

TEACHER RESOURCE 3.1

Science through the Centuries Cards

CITIZEN OF THE 1700s

My name is **Mary Walker** and I am a typical citizen of the 1700s. I am 16 years old. I have two older sisters, a younger brother, and two siblings who died as babies. Most people are farmers, and many boys go to school, at least for a few years. I was taught some at home, but many of my friends don't know how to read or write. If my brother wants more school, he'll have to go into the ministry because the church supports most education. This isn't likely, though, because somebody will have to take over the family farm.

MEDICAL PRACTITIONER OF THE 1700s

My name is **Isaac Dawson** and I practice medicine. Many people in our community (about one in three) die as infants or toddlers. If you live to be a teenager, you have a good chance of living to be as old as 50 or 60. Most of my patients die of smallpox, cholera, bubonic plague, scarlet fever, or tuberculosis. I believe that illness is caused by bad air or an imbalance of blood, phlegm, yellow bile, and black bile in the body. I use treatments that have been around for thousands of years, such as herbs, suction cups, and "bleeding" to cure disease.

SCIENTIST OF THE 1700s

My name is **Robert Hooke**. I was educated at home in England by my father, a churchman, and sent away to school at the age of 13. I am an old man now, but I've seen lots of scientific advancements. Our lens grinding techniques are now good enough to make two important research tools: telescopes and microscopes. Using a microscope, I was able to see very small things such as plant "cells." The public doesn't always understand my work, though, and I have been publicly ridiculed for spending so much money on microscopes just to see "mites in cheese." I think this is important work that may change science and medicine!

PERSON WITH DIABETES IN THE 1700s

My name is **Elizabeth Snell** and I am 27 years old. My husband is a farmer. I've had eight children, though only four are living now – one boy and three girls. One baby died before he was a week old, and I lost two children to smallpox when it spread through our village this year. My second son, though, that was the strangest thing. William was always hungry and we could hardly get enough food to feed him, but he stayed so skinny. He complained all the time of being tired and one day couldn't get out of bed. Maybe his body had too much black bile, I don't know. One evening we couldn't wake him up and by morning he was gone.

CITIZEN OF THE 1800s

My name is **Samuel Christian** and I am a typical citizen of the 1800s. I am an old man at the age of 52. I am a farmer, but our family's land was not big enough to support everybody, so my younger brothers and their families moved to the city years ago to work in a factory. They are making a living, but I hear that they all live crammed together in one small apartment. I can read and write some, but it's mostly the landowners and wealthy people who are truly "educated" since they are the only people who can afford it. I've heard that free public elementary education might be available for all American children soon—now that more people are moving to cities, some people think that free education will create good citizens, unite society, and prevent crime and poverty.

MEDICAL PRACTITIONER OF THE 1800s

My name is **Joseph Lister**, and I am a well-educated surgeon. Most people of this time die from diseases such as smallpox, cholera, scarlet fever, or tuberculosis. As a surgeon, I see a lot of women and babies die from infections after childbirth. I have heard of Louis Pasteur's work with "germs" and think they could be the cause of infection, not chemical changes due to "bad air" as most people think. Right now, many of the surgeons I work with don't even wash their tools or hands between surgeries. I'm now working on an antiseptic to kill germs on surgical tools, which may reduce infections from operations. Thanks to microscopes, one of my colleagues has discovered that both tuberculosis and cholera are caused by small living things—bacteria.

[**Note:** The popular antiseptic mouthwash *Listerine* is named after Joseph Lister.]

SCIENTIST OF THE 1800s

My name is **Louis Pasteur** and I am the son of a French tanner. My wife and I had five children, but three of them died of typhoid. After that heartache, I have dedicated my life to curing disease, and I would like to thank my university, which often gave me financial support for my studies. Many people still think that disease is caused by bad air, but I have proven that disease is caused by microscopic organisms. I'm calling them "germs." I think these germs are also responsible for spoiling milk and beer. I'm now working on a vaccination for rabies and for anthrax, which kill many domestic animals. Without microscopes and people like **Robert Hooke** who pioneered them, I wouldn't be able to do this work.

[**Note:** The process of pasteurizing milk is named after Louis Pasteur.]

PERSON WITH DIABETES IN THE 1800s

Hello, I am **Mary Roberts** and I am 14 years old. My father is a banker. My mother mostly entertains, but lately she hasn't even been doing that. That's because my eight year old sister got sick. The doctor came a couple of months ago and he said she has the diabetes. Since then, they have tried giving her opium and bleeding her with leeches. Now, the doctor won't let my mother feed her hardly anything – just some broth and black coffee. I'm not allowed to go in her room any more but I peeked in this morning. She doesn't look good! Her eyes are closed and she is real skinny.

