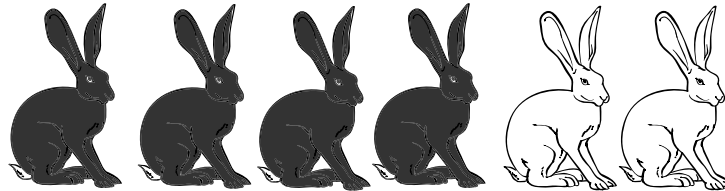


# Chapter 12



## Bunnies



Natalie’s white rabbit had a litter of six bunnies. Four bunnies were black and two bunnies were white. The father of the bunnies is black. Natalie wondered why there were more black bunnies than white bunnies in the litter. Circle the response you think is true about the litter of bunnies.

- A. All of the black bunnies are male and the white bunnies are female.
- B. The fur color has nothing to do with the parents. It depends on the environment.
- C. The bunnies got more traits for fur color from their father than from their mother.
- D. There are fewer white bunnies because they do not survive as well as black bunnies.
- E. There are more black bunnies because father rabbits have stronger traits for fur color than mother rabbits.
- F. Each parent contributed the same amount of information about fur color during reproduction.
- G. There must have been something wrong because black rabbits and white rabbits should produce grey rabbits.

Explain your thinking. Describe your ideas about how traits such as fur color are determined.

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Note-taking

Inquiry Lab

Study Guide

Chapter Review

Benchmark Practice

# Note-taking Chapter 12



- 1 The Practice of Science
- 2 The Characteristics of Scientific Knowledge
- 3 The Role of Theories, Laws, Hypotheses, and Models
- 16 Heredity and Reproduction

**THINK ABOUT IT!**

**How are traits passed from parents to offspring?**

## Before You Read

Before you read the chapter, think about what you know about genetics. In the first column, record three things you already know about the passage of traits from parents to offspring. In the second column, write three things you would like to learn about this topic. When you have completed the chapter, think about what you have learned and complete the **What I Learned** column.

<b>K</b> <b>What I Know</b>	<b>W</b> <b>What I Want to Learn</b>	<b>L</b> <b>What I Learned</b>

## Chapter Vocabulary

<b>Lesson 1</b>	<b>Lesson 2</b>	<b>Lesson 3</b>
<p><b>NEW</b> heredity genetics dominant trait recessive trait</p> <p><b>REVIEW</b> sperm egg</p>	<p><b>NEW</b> gene allele phenotype genotype homozygous heterozygous Punnett square incomplete dominance codominance polygenic inheritance</p> <p><b>ACADEMIC</b> conclude</p>	<p><b>NEW</b> DNA nucleotide replication RNA transcription translation mutation</p>

# Lesson 1 Mendel and His Peas

**LA.7.2.2.3, LA.7.4.2.2, MA.6.A.3.6, SC.7.L.16.1, SC.7.N.1.1, SC.7.N.2.1**

**Skim or scan** the heading, boldfaced words, and pictures in the lesson. Identify or predict three facts you will learn from the lesson. Discuss your thoughts with a classmate.

## Main Idea

### Early Ideas About Heredity

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

### Mendel's Experimental Methods

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

## Details

**Define** heredity.

Heredity: \_\_\_\_\_

**Describe** genetics, and explain why Gregor Mendel is known as the father of genetics.

**Identify** three reasons why Mendel chose pea plants for his genetic studies.

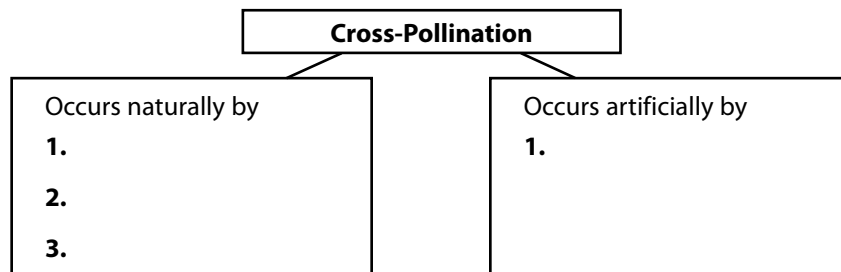
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Sequence** the 2 ways pea plants pollinate.

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
from the same plant

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_  
from different plants

**Detail** the 2 ways in which cross-pollination can occur.



# Lesson 1 | Mendel and His Peas (continued)

## Main Idea

I found this on page \_\_\_\_\_.



### NGSSS Check

Why did Mendel perform cross-pollination experiments?  
**SC.7.L.16.1**

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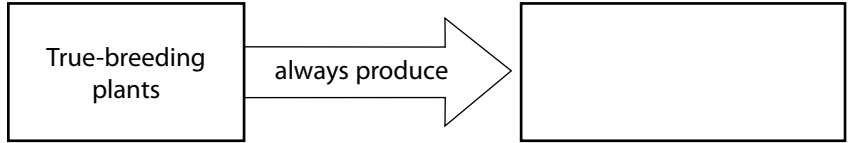
## Mendel's Results

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

## Details

**Define** true-breeding plants.



**Sequence** the steps in Mendel's cross-pollination process.

1. Mendel removed the _____ from the _____
2. He _____ from the _____ of the white flower to the _____ of the purple flower.
3. He planted _____ that _____ _____ of the purple flower.
4. _____

**Explain** why Mendel performed these experiments.

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**Model** the results of Mendel's first generation crosses.

(P) × (P) = \_\_\_\_\_

(W) × (W) = \_\_\_\_\_

(P) × (W) = \_\_\_\_\_

**Write** two questions raised by Mendel's first-generation cross results.

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

## Lesson 1 | Mendel and His Peas (continued)

### Main Idea

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

### Mendel's Conclusions

I found this on page \_\_\_\_\_.

I found this on page \_\_\_\_\_.

### Details

**Model** the results of Mendel's second-generation (hybrid) cross. Describe Mendel's results.

$(P_{\text{hybrid}}) \times (P_{\text{hybrid}}) =$

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Result:

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**Explain** the pattern produced when Mendel crossed two hybrids for a given trait.

3:1 \_\_\_\_\_


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 **Summarize** Mendel's conclusions.


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 **Explain** how dominant and recessive factors interact.

Dominant Factor	Recessive Factor

 **Synthesize It** How would you determine if wrinkled leaves or smooth leaves is the dominant factor in a true-breeding plant?

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