

# COLONIAL MEDICINE



JAMESTOWN-YORKTOWN  
FOUNDATION

## TABLE OF CONTENTS

Colonial Medicine: Introduction	Page 1
Background Information	
Science and Medicine in Colonial America	Page 2
Treating An Army	Page 7
Pre-Visit Activities	
Vocabulary List	Page 9
<i>Medical Mystery Crossword</i>	Page 10
Searching For Cures	Page 11
Answer Key	Page 12
Examine the Doctors' Kits	Page 13
Herbals	Page 17
Write a Class Herbal	
Grow an Herb Garden	
Nature Walk to Collect Herbs	
Annotated Herbal Listing Historical Uses of Herbs	Page 18
Post-Visit Activities	
Importing Cures	Page 20
Dramatize the Difference	Page 22
Bleeding: A Calculated Concern	Page 23
The Surgeon's Journal	Page 24
Using the Video --	
<u>Colonial Medicine: Prescriptions from the Past</u>	Page 25
Science in Colonial America	Page 25
Health Care in the 18th Century	Page 26
Two Recipes from the 18th Century	Page 28
Bibliography	Page 30
Teacher Evaluation	Page 31

The "Colonial Medicine" program and this curriculum packet were developed with an Education for Economic Security Title II Grant in conjunction with the York County Public Schools, York County, Virginia.

## COLONIAL MEDICINE: INTRODUCTION

The Jamestown-Yorktown Foundation is the agency of the Commonwealth of Virginia that operates **Jamestown Settlement** and **Yorktown Victory Center**. Through these two museums the Foundation accomplishes its educational mission to commemorate the first permanent English settlement in the New World and the important role Virginia played in the formation of the United States of America.

This booklet is designed to provide teachers with information and activities that will help students gain the most from the "Colonial Medicine" program. The booklet is divided into four sections. The **Background Information** section provides essays dealing with science and medicine in the 18th century, the unique roles of women and African-Americans in colonial medical treatment, and the special problems of the military during the Revolutionary War. **Pre-Visit Activities** include vocabulary lists, opportunities to evaluate 18th-century inventories, and suggestions for studying medicinal herbs. **Post-Visit Activities** offer opportunities for role-playing, math, and writing. Finally, **Using the Video** provides activities related to Colonial Medicine: Prescriptions from the Past, a 15-minute video that has been prepared with York County Public Schools and the Jamestown-Yorktown Foundation with funding from the Education for Economic Security Act.

The "Colonial Medicine" program, offered as an outreach program or on-site at the Yorktown Victory Center, is designed to introduce basic medical theory and practices during the 18th century. Students participate in a combination of experiences including hands-on artifact analysis and making an 18th-century herbal remedy sack as well as touring a re-created Revolutionary War encampment and farm for the on-site program.

Important concepts for students to master using the "Colonial Medicine" materials and museum experiences include:

1. The theories, practices, and tools of science/medicine have changed since colonial times.
2. Scientists and doctors have more training today than in colonial times; most 18th-century doctors were trained as apprentices.
3. In colonial times, medicines were made from measured amounts of herbs, minerals, and animal products.
4. Colonial women served without formal training as nurses for their families and for armies. They made medicines from available resources.
5. Medical treatment is needed by everyone, however different cultures practice medicine differently. In the 18th century, minorities such as Native Americans and African-Americans had different medical practices from the dominant European culture.

## SCIENCE AND MEDICINE IN COLONIAL AMERICA

In the 1700's people's views of the world were very different from the views people hold today. Americans in the 18th century did not have many of the scientific theories Americans have today. For instance, colonial Americans knew of only seven of the planets - they had not yet discovered Neptune or Pluto. In fact, Americans in the 18th century had not even found a way to use electricity.

There were no separate branches of science like biology or chemistry. These specializations had not been identified and developed. Also, it was not possible to make a living as a scientist in the American colonies. Educated gentlemen made a hobby of studying those things in nature that interested them. Universities did not usually offer science courses. Sometimes the gentlemen scientists would form private clubs to raise money for studying science and publishing reports that their members wrote. The private society that supported early American science was The Royal Society of London.

One area of science that was drastically different in the 18th century was medicine. Physicians in the 18th century had no knowledge of bacteria, germs, or viruses. Thus, they had no notion that disease was caused by the spread of bacteria. Also, as a result of not understanding bacteria, they did not practice the process of sterilization. Nor did these 18th-century doctors have the medicines which today's doctors use to treat disease. In spite of this lack of knowledge and materials, colonial doctors had developed working theories of medicine and treated patients with a good record of success.

### "Why" and "How" of Science

An important difference between colonial America and the 20th century is that scientists in the 18th century were strongly influenced by theories that attempted to explain "why" things were the way they were. These theories had been accepted for a long time -- some of them for 2000 years! A revolution in science began in the 17th century when scientists started to ask "how" things happened. To answer the "how" questions, scientists had to carefully observe occurrences and conduct experiments to collect data. This new data often proved that the old theories were incorrect. However, the old theories would continue to control scientific thought until better theories would explain the new data. Some of these old theories were particularly influential in colonial thinking. By learning about these theories, we may better understand science and medicine in 18th-century America.

### Theories of Medicine

First was the "Aristotelian view of matter". Aristotle was a Greek philosopher

and scientist writing in 350 B.C. He believed that everything (all "matter") was made from earth, air, fire or water. These four elements combined in various ways to form everything. Each element possessed important qualities. Earth was cold; air was dry; fire was hot; and water was wet.

Five hundred years after Aristotle, a Greek physician named **Galen**, used the four elements to explain illness and disease. He claimed that the body had four elements called "humors". When these elements were properly balanced, the body was healthy. If the body had too much or too little of an element, then disease was present and the doctor would have to restore balance to make the patient healthy.

One of Galen's four elements, blood corresponded to fire in Aristotle's theory. If the body had too much blood, the physician would know because the body would feel hot. The doctor would cure the patient by reducing the amount of blood in the body or cooling the body. If the body had an excess of phlegm, this imbalance indicated a need for hot applications. These explanations oversimplify the "Humoral Theory" which was very complicated and difficult to understand.

During the 18th century, the theories of **Hermann Boerhaave** (1668-1738) were the most commonly held in colonial medicine. Boerhaave worked together the best parts of the medical theories he had studied into a system which held that disease was an imbalance of "natural activities". He believed that fever was the body's attempt to keep from dying. He also felt that digestion and circulation could be explained by mechanical ideas. Boerhaave recognized three conditions that might have led to disease: salty, putrid, and oily conditions in the body. His remedies were to sweeten the acid, purify the stomach, and rid impurities through bleeding and purging. Boerhaave's system of medicine was the most commonly used theory by doctors in colonial America.

Doctors who adopted scientific methods noticed that Galen's and Aristotle's theories were incorrect when compared with data from experiments and observations. Boerhaave's ideas were an attempt to account for inconsistencies. Despite these proven contradictions, this theory was still influencing medical treatment into the 20th century.

**Paracelsus**, a 16th-century Swiss physician, made important contributions to medical science by describing the body as a chemical machine. He attempted cures using the minerals found in the earth such as gold, mercury, sulfur, and silver. His theory was closely tied to astrology. Minerals, he claimed, were part of the heavens, likewise the body was part of the universe. The doctor could treat sickness by shifting around the "astral forces" or the chemicals that made up the universe and therefore cure the patient.

## Scientific Research

These dominant theories were sometimes combined in different ways and with other theories to provide more complete explanations. In the 17th century when scientists began to ask how things happened, a wealth of new knowledge was discovered. Philosophers made it possible to question old theories by proposing that theories be arrived at only after much observation and experimentation. Important scientists, including Sir Isaac Newton, Robert Boyle, Galileo Galilei, and William Harvey were rewriting the laws of nature. Additionally, new instruments to measure weight, determine temperature, and view microscopic particles were being developed and improved.