CITIZEN OF THE 1900s

My name is **Pearl McKinley** and I am a citizen of the 1900s. I'm 96 now and I've seen a lot of changes! I grew up on a small family farm, but now most people rely on manufacturing jobs. Think of all the things that have been invented in my lifetime: television, credit cards, cell phones, dishwashers, contact lenses, ball point pens, frozen pizza, cars, microwave ovens, CDs, computers, fast food...the list goes on and on. When I was born, only about six percent of the population graduated from high school. Now, about 85 percent do! More and more people go to college now, too. Every child in the U.S. can get a free education now, at least through high school, because public schools are supported by the government.

MEDICAL PRACTITIONER OF THE 1900s

My name is **Alexander Fleming** and I am a medical doctor. It's not uncommon now for people to live until their mid-70s or later, at least in developed countries. During World War I, I saw how easily deep wounds became infected, even though we used sterilization techniques developed by **Joseph Lister** and others. After the war, I began looking for antibacterial agents that would lead to a treatment. After accidentally leaving bacteria cultures to mold, I noticed that the colonies closest to the mold had been destroyed. This led to the discovery of penicillin which has become an early antibiotic and eventually led to treatments for scarlet fever, cholera, tuberculosis, bubonic plague, and other diseases. I, Alexander Fleming, will die of a heart attack as will many others. Chronic diseases involving the heart and respiratory systems will take their toll as people live longer. Cancer will also affect people all over the world.

SCIENTIST OF THE 1900s

My name is **Jonas Salk**. and I was born to immigrants who were determined that I would have a good education. I went to public schools and was the first in my family to go to college. I attended a college in New York for students from working class, immigrant families, then on to medical school. During work on a project funded by a foundation (known as the March of Dimes), my research team and I developed the first effective vaccine against polio. Other researchers developed vaccines for smallpox, measles, mumps, rubella, and many other diseases reducing deaths and disfigurement drastically during this time period. We are all building on the early vaccine work of **Louis Pasteur** and others.

PERSON WITH DIABETES IN THE 1900s

My name is **James Walker**. I am 25 years old. I was diagnosed with diabetes when I was 16 years old, in 1948. Doctors now know that diabetes is caused by a lack of insulin, so I watch what I eat and use insulin to control my blood sugar, which is really difficult. I have to give myself insulin shots several times a day; then the needle and syringe need to be washed and sterilized in boiling water. It's a big needle, too! I even have to sharpen it regularly. The only way to really know my blood sugar levels is to go to the hospital. Once I got a sore on my foot that turned into an ulcer, and I didn't even know it! The doctor said if I had waited any longer to see him I might have lost my foot. At least I'm not allergic to the insulin I use; I've read about some people who are.

CITIZEN OF THE 2000s

My name is **Andrew Hayes** and I am a typical citizen of the 2000s. In the U.S. now, most workers provide some sort of service like health care, education, business, or retail. In developing countries, many people farm, though other types of jobs are becoming more common as developed countries move industries overseas. In the U.S., most people graduate from government-supported public high school, and the majority go on to college or trade school, too, though they may have to pay for part or all of it. Online education is becoming more popular and people now get a lot of their information through technology.

MEDICAL PRACTITIONER OF THE 2000s

My name is **Dr. Douglas Lowy**. Our global life expectancy is about 67 years, though it is not uncommon for people in developed countries to live into their nineties. After studying art history and French and getting my medical degree, I began a career in basic science research at the National Cancer Institute (NCI). My work eventually led to two vaccines for cervical cancer. I am familiar with the work of **Dr. Nora Disis**, who is also working with cancer vaccines. All my work is federally funded through the NCI. As people are living longer, chronic diseases are the source of many health issues. Worldwide, the top health-related causes of death are heart disease and stroke, respiratory infections, pulmonary disease, diarrheal disease, and HIV/AIDS. Diabetes is the ninth cause of death globally. More health concerns are related to diet and access to healthy foods and clean water.

SCIENTIST OF THE 2000s

My name is **Dr. Nora Disis** and I am a medical doctor and researcher interested in women's health, specifically breast and ovarian cancer. I discovered a tumor antigen which led me to develop cancer vaccines. In the past, vaccines made by famous researchers like **Jonas Salk** (1900s) fought infectious diseases like smallpox and polio, so my work using vaccines against cancer is pretty new! I work with the Tumor Vaccine Group in Seattle and rely on research grants from the U.S. government along with many other funding sources.

PERSON WITH DIABETES IN THE 2000s

My name is **Aubrey Mathwig**. I am 25 years old and have Type I Diabetes. I was diagnosed a few years ago when I was drinking two gallons of water every day but was extremely thirsty at all hours. I also was losing weight rapidly and was exhausted all the time. Things in my life have changed since then. First, I have to monitor my blood sugar throughout the day, every day, which can get tedious. I also have to give myself a shot of insulin each time before I eat, and once before bed. I have to be prepared at all times by traveling with insulin, needles, etc., along with a fast-acting carbohydrate in case my blood sugar gets low. Even with this disease, my future is bright as long as I consistently keep on top of my blood sugar levels and take good care of myself.