**PowerPoint Notes: Standard 4, Objective 1**

Slide 1: Germ cells undergo meiosis. Germ cells are found in the male and female gonads and form sperm and eggs. Meiosis produces haploid gametes, which contain only one set of chromosomes, instead of diploid somatic cells, which contain two.

Slide 3: Amoeba Sisters DNA Replication video.

Slide 5: What’s different about meiosis as compared to mitosis? What’s the same?

Slide 8: 46 chromosomes = 23 pairs. If each of our cells has 46 chromosomes what would happen if each parent gave their offspring 46 chromosomes?

[They would have 92… TOO MANY!] What do the animals need to do to make sure that their offspring have all the genetics they need but also the right amount of chromosomes? [Split in half]

What about the X and Y chromosomes? What is their significance? How do you get a male embryo? How do you get a female embryo?

Slide 12: **Genetic Variation**: How is that you look different than your brothers and sisters if you got chromosomes from the same parents? How does the genetic information in mom and dad’s diploid cells (46 chms) choose what becomes haploid cells(23 chms)? Is it always the same? How many times have you been told you look like grandma or grandpa on mom or dad’s side? WHY? To understand, we need to go back one more generation. Where do your parents get their DNA?

Slide 14: Basic Genetics – What Are Traits? What are DNA and Genes? What is Inheritance? What is Mutation

 Variation + Selection and Time – Sources of Variation

Slide 17: Starfish – Asexual Reproduction: Fissiparity (autonomy; self-amputation)

Slide 18: Bacteria – Asexual Reproduction: Binary Fission

Slide 20: Bacteria Lab – SRMS

Slide 21: Propagation Lab – Spider Plants

Slide 22: Mutation Video – Teenage Mutant Ninja Turtles

Slide 23: What was the mutagen that turned Donnie, Leo, Mikey and Ralph into Donatello, Leonardo, Michelangelo and Raphael? [Ooze from the sewer while they were in proximity to baby turtles dropped there.]

Slide 24: What does “bioethics” mean? Bioethics Current Science Event – Genetics Research Project.