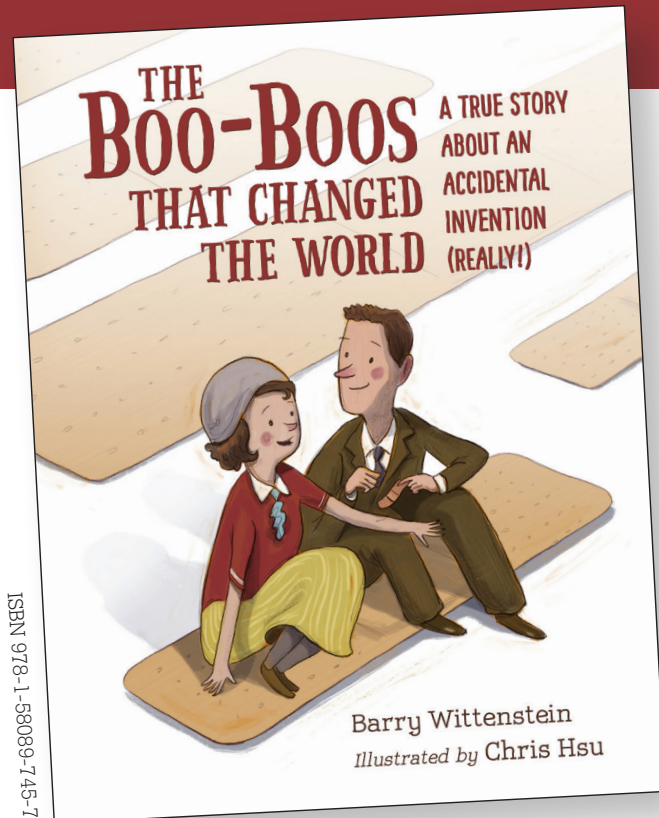


CURRICULUM GUIDE



THE BOO-BOOS THAT CHANGED THE WORLD

A TRUE STORY ABOUT AN
ACCIDENTAL INVENTION (REALLY!)

BY BARRY WITTENSTEIN

ILLUSTRATED BY CHRIS HSU

EARLE DICKSON'S WIFE, Josephine, was a klutz. She often cut her fingers while working around the house and in the kitchen. It was a bloody problem. How could Earle, a 1920s cotton buyer for pharmaceutical giant Johnson & Johnson

and the son of a doctor, help his wife take care of her minor injuries? Enter Earle's invention—the Band-Aid! But it took a while for folks to believe this little strip had merit.

Barry Wittenstein's funny tale about the true history of one of the world's most recognized products will charm and inspire young readers and inventors.

★ “Appealingly designed and illustrated, an engaging, fun story about the inspiration and inventor of that essential staple of home first aid.”

—*Kirkus Reviews, starred review*

“The book tells the story with a delightful sense of humor. . . . The splendid illustrations include historical details that evoke a distinct sense of time and place.”

—*School Library Journal*

A Junior Library Guild Selection

 Charlesbridge

charlesbridge.com

onedogwoof.com

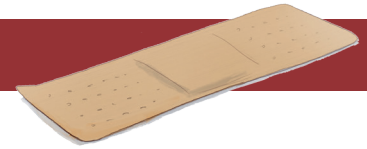
The Common Core State Standards addressed by the discussion questions and activities in this guide are noted throughout. For more information on the Common Core, visit corestandards.org. Next Generation Science Standards are also listed where applicable. For more information on NGSS, visit nextgenscience.org.

DISCUSSION QUESTIONS

-  How is the beginning of the story like a fairy tale? In what ways is it not like a typical fairy tale?
CCSS.ELA-LITERACY.RL.1.5; CCSS.ELA-LITERACY.RL.2.5; CCSS.ELA-LITERACY.RL.3.5
-  “Necessity is the mother of invention” is a common phrase. Some say that all great inventions start with finding a need that hasn’t been met—a problem to solve. What sparked Earle Dickson’s idea for an invention? **CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1**
-  How did Earle’s job help with the creation of his invention?
CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1
-  Often inventors create a prototype of their idea—a physical model of their invention. Describe the steps Earle took to design a prototype for his unique invention.
CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1
-  Earle realized that his invention could solve the problems of many. What next steps did Earle take to share his invention with a larger audience of people?
CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1
-  What problems arose in making and selling the first Band-Aids designed by Earle and produced in Mr. Johnson’s factory?
CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1
-  What was Mr. Johnson’s genius idea about how to increase awareness of Band-Aids at home in the United States and overseas during World War II?
CCSS.ELA-LITERACY.RI.1.1; CCSS.ELA-LITERACY.RI.2.1; CCSS.ELA-LITERACY.RI.3.1
-  In the beginning of the story, the author states, “Earle and Josephine ended up changing the world, one boo-boo at a time.” How did Josephine’s clumsiness change how people treat cuts and scrapes?
-  The author inserts “The End” in the story a few times before it is truly the end of the story. What effect does this have on the story? **CCSS.ELA-LITERACY.RL.1.5; CCSS.ELA-LITERACY.RL.2.5; CCSS.ELA-LITERACY.RL.3.5**
-  Study the opening double page spread illustration that shows Earle and Josephine’s neighborhood. What clues does the illustrator include to let readers know about the setting of the story? (Remember, the setting includes the time period as well as where the story takes place.)
CCSS.ELA-LITERACY.RI.1.7; CCSS.ELA-LITERACY.RI.2.7; CCSS.ELA-LITERACY.RI.3.7



ACTIVITIES FOR STUDENTS



BOO-BOOS BEFORE BAND-AIDS

In the “Learn More” section at the back of the book, several websites are listed that provide links to more information about Band-Aids. The last website link listed, <http://tedium.co/2015/05/19/history-of-bandages/>, explains how people dealt with injuries before Band-Aids were invented. Research information from this website and create a detailed paragraph or two describing methods and materials people used to treat their cuts prior to Earle’s invention. (Teachers may want to preview the site and photocopy the section on methods of wound care from long ago as a resource for students’ informative paragraphs.)

