack of food

Cognitive Development: Piaget's Preoperations

Table 3.6: Piaget's Stages: Focus on Infancy		
Age (years)	Name of Stage	Description
0-2	Sensorimotor	The baby manipulates objects to pin down the basics of physical reality. This stage ends with the development of language.
2-7	Preoperations	Children's perceptions are captured by their immediate appearances. "What they see is what is real." They believe, among other things, that inanimate objects are really alive and that if a liquid looks visually different (for example, if it is poured from a snort, wide glass into a tall, thin one), the amount actually becomes different.
7-12	Concrete Operations	Children have a realistic understanding of the world. Their thinking is on the same wavelength as that of adults. While they can reason conceptually about concrete objects, however, they cannot think abstractly in a scientific way.
12+	Formal Operations	Reasoning is at its pinnacle; hypothetical, scientific, flexible, fully adult. Children's full cognitive potential is reached.

Cognitive Development and Piaget: Preoperational Stage

Definition: The stage of development that begins about 2 years and ends at about 7 years, characterized by increasing use of symbols and prelogical thought processes. Preoperational children are unable to look beyond the way objects immediately appear (page 140) and defined by what children are unable to do.

When Piaget uses the word “operational”, “operations”, etc., he refers to logical, mental activities.

What kind of behaviors is typical of a child in the preoperational stage of cognitive development (approximate age range is 2 to 7 years old)?

- Children often display:
 - An inability to conserve quantities
 - An inability to reverse operations (They do not understand basic mental operations or rules).
 - centering (centration)
 - class inclusion
 - egocentrism

- Symbolic thinking emerges. They start to use words, images, and symbols to represent their world. Such behaviors are characterized by
 - The use of language (the word “fly” represents an annoying, buzzing creature).
 - Using language (a symbolic system) to ask for a drink of water instead of walking to the sink and pointing to it.
 - The use of fantasy and imagination (remember when you built a fort out of the couch cushions?).
 - Using a doll to represent a real baby they continue to develop language
- They are still trying to figure out the relationship between symbols and the actual objects (like maps).











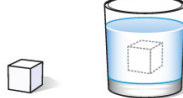



Tetra Images - Mike Kemp/Getty Images



Unable to Conserve

Preoperational children lack the ability to understand the principle of conservation. The principle of conservation states that two equal quantities remain equal even though the form or appearance is rearranged, as long as nothing is added and subtracted.

Type of conservation	Initial step and question	Transformation and next question	Preoperational child's answer
Number	<p>Two equal rows of pennies.</p>  <p>"Are these two rows the same?" (Yes.)</p>	<p>Increase spacing of pennies in one line.</p>  <p>"Now is the amount of money the same?"</p>	 <p>"No, the longer row has more."</p>
Mass	<p>Two equal balls of clay.</p>  <p>"Do these two balls have the same amount of clay?" (Yes.)</p>	<p>Squeeze one ball into a long pancake shape.</p>  <p>"Now is the amount of clay the same?"</p>	 <p>"No, the long, thin one has more clay."</p>
Volume or liquid	<p>Two glasses of the same size with liquid.</p>  <p>"Do these glasses have the same amount of juice?" (Yes.)</p>	<p>Pour one into a taller, narrower glass.</p>  <p>"Now do these glasses have the same amount of juice?"</p>	 <p>"No, the taller glass has more juice."</p>
Matter*	<p>Two identical cubes of sugar.</p>  <p>"Do these cubes have the same amount of sugar?" (Yes.)</p>	<p>Dissolve one cube in a glass of water.</p>  <p>"Now is there the same amount of sugar?"</p>	 <p>"No, because you made one piece of sugar disappear."</p>

*That is, the idea that a substance such as sugar is "still there" even though it seems to have disappeared (by dissolving).

