

# BITE-SIZED SEED SAVING LESSON PLAN

## TOPIC: GENETICS, PHENOTYPES, AND GENOTYPES

**Sub Topics:** Gene, Allele, Homozygous, Heterozygous, Genetically Modified Organisms

### Lesson Content:

#### 1. **Ages recommended:**

Grades 9-12

#### 2. **Objective:**

Understand the basics of plant genetics

#### 3. **Pre-lesson preparation:**

Print out the two worksheets, a coin for each student, and drawing materials

#### 4. **Key words:**

**Genotypes:** the part of a genetic code that we don't see visually

**Phenotypes:** the part of a genetic code that we see externally

**GMO:** genetically modified organism

1. **Slide presentation:** See speaker notes for suggested prompts and questions.

#### 2. **Activity options:**

a. **Punnett Square exercise** Print out the Punnett Square exercise with your students. After completion there should be 12 green beans, and 4 yellow beans. Reflect on how the dominant trait (Green) was found in larger numbers and how sometimes genes are not reflected phenotypically

b. **Frankenstein Plant exercise:** Print out the Frankenstein plant game and give every student a coin to toss. Get students to fill out the genotypes of the parents and then toss a coin to figure out the genotype of the offspring. At the end, have students draw their plant