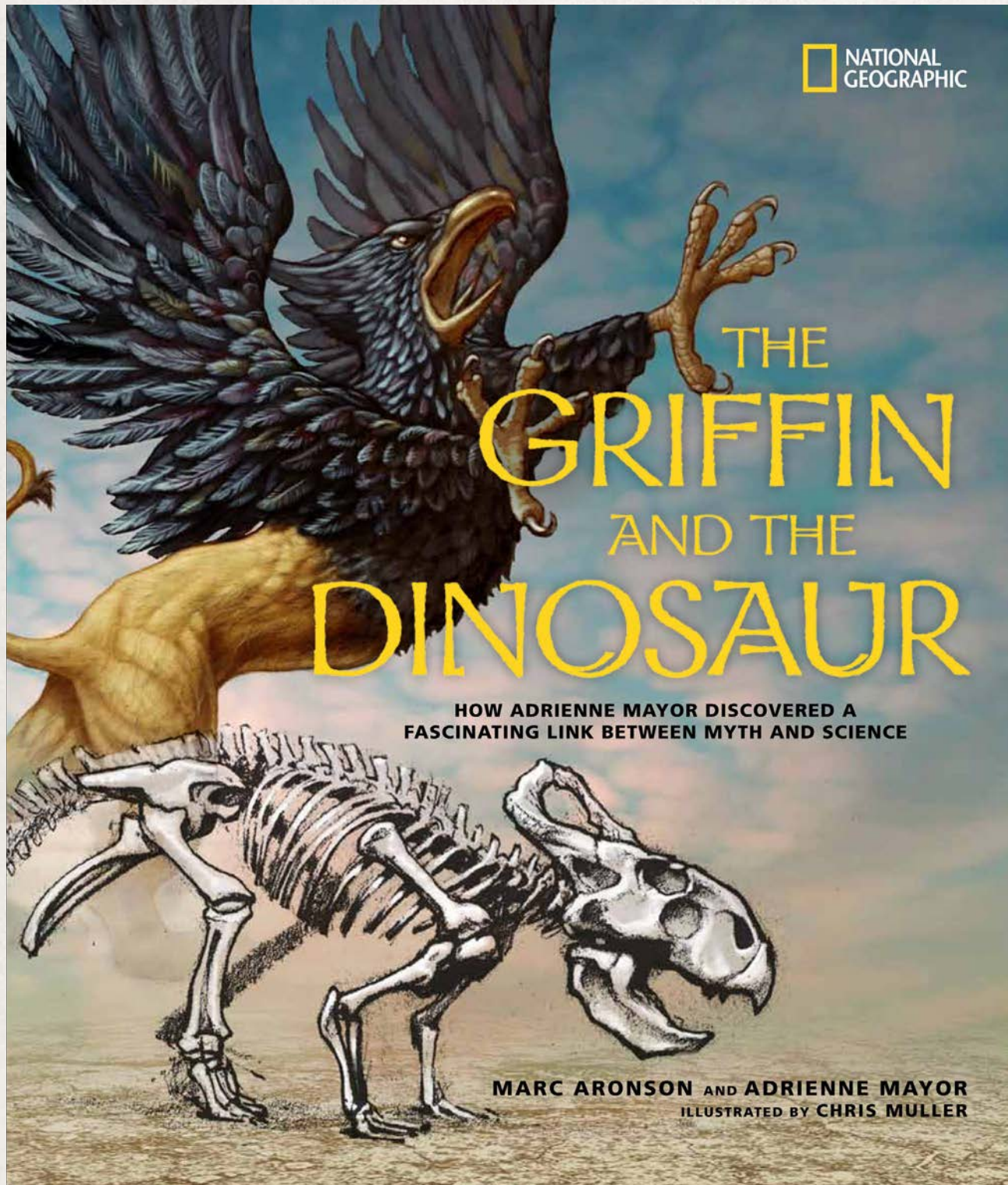


NATIONAL GEOGRAPHIC EDUCATOR'S GUIDE

COMMON CORE ALIGNMENTS AND CLASSROOM ACTIVITIES



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MARC ARONSON



ADRIENNE MAYOR

The Griffin and the Dinosaur

How Adrienne Mayor Discovered a Fascinating Link Between Myth and Science

By Marc Aronson with Adrienne Mayor
Illustrated by Chris Miller

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Classroom Guide

Where did the creatures of mythology come from? Were they wholly imagined by people of antiquity, or did they have other origins? What clues do we need to find the answers to these questions? What kind of person pursues such questions?