### GREAT MINDS OF SCIENCE

#### "AGE OF SCIENTIFIC REVOLUTION" 17TH CENTURY

Rene Descartes	France 1596-1650	Wrote <u>Discourse on Method</u> (1637). Philosophy supported a mathematical method. He argued that all objects were machines that were ruled by laws of mechanics.
Francis Bacon	England 1561-1626	He favored experimenting and collecting facts. Once data was collected, then a theory should be formulated that fit the facts.
Jon Baptista van Helmont	Belgium 1577-1644	He conducted experiments that led to the conclusion that air was made of more than one gas.
Robert Boyle	Ireland 1627-1691	Best known for showing the inverse relationship between pressure and gas.
Galileo Galilei	Italy 1564-1642	Formulated the laws of motion on earth.
Sir Isaac Newton	England 1642-1727	Formulated the laws of motion in the heavens under the influence of gravity.
Santorio Santorio	Italy 1561-1636	Constructed thermometers to measure temperature.
Antony van Leeuwenhock	Holland 1633-1723	Improved lenses for microscopes.
William Harvey	England 1578-1657	Proved that blood circulated inside the body.
Carl von Linnæus	Sweden 1707-1778	Developed a system for classifying plants that is still used today.
Edward Jenner	England 1749-1823	Developed vaccine against smallpox.

This incredible growth of information, however, did not have any immediate effect on the dominant theories or on the lives of most people. Communication was not as it is today; the spread of information was slow. More importantly, no new theory emerged that could explain the world as well as the old theories. If new information contradicted accepted theory, that alone was grounds for rejecting the new information. The scientific revolution seemed to have little effect on overall thought except that more and more, the scientific method was being tried and adopted.

By 1770, the field of medicine had become a truly professional one. Medical schools and guilds were thriving in Europe, allowing physicians to study and make new discoveries. In America, the first medical college opened in Philadelphia in 1768. King's College followed two years later in New York. Only a few doctors could be trained at these colleges. Most American doctors were trained through apprenticeships. Under this system, the apprentice paid to study under an experienced physician. Altogether, most doctors in the colonies had seven years of training before they were officially considered physicians.

While colonial doctors were highly trained by standards of that time, their services were not available to everyone. Many people lived too far away from doctors to use their services, and other people did not have access to doctors because of social customs or beliefs. For these reasons, people other than doctors often assumed the role of caring for the sick or injured.

### Women as Health Care Givers

Much of the health care for the 18th-century colonists was provided within the home. Women became responsible for health care in addition to their responsibilities for housekeeping and child care. They served as doctor, nurse, and pharmacist for their family despite the fact that 18th-century women rarely received any type of formal education. Their education in medicine consisted mainly of training from their mothers. They were exposed to raising medicinal herbs in kitchen gardens, concocting remedies from available resources, and nursing the ill by the traditional methods passed down through families and neighbors.

Popular guidebooks were also available to these women to assist in maintaining their family's health. These guidebooks provided many useful recipes, but rarely introduced women to current medical theory. The literate housewife would record successful recipes for medical treatment in handwritten journals.

Some women practiced medicine outside of their own households. Women, as child bearers, were the logical candidates to assist other women as midwives. Some women competed in the male-dominated medical field by prescribing,

preparing, and even advertising cures for troublesome diseases. It was quite common for successful women health care givers to serve the needs of the neighborhood. During the Revolutionary War, women served as nurses to the wounded and sick of the army and received pay and rations for their service.

### Medical Treatment Among African-Americans

Colonial medical treatment demonstrates how two diverse cultures can come into conflict. The African, uprooted from his native land, brought a tradition of medical care to the New World. The individual slave was accustomed to dealing with common ailments with traditional remedies passed down in his or her culture. The European master came from a different tradition of treating sickness. The master had paid a great deal of money for the slave and was concerned that the slave stay healthy, otherwise his investment would be lost. Therefore, the master often insisted that his slave use European remedies.

Beyond the master's and overseer's eyes, back in the slave cabins, some Virginia blacks took medical matters into their own hands. When under the surveillance of whites, slaves usually accepted their treatments. Some even administered them in the name of their master. Others developed or retained from an ancient African heritage their own brand of care, complete with special remedies, medical practitioners, and rituals.

Slaves frequently treated their own diseases and disorders or turned to other trusted blacks for medical assistance, with or without the master's knowledge. Black home remedies circulated through the slave quarters and were passed down from generation to generation. Most of these cures were derived from local plants. Occasionally, whites would learn of a particularly effective medicine and adopt it. Dr. Richard S. Cauthorn announced in the Monthly Stethoscope that an old folk remedy which had been used for years by blacks in the counties north of Richmond worked almost as well as quinine for fever. Otherwise, most whites simply ignored or tolerated the black medical world until something occurred to bring their attention to it.



## TREATING AN ARMY

Medicine during the American Revolution was not very advanced compared to today's standards. Yet, given the medical theories of the time and the conditions of the battlefield, especially the lack of medical supplies, Revolutionary War surgeons did a notable job of attempting to save lives.

Revolutionary War surgeons could be divided into three types: the proper surgeon with a professional degree, the apprentice surgeon, and the "quack" who pretended to know medicine in order to gain professional status. The duties of the camp surgeon were many and varied. Besides caring for those wounded in battle, the camp surgeon was responsible for caring for the camp's diseased soldiers. He gave examinations and treatments according to the common theories of the 18th century. In addition, the camp surgeon kept a constant check on the conditions of the camp in an attempt to rid the camp of unsanitary conditions that might lead to disease.

Following the theory of the four humors, the camp surgeon spent a good deal of time aiding his patients to rid their bodies of an excess of one of the humors. Some of the most common diseases suffered by soldiers of the Revolutionary War were dysentery, diarrhea, fever, and smallpox. Diarrhea and dysentery, although today considered symptoms of other diseases, were treated as diseases in the 18th century. Many illnesses were due to unsanitary conditions in camp, such as grouping sick and wounded patients together.

Treatment of those wounded in battle was complex and depended upon the severity of the wound. Most wounds were caused by musket balls. The surgeon would try to locate and remove the ball, if possible. Otherwise, the wound was cleaned and bandaged. In cases where the bone was damaged so severely that a limb could not be saved, the surgeon would have to perform an amputation.

Time was important in the treatment of wounds in a Revolutionary War camp. This was true not only because there was such a large number of casualties, but also because anesthesia had not yet been invented. As a result, surgeons had to rely on other methods of relieving pain. Enlisted men were often given a stick on which to bite down. Officers received rum and brandy when it was available. Due to the lack of knowledge of germs and bacteria, sterilization in surgery was not practiced until the 1870's, and the chances of a wound becoming infected were very high.

Although Revolutionary War surgeons did not know about anesthesia or sterilization, they did know about inoculations against smallpox. The procedure was very simple. A patient recovering from smallpox had a thin cut made in one of his sores, and a piece of thread was run through the slit. The person who was

to receive the inoculation had a thin cut made in his arm, and the thread from the ill man was run through the healthy man's arm. By early February, 1777, General Washington ordered all men who had not been previously inoculated or had not already had the disease to be inoculated. This action helped prevent a wide-scale epidemic of smallpox among Washington's army.

During the American Revolution, women played an important role in medicine as camp nurses. These women were paid for their services, and tended to ailing soldiers by preparing and administering medicines, dressing wounds, cleaning beds, and cooking meals. Their assistance greatly alleviated the drain on the Army's dwindling forces and made life easier for the camp surgeon, who might be responsible for as many as 600 men.

Given the lack of knowledge, tools, and supplies available, the 18th-century surgeons and the camp nurses treated their patients as well as they possibly could.

