

# Study Guide

**Directions:** Answer the following questions as you read the chapter. They will help you focus on the main points. Later, you can use this guide to review and study the chapter information.

## Section 9–1: Early Brain Development

1. What are neurons? \_\_\_\_\_  
\_\_\_\_\_
2. What are neural pathways? What causes them to develop? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Both a newborn and a six-month-old may kick their covers off if they feel warm. How is this response different for these two babies?  
\_\_\_\_\_  
\_\_\_\_\_
4. Newborns learn about the world through their senses. What part of the brain receives this sensory information?  
\_\_\_\_\_
5. What part of the cerebrum allows more complex learning? \_\_\_\_\_
6. What role do axons and dendrites play in the brain? \_\_\_\_\_  
\_\_\_\_\_
7. Explain the role of neurotransmitters in communicating between neurons. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Explain how the brain becomes organized with neural pathways. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. After stacking blocks repeatedly, a baby becomes skilled at stacking them quickly. How does the development of connections in the brain explain this skill?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**Intellectual Development of Infants**

**Chapter 9 continued**

10. What can a caregiver do to help the development of a baby's brain pathways? \_\_\_\_\_

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11. What is myelin? How does its presence in the brain affect learning? \_\_\_\_\_

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**Section 9–2: Intellectual Development During the First Year**

12. How is perception related to learning? \_\_\_\_\_

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13. Give an example of each of the four intellectual abilities that babies develop in their first year.

A. Memory: \_\_\_\_\_

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B. Associations: \_\_\_\_\_

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C. Cause and effect: \_\_\_\_\_

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D. Attention span: \_\_\_\_\_

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14. According to Piaget, how do children progress through the stages of intellectual development?

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**Intellectual Development of Infants**

**Chapter 9 continued**

15. Fill in the missing information with details about Piaget’s four periods of intellectual development.

Period	Age	Characteristics
	Birth to 2 years	
	2 to 7 years	
		Can think logically but still learn best through experience.
Formal operations		

16. Keesha drops her toy and it rolls behind a chair. She realizes that the toy must be somewhere, even though she can not see it, so she crawls to look for it. What concept has Keesha learned?

\_\_\_\_\_

17. What type of thinking makes it possible for children to eventually learn to read? At about what age do children develop this capability?

\_\_\_\_\_

\_\_\_\_\_

18. Why is it important to provide stimulation for an infant’s senses during the first period of development that Piaget identified?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

19. Give two examples of things a caregiver can do to build an infant’s sense of security and trust.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

20. What are concepts? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**Intellectual Development of Infants**

**Chapter 9 continued**

21. Describe three stages that children ages one to three go through in beginning to learn words and learn concepts.

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**Section 9–3: Helping Infants Learn**

22. How does responding to a child’s cries help the child’s intellectual abilities develop?

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23. How can learning about average child development help parents and other caregivers encourage learning?

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24. How does talking to infants benefit them? \_\_\_\_\_

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25. Why is childproofing the home better for intellectual development than keeping crawling or walking babies in playpens?

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26. Name three ways that play benefits babies. \_\_\_\_\_

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**Intellectual Development of Infants**

**Chapter 9 continued**

**27.** Give an example of a toy that is good for a twelve-month-old but not for a four-month-old. Explain why it is suitable for one age but not the other.

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**28.** How do babies communicate before they can use words? \_\_\_\_\_

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**29.** Why should caregivers avoid using baby talk? \_\_\_\_\_

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**30.** Identify the average age range for each of the following speech milestones.

- A.** Puts two words together: \_\_\_\_\_
- B.** Voices excitement and displeasure: \_\_\_\_\_
- C.** Talks about activities: \_\_\_\_\_
- D.** Says one or two words: \_\_\_\_\_
- E.** Tells stories: \_\_\_\_\_