In *The Griffin and the Dinosaur*, Marc Aronson poses provocative questions like these to get your middle school students thinking about a topic that may not have crossed their minds before. They will find their way to their own suppositions as they follow an unusual journey of discovery alongside Adrienne Mayor.

This guide is designed to take full advantage of the complexities of *The Griffin and the Dinosaur* and provide your students with an understanding of one person's determination that helped create a new science in which experts match myths and fossils and begin to see the world through our ancestors' eyes. There are connections to curriculum areas in science, reading, and language arts and to Common Core State Standards. You'll find CCSS after each suggested activity, with a full description of each standard referenced at the end of the guide.

Activities pages 8-9

CLASSROOM ACTIVITIES



1 Adrienne Mayor followed in her great-grandfather's footsteps. He was unschooled, but he collected things that fascinated him as he roamed about the natural world; in the process he became a self-made naturalist. For each thing he found, he made up a story. Each story had the same lesson: "Anyone can become an expert. You just have to be patient, observant, and curious." Adrienne became a collector as well, as she walked the hills of South Dakota. She would always look for that something special that would stand out in a happy day of wandering. When she found a wonder, she made up stories about her latest discovery.

Your students can emulate Adrienne and her great-grandfather by becoming collectors and storytellers. All they need is to be patient, observant, and curious. Every day for two weeks they should each find something that is unusual and special. They should write about each find. They can start with objective informational writing—telling where and when the object or phenomenon was found and why they think it is special. They can move on to narrative writing, making up stories about the objects. At the end of the two-week period each student should contribute his/her favorite discovery and its story to a class recitation and display.

W 6.2, 6.3, 6.4; SL 6.2, 6.4, 6.5



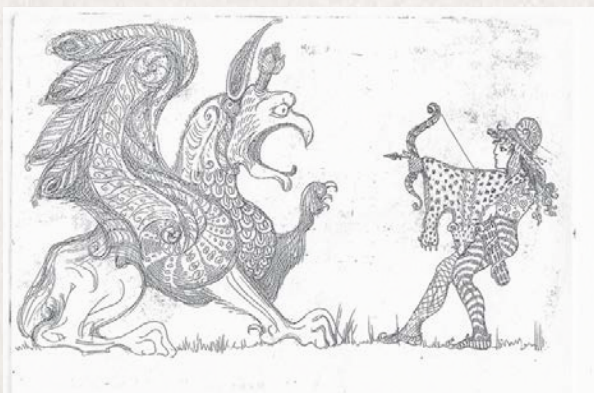
2 We learn a great deal about Adrienne Mayor's character as we follow her search for the origin of the griffin. Your class will know her well through her actions and her attitudes. As a whole class, develop a list of Adrienne's personality traits. Students should support each addition to the list with specific examples that show how she exhibited this characteristic.

Discuss what kind of person this list of words describes. How do Adrienne's characteristics suit her chosen profession? Can your class name people they know who have personalities that are similar to Adrienne's?

Each student should take the list of the descriptors of Adrienne and create a list for him or herself. How many traits do your students share with Adrienne?

RI 6.1, 6.3; W 6.1, 6.4; SL 6.1, 6.4, 6.5

Adrienne never lost her love of art and printmaking. She made this print of a young Amazon and a griffin during her adventures in Greece.





Adrienne Mayor's path to finding her profession is unique, but many people would say the same about themselves. There is no single road to success. People who work in a great variety of careers—whether teacher, scientist, violinist, professional baseball player—forged their own way.

