**SBI 3U Genetics**

**Big Ideas**

Variability and diversity of living organisms result from the distribution of genetic materials during the process of meiosis.

The study of the genome and biotechnology has social, ethical and environmental implications.

**Genetics Learning Targets**

1. I can describe and explain mitosis and meiosis as part of the cell cycle.

2. I can describe errors and complications with meiosis; along with the chromosomal abnormalities resulting from mutations.

3. I understand how meiosis contributes to genetic variation in offspring.

4. I can identify and describe how genetic and genomic research can have social and environmental implications.

5. I can describe how the concepts of DNA, genes, chromosomes and alleles account for the transmission of hereditary characteristics.

6. I can predict phenotypic and genotypic ratios in monohybrid and dihybrid crosses using Punnett squares.

7. I can use Mendelian laws of inheritance to explain concepts of dominance, recessiveness, codominance and sex-linkage.

