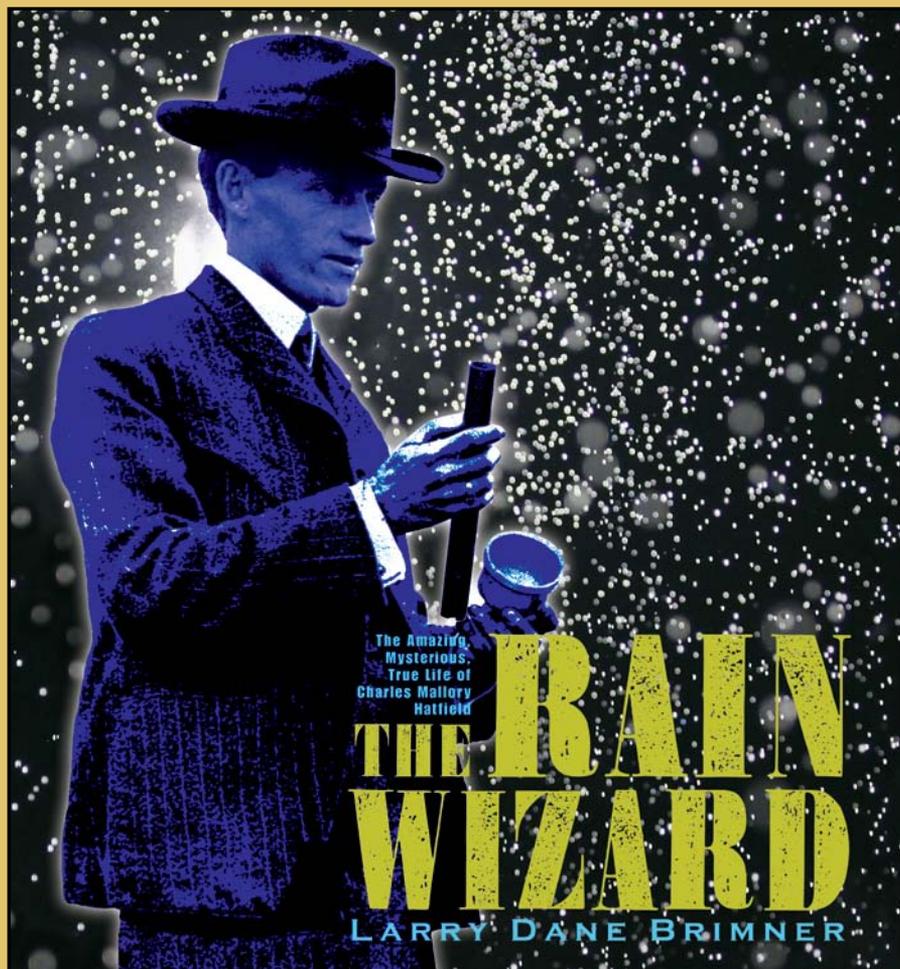


Educator's Guide



CALKINS CREEK



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Highlights

With
Common Core
State Standards
correlations

PEOPLE HAVE TRIED TO CONTROL THE WEATHER FROM THE very earliest times. Native American tribes danced and burned tobacco to make the heavens spill their moisture. . . . At the first sight of gray skies in eighteenth-century Europe, bell ringers would race to church towers to ring rain from above” (page 47). Water is such a basic element of life, yet, throughout history, people have been unable to control how much rain and snow falls, where it falls, and when it falls. Many have tried, using various methods—from spiritual to scientific to just plain silly. *The Rain Wizard* tells the story of one man—Charles Mallory Hatfield—who, in the early years of the twentieth century, devised a method for “coaxing” rain out of the clouds. He had some successes and attracted many believers. But there were always skeptics.

As they read *The Rain Wizard*, students will learn about an interesting, enigmatic figure in an important episode from America’s past, and about scientific progress, politics, and law. Ultimately, they must decide for themselves whether Hatfield was a scientist or a clever salesman.

This guide is designed to take advantage of the teaching and learning opportunities in *The Rain Wizard*. It includes questions to help you keep track of your students’ understanding of the ideas presented and activities and discussions that connect the book to various topics across curricula, including literature, language arts, critical thinking, social studies, and ethics. You’ll find relevant curriculum areas delineated at the start of each activity, with the relevant Common Core State Standards noted beneath.