Your students should explore the many ways of getting “there” by interviewing people who they think have chosen interesting careers. They might know someone they want to interview, or their parents, neighbors, doctors, and local businesspeople might suggest others who would make good subjects. Many professionals create online profiles so that they can meet and connect with others in their fields on websites such as LinkedIn. If the interviewee has posted a profile, get the necessary permission for the students to view those entries.

As a class, develop a list of questions to ask the subjects. Some of the questions will be generic; others will have to be tailored to the particular person.

Students should try to learn what path the interviewee took to reach his/her career goal. When did he/she know what he/she wanted to do? Was there anyone in his/her family or circle of friends who influenced the decision? What training (formal and informal) was required? How did he/she begin? At what point were there breakthroughs that moved him/her forward?

Each student should write up his/her interview and then present five selected relevant steps that he/she thinks will be the most instructional or inspirational to classmates.

At the end of each presentation, listeners should ask questions to learn more about the subject or the profession.

RI 6.6; SL 6.1, 6.2, 6.3, 6.4; W 6.8



The story of the griffin has captivated people throughout the ages. Have your students research the mythology of the griffin to discover its origins, meaning, and what it has come to represent. Was it a symbol of good or evil? Was it an attacker of mankind or its protector? Your students should decide and report back to their classmates. The following websites will be useful:

<http://www.unknownexplorers.com/griffin.php>

<http://mythortruth.com/griffin>

<http://www.sarahsawyer.com/2010/09/mythic-creatures-the-griffin>

Make the class aware that when they do research, they must cite references and provide other bibliographic information for sources.

RI 6.1, 6.6, 6.7; W 6.1, 6.2, 6.3, 6.4, 6.7, 6.8, 6.9; SL 6.1, 6.2

This modern painting of an Amazon fighting a griffin echoes the colors and images that Adrienne found so fascinating in ancient Greek sources.



Activities page 13



5 When the ancient Greeks described some legendary creatures, especially a hybrid of a lion and an eagle they called a “griffin,” they sounded like people talking about a real animal they had actually observed. Adrienne wondered what kind of real animal or fossil could have inspired them to create a creature with four legs and a beak like a bird. Remembering her great-grandfather’s collection of curiosities, she asked herself, “What kinds of bones, what sorts of fossils might have inspired them?” Thus began a ten-year quest to solve the mystery.

Acting like the ancient Greeks, your students can become creators of their own fantastic creatures. Working in teams, they should create a mythological beast. For each creature, they should include:

- Its name
- Where it came from (geographically)
- The inspiration for it (whether real or fictional)
- Its abilities and characteristics
- A drawing and/or model of it in action
- The mythology they create for it



A Greek coin, ca 490 B.C., shows a cicada and a griffin.

Put all the creatures on display in your classroom, hallway, or school library. Have the class select one of the creatures to become the class mascot or protector. Create a logo based on the chosen one; make posters, T-shirts, flags, etc.

For inspiration, students should do some Internet research. These websites will be good starting points:

<http://www.amnh.org/exhibitions/past-exhibitions/mythic-creatures>

<http://www.mythicalcreaturesguide.com/page/Greek+Mythology>

http://www.ducksters.com/history/ancient_greece/monsters_and_creatures_of_greek_mythology.php

Make the class aware that when they do research, they must cite references and provide other bibliographic information for sources.

RI 6.7; W 6.2, 6.3, 6.4, 6.8; SL 6.1, 6.2, 6.3, 6.5



page 16

6 Adrienne Mayor talks about the term “search image” in reference to animals in the wild that are hungry. “They have a clear picture of what they want to catch ... [this] allows [the animal] to shut out distractions and zoom toward supper.” Scientists looking for fossils have adapted the concept and create mental pictures of what they hope to find or expect to find when they are researching or experimenting.

Have your students define the term “search image” for themselves and write about how they can use it in their daily lives at home, in school, and in sports.

