

latter stage of this period, their reasoning is **intuitive** (e.g., the stars have to go to bed just as they do), and they are only beginning to deal with problems of weight, length, size, and time. Reasoning is also **transductive**—because two events occur together, they cause each other, or knowledge of one characteristic is transferred to another (e.g., all women with big bellies have babies).

**Concrete operations** (7 to 11 years old): At this age, thought becomes increasingly logical and coherent. Children are able to classify, sort, order, and otherwise organize facts about the world to use in problem solving. They develop a new concept of permanence—**conservation** (see Cognitive Development [Piaget], [Chapter 14](#)); that is, they realize that physical factors (such as, volume, weight, and number) remain the same even though outward appearances are changed. They are able to deal with a number of different aspects of a situation simultaneously. They do not have the capacity to deal in abstraction; they solve problems in a concrete, systematic fashion based on what they can perceive. Reasoning is **inductive**. Through progressive changes in thought processes and relationships with others, thought becomes less self-centered. They can consider points of view other than their own. Thinking has become socialized.

**Formal operations** (11 to 15 years old): Formal operational thought is characterized by adaptability and flexibility. Adolescents can think in abstract terms, use abstract symbols, and draw logical conclusions from a set of observations. For example, they can solve the following question: If *A* is larger than *B* and *B* is larger than *C*, which symbol is the largest? (The answer is *A*.) They can make hypotheses and test them; they can consider abstract, theoretic, and philosophic matters. Although they may confuse the ideal with the practical, most contradictions in the world can be dealt with and resolved.

## Language Development

Children are born with the mechanism and capacity to develop speech and language skills. However, they do not speak spontaneously. The environment must provide a means for them to