COMMON CORE
Lessons & Activities

History of the EARTH

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

REPRODUCIBLE

One teacher is allowed to make copies for use in her/his classroom!

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:
History of the Earth

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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)

What Is Inside the Earth?

Read the text and answer the questions.

To understand the history of the Earth, geologists first must understand what is inside the Earth. There are many important geologic processes that begin inside the Earth. But, what does the inside of the Earth look like?

Since geologists cannot travel deep into the Earth to collect rock samples, they use geological evidence from the surface of the Earth (rocks, layer patterns, etc.) to construct a model of the Earth's layers. A model is a tool that scientists use to show and study things that cannot be easily seen, like a molecule or the solar system. A model is what a scientist *thinks* something looks like. Models can take many forms: drawings, constructions (like mobiles or globes), and comparisons or analogies.

Scientists believe that the Earth has many layers. Most of the rocks and fossils that geologists study come from the outer layer of the Earth, called the crust. Below the crust lies a very thick layer called the mantle. The mantle is divided into two parts. The upper mantle is solid rock, while the rest is partly liquid rock. The center layer of the Earth is called the core. The outer core is liquid metal while the inner core is solid metal.

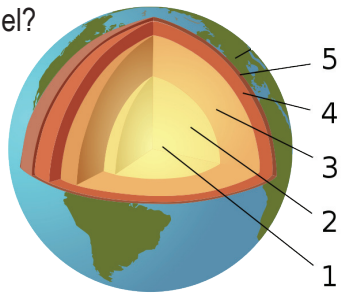
1. A. Which definition below matches the meaning of the word model as it is used in the text?

a)	noun;	person hired to wear and display clothing
b)	noun;	a simple diagram or description used to explain something
c)	noun;	highly respected person worthy of being followed

B. What is the reason for creating a model?

2. Identify each layer of the Earth:

_____ inner core
_____ outer core
_____ crust
_____ upper mantle
_____ mantle



3. Why is the crust important for studying the history of the Earth?

What Are Fossils?

Read the text and answer the questions.

Fossils are the remains, usually found in rock, of things that lived long ago. Most fossils are formed when organisms, plants or animals, die and become buried. As the sediment builds up over the years, pressure turns the sediment into rock and the trapped remains of plants and animals into fossils.

There are two basic types of fossils. Body fossils show what an organism looked like when it was alive. Trace fossils show something an animal left behind when it was alive. Fossils can also be classified by how they were formed. Actual remains are dead, but completely preserved, organisms, usually found in tar, amber, or ice. Mold fossils are imprints left by organisms in sediment; once the sediment hardens into rock, the imprint becomes permanent. Cast fossils form when minerals fill in the imprints left by organisms.

All fossils show us the many kinds of plant and animal life that has existed on Earth. Through fossils, scientists learn how and when the organisms lived, and how they have changed over time.

1. A. Use the text to define fossil.
   B. Where might you find a fossil?
2. Match each of the following questions to whether they are best answered by paragraph 1, 2, or 3 of the text. Then answer each question.
   A. _____ What are the different types of fossils?
   B. _____ What are fossils and how are they made?
   C. _____ What do fossils tell us about Earth's history?
3. Use the text to complete the table by classifying each fossil.

Fossil	Body or Trace?	Remains, mold, or cast?
Dinosaur footprint in rock		
Prehistoric insect in amber		
Rock imprint of fern		
Mastodon frozen in glacier		

Long-Term Perspective

Read the text and answer the questions.

"...Our place in the history of the Earth reminds us that [humans have] occupied the planet for the tiniest fraction of that planet's four and a half thousand million years of existence...As we peer back through the fossil record, through layer upon layer of long-extinct species, many of which thrived far longer than the human species is ever likely to do, we are reminded of our mortality as a species. There is no law that declares [humans] to be different... from any other animal. There is no law that declares the human species to be immortal." —Richard E. Leakey

1. A. Identify and list key words that you need to know to fully understand the passage.
   B. Use a dictionary or online resource to define the words.
2. The words mortality and immortal are best described as:
   a) homonyms b) homophones c) synonyms d) antonyms
3. Summarize the author's point of view about the history of the Earth.
4. What is the author's opinion about the future of the human race on Earth?
5. Mark which statements agree (A) and which statements disagree (D) with the quotation's point of view.
   A. _____ Human beings will be around until the end of time.
   B. _____ All species have a beginning and an end.
   C. _____ The laws of nature apply to human beings, just as they apply to every other living thing.
   D. _____ Humans have the special knowledge and skills that will help people survive for a long time on the Earth.
   E. _____ Humans are different than all other species on Earth.
   F. _____ Many species that are now extinct existed much longer than humans have.

Think Like a Geologist

For many hundreds of years, geologists and other scientists have wondered how the continents came to be in their present locations. The current answer to the question is the Pangaea Theory. Pangaea is a Greek word that means "whole Earth."

In the late 1500s, Abraham Ortelius, a Dutch mapmaker noticed that the coasts of some of the continents looked as if they fit together like pieces of a jigsaw puzzle, especially the coasts of Africa and South America. He hypothesized that the continents had once been part of one large landmass, or supercontinent, that was torn apart by earthquakes and floods.