RI 6.1, 6.2, 6.4, 6.5, 6.6; W 6.1, 6.4



Along with the entries in the glossary/index at the back of the book, your students will come across many new words in the course of reading the book. They should keep a list of those words as well as the pages on which they are found in the vocabulary sections of their notebooks. As students identify new words, they should read the sentence it is in as well as the sentences before and after it closely to look for clues to its meaning. From those clues they should form a meaning for the word, then check a dictionary to see how accurate their answers are. Then they should illustrate the word. The picture can be wordless or with text. Display illustrated words around the room.

RI 6.4, 6.7

Questions of Fact

Common Core State Standards emphasize building knowledge in all subjects and focusing learning across disciplines on text-based evidence. These “questions of fact” help accomplish both goals.

- On the island of Samos, Adrienne viewed bronze castings of griffins. She noticed that the more ancient the bronzes were, the more they looked like prehistoric animals; the later castings look more like mythical creatures. Why?
- Why was the finding of paleontologist Othenio Abel so important to Adrienne?
- Who were they Scythians? Where and when did they live? What stories did the Greeks create about them?
- What was important about a bronze relief that depicted a griffin mother with her pup to Adrienne’s research?
- What is the difference between a triceratops and a protoceratops?
- Adrienne first published her findings in a magazine for cryptozoologists. What do they do?

RI 6.1, 6.2, 6.4

Questions for Discussion page 19

CLASSROOM ACTIVITIES

Your students read that Adrienne learned from her great-grandfather that to be an expert you have to be patient, observant, and curious. That is a bit oversimplified. It's just a start. Have your students add to those three requirements and discuss what else makes an expert and the steps that must be taken to achieve that expertise.

Have your students debate the question "Are all experts created equal?" For example, does an expert speller or ballplayer have the same standing as an expert in paleontology or Greek literature?

RI 6.1, 6.2, 6.3, 6.6; SL 6.1, 6.3

- "Computers are very fast and very dumb. They quickly bring you precisely what you ask them to get, not what you meant them to find."

Adrienne's early research predates the modern technology of computers. Her research was done in libraries as she pored over hundreds of books, journals, abstracts, etc. What do your students think would have been different if she had been able to use a computer to search the Internet? Have the class discuss the value of both forms of research. They should consider the strengths and weaknesses of both sources of information, including the reliability of each.

RI 6.1; SL 6.1, 6.3, 6.4

- *The Griffin and the Dinosaur* is largely about the process of investigation and discovery. Adrienne's process was not linear. She had successes and failures, and many times had to retrace her steps and start over. Discuss some of the false leads and disappointments over the course of her research. What lessons does her process teach your students?

RI 6.1; SL 6.1, 6.3, 6.4

- Certainly Adrienne Mayor was seeking a link between the griffin and a prehistoric animal, but she had a wider goal. What do your students think that broader purpose is?

RI 6.1, 6.2, 6.3, 6.4

- Ancient people sought to explain natural phenomena with stories that made sense to them. Discuss some examples of such stories among various peoples. Do we do the same today when we are bewildered by what we see and experience around us? Or do we believe in science and depend on that to explain things that we do not understand? Perhaps it is a combination of both. In your class discussion, talk about UFOs, near-death experiences, black holes, weather and other climate changes, etc.

RI 6.6, 6.8, 6.9; SL 6.1, 6.3, 6.4

Common Core State Standards – Grade 6

Reading Information

- RI 6.1
Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- RI 6.2
Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- RI 6.3
Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).
- RI 6.4
Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.
- RI 6.5
Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.
- RI 6.6
Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.
- RI 6.7
Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
- RI 6.8
Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
- RI 6.9
Compare and contrast one author's presentation of events with that of another (e.g., a memoir and a biography on the same person).

Writing

- W 6.1
Write arguments to support claims with clear reasons and relevant evidence.
- W 6.2
Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
- W 6.3
Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
- W 6.4
Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- W 6.5
With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
- W 6.6
Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.
- W 6.7
Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
- W 6.8
Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.
- W 6.9
Draw evidence from literary or informational texts to support analysis, reflection, and research.

Speaking and Listening

- SL 6.1
Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- SL 6.2
Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.
- SL 6.3
Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
- SL 6.4
Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.
- SL 6.5
Include multimedia components (e.g., graphics, images, music, sound) in presentations to clarify information.