#### **Medical Men of the Revolutionary War**

1. Dr. Benjamin Rush: Signer of the Declaration of Independence. Dr. Rush had been a student of William Cullen (a moderate believer in bleeding). Rush later advocated massive bleeding and purging. He is also considered the "Father of American Psychology."
2. Dr. John Morgan: The first medical professor at the College of Philadelphia who worked hard to bring efficiency and discipline to the Hospital of the Continental Army. He lacked diplomacy and was an authoritarian. He was discharged over his methods by Congress.
3. Dr. Hugh Mercer: Commanded the "Flying Camp," a mobile force of militia and Continental troops based in New Jersey. This was to be a source of reinforcements and was to act as a barrier to the British. General Mercer was killed at the Battle of Princeton as a result of bayonet wounds.
4. Dr. Jean Francois Coste: Chief medical officer under Rochambeau, advocated spring water over well water. Dr. Coste was responsible for converting The College of William and Mary into a hospital.
5. Dr. James Tilton: Surgeon who helped to save a great many lives by changing the manner in which hospitals were ventilated. He wrote Economical Observations on Military Hospitals and the Prevention and Cure of Diseases Incident to an Army. Dr. Tilton was intrigued with the French system and made notes on sanitation procedures.
6. Dr. John Jones: Professor of surgery at Kings College in New York. Dr. Jones wrote a textbook on surgery for surgeons of the army entitled Practical Remarks on Wounds and Fractures.

## VOCABULARY LIST

Anatomy - Study and knowledge of the body.

Anesthesia - A drug that results in loss of pain.

Apothecary - One who fills prescriptions and sells medicine.

Apprentice - One who studies under a noted person in a particular field in order to learn more about that field. Many doctors studied medicine as apprentices in the 18th century.

Artery - Blood vessel that carries blood from the heart to the body.

Bacteria - Microorganisms that can cause disease.

Bloodletting - Drawing blood for purposes of ridding the body of impurities.

Bolus - A pharmacy preparation slightly larger than a pill.

Circulation - Movement of blood through the body.

Drug - Substance used in the cure of disease.

Dysentery - Disease resulting from unclean conditions, such as dirty water.

Emetic - Substance that makes someone vomit.

Epidemic - Disease spreading rapidly throughout a population or group of people.

Herb - Plant that was often used for medicinal purposes.

Infection - To cause disease to go from one person to another.

Inoculation - The injection of a disease agent into a body to build immunity.

Laxative - Medicine that works on the bowels.

Microscope - An instrument for making things look larger.

Physic - A doctor who takes care of physical ailments or the art of medicine and its practice.

Poultice - A moist herb mixture applied to a sore or inflammation.

Purgative - A medicine which acts upon the bowels.

Purge - To wash away internal impurities from the bowels.

Quack - One who pretends to understand medicine but has not been trained or certified to practice.

Remedy - Means of removing or relieving disease or bad conditions.

Smallpox - Contagious disease causing fever and skin eruptions often resulting in death.

Splint - Device used to keep part of the body in a fixed position.

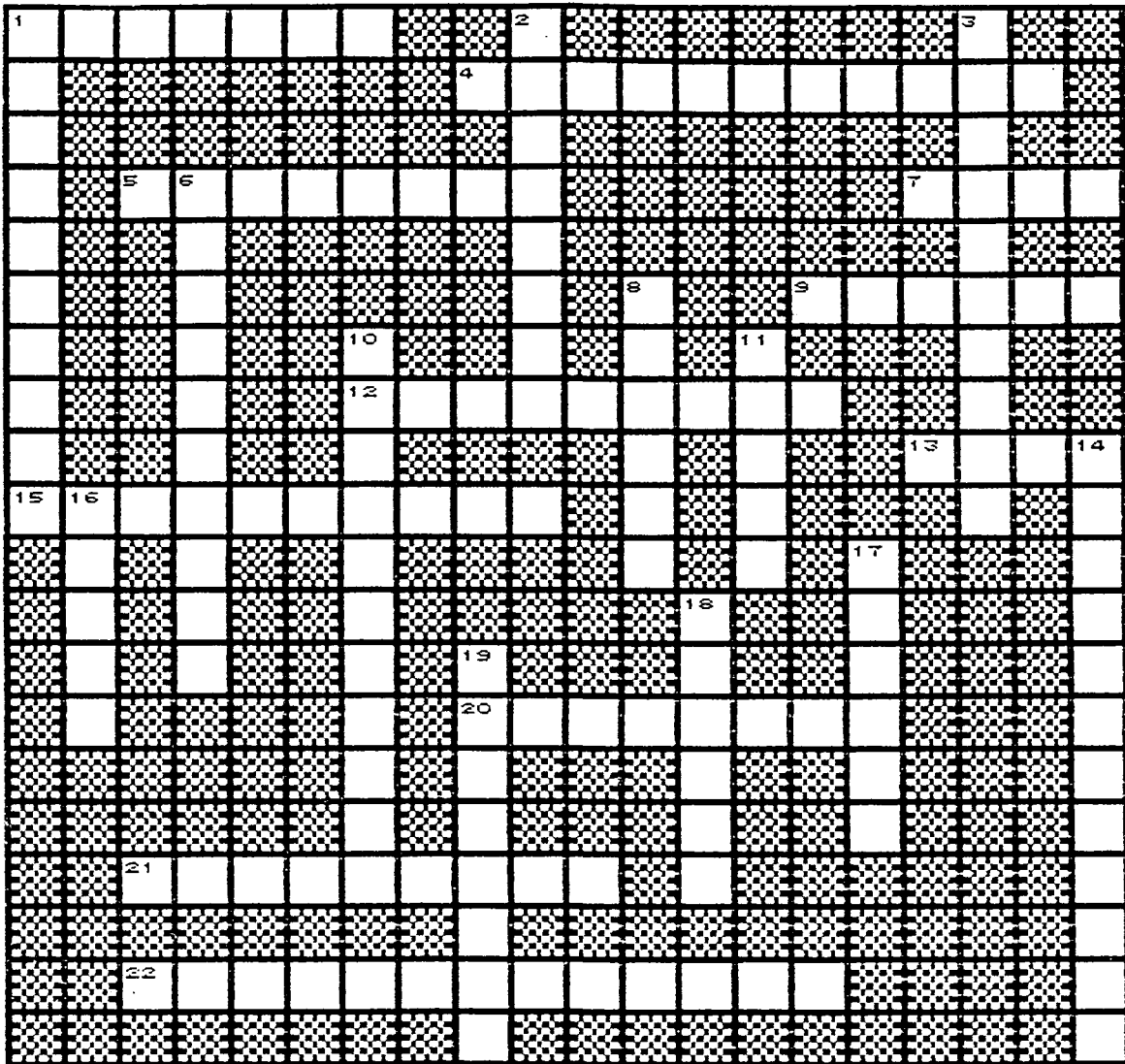
Sterilize - To free from germs.

Suture - Joining together the edges of a wound by stitching.

Tourniquet - Device used to compress a blood vessel to stop bleeding.

Vaccinate - To inject the body with a liquid containing the dead or weakened germs of a certain disease to help the body protect itself against the disease.

# MEDICAL MYSTERY



## Across Clues

1. Study of the body.
4. Protective injection.
5. Microorganisms that cause disease.
7. Substance used to cure disease.
9. Keeps body part in fixed position.
12. Transmission of disease.
13. *Plant used for medicine.*
15. Fills and sells prescriptions.
20. Moist herb mixture.
21. Disease caused by dirty water.
22. To free from germs.

## Down Clues

1. Loss of pain.
2. Medicine that works on bowels.
3. Device to stop bleeding.
6. One studying under a professional.
8. Stitching wounds.
10. Movement of blood in the body.
11. *Medication like a pill.*
14. Removing blood to effect a cure.
16. Washing away body impurities.
17. Cure for pain or sickness.
18. Blood vessel from heart to body.
19. Widespread disease.