In 1912, a German meteorologist, Alfred Wegener, changed the hypothesis. He thought that the supercontinent, named Pangaea, was actually broken apart over many millions of years by continental drift, the slow but constant movement of tectonic plates.

Wegener's research showed that not only do the continental coasts look like they fit together, all the continents have fossils from the ancient past of the same organisms. It seemed that life on Pangaea developed and spread across the supercontinent, and then traveled with the individual continents as they drifted apart.

Once the continents were separated, the fossil records show that organisms began to develop differently on each continent. Today, there is much biodiversity, or variety of life, between the plants and animals that live on different continents. For example, giraffes and elephants naturally live in Africa, but not in North America.

PART A: Make inferences from information in the text to answer the questions.

1. A. Summarize the Pangaea Theory.
   B. What inspired Ortelius to come up with his hypothesis?
   C. Describe the change that Wegener made to Ortelius' hypothesis.
2. Why are fossils of certain organisms found on all the continents?
3. The word Pangaea is made from *Pan* = *entire*, and *Gaia* = *Earth*. When Pangaea existed, the Earth also had one large body of ocean water, Panthalassa. Infer the meaning of "thalassa."

4. A. Explain the meaning of the word biodiversity.
   B. Infer why biodiversity occurs in different continents.

5. Write a paragraph of your own theory of why the continents are in their present locations, and how ancient fossil records show that the same organisms lived on all the continents in the past.

PART B: Read the text and answer the questions.

Scientists use the Scientific Method to help them logically answer questions about the natural world. The Scientific Method starts with a **question**. After asking the question, scientists do **research** to learn about the subject, and come up with a possible answer to the question, called a **hypothesis**.

Scientists then design an **experiment** to test the truth of the hypothesis. Once testing is done, the results are reviewed in a step called **analysis**. If the analysis shows the hypothesis is correct, the question has an answer. If it is not correct, scientists develop another hypothesis and try again. Either way, scientists always **report** what has happened so everyone can learn from their experiences.

6. What is the purpose of the Scientific Method?

7. A. List the steps of the scientific method in order in the first column.
   B. In the second column, explain how Wegner used each step of the Scientific Method to develop the Pangaea Theory.

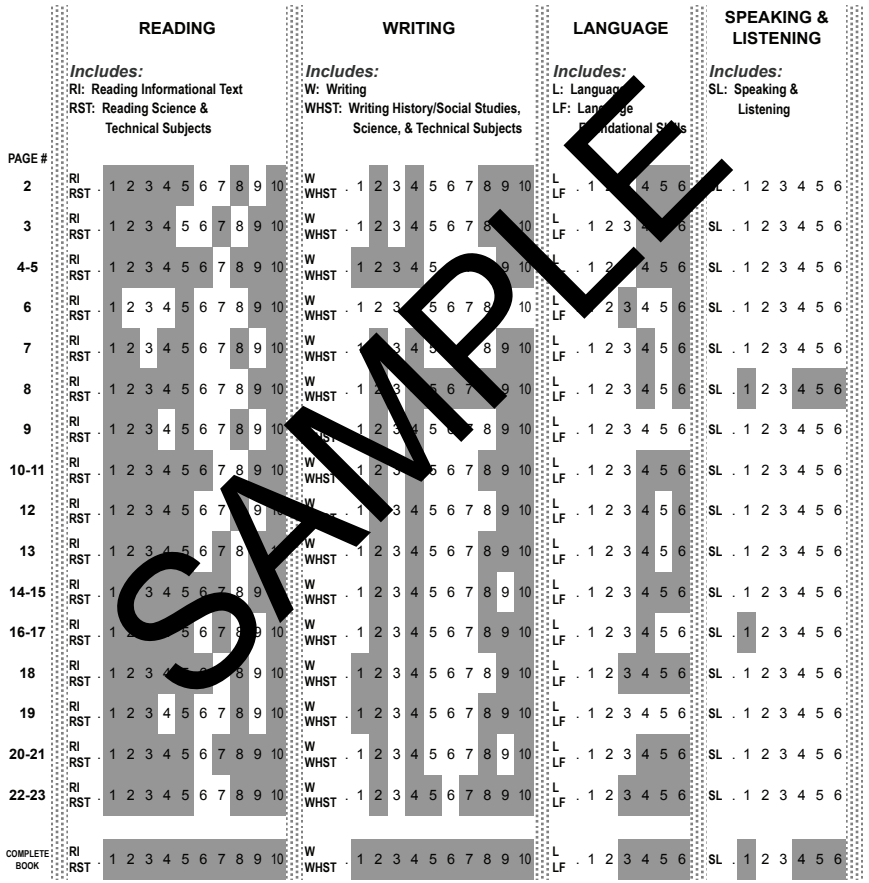
Scientific Method Steps	Alfred Wegner

Correlations to Common Core State Standards

For your convenience, correlations are listed page-by-page, and for the entire book!

This book is correlated to the Common Core State Standards for English Language Arts grades 3-8, and to Common Core State Standards for Literacy in History, Science, & Technological Subjects grades 6-8.

Correlations are highlighted in gray.



For the complete Common Core standard identifier, combine your grade + "." + letter code above + "." + number code above.

In addition to the correlations indicated here, the activities may be adapted or expanded to align to additional standards and to meet the diverse needs of your unique students!

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!

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–Amy Johnson, Common Core Specialist

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