COMMON CORE
Lessons & Activities

HEREDITY & GENETICS

Reading for Information
Higher-Order Thinking
Writing Prompts
Current Events Analysis
Vocabulary
Cause & Effect
Graphic Organizers
& More!

REPRODUCIBLE

About this Book

This Common Core Lessons and Activities Book allows you to immediately meet new Common Core State Standards for English Language Arts, as well as Literacy and Writing in History/Social Studies. It is designed to supplement your Social Studies resources, adding new Common Core rigor, analysis, writing, inference, text-dependent questions, and more into your daily instruction.

How to Use this Book:

- Work through the lessons and activities as a class to teach your students higher-order thinking, analysis, and 21st century skills necessary to meet new Common Core expectations.
- Allow students to work through the lessons independently to build and practice these new skills.
- Include technology, collaboration, presentation, and discussion in the activities as you desire—you can decide how in-depth to go.
- Watch your class develop new abilities to meet the rigor of Common Core State Standards, right before your eyes!

Tips:

- Use some of the pages—or use them all—based on your grade, your students, your curriculum, and your needs.
- Use the pages at their current size, or if you prefer them to be 8-1/2" x 11", enlarge them 125% on your copy machine.
- Download graphic organizers labeled **"GO"** in the Table of Contents by going to: www.gallopade.com/client/go
- Use the correlations grid to easily see which Common Core standards are covered in each lesson.

Common Core Lessons & Activities:
Heredity & Genetics

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TABLE OF CONTENTS

G: Includes Graphic Organizer
GO: Graphic Organizer is also available 8½" x 11" online download at www.gallopade.com/client/go
(numbers above correspond to the graphic organizer numbers online)

Class Survey

Follow the instructions for parts A, B, and C.

PART A: As a class, take a survey on students' physical traits.

A.	*I am a*	*male*	*female*
B.	*I can roll my tongue*	*Yes*	*No*
C.	*I have attached earlobes*	*Yes*	*No*
D.	*I have dimples*	*Yes*	*No*
E.	*I have freckles*	*Yes*	*No*
F.	*I have naturally straight hair*	*Yes*	*No*

PART B: Complete the chart by collecting survey data from your class.

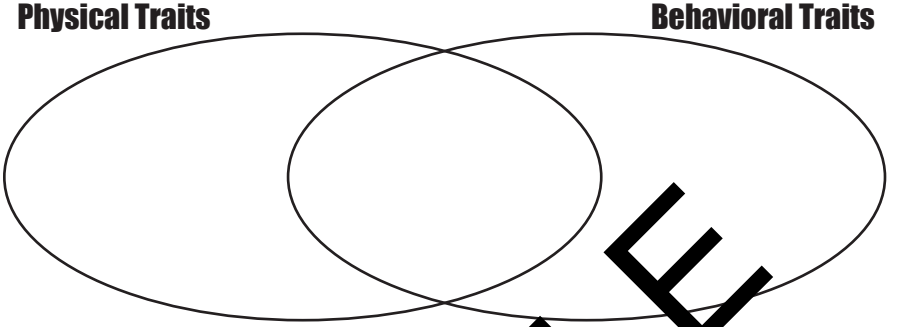
Physical Traits	Number of Students	% of Total Class
Males		
Females		
Can roll tongue		
Cannot roll tongue		
Attached earlobes		
Detached earlobes		
Dimples		
No dimples		
Freckles		
No freckles		
Straight hair		
Curly/Wavy hair		

PART C: Use the chart to answer the questions.

1. A. What is the purpose of a survey?
   B. Which trait was most common? Which trait was least common?
2. Use the data in the charts to make a bar graph of the traits. Label the x-axis "traits" and list the traits. Label y-axis "Number of people."
3. What is the benefit of viewing this information in a bar graph?
4. Determine whether each statement is **true** or **false**.
   A. _____ Your physical traits make you similar to other people.
   B. _____ Your physical traits make you different from other people.
   C. _____ Your physical traits make you unique.

Comparing Traits

Complete the graphic organizer by comparing physical traits and behavioral traits. Include examples and how each affects you.



Identify each characteristic as either a physical or behavioral trait and as inherited or learned. Then explain how you reached your conclusions.

Trait	Behavioral or Physical	Inherited or Learned	Explanations
Liking the color red			
Wanting to eat vanilla ice cream			
Being tall			
Having green eyes			
Birds flying south in the fall			
Parents caring for their babies			
Having curly hair			
Watching television			

Genes

Read the text and answer the questions.