# SEARCHING FOR CURES

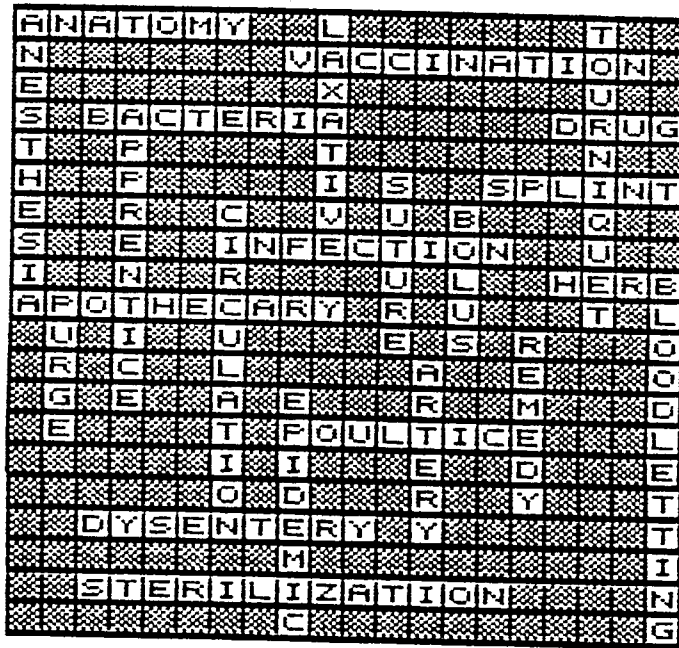


W F U K Z U W E H I J A R J M B G E C N J K  
 E P U Y O F G A R Q F J A R E N I U W R P L T C  
 R C W N B O R Y G P A Y K U R A C T I E M Y Q O H X S O  
 X F N B O R Y G P A Y K U R A C T I E M Y Q O H X S O  
 N E I Y I Y R F U Y U E T S E Y Y T U Z O  
 M U T J A Z A R D H Z R D N E B D H Q A I N I  
 R Q A S N E C D Z E X S G H E B I I I E N I  
 K I L J I R E J R C M A Q E G S I J P J F A  
 M N U Z C U H L C A Z Z I N P J Y Y I E N L  
 I R C X C T T D L I B T I U K N U D N O P M  
 C U O P A U O L A M T R P O K H A I A F E  
 R O N M V S P S C I T G O I I E I T C P D D  
 O T I P V O A T K E A U T N R S A S L P Z I  
 S U P J X Y E B L T L A F B E Z T A H R P C  
 C R J F H R T D I T L E S H I K X Y A E B I  
 O P T W I N O U I U C A T L U A D F Y N R N  
 P F Y A I O E C C T I S I G T P S K K T G E  
 E U W L L X E R I U E R N I U H G U U I C Y  
 Y Y P B J R I O U N E W U C C R L Q J C J O  
 Y S J K T C N D A T O E E O U V D W T E U F  
 P S M A Z U M O S B S U L O B K P A F Y I T

Can you find these words?

- |               |                   |              |             |
|---------------|-------------------|--------------|-------------|
| Sterilization | Colonial Medicine | Bloodletting | Vaccination |
| Inoculation   |                   | Circulation  | Tourniquet  |
| Microscope    |                   | Apprentice   | Apothecary  |
| Anesthesia    |                   | Purgative    | Infection   |
| Dysentery     |                   | Smallpox     | Poultice    |
| Laxative      |                   | Epidemic     | Bacteria    |
| Anatomy       |                   | Suture       | Splint      |
| Remedy        |                   | Artery       | Purge       |
| Herbs         |                   | Bolus        | Drug        |

# ANSWERS



WORD SEARCH: ANSWER KEY

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. . . . . A R . . . . .
. . . . . R E . . . . .
. . . . . N O . . . . . Y . . . . . C I M Y . . . . . C O
. . . . . I O . . . . . I . . . . . P R E . . . . . I E E M D O . . . . . C L O
. . . . . E I . . . . . I . . . . . R . . . . . U . . . . . T . . . . . E Y Y T . . . . . O N
. . . . . U I . . . . . A . . . . . . . . . . R . . . . . N . . . . . D . . . . . A . . . . . N I
. . . . . Q A . . . . . N E C . . . . . S G . . . . . E . . . . . I . . . . . N I
. . . . . I L . . . . . I R E . . . . . M . . . . . E G S . . . . . P . . . . . N A
M N U . . . . . C U H . . . . . A . . . . . N P . . . . . Y . . . . . E N L
I R C . . . . . C T I . . . . . L . . . . . A B . . . . . I U . . . . . N . . . . . D O . . . . . M E
C U O . . . . . A U O L . . . . . A . . . . . T R P O . . . . . H A I . . . . . P . . . . . I C
R O N . . . . . V S P . . . . . C . . . . . I G O I E I . . . . . A . . . . . L P . . . . . I C
R O T I . . . . . O A T . . . . . E A U T N R S A . . . . . L . . . . . R . . . . . C I
S C . . . . . X . . . . . E . . . . . L I L A F B E Z . . . . . A . . . . . E . . . . . I N E
S C . . . . . R I D I T L E S H I . . . . . X . . . . . . . . . . . . . . . . . . . . .
O P . . . . . I N O V I U C . . . . . T I L . . . . . A . . . . . . . . . . . . . . . . .
P . . . . . A I O E C C T . . . . . S I G I T . . . . . . . . . . . . . . . . .
E . . . . . L L . . . . . E R I . . . . . E R . . . . . I U . . . . . . . . . . . . . . .
. . . . . P B . . . . . I O . . . . . N E . . . . . U . . . . . R . . . . . . . . . . .
. . . . . S . . . . . C N . . . . . A T . . . . . E . . . . . . . . . . . D . . . . . E . . .
. . . . . . . . . . . S . . . . . S U L O B . . . . . . . . . . . . . . . . .

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## EXAMINE THE DOCTORS' KITS

Attached are inventories of medical chests belonging to four 18th-century physicians. These doctors all had an association with The College of Physicians of Philadelphia, and their medical chests have been donated to the Mutter Museum. A study of the contents of the chests can help students understand the doctors' responsibilities in colonial America.

1. What items in the kits show that careful measurements were needed?
2. What did the doctor carry to help him prepare medicine?
3. What items can you find that show how a doctor treated his patients?
4. What item shows that a doctor did dental work?
5. Find three plants the doctors used as medicine.
6. Find three minerals used by the doctors.
7. In what containers did a doctor store his medicines?
8. Which 2 doctors purchased medicines from a drugstore?
9. Which doctor has something in his box that could not have belonged to him? What is it?
10. What items might you find in a 20th-century doctor's kit that you did not see listed in any of the inventories? Why?
11. What were all of the roles played by one doctor? Can you name the specialists who play these roles today?

#### MEDICINE CHEST OF BENJAMIN RUSH (1745-1813)

##### Upper Section:

16 glass bottles with stoppers, of various sizes labeled:

Whiskey            Brandy  
Paregoric          Calomel

"Black sand from Lake Superior, brought by  
my father in 1854"

1 square ceramic pill tile, one side glazed white  
1 wood-handled spatula (possible plaster iron)

##### Lower Drawer:

3 wide-mouthed jars of ointments capped with  
parchment labeled: Yellow Basilicon

Mercurial ointment  
unidentified white ointment

6 small glass-stoppered bottles, some with parchment  
lids labeled:

Dovers Powder    unidentified white powder  
Emetic Tartar    James's Powder  
Fryars Balsam    Extract of Lead

2 pieces of unidentified material, one resembling clear  
resin, one appearing to be a soft stone, both  
apparently used for waxing thread.

1 glass rod (possible medicine dropper)

1 set of apothecary scales and weights

1 small glass mortar and pestle

1 tall glass measuring beaker

#### MEDICINE CHEST OF WILLIAM SHIPPEN JR., M.D. (1736-1808)

##### Top of Case:

6 ground glass bottles with stoppers

7 ground glass bottle stoppers

4 soldered tin containers

1 ivory-handled tooth key

1 blown glass bottle labeled: "Comp. Sp. of  
Lavender, Prepared and sold at Marshall's Drug and  
Chemical Store, No. 56 Chestnut Street, Philadelphia"

1 apothecary scale & 1 2-dram brass weight

1 wooden box, oval; contains 21 round black  
pills

##### Front of case:

6 blown glass bottles with brass caps which  
are embossed with a bull's-eye pattern.