CCSS.ELA-LITERACY.W.1.2; CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2

DESIGN YOUR OWN BAND-AIDS

As he perfected his invention, Earle Dickson and his company went through different designs of the Band-Aid—from long adhesive strips with cotton cut to size as needed, to smaller, single Band-Aids that were individually packaged. Today the Band-Aid comes in a variety of shapes and designs. Draw illustrations of your own unique line of Band-Aids. Write a letter to Johnson & Johnson about your designs and why your Band-Aids would be a successful product for today’s consumers.

CCSS.ELA-LITERACY.W.1.1; CCSS.ELA-LITERACY.W.2.1; CCSS.ELA-LITERACY.W.3.1

“I NEED A BAND-AID!”

Think back to a time in your life when you required a Band-Aid. Where were you? What were you doing? How were you feeling? Use this memory to write a small moment story about an incident that required a Band-Aid. Make sure to include what the people in your story were saying and feeling during your small moment. **CCSS.ELA-LITERACY.W.1.3; CCSS.ELA-LITERACY.W.2.3; CCSS.ELA-LITERACY.W.3.3**

A BAND-AID EXPERIMENT

Conduct your own bandage experiment by trying to answer the following question with a science partner or group: Which brand of adhesive bandage stays on under water for the longest amount of time? Choose three different brands of adhesive bandages. Fill a dish tub with water. Put one adhesive bandage on the top of your hand and put your hand in the tub of water. Have a partner watch the time to see how long it takes for the bandage to come off your hand under water. Record the time. Repeat the process with the other two brands of adhesive bandages. Record all of your data. Write a report about your science experiment that details the question, the method, and the results of your bandage experiment. How else might you test adhesive bandages? **CCSS.ELA-LITERACY.W.1.2;**

CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2;

NGSS: 2-PS1-1; NGSS: 2-PS1-2



The discussion questions and activities in this guide were created by Leigh Courtney, Ph.D. She teaches in the Global Education program at a public elementary school in San Diego, California. She holds both masters’ and doctoral degrees in education, with an emphasis on curriculum and instruction.

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NAME: _____

THINK LIKE AN INVENTOR



CCSS.ELA-LITERACY.W.1.2; CCSS.ELA-LITERACY.W.2.2; CCSS.ELA-LITERACY.W.3.2; CCSS.ELA-LITERACY.W.1.6;

CCSS.ELA-LITERACY.W.2.6; CCSS.ELA-LITERACY.W.3.6; NGSS: 2-PS1-1; NGSS: 2-PS1-2

What is a problem that you notice in your life at home or at school?

How might you solve this problem with an invention?

Make a labeled sketch of your invention and give your invention a name.

Using materials from an art or recycling box in the class, build a model of your invention based on the sketch. If possible, use an application such as “Educreations” to write about your invention to inform others about why your invention is useful. Hold an inventors’ conference with other inventors in your class. Share your models and computer presentations about your product.

After the inventors’ conference, write about any changes you might make to your invention based on the feedback from other inventors.

NAME: _____

CAUSE AND EFFECT



The story events in *The Boo-Boos That Changed the World* are all connected to each other. Look at the story events listed in the CAUSE column below. What EFFECT happened as a direct result of each story event? Draw a line to connect each CAUSE to its EFFECT. **CCSS.ELA-LITERACY.RL.1.3; CCSS.ELA-LITERACY.RL.2.3; CCSS.ELA-LITERACY.RL.3.3**

CAUSE

1. Josephine Dickson was accident prone in the kitchen.

2. It was too big a job for the Dicksons to make the adhesive bandages by themselves.

3. The Band-Aids were not selling well, so the company gave the Band-Aids away for free.

4. Earle Dickson saw that there needed to be a better way to help Josephine with her kitchen injuries.

5. The first Band-Aids were made in a factory by a very slow process. Only a small number could be made by hand.

EFFECT

Band-Aids were a hit with the Boy Scouts (and their mothers) and with WWII soldiers.

Josephine used kitchen rags and bulky towels to bandage her kitchen injuries.

James Johnson agreed to produce and sell the first Band-Aids.

The company invented a machine that could mass produce thousands of Band-Aids.

Earle thought of a way to make bandages using adhesive and cotton that could be cut with scissors. He tried his invention on Josephine.

ANSWERS: 1B, 2C, 3A, 4E, 5D

NAME: _____ NAME: _____

CREATING A GLOSSARY



There is a great deal of interesting information at the end of *The Boo-Boos That Changed the World*, including an Author's Note and timelines of Earle Dickson's life and medical inventions from the 1920s and 1930s. Another backmatter feature often included at the end of a book is a glossary. A glossary is like a little dictionary of words found within that one book. With a partner, look through *The Boo-Boos That Changed the World* and identify five words that are important to the telling of how Band-Aids were invented. List the words in alphabetical order and create definitions for each word. When you're finished, you will have created a glossary for *The Boo-Boos That Changed the World*. **CCSS.ELA-LITERACY.RI.1.5; CCSS.ELA-LITERACY.RI.2.5; CCSS.ELA-LITERACY.RI.3.5**

ENTRY WORD

DEFINITION