Belsky, *Experiencing the Lifespan, 5e*, © 2019 Worth Publishers George Shellye/Masterfile

Unable to Conserve

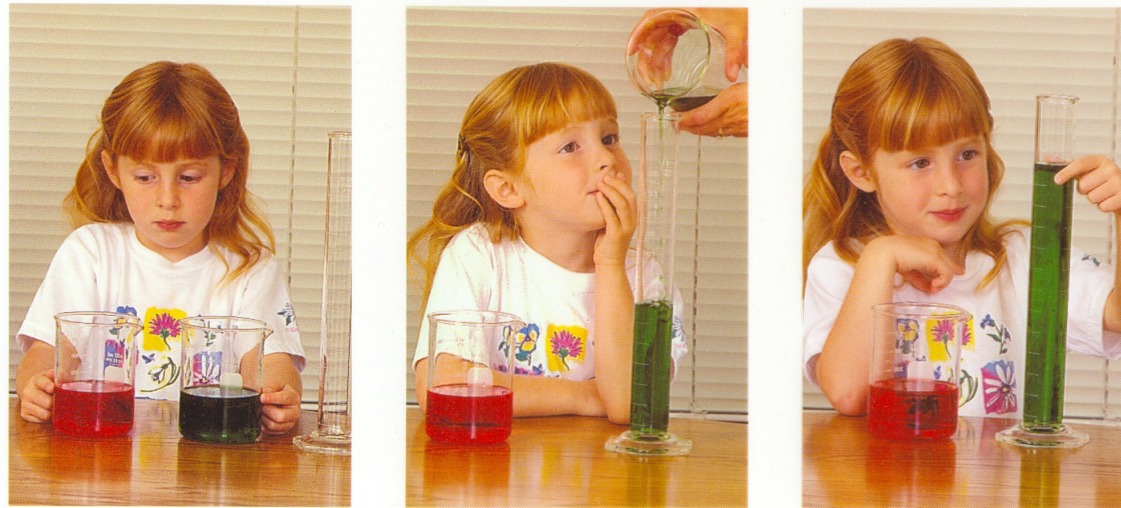


Image Source: Hockenbury and Hockenbury, 2008, Psychology

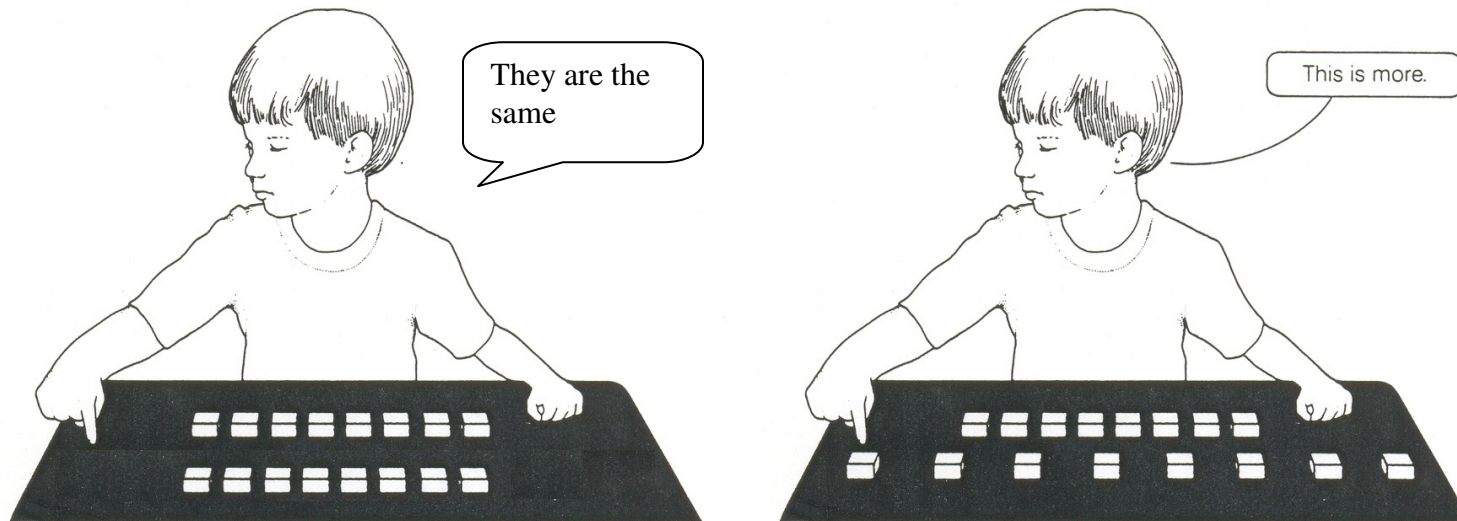


Image Source: Kalat, ()

Unable to Conserve

A four-year old (who hates carrots) gets upset when a mother cuts the carrots into smaller pieces because the child thinks they have to eat more carrots.