## Early Brain Development

## SECTION 9-1

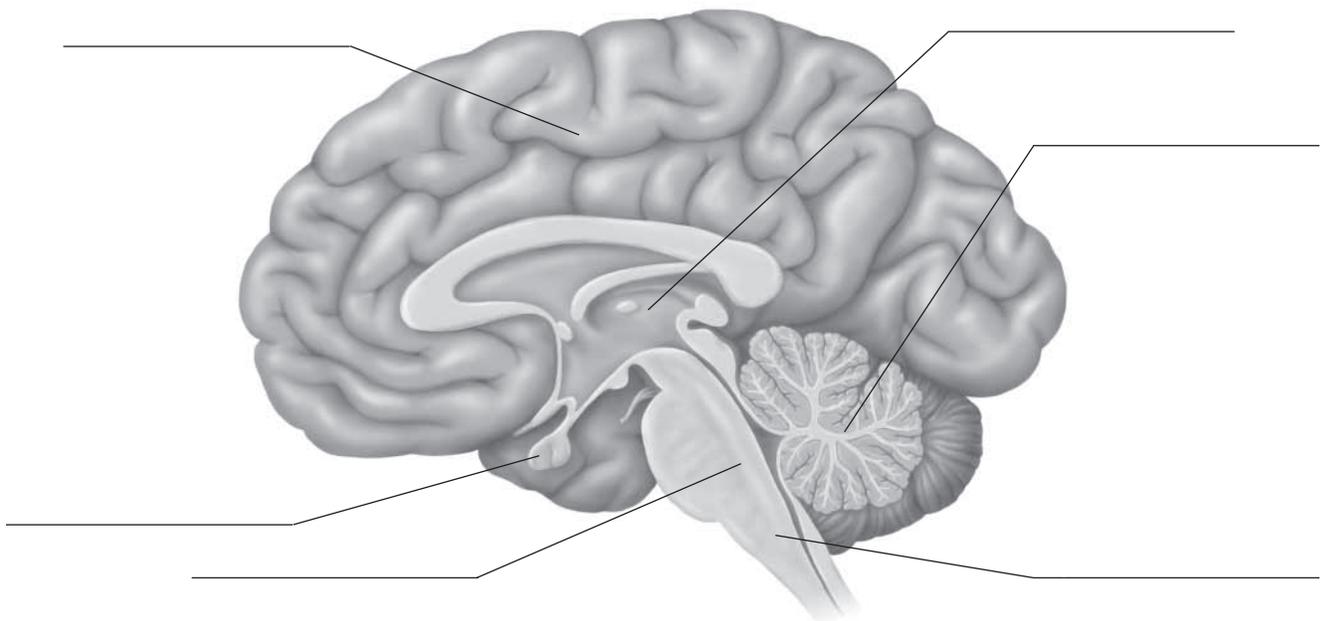
# Understanding Brain Structure

**Directions:** The descriptions below explain some functions and characteristics of different parts of the brain. Write the name of the correct part of the brain in the space after its function. The same part of the brain may be used more than once. Then complete the diagram by writing the name of the brain part in the appropriate space.

### Parts of the Brain

- |                   |              |
|-------------------|--------------|
| • Thalamus        | • Brain stem |
| • Spinal cord     | • Cerebrum   |
| • Pituitary gland | • Cerebellum |

1. Controls involuntary activities such as breathing. \_\_\_\_\_
2. Directs motor activities. \_\_\_\_\_
3. Controls the way emotions are expressed. \_\_\_\_\_
4. Coordinates the activities of the two sides of the body. \_\_\_\_\_
5. Secretes hormones that regulate growth. \_\_\_\_\_
6. Controls functions such as speech and memory. \_\_\_\_\_
7. Controls muscular coordination, balance, and posture. \_\_\_\_\_
8. Controls simple reflexes that do not involve the brain. \_\_\_\_\_
9. The cortex is the outer layer of this part of the brain. \_\_\_\_\_
10. Releases hormones that control metabolism and sexual development. \_\_\_\_\_