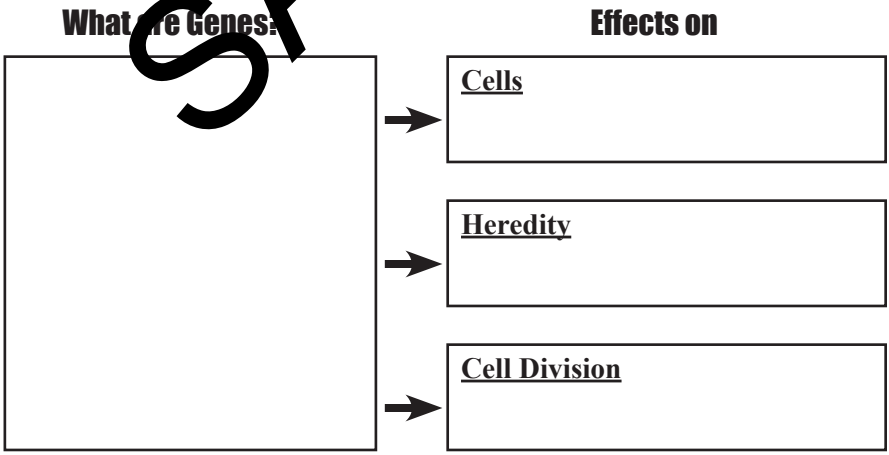
All living organisms are made of cells. The human body is made up of trillions of cells! Cells produce chemicals and proteins that organisms need to live. Cells also divide to create new cells.

How do cells know what to do? Genes! Genes tell a cell what proteins to make. Genes also control what type of cell is made when the cell divides. Most cells have a complete set of genes, but only some of the genes in a cell are "turned on." Genes are turned on and off at different times during development in order to make a bone cell look and act differently than a skin cell, for example. All cells—muscle cells, skin cells, brain cells, bone cells, and more—have specialized functions in the body.

Most organisms have two copies of every gene—one from the mother and one from the father. Specific combinations of genes determine hereditary traits, like height and eye color.

Genes store all the information a cell needs in their DNA. When a cell divides, it makes a copy of its DNA so the new cell has all the information it will need too!

1. Summarize the key information from the text to complete the graphic organizer.



2. Cells are called the "building blocks of life." Cite evidence from the text to explain and support this analogy.

DNA & RNA: The Keys to Life

Read the text look at the diagram, and answer the questions.

Cells contain two of the most important keys to life—DNA and RNA. **DNA** stands for **D**eoxyribo**n**ucleic **A**cid. DNA is the material that is responsible for copying and carrying genetic information. **RNA** stands for **R**ibo**n**ucleic **A**cid. RNA is the material that is responsible for carrying messages from DNA to the cell to make proteins.

DNA is a thin thread-like material that has two strands and looks like a twisted ladder. This twisted ladder shape is called a "double helix." The steps of this ladder are made up of four different chemicals called nucleobases—cytocine, guanine, adenine, and thymine. These four nucleobases bond together in pairs of two—adenine always bonds with thymine, and cytosine always bonds with guanine.

RNA is also thin and thread-like. However, RNA is single-stranded. Its shape is called "helix." RNA looks like half of a ladder. RNA has three of the same nucleobases as DNA—cytosine, guanine, and adenine—and one that is different—uracil.

A cell contains a lot of DNA. A cell's DNA is tightly coiled into small units called chromosomes, located in a cell's nucleus. When two parents reproduce, each parent passes down exactly one-half of its chromosomes to the offspring. The two halves combine to give the offspring its complete DNA.

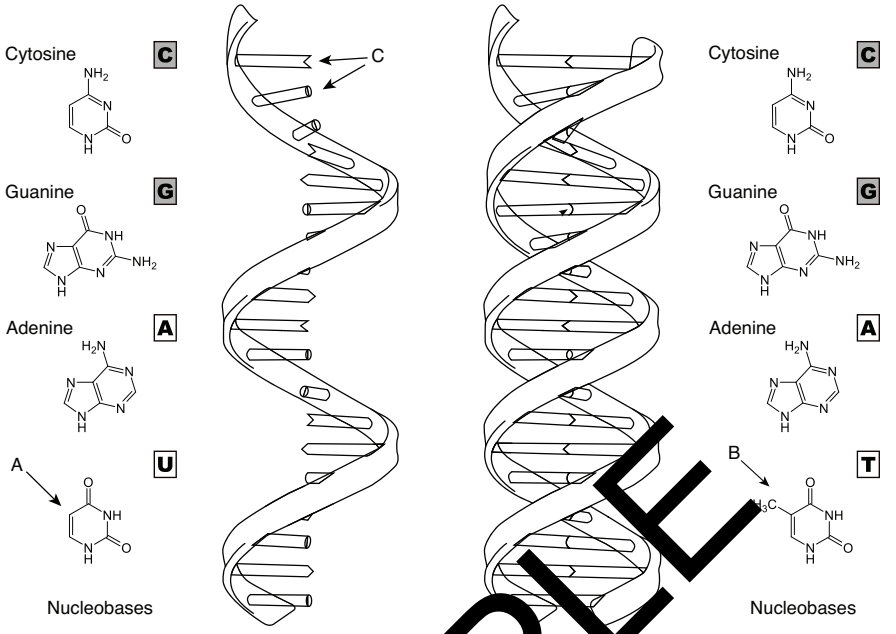
PART A: Use the text to answer the questions.