Reversibility

Preoperational children have difficulties grasping that a procedure can be repeated in the opposite direction ([page 141](#)). The inability to have the schema of reversibility is a factor that contributes to a child's inability to conserve quantities.

A child may be able to perform multiplication, but can't divide.

A child displaying irreversibility says

$$2 \times 4 \neq 4 \times 2$$

Centering or Centration

Preoperational children display centration. Centering is the tendency to focus or center on one aspect of the situation and ignore other important aspects of the situation.

In this particular case with the clay balls, when determining which one has more, the child “centers” on surface area and ignores height.

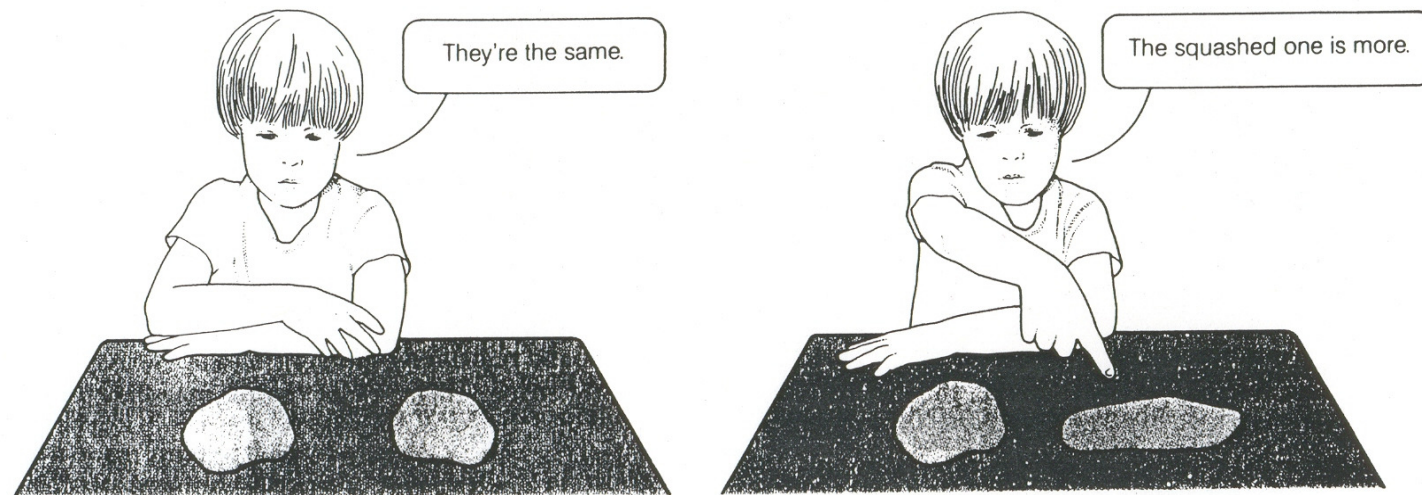


Image source: Kalat, (),

Centering or Centration

In the case of the graduated cylinder, they “center” on height and not on surface area

