I. Chapter Overview

1. Physical Growth
   Size and Shape
   The Musculoskeletal System
2. Brain Development
   Brain and Behavior
   Brain and Experience
3. Motor Development
   Fine Motor Skills
   Gross Motor Skills
   The Role of Practice in Motor Development
   Control of Elimination
4. Cognitive Development: The Great Debate
   Sensorimotor Development
   Reproducing Interesting Events (Substage 3)
   The Emergence of Intentionality (Substage 4)
   Exploring by Experimenting (Substage 5)
   Representation (Substage 6)
5. Conceptual Development
   Understanding the Permanence of Objects
   Understanding Other Properties of the Physical World
   Reasoning About Objects
6. The Growth of Attention and Memory
   Developing Attention
   Developing Memory
7. Implications

II. Key Concepts to Emphasize

III. Connections to Text: Central Issues and Theories
Continuity vs. discontinuity
Nature vs. nurture
Theories

IV. Guide to the Supplements

V. Activities to Enhance Learning (homework, in-class activities, discussion questions)

VI. Handouts

I. Chapter Overview

1. PHYSICAL GROWTH

Height and weight increase rapidly throughout infancy, especially during the first year. Proportions shift, too, with the head coming to account for relatively less of the infant’s length, the legs for relatively more. Soft bones gradually ossify, and muscle mass increases. Although boys tend to be larger, girls tend to develop more quickly.

Figures:
5.1 Growth from 3 months of age to 2 years of age
5.2 Tapering off of growth
5.3 Changes in body proportions
5.4 Growth rates in the United States and Malawi

Apply, Connect, Discuss
Provide some concrete examples of how socioeconomic status may affect infants’ physical growth.

2. BRAIN DEVELOPMENT

Brain and Behavior

Increased myelination of neurons, along with other changes, leads to substantial development of the cerebral cortex, including the prefrontal and language-related areas, and to greater synchrony among the brain areas. These changes appear vital to the emergence in late infancy of more systematic problem solving, voluntary control of behavior, and acquisition of language. By late infancy, most of the brain structures that will support adult behavior are present.

Brain and Experience

As shown by studies of Romanian orphans who were adopted, prolonged deprivation in infancy leads to ongoing impairments in intellectual functioning. Because the brain undergoes considerable development between 6 and 24 months, lack of experiences during this sensitive period appears to affect both experience-expectant and experience-dependent brain development.
Apply, Connect, Discuss
Review the four central issues of developmental science that were discussed in Chapter 1. How does our knowledge of infant brain development shed light on these issues?

3. MOTOR DEVELOPMENT

Made possible by physical changes, development of fine and gross motor skills enables infants increasingly to explore their environment and reduce their dependence on caregivers.

Fine Motor Skills
As the movements of the hands and fingers become better coordinated during the 1st year, infants perfect their reaching and grasping. With continuing increases in coordination of fine motor movements, by age 2 infants can do much in the way of feeding and dressing themselves and can turn book pages, cut paper, string beads, and stack blocks.

Gross Motor Skills and the Role of Practice in Motor Development
• Progress in locomotion leads to the emergence of crawling by 8 to 9 months of age, at which time wariness of heights appears. Walking at around 1 year is made possible by the development of component motor skills and by practice. Studies in different cultures reveal that practice or lack of it can affect the age at which infants reach motor milestones.

Apply, Connect, Discuss
Imagine two children—one an early walker, walking well at 9 months of age, the other a late walker, walking well at 15 months. Suppose both children live in the same neighborhood or village and
have parents with similar resources and with similar childrearing practices and beliefs. Explain how the difference in onset of walking may have significant implications for each child's development.

4. COGNITIVE DEVELOPMENT: THE GREAT DEBATE

- For some developmentalists, including Piaget, young infants are limited to sensorimotor intelligence until about 18 months, when they become capable of representational thinking—thinking that is truly conceptual.
- For other developmentalists, very early in development, if not from birth, infants are capable of representing and understanding the world conceptually. A rudimentary conceptual system develops separate from, although in close association with, the sensorimotor system.