1. *An acronym is a word formed from the initial letters of other words.*
   A. DNA is an acronym for what genetic material?
   B RNA is an acronym for what genetic material?

2. Explain the functions of DNA and RNA.

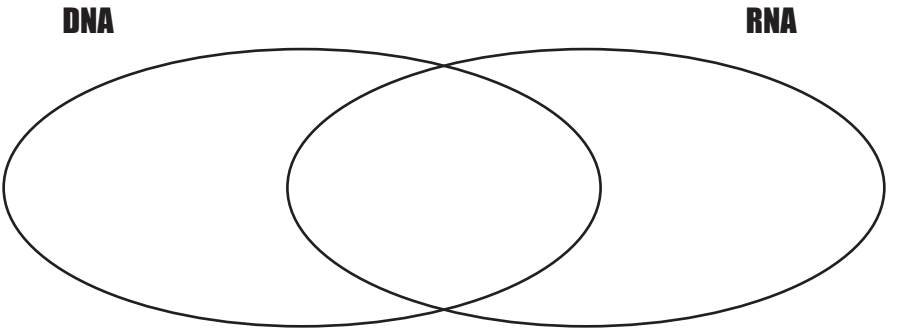
Material	Function
DNA	
RNA	

3. Where does an offspring get its DNA?



PART B: Use the text and diagrams to answer the questions.

4. A. What is represented by Diagram A?
   B. What is the name of the shape of the item in Diagram A?
   C. What is represented by Diagram B?
   D. What is the name of the shape of the item in Diagram B?
5. A. What nucleobase does Arrow A point to?
   B. What nucleobase does Arrow B point to?
6. Use the Venn diagram to compare and contrast DNA and RNA.



Common Core Lessons & Activities Books

Social Studies Titles:

- Declaration of Independence
- U.S. Constitution
- Bill of Rights
- Road to the Civil War
- The Civil War: Key Battles & Events
- Jamestown
- Key Events of World War II
- Civil Rights Movement
- Branches of Government
- Basic Economic Concepts
- Women's Suffrage and the 19th Amendment
- The American Revolution
- Explorers
- The Olympics
- Underground Railroad
- Forms of Government: Democracy, Monarchy, & Oligarchy & More
- Ancient Greece
- Ancient Egypt
- Native Americans
- Indian Removal & the Trail of Tears
- Inventors & Inventions
- Map Skills
- Westward Expansion
- Communities

Science Titles:

- Habitats
- States of Matter
- Cell Structure
- Weather
- Water Cycle
- Energy
- Solar System
- Sound
- Mammals
- Light
- Rocks and Minerals
- Oceans
- Heredity & Genetics
- Magnetism
- Natural Resources
- Ecosystems
- Force & Motion
- History of the Earth
- Life Cycles
- Wave Properties
- Landforms
- Classification of Organisms
- Electricity
- The Scientific Method

COMMON CORE Lessons & Activities

Are you expected to change how you teach because of new CCSS for English Language Arts & new CCSS for Literacy and Writing in History/ Social Studies and Science?

Are you expected to continue to meet existing science and social studies standards, AND integrate new, more rigorous expectations for reading, writing, analysis, inference, and more into your daily instruction?

This series of 48+ little books is a HUGE help!

Common Core at an Uncommon Value!

Supplement the resources you already have by choosing the books in this series that match the science and social studies topics you teach. Each book will provide you with ready-to-use reproducible pages that are the exact kinds of Common Core lessons and activities you need to meet the new added requirements of Common Core!

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–Amy Johnson, Common Core Specialist

You don't have to start from scratch. This brand new series meets Common Core State Standards for ELA + Common Core State Standards for Literacy and Writing in History/Social Studies and Science!

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