

# INTRODUCTION TO GENETICS / LESSON OVERVIEW

## Objectives

**The students will:**

- be able to distinguish between recessive and dominant traits;
- learn what genes are and how they determine traits;
- learn how to calculate the likelihood of receiving a genetic trait;
- and learn how to use the Punnett Square to determine recessive and dominant traits.

## Lesson Summary

**Part 1. Introduction (15 minutes)**

- Introduce the lesson by defining genetics, genes, traits, and heredity.
- Discuss Gregor Mendel, the first person to discover how genes mark traits.

**Part 2. What are Genes and What Do They Do? (15 minutes)**

- Students learn about DNA, chromosomes, and how they determine genetic traits.

**Part 3. Inheritance of Traits (15 minutes)**

Students learn why it is important to study genetics. Students then learn how traits are inherited, including the concept of dominant traits and recessive traits. Students also define genotypes and phenotypes.

**Part 4. Predicting Shark Genetics – Punnett Square (30 minutes)**

Students learn how to use a Punnett Square to predict genotypes and phenotypes.

**Activity 1. Predicting Shark Genes: The Punnett Square (30 – 45 minutes)**

This activity provides more example genetics problems for students to solve. This is a great chance for the students to gain more experience in preparing Punnett Squares and calculating percentages for different traits.