11/03

* Chapter 5: DNA, Gene Expression, and Biotechnology
	+ “The DNA 240”
		- Knowledge about DNA is increasing justice in the world
		- 240 people have been freed because their DNA wasn’t in the evidence
	+ DNA, and three things
		- Structure
			* Backbone of sugars and phosphates for nucleic acid
			* Adenine, Guanine, Thymine, Cytosine
			* Is two polynucleotides twisted in a double helix
			* A and T always paired, and G and C are always paired
			* The sequence of the nitrogenous bases carries genetic information
		- How it works
			* DNA to proteins
		- How it replicates, when and where.
	+ Two important features
		- DNA contains the instructions on how to create a body and control its growth and development
		- Passed down from parents to offspring
	+ Genes are sections of DNA that contain instructions for making proteins
		- All DNA is basically the same from being to being, plants to invertebrates, invertebrates to vertebrates.
		- Not all DNA produces proteins
		- About 95% doesn’t produce anything, it just turns things on and off
	+ So how does it work?
		- Transcription and translation
			* Turning DNA sequence to an RNA sequence
			* RNA making proteins
		- DNA to RNA
			* Nucleus has DNA
				+ DNA can’t leave the nucleus because the nucleic membrane is like the evil stepmother that keeps the princess in the tower
				+ So DNA makes a coded copy called RNA replacing all of the T with U so that gene can leave
			* To make the code
				+ Unzip the DNA
				+ Take the complement
				+ Replace all T’s with U’s

After the complement!!!

* + - * + Viola, RNA molecule!

Vocabulary

 Gene – a sequence of DNA calling for a specific trait

 DNA – a molecule that contains all of the information to create a living being. It has a sugar phosphate back with nitrogenous bases

 Chromosome – the entire six feet of DNA in each cell, a packaging of gene basically

 Genome – complete collection of genes. Found in pretty much every cell in a living creature’s body

 Alleles – alternate versions of a gene that code for the same trait. Ex: Allele 1 will give you hair, albeit brown hair while Allele 2 will still give you hair, albeit red hair.

 Genotype – all of the genes in an organism…what you don’t see…duh

 Phenotype – the physical manifestations of the instructions. It’s what you see

For Tuesday Lab

 Randomly put together 21 bases of DNA in notebook

 Start with TAC