



# How Chimes Have Changed!

**HOW HENRY ROSE FROM  
POVERTY AND BECAME A  
RENOWNED SCIENTIST.**



# A letter from the publisher



Dear Reader,

This playful book-series is a publication of AlligatorZone®, where students meet startups, an impact initiative as well as a community of life-long learners who explore the world through the eyes of the entrepreneurial problem-solver.

AlligatorZone® is proud to present this series of stories and related playful explorations designed to surface the delightful conversationalist that lurks within each of us, and to shine a light on our charismatic side, while we explore the world of future careers, and perhaps find a calling, sooner than later. This activity book can be enjoyed by students of ages ten through the teens. In fact, any life-long learner will enjoy this booklet.

If you choose to read this book aloud, enunciate like your favorite TV newscaster, actor or YouTuber. If you post it online outside of AlligatorZone, tag @alligatorzone or even #alligatorzone. If reading aloud, slow down so that audiences of all backgrounds may understand you clearly. This exercise fine-tunes our personality, making people pause and listen when we speak. That's because the knowledge in this book series will appeal to most people, and this exercise powers up style with substance.

These stories and explorations will make you look at the world through the eyes of an entrepreneur and observe opportunities to solve problems everywhere around you. Included with this story, is a set of questions to jog your thinking, and an activity for you to go on a journey of discovery, somewhat like an investigative journalist. After you read this book, you can continue learning about more lessons drawn from this book through additional programs offered by AlligatorZone online.

**LIFE-LESSONS:** With this exploration-book and program, readers will understand, among other things, that

- opportunities to improve things and make a difference exist all around us
- industries require a variety of skills
- there is something to learn even from the most mundane things around us
- the world is an encyclopedia, when we don't hesitate to ask questions
- with practice, one can learn to ask the right questions and solve problems
- persistent efforts can accumulate to grand outcomes despite humble beginnings
- your voice matters
- even learning to think like an innovator makes one a standout leader
- mindfulness is possible in everyday activities
- understanding a company and its leaders makes us better consumers and investors
- those who make a difference do it regardless of their circumstances, and
- curiosity, listening and observation are super-powers that we all have and can use everyday

Enjoy more advanced explorations and collaborative learning that we bring to you by extending stories from this book to an online environment as a member of AlligatorZone. Visit [AlligatorZone.org](https://AlligatorZone.org) for more.

Have fun with this story and exploration.

Ramesh Sambasivan  
Instructional Designer  
AlligatorZone® Academy  
September 30, 2020



# How Chimes Have Changed!

*(To be read aloud to an audience at home, in school, or online)*



Once upon a time, on the banks of the Hudson river in Albany, New York, there lived a day laborer named William Henry, with his wife Ann. They had emigrated from Scotland a year before America's Declaration of Independence in 1776. Their only child Joseph, was born on December 17, 1797. Joseph grew up in poverty, and soon became an apprentice, learning watchmaking. Later he wanted to become a professional actor. However, when Joseph was 16, he was gifted a book titled, 'Lectures on Experimental Philosophy, Astronomy and Chemistry, Intended Chiefly for the Use of Young People'. The book changed Joseph's future because he realized that he was deeply interested in science.

Joseph soon began to learn while working at the Albany Academy. He graduated after studying mathematics, chemistry and physics, worked as a laboratory assistant for some time and then moved on to work for a civil engineer. Soon, he returned to the Albany Academy for a teaching position. By the age of 30, Joseph Henry was Professor of Mathematics and Natural Philosophy at the Academy. Joseph was about to embark on a journey of breathtaking scientific discoveries. This was also the time when other scientists were making discoveries such as electromagnetism. Joseph Henry began several experiments using electromagnets.