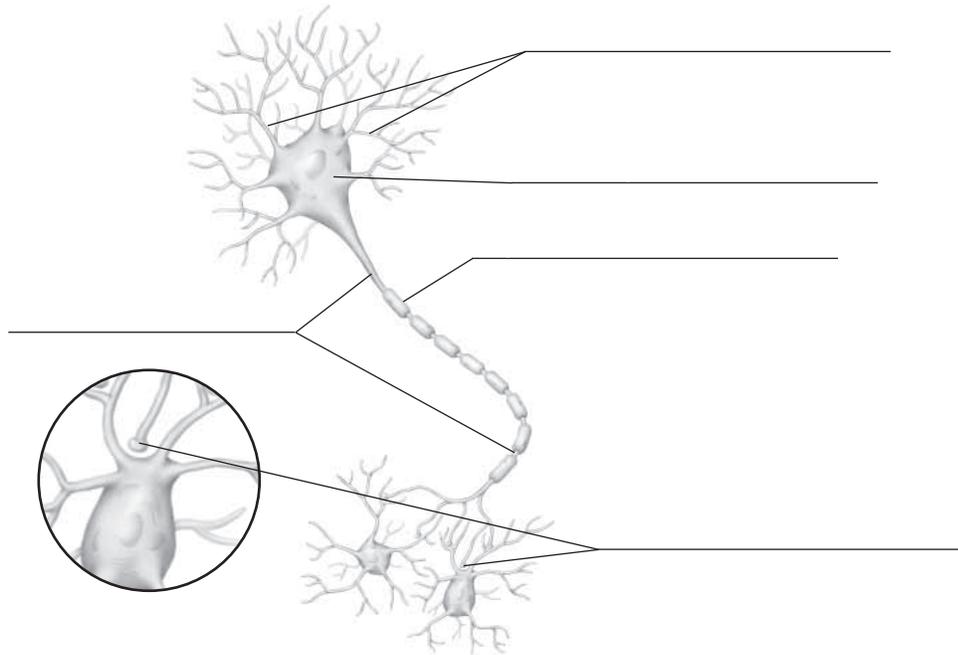
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**Early Brain Development**

**Section 9-1 continued**

**Directions:** Choose terms from the box below to label the parts of a neuron. Write the term in the appropriate place on the diagram. In the spaces below the diagram, briefly summarize the function of each part in transmitting information between neurons.

- | Parts of a Neuron |           |
|-------------------|-----------|
| • Axon            | • Myelin  |
| • Cell body       | • Synapse |
| • Dendrite        |           |



**Functions**

Dendrite: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Cell body: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Axon: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Myelin: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Synapse: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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*Intellectual Development During the First Year***SECTION 9–2****Applying Piaget's Work**

**Directions:** The chart below shows the stages and characteristics of intellectual development that Piaget placed in the sensorimotor period—the first of the periods he identified. In the right column, write examples of activities or objects that could be given to infants at each stage in order to match its characteristics.

**Piaget's Sensorimotor Period**

<b>Ages</b>	<b>Characteristics</b>	<b>Activities or Objects</b>
Birth to one month	<ul style="list-style-type: none"> <li>• Practices inborn reflexes.</li> <li>• Does not understand self as a separate person.</li> </ul>	
One to four months	<ul style="list-style-type: none"> <li>• Combines two or more reflexes.</li> <li>• Develops hand-mouth coordination.</li> </ul>	
Four to eight months	<ul style="list-style-type: none"> <li>• Acts intentionally to produce results.</li> <li>• Improves hand-eye coordination</li> </ul>	
Eight to twelve months	<ul style="list-style-type: none"> <li>• Begins to solve problems.</li> <li>• Finds partially hidden objects.</li> <li>• Imitates others.</li> </ul>	
Twelve to eighteen months	<ul style="list-style-type: none"> <li>• Finds hidden objects.</li> <li>• Explores and experiments.</li> <li>• Understands that objects exist independently.</li> </ul>	
Eighteen to twenty-four months	<ul style="list-style-type: none"> <li>• Solves problems by thinking through sequences.</li> <li>• Can think using symbols.</li> <li>• Begins imaginative thinking.</li> </ul>	

# Toy Evaluation

**Directions:** Select a toy that might be appropriate for a child between seven and twelve months old. You may select a toy that you have seen in stores, catalogs, magazines, or around your home or the home of someone you know. Write the name of the toy and describe it below. If a picture is available, attach it to the page. Then answer the questions that follow.

**Name of toy:** \_\_\_\_\_

**Description of toy:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. Why did you choose this toy? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. What makes this toy safe or unsafe for this age range? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Would it be easy to keep clean? Explain. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. What materials are used in making this toy? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Is it durable and well constructed? Explain. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Helping Infants Learn**

**Section 9–3 continued**

6. Check the information in the textbook about appropriate toys for children these ages. Would this toy really interest a child this age, or would it appeal more to older children or to the adults buying it? Explain.

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7. Does the toy encourage problem solving? Explain why or why not. \_\_\_\_\_

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8. What skills does the toy teach? \_\_\_\_\_

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9. Would this toy stimulate a child’s imagination or creativity? Why or why not? \_\_\_\_\_

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10. Does the toy encourage interaction between children and adults? If so, how? \_\_\_\_\_

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11. Can you think of any household objects that could substitute for this toy? Explain. \_\_\_\_\_

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12. How many months do you think a child would enjoy this toy? Explain. \_\_\_\_\_

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