Sensorimotor Development

- In Piaget's stage of sensorimotor development, infants acquire knowledge exclusively through motor actions directed at their immediate environment and guided by their senses.

Tables:
5.1 Piaget's sensorimotor substages

- Following the first two substages, in which infants learn to control reflexes and then to modify and repeat actions involving their bodies, infants move through four additional sensorimotor substages:

Reproducing Interesting Events (Substage 3)

In Substage 3, infants of 4 to 8 months become capable of secondary circular reactions, repeating actions that involve objects, not simply their own body.

The Emergence of Intentionality (Substage 4)

In Substage 4, at 8 to 12 months, infants begin to display intentionality, engaging in goal-directed behavior.

Exploring by Experimenting (Substage 5)

In Substage 5, the stage of tertiary circular reactions, infants of 12 to 18 months deliberately vary their actions, thus experimenting in order to explore the world.

Representation (Substage 6)

- In Substage 6, between 18 and 24 months, infants begin to base their actions on representations. The ability to represent mentally is crucial to problem solving, symbolic play, deferred imitation, and the use of language.
- The sequence and timing of the behaviors associated with Piaget's sensorimotor stages have been replicated with infants in a wide range of societies. However, critics of Piaget argue that young infants have representational competence that traditional Piagetian tests do not enable them to reveal.

Apply, Connect, Discuss

Imagine that you have been hired by a company to develop a line of toys appropriate to the ongoing sensorimotor development of infants through age 2. Prepare a presentation of some of your
ideas for products, including arguments for how your products will appeal to infants at the various sensorimotor development.

5. CONCEPTUAL DEVELOPMENT

Understanding the Permanence of Objects

- For Piaget, object permanence—the understanding that objects continue to exist when out of sight—emerges only gradually, beginning at about 8 months. Thus, 8- to 12-month-old infants continue to search for an object in a location where they discovered it even when they have then seen it rehidden in a different location. Piaget claimed that these infants still did not have true representations. Other developmentalists have argued that the infants’ behavior reflects not a lack of representational competence but performance problems—specifically, memory limitations or a tendency to perseverate, repeating the same movement or the same successful strategy.

Figures:
5.13 Objects no longer in view
5.14 Understanding of object permanence
5.15 A-not-B error

- Using the violation of expectations method, in which babies are habituated to an event and then presented with possible and impossible variants, researchers have obtained results suggesting that infants as young as 2 months are capable of representations.

Figures:
5.16 Violation of expectations method

- According to the dynamic systems approach, cognitive development in infancy involves not a shift from sensorimotor to conceptual intelligence but growing abilities to coordinate all the various systems involved in sensorimotor and conceptual intelligence.

- The formation of representations may depend heavily on experience. In experiments, infants’ preference for a familiar object over an unfamiliar object is reversed when the room is darkened, perhaps because experience with an object had led to a stronger representation of it.

Figures:
5.17 “Visible” and “hidden” conditions

Understanding other Properties of the Physical World

Experiments using the violation-of-expectations method suggest that infants as young as 3 months have an initial grasp of various physical laws concerning the behavior of objects, such as the law of gravity.

Figures:
5.18 Violation of expectations example
5.19 Violation of expectations in regards to gravity
Reasoning about Objects

Other such experiments, contrary to Piaget’s view, reveal that young infants may be capable of understanding basic numbers and cause-effect relationships. Of particular interest is infants’ abilities to categorize, evident as early as 3 months. Developmentalists are uncertain whether changes in categorization abilities during infancy simply reflect improved perceptual abilities or signal a change from categorization based only on perceptual features to categorization that is also conceptually based.

Figures:
5.20 Violation of expectations for counting
5.21 Intermodal perception
5.22 Categorizing abilities of infants
5.23 Changes in categorizing abilities from age 7 to 9–11 months
5.24 Generalized imitation

Apply, Connect, Discuss
Design an experiment to test whether infants understand the difference between “natural” objects (trees, fish, people, etc.) and “artificial” objects (cars, watches, buildings, etc.)