BEFORE READING

Fill a glass with water and place it on your desk. It’s just a glass of water, right? Engage the class in a discussion of the importance of water to human life, communities, business, the environment, and safety. After the discussion, the class should understand that while water is universally essential, people have never been able to control exactly how much rain or snow we get. At this point, you can introduce *The Rain Wizard* as the story of a man who thought differently.



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QUESTIONS OF FACT

Language Arts: Reading Comprehension; Social Studies: History, Law; Science: Environmental Studies; Cooperative Learning

To be sure students follow, understand, and remember what they read, pose these questions to the class:

Who were Charles Mallory Hatfield's parents? Where did they live? What did his father do? What field did Charles go into when he began working?

Who was Frederick "Fred" Binney and what role did he play in the career of the Hatfield brothers? What would Binney's job title be if he were working today?

What method did Charles Hatfield use to "make rain"?

Name three theories proposed for rainmaking by people other than Charles Hatfield in the early part of the twentieth century.

What information did the San Diego city attorney demand from Hatfield before he would agree to draw a contract for Hatfield to fill the Morena Reservoir to overflowing?

Why did city officials refuse to acknowledge that Hatfield was employed to use his rainmaking to fill the Morena Reservoir?

What justification did the city of San Diego use to renege on their agreement with Charles Hatfield?

As a class, make a list of the kinds of damage and devastation “Hatfield’s flood” caused in and around the city of San Diego.

In the 1930s, even as the Dust Bowl raged in the central and southern plains, why was there was little demand for Hatfield’s rain-coaxing talents? What other methods were used? **[RI 5.1, 5.2, 5.3, 5.5, 5.8, 5.9]**



QUESTIONS FOR DISCUSSION

Critical Thinking; Language Arts: Speaking and Listening, Reading: Compare and Contrast Texts

Some sang Hatfield’s praises: “Long live rainmaker Hatfield, and may he reign longer” (page 37), while others saw things differently: “when prospective employers [of Hatfield] checked with the U.S. Weather Bureau for references, Willis L. Moore, chief of the agency since 1895 told them that Hatfield was practicing deception on a grand order” (page 45). Where do your students stand on this question? Each student should express his/her opinion and back it up with facts and reasoning.

Share with your class “The Man the Rain Minds,” the article from the August 1919 issue of *Everybody’s Magazine* referenced on page 90, and which can be found online at <http://tinyurl.com/q2v8rpv>. Focus on the last part of the article, in which Hatfield talks about his work in San Diego in January 1916. How does this account compare to what is written in the book?

For fear of being sued for the damage caused by the storm, Hatfield refused to take credit for the ensuing flood, yet his other actions he took support the theory that he indeed believed he had caused it. What do your students think? Did he create the great San Diego flood with his rainmaking, or was he just at the right place at the right time? **[RI 5.1, 5.2, 5.5, 5.6, 5.7; SL 5.1, 5.2]**

ACTIVITIES

Language Arts: Vocabulary

In *The Rain Wizard*, your students will encounter many new words and terms. Have them create a “Rain Wizard” glossary of words and terms. They should write each word and its definition on an index card. In addition to the definition, your students should create, on a separate piece of paper, an illustration that explains the word or term. They can use text if necessary. For example, for the word *synthesis*, the picture could be of a scientist mixing chemicals to create a new substance. The illustrations can be placed around the classroom, and the cards can be kept in an alphabetical file for future reference. Below are a few words to get students started:

Pluviculture
Concoction
Coaxer
Moguls
Drought
Flimflam man
Aqueduct
Skeptic
Condense
Hydraulic engineer
Court of public opinion

[RI 5.4]



Social Studies: Cultures; Language Arts: Reading, Writing, Speaking and Listening; Cooperative Learning; Performance Arts

From ancient times to the present, people have tried to effect a number of techniques to make it rain. Divide your students into research teams. Each team should study a particular group of people and the methods they used. Be sure to include (but not limit yourselves to) these peoples:

- Ancient civilizations
- Native Americans
- Tribes from Africa and Asia
- Other rainmakers from the 1800s.

Some useful web resources are:

David K. Semanya. "The Making and Prevention of Rain amongst the Pedi Tribe of South Africa: A Pastoral Response." *HTS Teologiese Studies/Theological Studies* 69 (February 2013): 1, doi:10.4102/hts.v69i1.1175. <http://www.hts.org.za/index.php/HTS/article/viewFile/1175/3247>.