Remaining labels: Hoff. Anodyne & Jalap

In drawers: 1 packet of odd doses of Jalap, Calomel,  
and Tartar Emetick

1 wooden box of Dr. Mean's Stomach Pills

1 packet of Pulverized Cantharid

1 packet of Rhubarb

2 packets with unlabeled contents

Of the 6 drawers in the front of the case, 2 are labeled:

Flor. Sulphur & Yellow Bark

#### MEDICINE CHEST OF JOSEPH HARTSHORNE, M.D. (1779-1850)

11 ground glass bottles with 10 ground glass stoppers  
labeled: Cinnamon                    01:Carui

Tincture Cantharides                Elixir Paregoric

Tinc.Bals: of Tolic                    01: Menth: Piper

3 small ground glass bottles with brass-topped cork  
stoppers one containing orange crystalline powder.  
labeled: o pr:Rub

1 packet of iron filings

1 small lump Terra Japonical

4 large ground glass bottles with cork and brass  
stoppers labeled:

Pulverized Jalap                    Pulv: Rhei  
Creata pp.                            Pulverized Ipecz

1 packet unidentified light brown powder

1 ivory syringe

1 ground glass pestle

27 assorted apothecary weights

#### MEDICINE CHEST OF WILLIAM SHIPPEN SR., M.D. (1712-1801)

7 large blown glass bottles with ground glass stoppers  
Remaining labels:

Tinct. Rhaj. Sp.                    Spt. Lavender  
Sp.Sal.Nolat.                        Bals. Traumat.

Oil Peppermint

5 medium blown glass bottles with ground glass  
stoppers labeled:

Extract of Lead                    Tinct. of Valerium  
Vol.Tinct.Guaiac                    Aether

Minibarb Wine - Prepared and Sold at  
Marshall's Drug and Chemical Store,  
No.56 Chestnut Street, Philadelphia

6 blown glass cupping cups

1 small glazed pot, with dark blue on light blue  
decoration

1 white pill tile

3 large blown glass bottles with brass and cork  
stoppers, bull's-eye pattern

2 large needles, use unknown, stuck in corncob

1 oval wooden box with seal in black wax of "Dr. Patrick  
Anderson - True Scots Pills" containing 13  
small round black pills

1 hinged oval tin case containing 16 assorted  
apothecary weights, a small scarifying  
instrument and a syringe

2 apothecary scales

10 compartments containing various powders labeled:

Powdered Myrrh    Calomel

Athiops Mineral

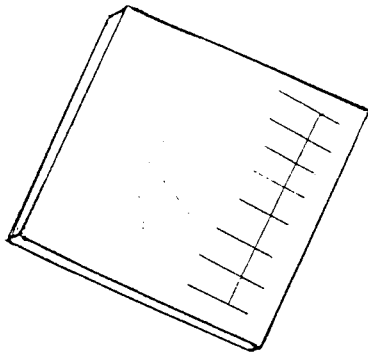
8 blown glass jars with leather covers containing various  
pills and unguents/salves. Remaining labels:

Pil Ruffi

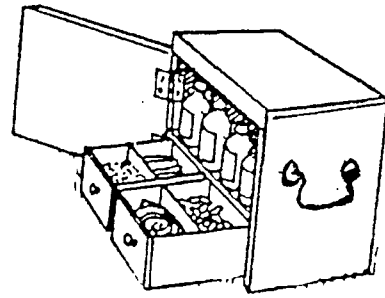
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## EXPLANATIONS OF ITEMS IN MEDICAL KITS



Pill tile - a flat surfaced tile that usually had a measuring line so that a medical mixture could be rolled and divided into proper doses. The glazed surface allowed the pill to be rolled into a ball shape, and would not absorb the medicines.



Syringe - often a large syringe was used for administering enemas. A small syringe might be used for getting medicine down the throat. 18th-century syringes did not usually have needles attached for giving shots or withdrawing blood.

Mortar & Pestle - used for grinding medicines. Glass and marble would have been preferred for apothecary purposes.



Apothecary scales & weights - for weighing medicines to the exact specifications of the doctor's pharmacopeia\*.

Cupping glass - A small, smooth-rimmed glass used for bleeding patients.



Scarifying instrument - this instrument would have had sharp blades for piercing the skin to bleed the patient.

Many of the medicines have obscure names that may have been known only to a small circle of physicians. Other medicines are easily identified as plant or mineral material.

\*Pharmacopeia - This was a book of recipes for medicines that the doctor or pharmacist would use.

## EXAMINE THE DOCTORS' KITS (Answer Key)

Attached are inventories of medical chests belonging to four 18th-century physicians. These doctors all had an association with The College of Physicians of Philadelphia, and their chests have been donated to the Mutter Museum. A study of the contents of the chests may help the student understand the doctors' responsibilities in the Colonial America.

1. What items in the kits show that careful measurements were needed?  
**Answer:** ceramic pill tile, apothecary scales and weights, tall glass measuring beaker.
2. What did the doctor carry to help him prepare medicine?  
**Answer:** mortar & pestle, glass rod, spatula, pill tile.
3. What items can you find that show how a doctor treated his patients?  
**Answer:** syringe, cupping glass, scarificator, medicines.
4. What item shows that a doctor did dental work?  
**Answer:** ivory tooth key.
5. Find three plants the doctors used as medicine.  
**Answer:** Cinnamon, Menth or mint, lavender, rhubarb, peppermint, calomel.
6. Find three minerals used by the doctors.  
**Answer:** Mercury, lead, iron, sulfur.
7. In what containers did a doctor store his medicines?  
**Answer:** blown glass bottles with stoppers, wooden pill boxes, wide-mouthed jars capped with parchment, packets, soldered tin containers, drawers and compartments.
8. Which two doctors purchased medicines from an American drugstore?  
**Answer:** Dr. William Shippen Jr, M.D., Dr. William Shippen Sr, M.D.
9. Which doctor has something in his box that could not have belonged to him? What is it?  
**Answer:** Dr. Benjamin Rush; the black sand from Lake Superior was given in 1854.
10. What items might you find in a 20th-century doctor's kit that you did not see listed in any of the inventories? Why?  
**Answer:** thermometer, stethoscope, otoscope, blood pressure cuff, aspirin; because these items were either not invented yet or not in common use in the 18th century.
11. What were all of the roles played by one doctor? Can you name the specialists who play these roles today?  
**Answer:** pharmacist, dentist, surgeon, internist.

## HERBALS

Herbs are botanicals that are useful to man. As soon as humans desired food, medicines, spiritual stimulants (and control of their environment), they sought ways of using plants. Primitive tribes entrusted the knowledge of plants to medicine men who would know the various uses of plants as well as the best time and place for obtaining those plants. Interest in the useful qualities of plants is documented from the royal gardens of the Aztec Emperor Montezuma, to ancient Chinese medical manuals, to medieval herbals based on the monastic gardens. By the 18th century, nurseries cultivating herbs for medicinal uses and published herbals were both widely available.

By growing their own herbs, students can become part of an important historical tradition and will be encouraged to learn through integrated curriculum activities. It is essential to stress throughout this study that the uses of herbs are historical and are **NOT INTENDED TO REPLACE THE SERVICES OF A DOCTOR.**

### Activity 1: Write a Class Herbal

Students, working alone or in small groups, should choose an herb to research. They should illustrate the herb, describe how it should be grown, and describe its uses. The individual sheets can be bound together as an illustrated herbal.

### Activity 2: Grow an Herb Garden

Students will grow various herbs either in an outdoor garden or classroom window. Choices should be made by the availability of herbs from local nurseries or mail order sources. These may be the same herbs that students have already researched.

- \* Students must determine what growing conditions are required for the chosen herbs -- light, soil, space.
- \* Students should use math skills to determine soil proportions and space requirements.
- \* Students should keep weekly records of the amount of water, fertilizer, and sun the plants receive.
- \* Students should chart the growth of their herbs.
- \* Collected data can be used to draw graphs and charts to compare growth.
- \* Students should find (safe) ways to use their herbs as in a classroom cooking activity.