In 1831, Joseph used a battery and a long wire to create electromagnetic power, which made a bell ring from a thousand feet away. This is said to be the first electric doorbell. Joseph Henry did not want to patent his invention because he considered himself a pure scientist and not an inventor seeking to profit from his creation. It is unclear if that was a good idea because when Henry demonstrated the early version of another creation of his, the telegraph, it was said to have been picked up by Morse, but Henry was said to be resentful that his role in the development of the telegraph was not acknowledged. He continued with his inventions and became secretary of the Smithsonian Institution. A unit of electric inductance was named 'henry' in his honor.

In its early years, the electric doorbell was considered a luxury that few could afford. The electric doorbell did not become popular until the transformer was invented many years later, allowing for doorbells to stop relying on batteries, but instead be powered by the electricity in homes. The doorbell changed how it rang over the years. First there were buzzers, and then by the 1930's, there were musical chimes. The Westminster Quarters is considered one of the more popular chimes for doorbells. Doorbells with sounds of chirping birds didn't seem popular as home owners would look out the window for birds instead of answering the door.

Doorbells soon evolved into wireless doorbells, allowing for the bell to be heard in remote parts of a home. Wireless doorbells were also easier to install, with no wires required. When a visitor presses the button on a wireless doorbell, a transmitter sends a radio signal to a wireless receiver plugged into the wall socket through a transformer adapter that adjusts the power sent to a sound chip that then plays a chime.

Since a doorbell is the first alert for us to know that there is someone at our doorstep, it was only a matter of time before home security would become a part of the doorbell. With wireless doorbells, including those that stream videos, they need an approval from Federal Communications Commission (FCC), the government agency which wants to make sure that the radio frequency signals from the doorbell do not interfere with cell phone towers or other radio channels. When a doorbell causes such a problem, agents from the FCC may be ringing the doorbell to warn owners to change the device, and if they do not correct the problem, they may have to pay fines. The local power company can diagnose such interference and solve it.

When a company like Ring, which was purchased by Amazon for \$1 billion, announces a new kind of doorbell, there is tremendous excitement in the industry. By 2025, people are expected to spend \$78 billion on home security systems each year, including video doorbells. The ability to connect devices through the Internet, more awareness about home security, the ease of installation, as well as the use of more online shopping during Covid19 are making video doorbells popular. Henry's invention has changed a lot with the passage of time. However, there are reports that fewer friends will press your doorbell button, instead, just sending a text message saying 'Here', when they reach your place. Still, whenever we visit someone and see or ring the doorbell, let us remember that its story dates back to 1831 with a brilliant physicist named Henry.

# Quiz your audience.

*This performance task is mainly for the younger members of AlligatorZone®.  
(Your audience could be a family member, a classmate, a teacher or an observer).*



How many years ago was the electric doorbell invented? (Don't use a calculator)

At the World's Columbian Exposition, held in Chicago in August 1893, an International Congress of Electricians met and adopted names and definitions for eight units of electrical measure, including one for inductance. What is the unit to measure inductance called, in honor of the physicist who invented the electric doorbell?

The doorbell was a luxury that few could afford. What invention transformed the use of electricity in the early 1900's, years after the invention of the doorbell, which made the doorbell highly popular and more commonly available?

Which government agency monitors the radio frequencies in modern doorbells?

Next?

Continue to the next page for participating in an exploration, as part of the premium AlligatorZone plan or go online to our learning community and share your thoughts.



# AlligatorZone<sup>®</sup> Exploration

*Note down your responses, start or join a discussion in our learners' online community.  
(This performance task is for older students and life-long learners at AlligatorZone.)*



- 1) Observe a doorbell the next time you use one. What would be a nice feature or quality to add to it or eliminate? Think of it from all the angles, including if young children or visitors in wheelchairs can use the doorbell easily.
- 2) Find out what is the power source for the doorbell you get to observe. Think of the advantages and the disadvantages of that power source.
- 3) The doorbell went from being a luxury item to a commodity that everyone installed and enjoyed. Lately, doorbells have blended home security in its function. Think of what can be changed to make a doorbell feel like a luxury item again.
- 4) As the world learns from Covid19, what do you think can make doorbells easier to use if a visitor is hesitant to touch the button on the doorbell and expects a contact-less experience.
- 5) What do you think are the consequences of the modern day video doorbell for individual privacy?
- 6) If you were to completely change the doorbell with all the technology that is currently available, what would it be like?
- 7) What are the pros and cons of bundling a doorbell with all sorts of capabilities? What do you think are the pros and cons of combining capabilities in anything?
- 8) There are trash cans that open if you step on a pedal. What could be the drawback if a doorbell can be activate with one's feet?