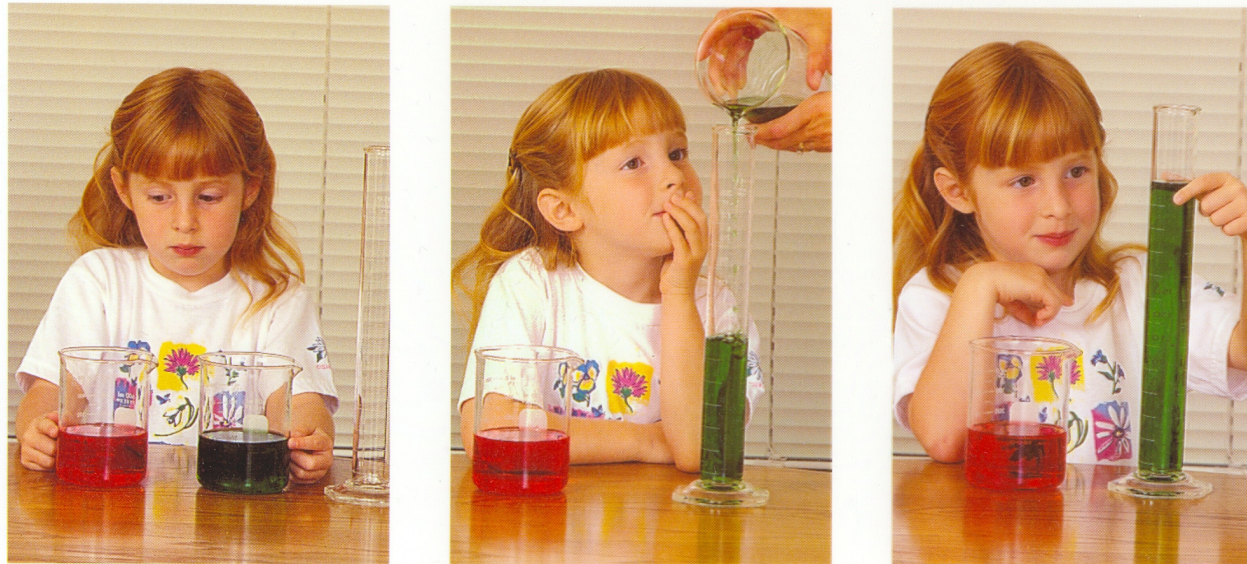


Image Source: Hockenbury and Hockenbury, 2008, Psychology

Class Inclusion

Centering on immediate impressions impairs class inclusion. Class inclusion is the knowledge that a category can comprise subordinate elements (subgroups) ([page 142](#)).

For example ([page 142](#)), spread 20 Skittles and a few gummy bears in a dish for a 3-year old



and ask “Would you rather have the Skittles or Candy?”

Most 3-year old would pick the 20 Skittles, even if you establish that gummy bears and Skittles are both candy.

Class Inclusion

“Would you rather have the Skittles or Candy?”
a 3-year old in preoperations would pick Skittles.

Candy-Skittles	Candy-Gummy Bears
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“Would you rather have the Skittles or Candy?”
a 7-year old in concrete operations would pick candy.

Candy	
Skittles	Gummy Bears



Identity Constancy

Those in the preoperational stage lack identity constancy. This is where a preoperational child is unable to understand that there is a “core self” that stays the same despite a change in outward appearance.

Halloween masks do NOT transform a person into whatever the mask is, nor wearing the clothes stereotypic of a man or woman does not make you a man or a woman.