6. THE GROWTH OF ATTENTION AND MEMORY

Developments in attention and memory are crucial to all the other cognitive changes of infancy.

Developing Attention

Infants are increasingly able to sustain their attention; in addition, they are increasingly fast at processing information about the targets of their attention. These changes are reflected in experiments showing that attention to simple visual displays decreases after the first few months but attention to complex stimuli increases.

Figures:
5.25 Four distinct phases in development of attention
5.26 Changes in attention (simple vs. complex patterns/figures)

Developing Memory

Memory increases rapidly during the first year, as shown by the increasing length of time for which infants are able to remember procedures such as how to make a mobile move. The improvement may involve simply a continuous process or may reflect a shift from reliance on implicit memory (recognizing what has been experienced before) to explicit memory (recalling absent objects and events without a reminder). Explicit memory is an important cognitive achievement because it requires generating a mental representation for something not present to the senses.

Figures:
5.27 Rovee-Collier mobile experiments
**Apply, Connect, Discuss**

In what ways might changes in the brain discussed at the start of this chapter contribute to the development of attention and memory during infancy?

7. **IMPLICATIONS**

Infancy is a brief period of enormous physical and cognitive changes with enormous implications for development in other domains and for future development. Brain development and increases in height and weight support developing motor skills, which help make the cognitive changes possible. Among cognitive changes crucial to development are the growing capacity to represent mentally and to remember.

II. **Key Concepts to Emphasize**

In the following section, key concepts to emphasize are described for each major section of this chapter. These concepts are either key aspects of development during the age period covered in this chapter or are introduced in this chapter and then returned to in later chapters.

1. **PHYSICAL GROWTH**

   Figure 5.3 shows the changes in physical proportions that occur over the first few years of life into adulthood. As the changes in proportion will help to explain some of the motor achievements that occur over the first year of life, this figure would be good to emphasize.

2. **BRAIN DEVELOPMENT**

   The *exuberant synaptogenesis* that occurs during this period of development is a topic of great interest in the popular press as noted in the box on Brainy Babies. Several books have been written in recent years suggesting that this exuberant synaptogenesis and synaptic pruning makes the first year of life an especially critical period. Others, however, disagree about the general long-term implications of exuberant synaptogenesis and other aspects of infant development. You may want to bring in examples of some of the “brainy baby” products that are overgeneralizations from our extent of knowledge.

3. **MOTOR DEVELOPMENT**

   The development of reaching and grasping abilities is described in this chapter. This *developmental sequence* merits emphasis since it is an example of a progression that will be noted with other abilities to emerge later in development. For example, in later chapters as the emergence of strategic knowledge is described, we will see a need for great concentration at first followed by more automatic behavior, and then subtle refinements of the skill are noted.

   General developmental changes in locomotion should be emphasized here as well as practice in motor development. In the infants and toddlers section of the instructor's videos is a section on cognitive development which includes a video of Karen Adolph's experiments. This shows how experience helps children to evaluate safe and risky locomotive behaviors.

4. **COGNITIVE DEVELOPMENT**

   Piaget's model is once again described in this chapter. Table 5.1 can be discussed with students to emphasize Piaget's points. Challenges to Piaget as found in the next section of this chapter covering
competing evidence in the area of object permanence present a good opportunity to emphasize the process by which researchers come to understand development. The differing methods and conclusions from the research with Piaget’s A-not-B error, Baillargeon’s violation of expectations studies, Thelen’s dynamic systems approach, and Shinsky & Munakata role of experience studies provide a good example of how research studies build upon each other. This progression of research is especially important in understanding internal processes such as reasoning about nonvisible objects. These studies also provide a good example of the difficulties involved in ascertaining the true underlying abilities of infants (see Handout 5.11).