"It's Not Magic on the Mountain, It's A Rain-Making Machine," Lauren Sommer, NPR.org, January 9, 2014, <http://www.npr.org/2014/01/09/261070150/its-not-magic-on-the-mountain-its-a-rain-making-machine>.

Zeeya Merali. "Rain-making Lasers Could Trigger Showers on Demand." *Nature News*. May 2, 2010. doi:10.1038/news.2010.213. <http://www.nature.com/news/2010/100502/full/news.2010.213.html>.

"Clouds Form over Rainmaking Technology," Anna Salleh, ABC Science, November 23, 2007, <http://www.abc.net.au/science/articles/2007/11/23/2099071.htm>.

In the 1950s, the television show *You Are There* took viewers back in time to observe historical events as they were happening. The host would interrupt the action and interview the participants about the ongoing events. Each research team of students should create and perform a skit about the society or civilization they researched, inspired by *You Are There*. A sample opening line might be, "We are here at [place] where [group] are trying to coax rain from the sky. Let's talk to them and see how things are going."

If possible, the skits could also be videotaped and shown to other classes in the school.

[RI 5.1, 5.6, 5.7; W 5.3, 5.4; SL 5.1, 5.5]

Social Studies: History; Research; Language Arts: Writing, Speaking and Listening

Hoping to capitalize on the opening of the Panama Canal in 1915 and to spur the growth of San Diego, local politicians and businessman created the Panama-California Exposition. Its goal was to bring new residents and businesses to San Diego. Have your students gather information about the Panama-California Exposition in San Diego held from 1915 to 1916. Divide the class into four research teams, each focused on a different aspect of the exposition:

- History of the exposition: Who were the leaders? What were their goals?
- What were some of the displays and activities of the exposition? If you had a chance to go, what would you see and do there?
- What were some of the differences between San Diego's expedition and San Francisco's?
- Discuss the legacy of the exposition: Balboa Park.

Some useful web resources are:

"1915 Panama-California Expo," Jonathan Bechtol, from "Balboa Park: An Urban History," 2009, accessed April 30, 2015, <http://public.csusm.edu/becht004/1915expopage.html>.

"Chapter 1: The Making of the Exposition, 1909–1915," San Diego History Center website, accessed April 30, 2015, <http://www.sandiegohistory.org/pancal/sdexpo32.htm>.

1915: San Diego: The Panama–California Exposition Pinterest board, Christopher Biggs, accessed April 30, 2015, <https://www.pinterest.com/flickrcjb/1915-san-diego-the-panamacalifornia-exposition/>.

"How San Diego's, San Francisco's rival 1915 expositions shaped them," Christopher Reynolds, LATimes.com, January 3, 2015, <http://www.latimes.com/travel/california/la-tr-d-sd-sf-1915-panama-expos-20150104-story.html#page=1>.

"Balboa Park: History," Balboa Park website, accessed April 30, 2015, <http://www.balboapark.org/info/history>.

Each team should present a report to the whole class highlighting five of the most interesting bits of information they found. Their presentations should use a variety of media to make their reports more complete and engaging for their classmates.

[W 5.2, 5.4, 5.7, 5.8, 5.9; SL 5.1, 5.4, 5.5]

Social Studies; Politics; Language Arts: Speaking and Listening, Writing; Art

Have your students imagine that they live in a small town suffering from a long drought. Charles Hatfield comes to town and addresses the community. He tells them he can make rain, and he gives them a price. Now it is up to the town to decide if they will hire him.

Divide the class into two groups: one that wants to hire Hatfield and the other that thinks he is a con artist and will not be able to make rain for them. Each side should create a campaign to convince the other of their point of view. They can use techniques available during Hatfield's time: editorials and articles in newspapers; posters; broadsides; booklets; meetings in people's homes. Finally, a town hall debate should be held, with a moderator and four people on each side of the issue. The audience should ask questions. When the debate is over, a closed-ballot vote will determine what your class's imagined town will do.

[W 5.1, 5.4, 5.8, 5.9; SL 5.1, 5.4, 5.5]

Language Arts: Writing, Reading; Critical Thinking

Who really was Charles Mallory Hatfield? Was he a salesman, rainmaker, self-promoter, opportunist, astute observer of weather patterns, miracle worker, or just a con artist and flimflam man? Or perhaps he was all or none of the above?