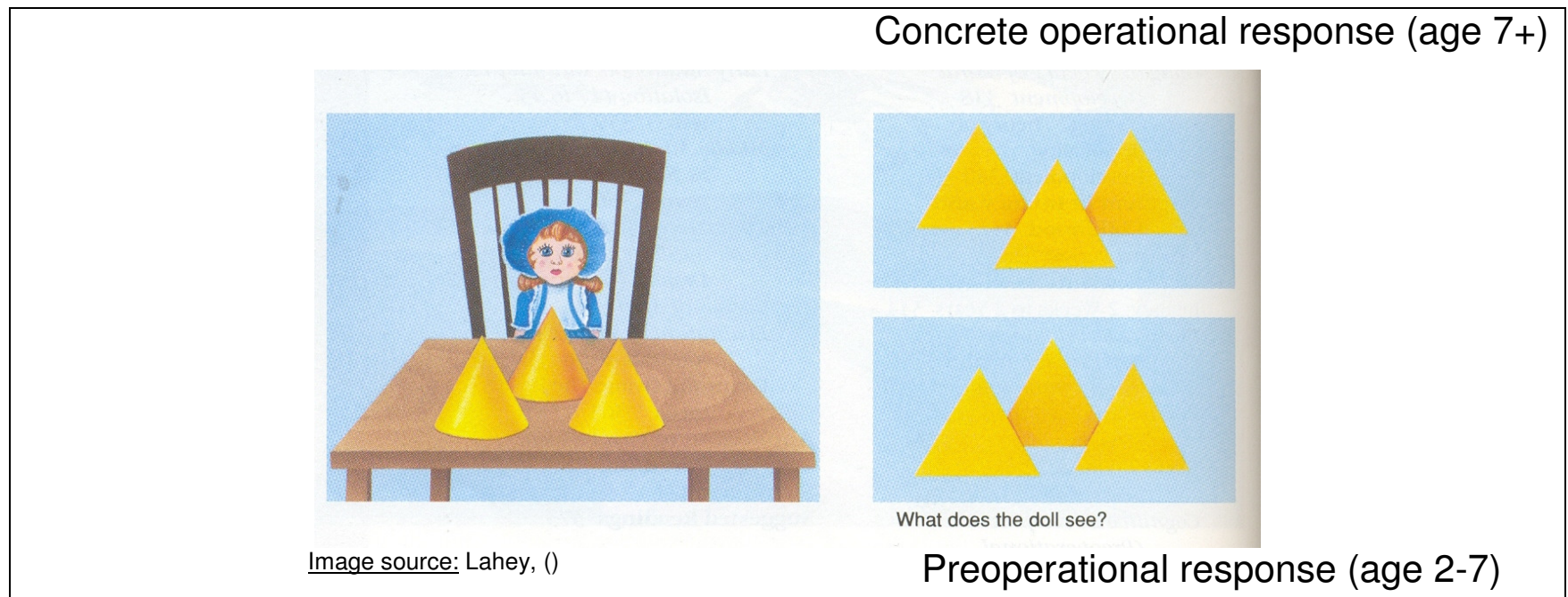


Peter Hvizdak/The Image Works



Egocentrism

Egocentrism: The tendency for preoperational children to have difficulty in viewing the world from someone else's perspective or point of view. Psychologists are NOT using egocentrism to mean selfishness or conceit as social psychologists use the word.



In response to the question “What does the doll see?”, an egocentric child picks the bottom set of triangles.

Using Piaget's Ideas at Home and at Work (page 145)

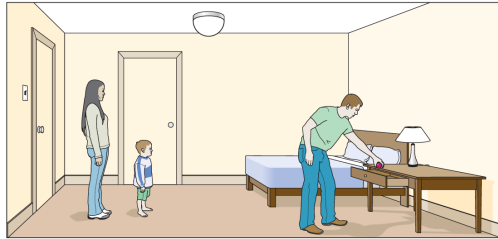
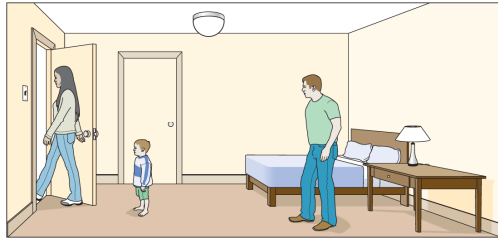
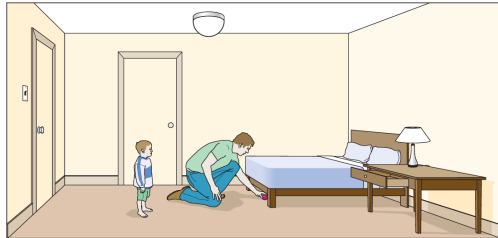
- Piaget's theory helps explain why you need the same-sized cups at a kindergarten lunch table—even if you pour each drink from identical cans.
- Nurses understand that rationally explaining a medical procedure to a 4-year old is less effective than providing a magic doll to help the child cope.
- Organizing a baseball game is impossible with those at the preoperational level due to the abstract nature of some rules and the inability to follow directions.
- It explains why the preoperational child is terrified of the dark and scary amusement park clowns*. When a child is ready, they will naturally grow out of these fears (or control their fear of clowns).

*clowns may be a special type of fear.

Emotional Development: Theory of the Mind

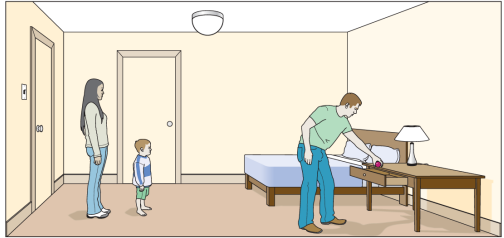
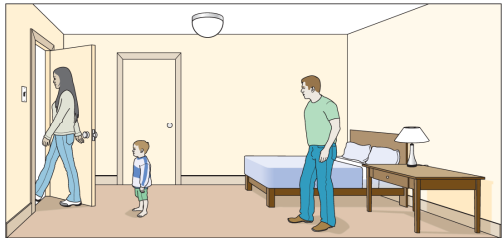
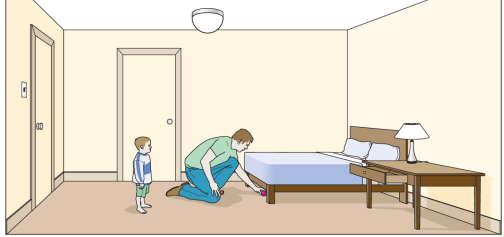
Making Sense of Other People's Minds

Theory of mind: The understanding that other people perspectives different from their own.