5. CONCEPTUAL DEVELOPMENT

Categorizing abilities were mentioned in earlier chapters and will be reviewed again in later chapters. It may be worth taking a few minutes to emphasize how this basic cognitive ability is a common focus for research in early cognitive abilities. Assigning a quick-write activity on why this ability is so important can be a good way to emphasize its importance. You can also emphasize all of the cognitive changes that occur using Handout 5.15.

6. THE GROWTH OF ATTENTION AND MEMORY

Figure 5.24 can be used to help students understand some of the methods used to study infant capacities. By reviewing the different phases of attention as measured by changes in heart rate, students can understand how we come to know what infants can and cannot do. Figure 5.27 shows the gradual increase in memory, and the mobile and train tasks can also be emphasized as methods used to understand infant development.

III. Connections to Text: Central Issues and Theories

This chapter provides many opportunities to draw connections to the key themes for this text and the frameworks as presented in Chapter 1. These connections can be made in lectures, class discussions, or activities and will be presented in the handouts section later.

CONTINUITY VS. DISCONTINUITY

Throughout this chapter, changes in cognitive abilities are noted. To help revisit the continuity and discontinuity issue, the changes noted in the chapter can be grouped into those that best fit a continuous model of development and those that fit into a discontinuous model. To contrast a stage view of development with the gradual change theory, a class discussion can occur. In small groups, students can summarize the evidence in support of gradual quantitative changes in cognition and evidence in support of more sudden qualitative changes in cognition. They can then discuss the implications of each of these views for the parents of children who are nearing the end of their first two years of life. What different types of conclusions would they share with parents based on each of these models (Handout 5.12)?

NATURE VS. NURTURE

As noted previously, this chapter emphasizes how Piaget underestimated the abilities of infants and shows how researchers have found that infants have some conceptual knowledge that may in fact have an innate basis. The differing pieces of evidence provide an opportunity to return to the nature versus nurture debate as described in Chapter 1. Handout 5.13 can be used to help students discuss the evidence related to early cognitive abilities in support of both of these positions.
PLASTICITY

On pages 166–168, the role of experience in brain development is discussed. This is a good chance to discuss plasticity especially in regards to the functioning of children who spent some of their early years in orphanages. The text points out that the children who did not have positive outcomes may have missed a “sensitive period” or key period of plasticity in brain development.

THEORIES

Piaget's theoretical model of cognitive development is featured in this chapter. This is therefore a good place to review his claims about the sensorimotor period but also an opportunity to show how he underestimated the abilities of infants. Handouts 5.11 and 5.13 can be used to help frame a discussion of Piaget's claims and the research that refutes some of what he described about infants.

IV. Guide to the Supplements

The publisher has a variety of supplemental tools to assist instructors in their courses. There are supplemental readings grouped according to each section of the course. Multiple video clips can be found to support a student's understanding of the material in this chapter. The Tool Kit includes an excellent sampling of video clips with associated activities that can be completed outside class and turned in for instructor review. Refer to the introductory chapter for this Instructors Resource manual for ideas on how to use these supplements across the text.

The supplemental videos feature several sections that can reinforce concepts from this chapter. There is a section on babies making the transition from crawling to walking. It nicely shows how efficient crawling can be, but also that babies work hard to move to walking. There is also a section on Karen Adolph's research with slopes and crawling babies and walking babies. It nicely shows how each time children master a way of getting around, they seem to have to learn about safe and risky behaviors all over again.

V. Activities to Enhance Learning (homework, in-class activities, discussion questions)

The preface introduced a variety of activities that an instructor can use to enhance learning. These include homework which a student can complete outside class and then turn in for grading or review. The results of these homework activities can also be reviewed during a class session. The activities found on the Tool Kit lend themselves to review and discussion in class. Also, the Apply, Connect, Discuss sections of this chapter lend themselves well to in-class activities. A few examples of activities will be presented here specific for this chapter, but we also give you a reminder to review the activities described in the preface for other activities that you can use to enhance the learning of the material in this chapter.