Suggested herbs for garden: Basil, Catnip, Dill, Lavender, Lemon Balm, Marigold, Oregano, Parsley, Peppermint, Rosemary, Sage, Spearmint, Thyme.

### Activity 3: Nature Walk to Collect Herbs

Students can take a walk to identify, measure, describe, and collect samples of commonplace plants used as medicines:

Birch	Mallow	Poplar
Chickweed	Mandrake -	Queen Anne's Lace
Dandelion	(May Apple)	Sassafras
Dogwood	Mountain Ash	Sycamore
Evening Primrose	Peach Tree	Sweet Gum
Holly	Oak	Tulip Tree
Magnolia	Poison Ivy	White Pine

The accompanying herbal has information on these plants. A good suggestion would be for the person leading the walk to carry a complete herbal which will help in identification and explanation. This listing is certainly not all the possible plants that could be used, and the nature walk will depend on the location, season, and available flora in the vicinity.

#### Suggested Procedures:

- \* Students can collect pine cones and compare sizes using metric measurements.
- \* Students will compare sizes and shapes of leaves by measuring width and length.
- \* Students will mount herb samples on charts or in herb booklets. Samples will be labeled and students will explain the herb's uses for medicinal purposes and/or cooking.
- \* Several outdoor survival stories make good supplemental reading, i.e., My Side of the Mountain, George; Island of the Blue Dolphins, O'dell.
- \* Students can create a short story that uses what they have learned about the various herbs.

#### ANNOTATED HERBAL LISTING HISTORICAL USES OF HERBS

Basil - Used as tea to calm nervous tension; juice used for dimness of eyes. Antibacterial.

Birch (Sweet or Black) - Bark is aromatic and contains methyl salicylate, which explains its usefulness as a pain reliever. Sap used to make birch beer as a tonic. Oil of wintergreen is distilled from inner bark; used to alleviate sore muscles. Native to North America.

Catnip - Used to ease toothache, intestinal cramps, infant's colic, and as a mild sedative. Possesses herbicidal properties.

Chickweed - Gathered fresh, used as antiscorbutic (prevents scurvy) when prepared as a green. The water, boiled, used as a wash for injuries. When dried, the leaves used to treat congestion, or to reduce fever.

Dandelion - Flowers make a yellow dye. A tea from the leaves used as a tonic and to promote bowel regularity. Juice used to relieve stiff joints. The flower is a native to Greece but is found throughout North America.

Dill - Dill water, made from oil of dill eased infant colic and children's upset stomach. Pickling and flavoring spice.

Dogwood - The bark was widely used to reduce fever and as a substitute for quinine (from Peruvian Bark); twigs used as chewing sticks (forerunner of toothbrushes). Native American.

Evening Primrose - This plant was one of the earlier plants to cross the Atlantic to Europe as a medicinal. Used fresh as a poultice. Boiled and eaten, good for scurvy. Native Americans used root tea for obesity and

bowel pain. More complex preparation by an apothecary produced treatment for coughs and whooping cough. Native to Americas.

Holly - The leaves were used for colds and flu; drops for sore eyes; wash for sores and rashes. Berries poisonous. Native American.

Lavender - Flowers are used as sedative and fragrance. Believed to cure 43 ills of the flesh and spirit.

Lemon Balm - An infusion of lemon balm is drunk to relieve the pain of a toothache; also for headaches, fevers, and asthma. Leaves used to make tea; oil used in perfumes and in salves for healing wounds.

Magnolia - The bark has been used as a substitute for Peruvian Bark to reduce fever. Bark used as bitter tonic. Native to North America.

Mallow - Roots are sticky so can be dried and grated to a powder that is a useful base for pills or confectioneries. Used also for coughs, bronchitis, and stomach aches. Native to Europe.

Mandrake - Common name: May Apple. Active cathartic; used to relieve constipation, worms, fever. Native Americans used as a poison (small amounts of leaves and roots are poisonous). Scientists today are utilizing the plant in cancer research. Native to North America.

Marigold - An aromatic. Dried flowers or fresh leaves boiled in lard make a salve.

Mountain Ash - Fruit is used to prepare astringent; native Americans used to treat scurvy, worms, colds, boils and diarrhea.

Oak - The bark was used dried and powdered to treat dysentery, cholera, gangrene, and as an eye wash. Mixed with alcohol, the powder was used as a poultice for arthritis. Powdered acorn mixed with water was a treatment for diarrhea.

Oregano - Used in hot bags as an application for rheumatic swelling; good for stomach aches.

Parsley - Seeds are used to reduce gas pains. The leaves, bruised, are helpful when applied to wounds.

Peach Tree - Leaves and kernels are used in preparing a sedative, bitter, aromatic, and laxative.

Peppermint - Used to relieve gas, nausea, diarrhea, colic, nervous headache, heartburn, and as a flavoring.

Poison Ivy - Contains a powerful, nonvolatile oil that penetrates the skin causing an itchy rash. Native Americans recommended a wash made from Jewel Weed (Wild Touch-me-not) to relieve the discomfort of poison ivy rashes.

Poplar - Bark and leaves used for soothing qualities as an external wash for minor wounds. The buds are commonly called Balm Gilead.

Queen Anne's Lace - Seeds dispel intestinal gas and worms. The root is rich in vitamin A.

Rosemary - Used for digestion, to stimulate circulation, and as a disinfectant. The oil is used in perfumes, ointments and liniments.

Sage - Used for treating headaches and fever. Leaves were once used to strengthen gums and whiten teeth. Sage tea reduces gas pains.

Sassafras - Root was used to make tonic (Root Beer). It is considered unsafe - it may cause cancer - today. Native to North America, its early appeal as a curative caused it to be a major colonial export item to Europe.

Spearmint - Used to aid digestion and to relieve stomach ache. Believed to cure a headache when rubbed on the temples. Used as flavoring in confections, sodas, and dental preparations.

Sweet Gum - Bark used as a remedy for coughs. It is also useful as an ointment and flavoring.

Sycamore - Bark used as an astringent and to relieve rheumatism and scurvy.

Thyme - Used to relieve spasms and coughing. A warm infusion is useful to reduce gas and colic. Thymal is a powerful antiseptic. Ointment is good for spots, pimples, and lice.

Tulip Tree - Bark is used as a stimulant and for fevers; as a wash on fractured limbs, wounds, boils, and snake bites.

White Pine - Inner bark eaten raw, or cooked or made into tea to prevent scurvy. Used to treat chest pains. Pine needles steeped into tea for sore throats and constipation. Resin good for sore muscles and mosquito bites.

Other plants found in your locale:

## IMPORTING CURES

1. Before the Revolution, England permitted the colonies to import goods only from the Mother Country. For example, tea from India was shipped first to England and then to the colonies. In this way, England maintained strict control over the colonies.

