

## WebQuest: Creating a Recombinant

Name : \_\_\_\_\_

Go to DNAI ([www.dnai.org](http://www.dnai.org)) > Manipulation. Focus on the modules Revolution and Production, found at the bottom of the page. Work through the problem, players, pieces of the puzzle and putting it together sections of these modules. Answer on a separate sheet of paper.

1. What is recombinant DNA?
2. Explain how recombinant DNA technology can be useful in medicine.
3. What three basic mechanisms did scientists need to know how to perform in order to manipulate DNA sequences? In addition, state which biological structures are responsible for performing each mechanism.
4. What was the issue with using degradative enzymes to cut the DNA?
5. What was unique about a new class of enzymes that James Watson describes?
6. What was the process Paul Berg described was the critical step to separate a mixture of DNA fragments?
7. The crucial enzyme used to cut DNA creates \_\_\_\_\_ ends in the DNA.
8. How are plasmids beneficial in cloning DNA?
9. Why was Bob Pollock concerned about Janet Mertz's discovery?
10. \_\_\_\_\_ consist of bacterial genes that code for resistance to antibiotics.
11. What was the original purpose of the moratorium letter?
12. How is the manipulation of genetic material similar to a telescope?
13. \_\_\_\_\_ is a protein which regulates body sugars and is lacking in patients who have \_\_\_\_\_.
14. What are the pros and cons of using cow and/or pig insulin in humans? What did biotech companies such as Genentech seek to solve this problem?
15. Compare and contrast the approaches from the Gilbert group and Genentech.
16. What is DNA transformation?
17. How did the Gilbert group identify that they had created rat insulin?
18. The P4 facility must have all separate \_\_\_\_\_ to achieve the greatest containment and quarantine.