<p>Hide a toy somewhere in the room while the child and your friend watch (e.g. in the drawer).</p>	<p>(1) Another adult and a young child watch while you hide a toy in a place like a desk drawer.</p> 	<p>Ask the child where the friend would look for the toy when she comes back.</p>
<p>Have your friend leave the room.</p>	<p>(2) The other adult [Ms. X] leaves the room.</p> 	<p>If the child is younger than 4 years old, the child will typically say "under the bed" (in this example), the second hiding place, even though the friend could not know that the toy had been moved.</p>
<p>Once your friend is gone, move the toy to another hiding place (e.g. under the bed).</p>	<p>(3) You hide the toy under the bed and then ask the child, "Where will Ms. X look for the toy?"</p>  <p>Belsky, <i>Experiencing the Lifespan</i>, 5e, © 2019 Worth Publishers</p>	<p>The child doesn't understand that what he observed, can't be what the friend observed.</p>

Emotional Development: Theory of the Mind

Theory of mind: The understanding that other people perspectives different from their own.

	<p>(1) Another adult and a young child watch while you hide a toy in a place like a desk drawer.</p> 	
	<p>(2) The other adult (Ms. X) leaves the room.</p> 	
<p>Where would your friend look for the toy?</p>	<p>(3) You hide the toy under the bed and then ask the child, "Where will Ms. X look for the toy?"</p>  <p><small>Belsky, <i>Experiencing the Lifespan</i>, 5e, © 2019 Worth Publishers</small></p>	<p>Where would your friend look for the toy?</p>
<p>The friend would look under the bed—does NOT have "Theory of the Mind"</p>		<p>The friend would look in the drawer—has "Theory of the Mind"</p>

Emotional Development: Theory of the Mind

Having the Theory of the Mind can help a child understand that others may not have your best intentions at heart.

Mean Monkey study		
	Children told researchers which sticker they preferred	
	The Mean Monkey took the sticker the children preferred leaving a less preferred sticker.	
Does Not have Theory of the Mind		Has Theory of the Mind
Children told researchers which sticker they preferred		Children told researchers which sticker they opposite of what they preferred
Mean Monkey took the preferred sticker		Mean Monkey took the sticker they claimed to prefer (which was the opposite of what they preferred).

When others do not have their best interests at heart, children learn to lie. Keep in mind that children at this age tend to act impulsively, so acting impulsively as to what they want may not be the best thing for children.

Individual Differences in Theory of the Mind

Brain frontal lobe development does appear to be associated with the development of the theory of the mind.

- Children who talk with their parents about feelings frequently as 2-year olds show better performance on theory of the mind tasks as do children who frequently engage in pretend play (page 159, Santrock)
- Children who display better executive functions such as planning and inhibition show better theory of mind development. (page 159, Santrock)
- Bilingual preschoolers and preschoolers with superior language skills tend to achieve theory of the mind at an earlier age than those who are monolingual and have less sophisticated language skills (page 152).
- Theory of the mind abilities are associated with sharing and helping (especially during elementary school), with girls having an advantage (page 153).
- Children (especially girls) with superior theory of mind skills were more popular during preschool and early elementary school, and to some extent through adulthood (page 153).
- 5-year-old boys and girls who had poor theory of mind abilities were more likely to have fewer friends from kindergarten to second grade (page 153).

Intervention, Stimulating Theory of the Mind, [page 153](#).

Engagement of social interactions helps with the development of the theory of mind.

- Continually train preschools in perspective-taking by pointing out other people's feelings.
- When reading stories to young children, discuss what each protagonist is feeling (instead of just reading to them).
- Embed false-belief tasks into games. For example, leave a room and have the child hide a toy in a new place, then return and look for that toy where you think it should be.
- Encourage dramatic and make believe play. Have children dress up in costumes and pretend.