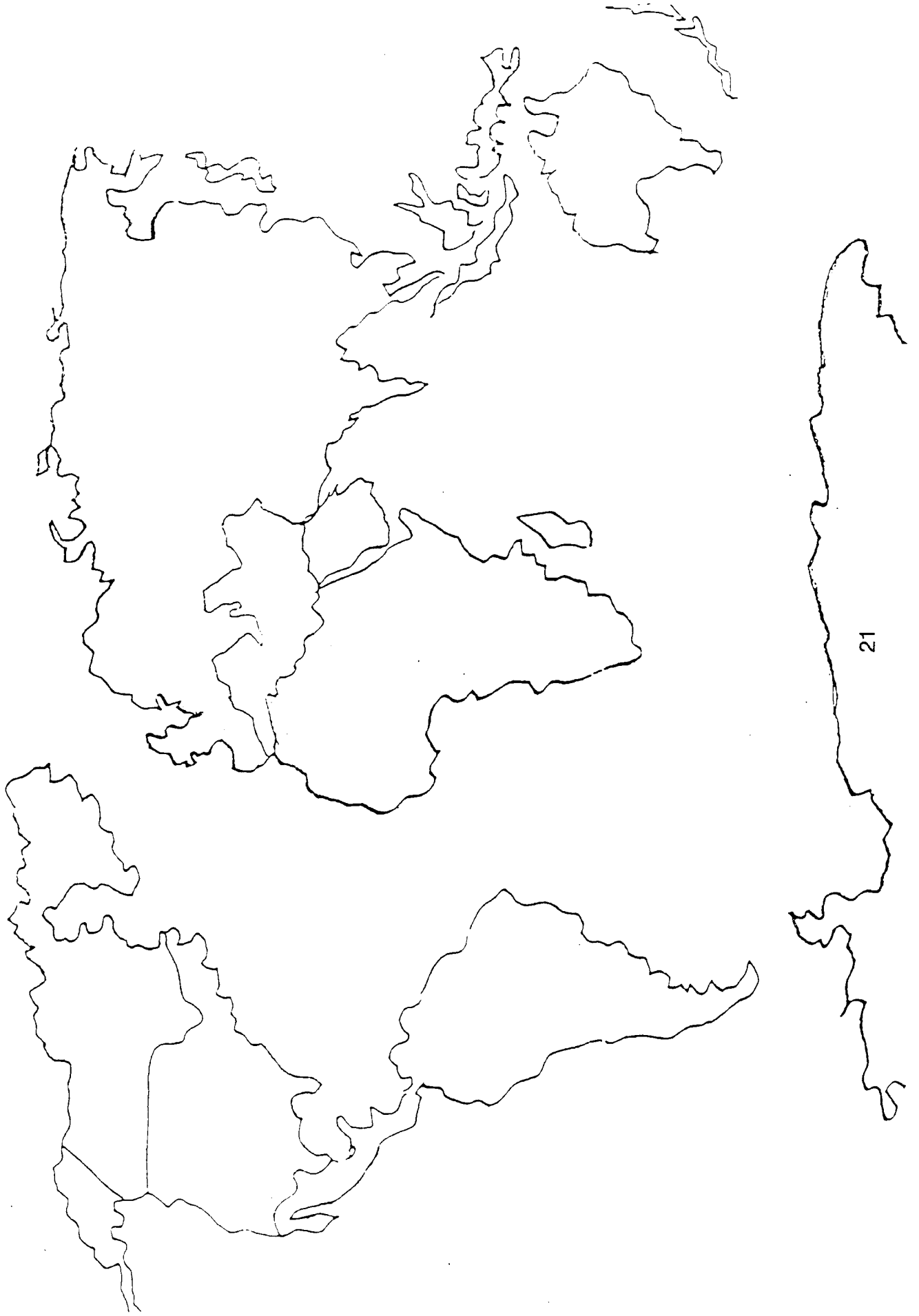
To reinforce this concept, students might use an outline map and colored yarns or pencils to locate the routes of these imports. A partial list of imports includes:

tea	India
glass	Venice, Italy
furniture	England
wine	France & Spain
Delftware	Holland
surgical instruments	England
herbal how-to books	England

2. Plants from all over the world were used as medicines. When European explorers "discovered" the Americas, gentlemen scientists began to experiment with ways of using newly discovered plants to cure disease. Listed below are eleven plants, how they were used in medicine, and their country of origin. Locate the appropriate countries on an outline map of the world.

a. Asafoetida	Worn around the neck to prevent disease	Persia (Iran)
b. Dragon's Blood	Eases symptoms of diarrhea	East Indies (Malaysia, Indonesia)
c. Cinchona	Bark reduces fever (quinine)	Peru
d. Camphor	Sap relieves upper-respiratory congestion	Japan
e. Squill	Relieves cardiac distress	Spain
f. Opium	A narcotic; reduces pain	Asia Minor (Turkey)
g. Ginseng	A tonic to invigorate body	China
h. Ginger	Aids digestion	Jamaica
i. Sassafras	The root used as tonic to invigorate body	North America
j. Ipecacuanha	Syrup of ipecac is a stomach purge	Brazil
k. Gum Arabic	A mucilage used as base for making pills	Northwest Africa

# THE WORLD



## DRAMATIZE THE DIFFERENCE

Have students role play a medical "practitioner". They may want to dress appropriately. They could choose from the following and add others you may wish.

1. 18th-century doctor
2. 18th-century surgeon
3. Native American medicine man
4. African-American slave
5. 18th-century mother
6. 18th-century army nurse
7. 20th-century doctor/specialist
8. 20th-century parent
9. 20th-century nurse

Prepare or have other students prepare questions for the character to answer. For example:

1. How did you become a doctor? or How did you learn to treat disease?
2. What methods and/or medicines do you rely on for treating diseases?
3. What is your theory of medicine?
4. How would you treat a toothache? Why?
5. How would you treat a fever? Why?
6. How would you treat an upset stomach?
7. How would you treat a cut? or battle wound?
8. How would you treat a sore throat?

The class should discuss the reasons for the answers given. Some differences between the 18th century and 20th century will be easily identified - knowledge of antiseptic and bacteria. Some differences between cultures will be less easy to classify because we do not have as much information and because there are variations within a culture. Students, however, can pull together many things they have learned and begin to appreciate how much more there is still to learn.

Bonus Follow-up: Bring some medical professionals into the classroom to tell about their training, their daily work, and to get their reactions to these questions.



## BLEEDING: A CALCULATED CONCERN

8 ounces = 1 cup  
2 cups = 1 pint

2 pints = 1 quart  
4 quarts = 1 gallon

1. Bleeding was a common treatment for disease in the 18th century. It was thought that the body contained approximately 3 gallons of blood. How many ounces are in 3 gallons?

\_\_\_\_\_

2. An average amount of blood drawn was 10 ounces. What percentage is that of the total amount 18th-century doctors thought the body contained?

\_\_\_\_\_

3. The actual amount of blood in the body is approximately half what the 18th-century doctors thought. Approximately how many ounces of blood are actually in the body?

\_\_\_\_\_

4. What percent of actual blood is the average amount drawn in the 18th century?

\_\_\_\_\_

5. When a person gives blood to a blood bank today, he or she gives a pint of blood. How many ounces is given to the blood bank?

\_\_\_\_\_

6. What is the percent of blood in your body donated to a blood bank?

\_\_\_\_\_

7. Which is greater, the average amount of blood drawn by an 18th-century doctor to try to cure the disease or the amount of blood drawn by a blood bank today?

\_\_\_\_\_

8. When George Washington had his final illness, he was suffering from a severe sore throat. His throat had swollen so that he could not swallow. The doctors bled him in the morning of 12 ounces of blood. Generally, doctors did not bleed a patient except every other day. They were so desperate to try to ease G. Washington's suffering, that they bled him that afternoon of 24 more ounces of blood. What was the total amount of blood taken from George Washington? What percent of his body's blood was taken?

\_\_\_\_\_

9. That same evening, a third physician called into consult ordered that Washington be bled of another 32 ounces of blood. Now what was the total amount of blood drawn? Altogether, what percent of his blood was drawn?

\_\_\_\_\_

10. Those present claimed that the blood did not flow freely. Is it any wonder that George Washington died that same evening?

\_\_\_\_\_

(Blanton, Wyndham B., Medicine in Virginia in the Eighteenth Century. Richmond. Garrett & Massie, Inc. 1930. p. 306.)

**Answer key:** 1. 384 oz. 2. 2.6% 3. 192 oz. 4. 5.2% 5. 16 oz. 6. 8.3% 7. Blood Bank 8. 36 oz., 18.8% 9. 68 oz., 35% 10. NO



## USING THE VIDEO

### COLONIAL MEDICINE: PRESCRIPTIONS FROM THE PAST

Peer into the world of colonial medicine. Hear one theory of disease explained and see how the doctor treated sickness based on the Humoral Theory. Inside the tent of a Revolutionary War surgeon, discover the medicines and implements of doctors while learning about the ailments and problems of the 18th century. A woman's role in medicine is portrayed with everyday tasks and a recipe used to treat the sick. This video adds new insights into a significant concern of the 18th century. The theory, technology, and application of colonial medicine are made understandable because of close-up views of doctors' tools, medicines, recipes, and procedures presented by costumed interpreters in a living history setting.

