**Recombinant DNA and Plasmids**

**Some Questions.**

**1. What is a plasmid?**

**2. Why do bacteria carry them?**

**3. Why cant we take genes of interest to us (GFP, Insulin, etc.) and simply circularize them and transfer them into bacteria?**

**4. Why are plasmids useful to modern DNA science?**

**Recombinant DNA and Plasmids**

**Some Answers**

**1. What is a plasmid?**

* Circular
* Extrachromosomal
* Able to replicate
* About one thousand times smaller than the bacterial chromosome

**2. Why do bacteria carry them?**

* Plasmids contain useful genes
* Plasmids can be transferred between bacteria more easily than whole chromosomes.

**3. Why cant we take genes of interest to us (GFP, Insulin, etc.) and simply circularize them and transfer them into bacteria?**

* Antibiotic resistance genes give us a way to select for a transformation event (find the bacteria with the plasmid).
* The plasmids carry an origin of replication that is a start point for DNA polymerase. Without it a plasmid would dilute out of the population.

**Why are plasmids useful to modern DNA science?**

* They give us a way to move genes of interest into bacteria so they can express the protein in large amounts. [They are vectors]