HOMEWORK

- Select one of the studies described in the text and review the original report on the study. Summarize the hypothesis, methods, results, and conclusions for this study. Do you agree or disagree with the summary of the study as presented in the text? What is the basis for your agreement or disagreement?
• Go out and **measure the height and head and body length** of a group of 1-year-olds. Graph the mean and individual scores. What is the pattern of individual difference? Hypothesize reasons for these individual differences.

• Measure a 1-year-old’s head and leg length and your own head and leg length. Compare the **proportion of both of your respective body parts**. How does this compare with the information presented in the text?

• Observe a 5-month-old, 7-month-old, and 9-month-old using Handout 5.3. What differences do you notice between the children? What reasons other than age might account for differences between the children?

• Write an owner’s manual for the parent of a 2-month-old child. Describe the key social, behavioral, and biological changes the parent can expect to see as the child ages from 2 1/2 months to 1 year.

• Ask your parent about when you first reached the motor milestones listed in Figure 5.9. Where do you fit in terms of the percentage of children who achieve each milestone? Why do you think your developmental pattern falls as it does?

• List the age at which your own child achieved the motor milestones listed in Figure 5.9. How does your child’s pattern of development fit with the information in Figure 5.9? To what do you attribute your child’s patterns of development and how it fits with these percentages?

**IN-CLASS ACTIVITIES**

• Assign small groups of three students a grand theory as presented in Chapter 1. Ask them to describe how a “teacher” who ascribes to their assigned theory would teach a 9-month-old infant how to pick up or reach for a toy on the table. Students can write their approaches on the board and then share them in a large group discussion.

• Instructors can show the “visual cliff” experiment from the supplemental video. This video would lead nicely to a preview of Chapter 6 as this experiment can show the connection between physical development and emotional development.

• Instructors may want to use a Jigsaw activity with students to review the conceptual development section. Groups of students can be assigned each of the areas of conceptual development as part of the Jigsaw.

• Stop mid-way through your discussion of Piaget’s theory and ask students to text you three key things they know about Piaget. This can be a good check for understanding.

**DISCUSSION QUESTIONS**

• Why did Piaget underestimate the abilities of infants? How did reliance on motoric actions as evidence impact his underestimation?

• Why is the ability to categorize considered essential to the process of human cognitive development?

• Even though the evidence in support of the “brainy baby” craze is limited, why do we continue to see an increase in toys and videos for infants?

• In your own words, describe the difference between explicit and implicit memory.
VI. Handouts

The handouts and activity forms for this chapter are listed below.

5.1 Advance Organizer
5.2 Key Terms
5.3 Observation Guide
5.4 Interview Guide
5.5 Apply, Connect, Discuss: Impact of SES
5.6 Apply, Connect, Discuss: Four Central Issues
5.7 Apply, Connect, Discuss: Individual Differences in Onset of Walking
5.8 Apply, Connect, Discuss: Toy Products
5.9 Apply, Connect, Discuss: Natural and Artificial Objects
5.10 Apply, Connect, Discuss: Brain Changes, Attention, and Memory
5.11 Competing Evidence on Infant Abilities to Reason about Nonvisible Objects
5.12 Discontinuity or Continuity? Cognitive Changes
5.13 Nature vs. Nurture: Is Knowledge Innate or Constructed?
5.14 Theoretical Perspectives
5.15 Cognitive Abilities
### Chapter Advance Organizer

<table>
<thead>
<tr>
<th>Chapter outline</th>
<th>Key points and questions</th>
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<tbody>
<tr>
<td>1. Physical Growth</td>
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<td>Size and Shape</td>
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<td>Gross Motor Skills</td>
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<td>The Role of Practice in Motor Development</td>
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<td>Control of Elimination</td>
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<td>4. Cognitive Development: The Great Debate</td>
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<td>Reproducing Interesting Events (Substage 3)</td>
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<td>The Emergence of Intentionality (Substage 4)</td>
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<td>Exploring by Experimenting (Substage 5)</td>
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<td>Representation (Substage 6)</td>
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<td>5. Conceptual Development</td>
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<td>Understanding the Permanence of Objects</td>
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<td>Understanding other Properties of the Physical World</td>
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<td>Reasoning about Objects</td>
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<td>6. The Growth of Attention and Memory</td>
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<tr>
<td>Developing Attention</td>
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<td>Developing Memory</td>
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<tr>
<td>7. Summary and Implications</td>
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</table>

