

	<p><b>Lesson Plans for Nestle Collection</b></p> <p><b>Medicine and First Aid (Level 2, 3-5)</b></p> <p><b>Reading Is Fundamental</b></p> <p><b>Books Supported:</b></p> <ul style="list-style-type: none"> <li>• <i>Cuts, Scrapes, Scabs, and Scars</i> by Dr. Alvin Silverstein, Virginia Silverstein, and Laura Silverstein Nunn</li> <li>• <i>Marie Curie</i> by Philip Steele</li> <li>• <i>Medical Mysteries</i> by Scott Auden</li> </ul>
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## INTRODUCTION

Here are some examples of activities to support students' learning:

- Set up a Medicine and First Aid Literacy Center in your classroom. Include books from this collection, other books on medicine and first aid, and posters and handouts from the CDC or your local pediatrician's office about first aid related topics.
- Invite your school nurse, a Red Cross trainer, or another professional to come to your class to talk about first aid.
- Make sure students know basic first aid practices for school and home. Discuss when, where, and how they should call 911 or other emergency numbers, and make a list of emergency numbers for your area.
- If you have a defibrillator in your school, make sure students know where it is and the right conditions for its use so they can direct first responders to it if necessary.
- Help students pack basic first aid kits to take home, and make sure they know how and when to use each item.

## Materials List

- books about medicine and first aid
- posters and handouts about medicine and first aid
- lists of local emergency numbers
- materials for packing basic first aid kits (latex or neoprene gloves, adhesive bandages, antibiotic creams, antiseptic wipes)

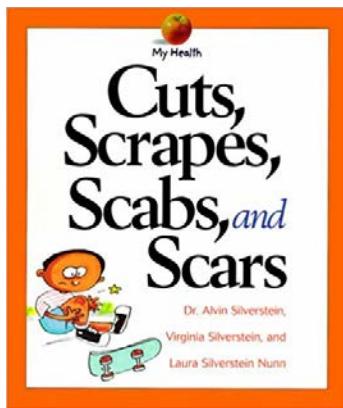
## General Objectives for Germs and Disease Lessons

Students will:

- understand key vocabulary
- understand basic first aid practices
- understand key moments in the history of medicine
- understand the work of medical researchers at a basic level

## **BOOK-SPECIFIC LESSON PLAN 1**

**Using *Cuts, Scrapes, Scabs, and Scars* by Dr. Alvin Silverstein, Virginia Silverstein, and Laura Silverstein Nunn with the Medicine and First Aid Level II Lesson Plan**



*Cuts, Scrapes, Scabs, and Scars* by Dr. Alvin Silverstein, Virginia Silverstein, and Laura Silverstein Nunn (FranklinWatts-My Health, 1999) is an introduction to various types of skin injuries, how the skin repairs itself, basic first aid for the title ailments, and how you can protect yourself from injury.

### **Objectives**

Students will:

- understand new vocabulary
- identify the main topic
- identify and describe various types of skin injury
- describe how skin repairs itself
- describe medical intervention for skin injury
- identify ways to protect the skin from injury

### **CCSS Alignment**

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.

RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

### **NGSS Alignment (None)**

**Pre-Reading Activities:** Introduce the book to students and briefly discuss the main topic of skin injury. Show students how to use the Table of Contents, Index, and Glossary to find information.

**Reading:** Make the book available to read in your Medicine and First Aid Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

What is the purpose of skin? (It protects your body from injury and disease.)

Describe how your body repairs itself when you injure your skin. Use vocabulary words from the glossary. (Platelets pile up at the wound site, forming a plug to fill the hole. This stops the bleeding. The platelets break open and a material called fibrin spills out. The fibrin forms a mesh over the wound, which traps red blood cells, causing the blood around the wound to thicken and form a clot. The clot becomes a hard scab when the blood dries. White blood cells clean out the wound and new skin cells form, healing the wound under the scab, which eventually falls off, exposing new pink skin.)