Share your thoughts and learn collaboratively on our online community of life-long learners at AlligatorZone.



Not yet a premium member of AlligatorZone<sup>®</sup>.  
Visit our website <https://alligatorzone.org>

# Tips for a Parent, Teacher or a Mentor

(For mentors and coaches using AlligatorZone's Premium Plans)



Here are time-tested tips for mentors who may want to steer the learning at home or in class.

- 1) **Keep it simple.** If the suggested activity calls for going to a specific location, try slipping the field activity into a routine trip to a store or a mall, and make it an 'oh-by-the-way-let-us-stop-and-look' kind of detour on an errand, rather than making a special trip for it. The idea is to remove any semblance of pressure to perform and focus purely on the joy of learning something new in a shared experience for a student and the teacher.
- 2) **Go Improv.** Avoid planning and scheduling it in advance. Our goal with the activities is to help children make learning a life-long pursuit and a hobby, not a checklist item that will result in angst until it is completed and cleared.
  - Where an activity involves having a conversation with a stranger at a facility or a manager, consider making it a walk-in experience.
  - This improv-like approach, we believe, teaches the child to be comfortable with uncertain outcomes ("Sorry, the manager is out sick.") and improvise. They learn to play the hand they are dealt in the project (just like in life). They learn to find alternative sources of information and piece things together.
  - We believe it helps them learn how to focus on things they can control and not worry about things beyond their control.
  - We believe that it teaches them to find insights amid chaos and stay focused on the task at hand despite distractions.
- 4) **Learning, not shopping.** We strive to design activities that do not require making purchases. We strive not to make field activities specific to any particular brand. Use on-site observation to complete the learning with your student. Do not make a purchase for this purpose.
- 5) **Feel free to make a script, if it helps.** If you prefer to schedule a meeting in advance with a store manager or supervisor, prepare a script and encourage your student to be a part of the initial phone request while you stay on the call. Let the student own the process. In our recent summer workshop under the coach's supervision and guidance we had the 11-year old student conduct a market research. He told us later that it was the first time he had left a voice message and his first time on a business call. The sense of accomplishment and the confidence gained, were priceless.
- 6) **Let the child lead the conversation.** If the student is not yet ready to speak and start a discussion on topics in our activities, try making it a 3-way conversation and keep it casual, referring decision-making to the child ("What do you think?" or "Does that sound reasonable?") so everyone knows that the student is in charge of the discussion. After the first few times we often see kids lead and handle conversations with aplomb. Let there be no pressure on the student to produce a certain result. Let there be no pressure to use big words or business jargon. If a store owner or employee uses industry parlance or acronyms, seek clarification so the child knows there are no dumb questions.
- 7) **Going off-script is perfectly fine.** Allow the students to find alternative sources of information *under your supervision*, and let them piece things together for their learning. They might find something on TV or Netflix, Youtube, Pinterest or TikTok (if they already use those sites and apps) and be able to connect the dots to fresh insights for improved findings.

Last, but not the least, no matter what, keep it light-hearted and make it a spontaneous and shared experience for both, you and the student.

# Sources

*(These are the publicly available sources used to compile this story)*

Sources:

Please visit AlligatorZone's online learning community to see links to the sources used to pull this story together.

You can also enjoy a curated collection of links to news reports, articles and videos for a deeper and wider understanding of the subject of the story.