**Handout 5.2  Understanding the Key Terms**

<table>
<thead>
<tr>
<th>Key terms</th>
<th>Define in your own words here</th>
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</thead>
<tbody>
<tr>
<td>prefrontal area</td>
<td></td>
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<tr>
<td>fine motor skills</td>
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<tr>
<td>gross motor skills</td>
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<td>locomotion</td>
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<td>secondary circular reactions</td>
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<td>intentionality</td>
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<tr>
<td>tertiary circular reactions</td>
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<td>representations</td>
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<tr>
<td>symbolic play</td>
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<td>deferred imitation</td>
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<td>object permanence</td>
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<td>A-not-B error</td>
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<tr>
<td>violations of expectations method</td>
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<td>implicit memory</td>
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<td>explicit memory</td>
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</table>
### Handout 5.3

**Observation Guide**

<table>
<thead>
<tr>
<th>Changes that occur during infancy</th>
<th>Examples from your observation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological changes</strong></td>
<td></td>
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<tr>
<td>Size and shape</td>
<td></td>
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<tr>
<td>• weight triples and height increases 10 inches</td>
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<tr>
<td>• body proportions change</td>
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<tr>
<td><strong>Muscle and bone</strong></td>
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<tr>
<td>• bones in hand and wrist ossify</td>
<td></td>
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<tr>
<td>• muscles increase in length and thickness</td>
<td></td>
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<tr>
<td><strong>The brain</strong></td>
<td></td>
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<tr>
<td>• spurt in frontal cortex leads to increased self-regulatory abilities at about 7 to 9 months of age</td>
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<tr>
<td><strong>Motor development</strong></td>
<td></td>
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<tr>
<td>Reaching and grasping</td>
<td></td>
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<tr>
<td>• by 9 months of age, can guide movements with a single glance</td>
<td></td>
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<tr>
<td>• movements of hand and fingers become more coordinated between 7 and 12 months of age</td>
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<tr>
<td>• increased coordination by age 2</td>
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<tr>
<td><strong>Locomotion</strong></td>
<td></td>
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<tr>
<td>• rolls over at about 3 months of age</td>
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<tr>
<td>• sits at about 6 months of age</td>
<td></td>
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<tr>
<td>• crawls at about 8 to 9 months of age</td>
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<tr>
<td>• walks at about 12 months of age</td>
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<tr>
<td><strong>Cognitive changes</strong></td>
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<tr>
<td>According to Piaget</td>
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<tr>
<td>• secondary circular reactions (4–8 months)</td>
<td></td>
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<tr>
<td>• coordination of secondary circular reactions (8–12 months)</td>
<td></td>
</tr>
<tr>
<td>• tertiary circular reactions (12–18 months)</td>
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<tr>
<td>• symbolic representation (18–24 months)</td>
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<tr>
<td>• object permanence</td>
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<td>• object knowledge</td>
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<tr>
<td>• categorizing abilities</td>
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<td>• developing attention and memory</td>
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Handout 5.4

Interview Guide

In this chapter, the control of elimination and the diaper-free movement are discussed. Interview a parent and ask them about their efforts to help their child control elimination and their opinion about the diaper-free movement. Summarize their responses below.

