Name_____Date_____Period_____

Genetic Technology WebQuest

Link #1 http://www.ornl.gov/sci/techresources/Human_Genome/home.shtml

1. When was the Human Genome Project completed?

2. Fill in the blanks that address the goals of the human genome project:

   - *identify* all the approximately _____ genes in human DNA,
   - *determine* the sequences of the _____ chemical base pairs that make up human DNA,
   - *store* this information in _____,
   - *improve* tools for _____,
   - *transfer* related technologies to the _____,
   - *Address* the _____ (ELSI) that may arise from the project.

Link #2 Go learn.genetics.utah.edu/content/tech/cloning/clickandclone/

(If this link doesn't work- you can Google "Mimi the Mouse" and it is the first link).

3. What are you asked to remove from the egg?

4. What are you asked to remove from the somatic cell?

5. Where are you asked to put the nucleus from the somatic cell?

6. How is Mimi involved in the process of cloning Mimi?

7. What color is the baby mouse (pup)?

8. When and where was this procedure used in science? What did scientists learn from their research?

Link #3

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- **Link #7:** http://learn.genetics.utah.edu/content/labs/gel/
  Continue to click through the animation to answer the following questions.

9. What does the liquid contain?

10. How can we sort the DNA samples even though we can't see them?

11. How can we make DNA move through the gel?

12. What kind of charge is on the end with the wells? _____

13. What size strands move most quickly through the gel?

14. What shows up as bands in the gel?

Now it's your turn…

15. What are the 5 steps to making a gel electrophoresis? (Hint: look at the top right of the screen).

16. What is needed to make the gel?

17. What does the buffer do for the gel?

18. What forms the holes, or "wells" in gel?

19. Explain the purpose of putting the "DNA Standard" into one of the wells.

20. What kind of charge does DNA have?

21. What lets us know that the current is running through the gel?

22. What do we add to the DNA in order to see the bands?

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23. How do we measure the estimated length of the bands?

24. What is you estimate for the size of the **first band?** **Second band?** **Third band?**

Link #4 http://biomed.brown.edu/arise/resources/docs/GM%20foods%20review.pdf

25. Describe what "GM" means.

26. What is used to create GMOs?

27. . What were the two most harvested crops in America in 2000?

28. According to data taken in 2000, who was the leading producer of transgenic crops

29. What are the possible outcomes (positive or negative) for using GMOs?

30. What do scientists predict are future transgenic crops and what is their purpose?

31. What percentage of cross contamination is accepted in GMO?

32. Out of all of the possible benefits to GM crops, which three do you think are most important?

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33. Out of all the possible controversies of GM crops, which three do you think are most important?

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