Name: Period: Date:

Learning Objectives

Chapter 6: Genetics

Standard Students Know:	Learning Objective	Pre – Assessment 1	Mid – Assessment 2	Post - Assessment 3
2.a - meiosis is an early step in sexual reproduction in which pairs of chromosomes separate and segregate randomly during cell division to produce gametes containing one chromosome of each type 2.b – only certain cells in multicellular organisms undergo meiosis 2.c – how random chromosomes segregation explains the probability that a particular allele will be in a gamete. 2.d. – new combinations of alleles may be generated in a zygote through the fusion of male and female gametes (fertilization). 2.e – why approximately half of an individual's DNA sequence comes from each parent. 2.f – the role of chromosomes in determining an individual sex. 2. g – how to predict possible combinations of alleles in a zygote from genetic makeup of the parents. 3.a – how to predict the probable outcome of phenotypes in a genetic cross from the genotype of the parents and mode of inheritance 3.b – the genetic basis for Mendel's laws of segregation and independent assortment NGSS HS-LS3-2: Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis HS-LS3-3: Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	What are autosomes? What are sex chromosomes?			
	What is a **diploid** cells? I can give examples of **diploid** cells.			
	What are **haploid** cells? I can give examples of **haploid** cells.			
	Differentiate between body cells and sex cells (**gametes**)			
	What is **Meiosis**? How many rounds does it go through?			
	Compare and contrast the two rounds of divisions in **Meiosis**			
	How sexual reproduction creates unique gene combinations?			
	How does crossing over during meiosis increases genetic diversity?			
	Who is Gregor Mendel?			
	Summarize Mendel's **Laws of segregation**			
	What is a **purebred**? What happens when you **cross** purebreds?			
	Explain how there can be many versions of one **gene**.			
	Describe how genes influence the development of **traits**			
	What is a **monohybrid** cross? What is a **dihybrid** cross?			
	What is the **law of independent assortment**?			
	Explain how heredity can be illustrated mathematically			

To assess yourself use the following scale:

1) I have never heard of this concept
2) I have heard of this concept
3) I completely understand this concept