Summarize the parent’s responses and describe how they fit with what was discussed in the chapter.
Handout 5.5 Apply, Connect, Discuss

Provide some concrete examples of how socioeconomic status may affect infants’ physical growth.
Handout 5.6

Apply, Connect, Discuss

Review the four central issues of developmental science that were discussed in Chapter 1. How does our knowledge of infant brain development shed light on these issues?
Imagine two children—one an early walker, walking well at 9 months of age, the other a late walker, walking well at 15 months. Suppose both children live in the same neighborhood or village and have parents with similar resources and with similar childrearing practices and beliefs. Explain how the difference in onset of walking may have significant implications for each child’s development.
Imagine that you have been hired by a company to develop a line of toys appropriate to the ongoing sensorimotor development of infants through age 2. Prepare a presentation of some of your ideas for products, including arguments for how your products will appeal to infants at the various sensorimotor development.
Design an experiment to test whether infants understand the difference between “natural” objects (trees, fish, people, etc.) and “artificial” objects (cars, watches, buildings, etc.).
In what ways might changes in the brain discussed at the start of this chapter contribute to the development of attention and memory during infancy?
### Competing Evidence on Infant Ability to Reason about Nonvisible Objects

Summarize below the competing research findings on an infant’s ability to reason about nonvisible objects. First summarize the research methods and results and then summarize the conclusions from the research.

<table>
<thead>
<tr>
<th>Summary of research</th>
<th>Summary of conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piaget's studies of the A-not-B error</td>
<td></td>
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<tr>
<td>Baillargeon's violation of expectations studies</td>
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<tr>
<td>Thelen's dynamic systems approach</td>
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<td>Shinsky &amp; Munakata role of experience studies</td>
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</table>

What different conclusions would you reach from any or all of these studies?

What further studies would you recommend to resolve some of the conflicting evidence and conclusions?
Before you begin this activity, you should review the section in Chapter 1 describing continuity and discontinuity in development. Once you have reviewed that section of the text, review the material in Chapter 5 on cognitive changes. List below the evidence that supports a gradual, continuous change in these cognitive processes and the evidence that supports a more stage-like, discontinuous change in these cognitive processes. Finally, list the conclusions you would share to help the parent of a 1-year-old understand what a child can and cannot do based on each of these differing views.

<table>
<thead>
<tr>
<th>Continuity</th>
<th>Discontinuity</th>
</tr>
</thead>
<tbody>
<tr>
<td>What evidence is there to support continuity? What evidence is there to support discontinuity in the development of these cognitive processes?</td>
<td></td>
</tr>
</tbody>
</table>

What conclusions would you share with the parent of a 1-year-old based on this continuous view of development? Of a 1-year-old based on this discontinuous view of development?
## Handout 5.13  Nature vs. Nurture: Is Knowledge Innate or Constructed?

In Chapter 5, the text states that Piaget underestimated the abilities of infants. Review the material on Piaget’s claims as well as other researchers in the section on conceptual development. How do their claims lead us to conclusions about innate and constructed conceptual development? (Read the study by Werker.)

<table>
<thead>
<tr>
<th>Nature</th>
<th>Nurture</th>
</tr>
</thead>
<tbody>
<tr>
<td>What evidence supports the need to construct knowledge?</td>
<td>What evidence supports the idea that children are born with certain rudimentary knowledge?</td>
</tr>
</tbody>
</table>
### Handout 5.14

**Theoretical Perspectives**

Review the sections of the chapter describing cognitive changes in the first two years. List below the main evidence from these sections supporting each of the theoretical perspectives listed below.

<table>
<thead>
<tr>
<th>Framework</th>
<th>Evidence in support of the theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>The psychodynamic perspective</td>
<td></td>
</tr>
<tr>
<td>Behaviorism</td>
<td></td>
</tr>
<tr>
<td>Piaget's constructivist perspect</td>
<td></td>
</tr>
<tr>
<td>Vygotsky's sociocultural theory</td>
<td></td>
</tr>
</tbody>
</table>

What are the broad implications of each of these claims and their supporting evidence?
Summarize here the cognitive abilities noted in the following areas for infants.

Object permanence

Counting

Cause-effect relationships

Categorizing