Lesson 5.7 Cloning and Stem Cells

Name

Date

Period

Key Terms	
Cloning	Stem cell

 Explore I: **Cloning: Hit or Miss?**

Read the cloning article and answer the following questions.

1. Who is Noah?
2. Who is Bessie?
3. How many wild Asian oxen remain in the wild? Where is their habitat?
4. What happened to Noah?
5. List three reasons cloning advocates claim the process is beneficial.
6. Why is the term clone used?
7. Briefly explain how Noah was cloned.
8. What is a blastocyst?
9. What is a surrogate mother?
10. What is the success rate in cloning experiments?
11. What did researchers in Hawaii achieve?
12. What did researchers in Japan achieve?
13. Explain why baby clones are three times more likely to die than natural newborns.
14. Who is Cumulina?
15. Why are scientists concerned about cloned animals lacking genetic diversity to fight off disease?

16. What percent of all species may be extinct by 2025?

17. Describe artificial insemination.

18. Read the debate about cloning endangered or extinct animals. Do you agree with the supporters or opponents? Explain your reasoning.

19. Read the debate about cloning humans. Do you think the possible benefits out weigh the possible risks of cloning humans? Explain your thinking.

 Explore II: **Stem Cells: The next cure?**

Read the article about stem cells and answer the following questions.

20. Why do the LaRue brothers desperately need a miracle?

21. What are stem cells?

22. What are the two major types of stem cells?

23. What are embryonic stem cells?

24. Embryonic stems cells are often called pluripotent. What does this term mean?

25. Explain why embryonic stem cells don't remain in the body forever.

26. Where are adult stem cells found in an adult body?

27. Why don't adult stem cells have the same potential as embryonic stems cells to multiply and grow into other types of tissue?

28. Give some examples why stem cells may be the most promising miracle in medicines future.

29. Why is stem cell research controversial?

30. Where did Stiehm harvest the stem cells to treat the LaRue brothers' immune disorder?

31. How did these stem cells help cure the LaRue brothers' immune disorder?

32. What is a stem-cell "line"?

33. How do scientists generate a stem cell "line"?

34. What does the term "in vitro" mean?

35. What did President Bush announce about stem cell research?

36. What problems does this announcement pose?

37. Read both sides of the stem-cell research debate. Which side do you agree with? Explain your thinking.

38. Read how stem cells grow body parts (pages 16 and 17) and summarize in your own words the steps below.

    Step 1:

    Step 2:

    Step 3:

    Step 4: