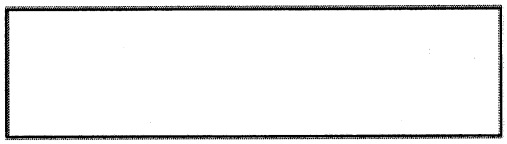
Name: Class:

Grade 8 SCIENCE – GUIDED NOTES

Chapter 8 Genetics **Lesson: 1– Mendel and His Peas** **Pages: 267-273**

Page Number	Title/Sub-Title	Guided Notes
267	**Early Ideas About Heredity**	Long ago, how did people think an organism's traits were passed on to offspring? What is heredity? Who is Gregor Mendel? What is he known as? What is genetics?
268	**Mendel's Experimenta l Methods**	What year did Mendel study genetics? List 3 reasons why Mendel chose Pea Plants to work with. 1 2 3
268	**Pollination in Pea Plants**	What is pollination? What are two ways pollination can occur in a pea plant? 1. 2. What is self-pollination? What is cross-pollination?
269	**True-Breeding Plants**	What is a true-breeding plant? Give an example of a true breeding plant and its offspring from the reading.
249	**Mendel's Cross Pollination**	Why did Mendel choose to cross pollinate plants himself? What are 3 different traits that Mendel cross pollinated for? 1 2

		3
270	**Mendel's Results** **First Generation Crosses**	A cross between true breeding plants with purple flowers produced _____ A cross between true breeding plants with white flowers produced _____ What happened when Mendel crossed a true-breeding plant with purple flowers with a true-breeding plant with white flowers? **Model** *the results of Mendel's first generation crosses.* (P) × (P) = _____ (W) × (W) = _____ (P) × (W) = _____ **Model** *the results of Mendel's second-generation (hybrid) cross. Describe Mendel's results.* $(P_{hybrid}) \times (P_{hybrid})$ =  **Result:** _____
270	**New Questions Raised**	Write out 2 questions that Mendel had after the results of his first generation crossing experiment. 1 2
271	**Second Generation (Hybrid) Crosses**	What is a hybrid (look at the green box on p. 271)? What is a hybrid plant – give the example from the book. What happened when Mendel crossed two **hybrid** purple flowering plants?

272 | **More Hybrid Crosses**

Fill in the table below using Table 1 from page 272

Table 1 Results of Hybrid Crosses

Characteristic	Trait and Number of Offspring	Trait and Number of Offspring	Ratio
Flower color	Purple 705	White 224	
Flower position	Axial (Side of stem) 651	Terminal (End of stem) 207	
Seed color	Yellow 6,022	Green 2,001	
Seed shape	Round 5,474	Wrinkled 1,850	

What was the ratio of purple to white flowers when Mendel crossed hybrid plants with purple flowers.

What does the above ration mean?

273 | **Mendel's Conclusions**

What were Mendel's conclusions from his experiments?

273 | **Dominant and Recessive Traits**

What is a dominant trait?

When is a dominant trait observed?

What is a recessive trait?

When is a recessive trait observed?

273 | **From Parents to Second Generation**

How do dominant and recessive factors interact?

Use the information below to answer the questions that follow.

Which is the dominant trait?

Imagine you are Gregor Mendel's lab assistant studying pea plant heredity. Mendel has crossed true-breeding plants with axial flowers and true-breeding plants with terminal flowers. Use the data below to determine which trait is dominant.

Pea Flower Location Results

Generation	Axial (Number of Offspring)	Terminal (Number of Offspring)
First	794 	0 
Second	651 	207 

Determine which trait is dominant and which trait is recessive using the information above. Support your answer with data.