Mendel and His Pea Plants Lesson

Subject / Course:	HS Biology		
Topic:	Heredity		
Lesson Title:	Mendel and His Pea Plants		
Level:	High School	**Lesson Duration:**	45 minutes

Lesson Objectives:

1. Students will be able to describe the essential details of Gregor Mendel's experiments with heredity.
2. Students will be able to identify the components of a pea plant flower (for understanding aspects of Mendel's experimentation).

This lesson should prepare students for the next lesson, *Mendelian Inheritance and Punnett Squares*.

Summary of Tasks / Actions:

Considerations for teaching students with blindness or visual impairments:

Students who are either blind or visually impaired may have difficulty understanding the structure of a pea plant flower. Ideally, a physical flower would be available for their inspection (along with the rest of the plant), but given the relatively small size of the flower, it will be beneficial to also have a larger scale model that can be inspected and explored to improve understanding of the structure. Additionally, producing an embossed Braille copy of the reading may be needed for students who are Braille readers primarily unless they have preferred assistive technology to read from.

If the student is using a refreshable Braille device, it may be helpful to copy the information from the website and convert it into a Word document format for them to navigate with. Be aware that oftentimes there will be weird text artifacts that copy over from Khan Academy readings, so you may need to edit this ahead of time to clean the reading up before presenting it digitally or translating it to Braille.

Bell Ringer/Introductory Activity:

What is heredity? What does it mean to inherit traits?

Discussion:

Begin by discussing what the word "heredity" means and gauge the ideas the students have about how trait inheritance works. Introduce the reading once the students have expressed their ideas.

Activity:

Read "Mendel and His Peas" either online or on paper copies as a group.

For students who do not know what a pea plant flower looks like, provide the physical model and guide them through exploring the parts.

Review:

Discuss inheritance patterns for each subsequent generation based on Mendel's experiments with crossing true-breeding parent plants for different traits. First filial generation (1:2:1 ratio of homozygous dominant, heterozygous, and homozygous recessive), then second filial generation, etc.

Materials / Equipment:

Mendel and His Pea Plants Lesson

Mendel and His Peas reading (from Khan Academy)

Pea Plant 3D model

NGSS Alignment:

HS-LS3-3 Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population. [Clarification Statement: Emphasis is on the use of mathematics to describe the probability of traits as it relates to genetic and environmental factors in the expression of traits.] [*Assessment Boundary: Assessment does not include Hardy-Weinberg calculations.*]