Since your students who write tweets know how to express complete thoughts in just 140 characters, they can use those skills in a great writing activity from the National Writing Project: writing a memoir using just six words. It teaches critical thinking and requires that they choose words precisely.

To get them started they should first write six-word memoirs about themselves: their thoughts, their hopes and aspirations, their talents or skills. Then using the book as source material and using what they have learned from their research into Charles Hatfield and current trends in rainmaking, each student should write Charles Hatfield's six-word memoir answering for themselves the question of who he really was. The memoirs can then be used as captions for illustrations or superimposed on images.

[RI 5.7, 5.9; W 5.3, 5.4]

Literature: Folklore; Language Arts: Writing, Speaking and Listening; Art

“A family myth suggests [Charles Hatfield’s] birth was announced by a cloudburst of monumental proportions and a lightning strike that killed four cattle. Rain fell in such quantities that dusty streets turned into muddy rivers, stranding a westward-bound wagon train and halting railroad service for several days” (page 29).

Legends and tall tales are an important part of American folklore. The exaggerations of accomplishments of characters have been used to lift the imaginations of the reading public. Charles Hatfield could easily be the subject of an American legend.

If this tale is the birth of the Legend of Charles Hatfield, then it is up to your students to complete it. Using the legends of such characters of American folklore as John Henry, Johnny Appleseed, Paul Bunyan, and Pecos Bill as models, each student should write and illustrate “The Legend of Charles Mallory Hatfield.” They should share their work in a class reading. **[RL 5.2, 5.3; W 5.3, 5.4, 5.7; SL 5.1]**

Literature: Poetry; Language Arts: Reading, Writing

Many poets have written about the weather. First, read with your class a poem by F.W. Clarke written in 1891 titled “An Ode to Pluiculture” on the National Oceanic and Atmospheric Administration’s website (<http://www.history.noaa.gov/art/rainmachine.html>).

If they click on “Weather Poetry” in the upper left corner of the web page they will also find other weather-related poems. Students can each pick a poem to recite to the class. Then they can try writing their own weather poems. Collect their work and publish it as a class collection. **[RL 5.2; W 5.3, 5.4, 5.6; SL 5.1]**

Social Studies: Current Events; Science; Research

California has an insatiable thirst for water. Cities need water for their ever-growing populations, and growers need water for their crops that supply the nation with much of its food. Complicating the matter is that the state of California has been suffering from a massive drought for four years now (2011–2015). Have your students research and create reports or presentations on the efforts being made to address this situation. **[W 5.2, 5.4, 5.7]**

Social Studies: Cultures; Art

Chileans have used ceremonial rain sticks to invoke the spirits to bring rain and nourish their crops. Your students can make simple replicas of rain sticks.

Each student will need:

- 20-inch x 2-inch mailing tube with end caps. Mailing tubes work best because they are sturdy. Paper towel cardboard rolls are too flimsy.
- At least 16 2-inch nails. The more nails, the better the effect.
- Hammer
- Dried beans
- Scissors
- Pencil
- Crayons or markers
- Construction paper
- White glue

Procedure:

Draw a spiral down the tube. Avoid using the natural spiral of the tube to prevent it from falling apart. The spiral doesn't have to be perfect.

Starting at one end, carefully hammer in the nails about one inch apart down the length of the spiral. For safety, don't allow the nails to pierce all the way through the tube.

Cap one end of the tube.

Pour in the dried beans.

Test out the rain stick by holding your hand over the opening and rolling it back and forth. To change the sound, add more beans. When you like the sound, cap off the other end.

To hide the nails, glue construction paper around the tube.

Decorate the rain stick. Then go outside, recite the poems written earlier, roll the rain sticks back and forth, and summon the spirits to make it rain.

[RI 5.1; SL 5.1]



THE GOVERNMENT BALLOON EXPERIMENTS IN TEXAS.—From *Panorama*.—(See Page 120.)

1. General Robert O. Reynolds. 2. A Balloon being lowered by means of the Winches. 3. The Balloon in which John F. Riley made his Ascent, being up on September 18th. 4. A Powerful Explosion on Mount Franklin.

Courtesy of Texas State Library & Archives Commission

COMMON CORE ABBREVIATIONS USED IN THIS GUIDE

RI—Reading: Informational Text

W—Writing

RL—Reading: Literature

SL—Speaking and Listening

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True Life of
Charles Mallory
Hatfield

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Highlights