What are three major health risks of deep wounds? (excessive bleeding, infection, and nerve damage)

What is pus made of? (the dead bodies of white blood cells)

**Post-Reading:** Go over the Reading Questions with students, then answer the questions below.

Post-Reading Comprehension Questions:

What is the main idea of this book? (Your body has special ways to heal injuries to the skin.)

What are some ways doctors can help heal skin injuries? (Skin grafts can be used to prevent scar formation. Stitches, staples, and medical glue can help stop bleeding and prevent infection. Infections can be treated with antibiotics.)

Why are puncture wounds especially vulnerable to infection? (They can be very deep, introducing bacteria deep into the body.)

What should you do when you get a cut or scrape? (Wash it with soap and water, put antibacterial ointment on it, and cover it with a bandage until a scab forms.)

How can you protect yourself from injury and heal faster if you do get hurt? (Wear a helmet, knee and elbow pads, and other protective gear when participating in sports. Get enough sleep and eat healthy foods to keep your body in good shape for healing.)

Class Activity: Identify the parts of the skin on a cross-section diagram.

#### **ABOUT THIS TITLE**

**Lexile:** 920

**Interest Level:** 8-11 years

**Reading Level:** 3<sup>rd</sup>-6<sup>th</sup>

#### **Themes**

Nonfiction, Informational Text, First Aid, Injury, Skin, Bacteria, Cuts, Bruises, Blood, The Human Body, Healing

**Word List:****Category Vocabulary:**

Bacteria	Single-celled organisms that can cause disease
Infection	Invasion of the body or part of the body by dangerous microorganisms
Virus	A microscopic infectious agent which attacks healthy cells and makes copies of itself
Inflammation	Redness, heat, and swelling that develop when part of the body is damaged
Disease	An illness or malfunction in the body
Prion	Proteinaceous infectious particle that can cause disease

**Book-Specific Vocabulary:**

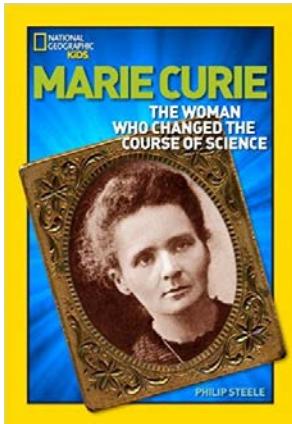
**There is a detailed vocabulary list on pages 40-42. These are the most relevant to the category from that list.**

Clot	A jellylike solid formed by blood to close up a wound
Fibroblasts	Fiber-forming cells that make the framework for skin and connective tissues
Fibrin	A strong, thread-like protein
Platelet	A tiny blood cell that helps close up cuts
Puncture wound	A small deep hole in the skin made by a sharp, pointed object
Pus	A whitish substance made up of dead white blood cells and bacteria
Red blood cell	A blood cell that carries oxygen to the tissues of the body
Scab	The dried remains of a blood clot that closed up a wound. It acts as a protective cover under which the wound heals.
Scar	Tough, strong tissue containing collagen fibers, which connects the cut edge of a

	wound
Scrape	A large, shallow wound in which part of the skin is rubbed off
Skin graft	A thin layer of healthy skin taken from another part of the body to cover a wound so that a scar will not form
White blood cell	A blood cell that moves through tissues and serves as an important part of the body's defenses. Some eat germs and clean up bits of damaged cells and dirt.

## BOOK-SPECIFIC LESSON PLAN 2

### Using *Marie Curie* by Philip Steele with the Medicine and First Aid Level II Lesson Plan



*Marie Curie* by Philip Steele (National Geographic, 2006) is a general biography of Marie Curie that covers her life and work from birth to death.

#### Objectives

Students will:

- understand new vocabulary
- identify important people, places, events, and terms in each chapter
- construct a reverse outline for the book
- summarize the text
- use information from two or more sources

#### CCSS Alignment

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic.

RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

RI.4.5 Describe the overall structure (e.g. chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.

RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

RI.5.5 Compare and contrast the overall structure (e.g. chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.

RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

### **NGSS Alignment (None)**

**Pre-Reading Activities:** Introduce the book to students along with a brief summary of Marie Curie's life and work so that they have a point of reference for this biography. Try using Curie's Nobel Prize biography at

[https://www.nobelprize.org/nobel\\_prizes/physics/laureates/1903/marie-curie-bio.html](https://www.nobelprize.org/nobel_prizes/physics/laureates/1903/marie-curie-bio.html), which is listed in the bibliography. (You could also use this as an opportunity to introduce the concept of a bibliography to students.)

**Reading:** Make the book available to read in your Medicine and First Aid Literacy Center or to check out from your classroom library. As they read each chapter, have students make notes on the following topics.

- Important People
- Important Places
- Important Events
- Important Terms

Once they have noted these items for each chapter, students will have the beginning of a reverse outline (an outline derived from a text rather than made in preparation for writing), which is an important reading comprehension skill they can transfer to other books.

### **Post-Reading:**

Post-Reading Comprehension Exercise:

Using students' notes for their reverse outlines, write one-paragraph summaries for each chapter as a class.

Class Activity: Using Curie's Nobel Prize biography

([https://www.nobelprize.org/nobel\\_prizes/physics/laureates/1903/marie-curie-bio.html](https://www.nobelprize.org/nobel_prizes/physics/laureates/1903/marie-curie-bio.html)) and the class's summaries, construct a timeline of major events and achievements in Marie Curie's life.

If desired, use butcher paper and other craft materials to make a large version to put on your classroom wall.

#### **ABOUT THIS TITLE**

**Lexile:** 900

**Interest Level:** 8-12 years

**Reading Level:** 3<sup>rd</sup>-7<sup>th</sup>

#### **Themes**

Nonfiction, Informational Text, Marie Curie, Science, Biography, History, Geography, Nobel Prize, France, Poland, Radiation

**Word List:****Category Vocabulary:**

Bacteria	Single-celled organisms that can cause disease
Infection	Invasion of the body or part of the body by dangerous microorganisms
Virus	A microscopic infectious organism which attacks healthy cells and makes copies of itself
Inflammation	Redness, heat, and swelling that develop when part of the body is damaged
Disease	An illness or malfunction in the body
Prion	Proteinaceous infectious particle that can cause disease

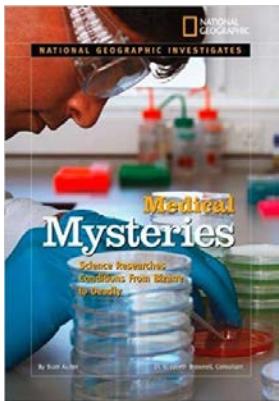
**Book-Specific Vocabulary: There is an extensive glossary on pages 60-61. These are the most relevant terms to the category.**

Anemia	An illness that affects the blood
Nervous breakdown	A period of mental illness, exhaustion, or depression
Physics	The branch of science that deals with matter and energy in the natural world, but not with chemistry or with forms of life
Pitchblende	A black ore that contains uranium, radium, and polonium
Polonium	One of the unknown elements that Marie Curie discovered and obtained from pitchblende
Radiation	The giving out of rays, especially by a radioactive material
Radiotherapy	Using x-rays, gamma rays, or radioactive substances to treat a disease, such as cancer
Radium	One of the unknown elements that Marie Curie discovered and obtained from pitchblende. It is highly radioactive.
Sanatorium	A health treatment center where people can recover from illness

Tuberculosis	An infectious disease that usually affects the lungs
Typhus	An infectious disease that is passed on by lice and fleas.
Uranium	A radioactive metal element

## BOOK-SPECIFIC LESSON PLAN 3

### Using *Medical Mysteries* by Scott Auden with the Medicine and First Aid Level II Lesson Plan



*Medical Mysteries* by Scott Auden (National Geographic, 2008) presents a history of various common elements and rare ailments of the human body that doctors and scientists have struggled or are still struggling to understand.

#### Objectives

Students will:

- understand new vocabulary
- explain why medical research is important
- compare and contrast viewpoints of researchers, loved ones, and patients
- understand how researchers might change their minds based on new evidence

#### CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, or cause and effect.

RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

RI.3.6 Use text features and search tools (e.g. key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.

RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).

RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.

RI.4.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.

RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

RI.5.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.

RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

### **NGSS Alignment (None)**

**Pre-Reading Activities:** Introduce the book to students, modeling how to use the table of contents, glossary, index, and other text features to find information.

**Reading:** Make the book available to read in your Medicine and First Aid Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

Why is medical research so important? (The goal of medical research is to prevent suffering and death. Everyone has a body that can sicken and die, and we all have loved ones who can sicken and die. Medical research helps us to stay well and to get better if we get sick.)

What are the five disciplines of medical research this book explores? (pathology, genetics, heredity, classification, and physiology)

What animal did Dr. Michael Zasloff study to try to help patients with FOP? (Sharks. He thought a drug derived from sharks might help prevent soft tissue from becoming bone.)

What is the purpose of the Human Genome Project? (The Human Genome Project "provides doctors with a map identifying all of the more than 20,000 genes in the human body." (p. 58) Doctors can use this information to treat and understand disease.)

**Post-Reading:** Post-Reading Comprehension Questions: After you review the answers to the Reading questions as a group, answer the following questions together.

Describe how Dr. Sam Berns and Dr. Leslie Gordon became interested in studying the genetic disease progeria. (Their son, Sam, was born with progeria. Because this premature aging disease is very uncommon, there was not much interest from the medical community and not much funding for research. They started the Progeria Research Foundation, and Dr. Gordon began working full-time to find a cure. She collected tissue samples from children with progeria, establishing the PRF tissue bank. She persuaded Dr. Francis Collins, a geneticist and the National Institutes of Health to help her. Ultimately, they isolated the error in DNA that causes progeria and can now screen children all over the world. They also discovered that a cancer drug might be helpful in treating progeria.)

How did the study of progeria hold benefits for our understanding of the human body? (Understanding abnormal aging can help us understand normal aging.)

What different types of people have been involved in the study of Morgellans Disease? (Doctors, patients, parents of small children, and law enforcement officers have all contributed to the study of Morgellans Disease, in which tiny fibers emerge from the skin. Dr. Randy Wymore asked for help from law enforcement fiber experts to determine that the fibers were not manmade, and he asked patients and their parents to send him the fibers for study.)

How did Dr. Randy Wymore change his mind about the existence of Morgellans Disease? (Initially, he was skeptical and believed the fibers must be coming from somewhere in the patient's environment. However, once he saw and studied the fibers, he says he "changed my mind and am working to try to understand it." (p. 49))

Class Activity: This book was published in 2008, so scientists and medical researchers may now know far more about the "medical mysteries" explored in the book. As individuals or groups, have students choose one medical mystery, conduct further research (either online or in newer print materials), and report on any new developments in our understanding of the problem. Use the bibliography on page 60 to begin the research process.

#### **ABOUT THIS TITLE**

**Lexile:** 1140L

**Interest Level:** 10-18+ years

**Reading Level:** 4<sup>th</sup>-12<sup>th</sup>

#### **Themes**

Nonfiction, Informational Text, Illness, Injury, Disease, History, Geography, Medicine, Medical Mysteries, The Human Body

**Word List:****Category Vocabulary:**

Bacteria	Single-celled organisms that can cause disease
Infection	Invasion of the body or part of the body by dangerous microorganisms
Virus	A microscopic infectious organism which attacks healthy cells and makes copies of itself
Inflammation	Redness, heat, and swelling that develop when part of the body is damaged
Disease	An illness or malfunction in the body
Prion	Proteinaceous infectious particle that can cause disease

**Book-Specific Vocabulary:** There is an extensive glossary on page 59. These are taken from that list and from the book.

Pathology	The study of disease
Genetics	The study of genes, or the blueprint for human growth and development
Heredity	The study of the specific genes passed from parent to child
Classification	A means of organizing diseases by type
Physiology	The study of how the body is constructed and how it works
Mutation	An error in the genetic code, or the effect produced by such an error
Scientific method	A formal system for the investigation of the physical world
Epidemic	The rapid spread of a disease to many people