**Genetics/DNA Unit Review** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per.\_\_\_\_

***The following will help you prepare for the test this Friday. Use your notebook and textbook to do the following work on a separate sheet of paper.***

**Cell Division**

1. What are the differences between mitosis and meiosis? (focus on the following):
   1. Which involves somatic cells and which involves gametes?
   2. What is the purpose of each type of cell division?
   3. Which results in 4 haploid cells and which in 2 diploid cells?
   4. Which involves asexual reproduction and which involves sexual reproduction?

**Genetics**

1. Be able to distinguish between Mendel’s three laws
2. Understand the following vocabulary words and the relationships between them:
   1. Dominant vs. recessive
   2. Homozygous vs. heterozygous
   3. Purebred vs. hybrid
   4. Genotype vs. phenotype
   5. Alleles vs. chromosomes vs. genes vs. DNA
3. Be able to set-up and complete a punnett square and make predictions about the genotypes and phenotpyes of offspring given information about the parents.
   1. For example, if brown eyes are dominant to blue and a heterozygous brown-eyed parent crosses with a blue-eyed parent, determine the likelihood that the couple will have a brown-eyed child.
4. *Honors Students only*: be able to interpret a pedigree

**DNA**

1. What is the structure of DNA (draw and label a section of DNA including):
   1. Base-pairs
   2. Nucleotides
   3. Sugar
   4. Phosphate
2. What does the term “double-helix” refer to?
3. What are the two steps of protein synthesis?
4. Describe the process of protein synthesis from the DNA to a Protein including the following vocabulary:
   1. Codon d. anticodon g. DNA j. amino acids
   2. mRNA e. nucleus h. transcription k. base-pairing
   3. tRNA f. nuclear pore i. translation