Internet Assignment:

Vectors & Early Genetic Engineering

**Now read what a plasmid vector is by going to**

<http://en.wikipedia.org/wiki/Plasmid>

A **plasmid** is an extra \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ molecule separate from the [chromosomal DNA](http://en.wikipedia.org/wiki/Chromosome) which is capable of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ independently from the chromosomal DNA. Plasmids usually occur naturally in [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](http://en.wikipedia.org/wiki/Bacterium), and are commonly used in Genetic Engineering. Plasmids used in [genetic engineering](http://en.wikipedia.org/wiki/Genetic_engineering) are called [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_](http://en.wikipedia.org/wiki/Vector_(molecular_biology)). Plasmids serve as important tools in genetics and biotechnology labs, where they are commonly used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (make many copies of) or [*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*](http://en.wikipedia.org/wiki/Protein_expression) particular genes

**Next go back to:**

<http://highered.mcgraw-hill.com/sites/dl/free/0072437316/120060/ravenanimation.html>

**and watch Early Genetic Engineering Experiments and answer the questions**

1. In what years were the 1st genetic engineering experiments done, and by what 2 scientists?
2. What was the first step in this experiment?
3. Tetracycline is an antibiotic that usually inhibits growth of E. coli, why was it necessary to incorporate this gene into the vector being used in the experiment? In other words, what did it help the researchers identify?
4. Why can’t you assume that all of the cells growing on the media have the gene of interest, in this case the frog ribosomal RNA gene?