

Intellectual Development in Infants

CHAPTER 9

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

11. What is *myelin*? How does its presence in the brain affect learning? _____

Section 9-2: Intellectual Development During the First Year

12. How is perception related to learning? _____

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

A. Memory: _____

B. Associations: _____

C. Cause and effect: _____

D. Attention span: _____

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

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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't 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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21. Describe three stages that children ages one to three go through in beginning to learn words and learn concepts.

Section 9-3: Helping Infants Learn

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

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

24. How does talking to infants benefit them?

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

26. Name three ways that play benefits babies.

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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.

28. How do babies communicate before they can use words? _____

29. Why should caregivers avoid using baby talk? _____

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

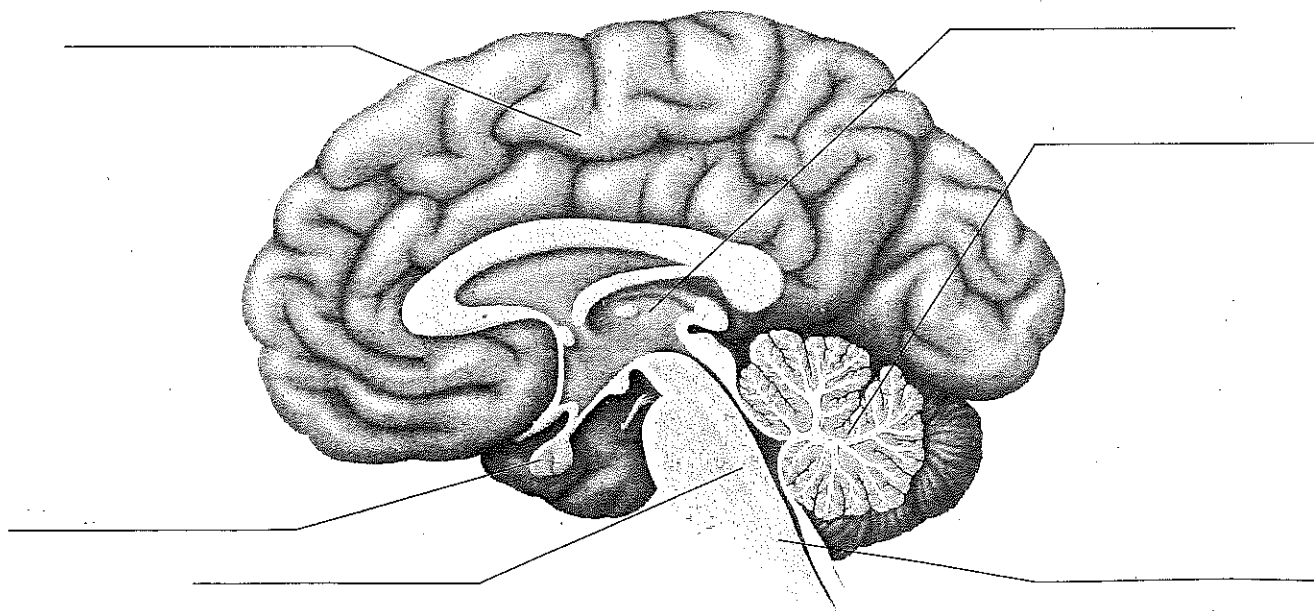
- A. Puts two words together: _____
- B. Voices excitement and displeasure: _____
- C. Talks about activities: _____
- D. Says one or two words: _____
- E. Tells stories: _____

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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