(Video is approximately 15 minutes long.)

### SCIENCE IN COLONIAL AMERICA: VIDEO-INSPIRED ACTIVITIES

In what ways was science very different in the 18th century? The following are suggestions for encyclopedia research.

1. Look up "Leyden Jar" in the encyclopedia. What equipment is needed to make a Leyden Jar? What does a Leyden Jar do? How is a capacitor important to electricity?
2. Look up "Herschel" in the encyclopedia. **Sir William Herschel** discovered a new planet in 1781 and named the planet for himself. What name do we give that planet today? He trained his sister, **Caroline Lucretia Herschel**, as an astronomer. What did she discover?
3. When was the 8th planet discovered? What 18th-century scientific work helped to discover the 8th planet? When was the 9th planet discovered? What tools were used to discover this planet? (Use World Book, "Astronomy", Vol 1, History.)
4. Look up "Microscopes" in the World Book. How did they develop? Who was **Anton Van Leeuwenhoek** and what were his discoveries?
5. The **Humoral Theory** discussed in the video was based on ideas that arose in ancient Greek philosophy. **Aristotle** (c. 350 B.C.) divided the universe into 4 elements: Fire (hot); Earth (cold); Wind or Air (dry); and Water (wet). **Galen** (c. 2 A.D.) was a physician who identified 4 corresponding elements in the human body: Blood, Phlegm, Yellow Bile, Black Bile. Disease was an imbalance of these elements. **Hippocrates** (c. 400 B.C.) was very influential in the field of medicine. Find out more about these famous Greeks and their influence on medical thinking.

6. Look up the history of some of the instruments and medicines used by doctors. Who developed these instruments/medicines? When were they developed? What effect did their development have on medical practice?
- |                 |                  |
|-----------------|------------------|
| a. Thermometers | e. Polio Vaccine |
| b. Stethoscope  | f. Chemotherapy  |
| c. X-rays       | g. Anesthesia    |
| d. Vaccination  | h. Penicillin    |

### HEALTH CARE IN THE 18TH CENTURY: DISCUSSION QUESTIONS

1. How did a person become a doctor in the 18th century?

Either he went to a university or became an apprentice. In either case, a person had to pay a lot of money for the privilege of becoming a doctor.

2. Because of the financial requirement, who was most likely to become a doctor?

The wealthy. Other societal restrictions would restrict this further to wealthy, white men.

3. Was there any way a woman, a slave, or an Indian could become a doctor?

This was almost impossible in colonial America. A woman might be married to a doctor, learn from him, work beside him, and even carry on his work after his death. However, she would still not be granted a doctor's certificate. There are references to a black doctor in Philadelphia. He may have received training in the West Indies or arrived in America as a free black physician. References to this individual are not specific enough to know his background. Colonial America did not provide equal opportunities for professional advancement to minorities and women.

4. How did most people receive care for their illnesses?

Doctors were few and far between in colonial America. Most people were treated in the home and most care givers were probably mothers - in every racial group. It can be said that most health care was given by women, even though women could not be called doctors.

5. What kind of care did home health care givers provide?

They had learned treatments and remedies from their parents using herbal preparations that were usually easily available. Common preparations might be recorded in handwritten recipe books passed from mother to daughter. Some home health guides were published in the 18th century and could be purchased for home use.

**6. How did women help doctors during the Revolutionary War?**

Washing clothes, cooking, helping the doctor to hold down patient, burying body parts, preparing medicines, scraping lint for packing wounds.

**7. Contrast the role women played then to the role of nurses today. Consider training, duties, and pay.**

Check an encyclopedia to review the impact that Florence Nightingale had on women helping during wartime.

**8. What were the difficulties faced by the Revolutionary War doctor?**

Short supplies, no proper weights to measure medicines, supplies controlled by the enemy, poisoned medicines, crowded tents, poor clothing, poor food. **How would these difficulties compare with a M.A.S.H. unit in the Korean War or the Contras in Nicaragua?**

**9. Discuss: Were 18th-century doctors scientific? Why or Why not?**

They thought they were scientific.

They made observations and acted accordingly.

They allowed the theory to determine conclusions rather than drawing conclusions from their observations.

In the biography of Dr. Benjamin Rush, he outlines his major research project while at the University. He chose a **problem**: What is the effect of acid on digestion? He outlined a procedure that was designed to vary the amounts of acid but keep all other variables the same. He collected data. He drew conclusions.

**10. Identify the three sources of medicine and give examples of each.**

Plant: vinegar, rue, garlic, beer, dragon's blood resin, castor oil

Animal: oyster shells, honey, spermaceti, venice treacle, horses hoof

Mineral: asphalt, pewter, tin, sulphur, nitrum (salt peter)

**11. What are the sources of some modern day miracle drugs such as radium, penicillin, sulfa?**

Mineral, plant, mineral

**12. How would doctors classify drugs today?**

The World Book suggests a classification based on the beneficial effect on the body: (1) drugs that fight bacteria; (2) drugs that prevent infectious disease; (3) drugs that affect heart and blood vessels; (4) drugs that affect the nervous system. This classification would have been impossible in the 18th century given their knowledge of bacteria, prevention, and body systems.

## TWO RECIPES FROM THE 18TH CENTURY

Here are the two medical recipes from the video.

<p>1. From <u>Pharmacopoeia Simpliciorum et Efficaciorum, in usum Nosocomii Militaris, ad exercitum Faederatarum Americae Civitatum.</u> Printed in Philadelphia, DCCLXXVIII.</p>	<p>2. From <u>The Art of Cookery made Plain and Easy.</u> "Another for the Bite of a Mad Dog" by Hannah Glasse, 1755.</p>
<p>#30. <u>Gargarisma Commune.</u></p> <p>REC.</p> <p>Sal.nitri            drachm. i.          Aceti                unc. ii.          Mellis                semunciam          Aqua fontanae    unc. vi. M.</p>	<p>For the Bite of a Mad Dog, for either Man or Beast: Take six ounces of Rue clean picked and bruised, four Ounces of Garlick peeled and bruised, four Ounces of Venice treacle, and four Ounces of filed Pewter, or scraped Tin. Boil these in two Quarts of the best Ale, in a Pan covered close over a gentle Fire, for the Space of an Hour, then strain the Ingredients from the Liquor. Give eight or nine Spoonfuls of it warm to a Man, or a Woman, three Mornings fasting. Eight or nine Spoonfuls is sufficient for the strongest; a lesser Quantity to those younger, or of a weaker Constitution, as you may judge of their Strength. Ten or twelve Spoonfuls for a Horse, or a Bullock; three, four, or five to a Sheep, Hog, or Dog. This must be given within nine Days after the Bite; it seldom fails in Man or Beast. If you can conveniently bind some of the Ingredients on the Wound, it will be so much the better.</p>

1. Which uses more scientific language? How can you tell? Can you translate it?
2. List the different kinds of measurements used in the two recipes. Which seems to be the most accurate?
3. Which recipe came from the home health care giver? How can you tell?
4. If you were treating someone in the home today, could you find the ingredients to treat the bite of a mad dog?
5. Would either of these recipes be effective for treating illness today? Will the gargle help a sore throat? Will the second recipe cure the bite of a mad dog? Are any of the ingredients harmful?

**TWO RECIPES FROM THE 18TH CENTURY  
ANSWER KEY**

**1. Which uses more scientific language? How can you tell? Can you translate any of it?**

Hint: The Pharmacopoeia recipe contains salt or salt peter, vinegar, honey and water. Measurements are drams and ounces with amounts given in Roman numerals. Abbreviations include "REC" for recipe and "M." for mix together. Hints: Vinegar is an acid ("aceti"); the Latin for water is "aqua"; REC. in Latin is "take of"; "unc" means ounce; "sem" means one-half.

**ANSWER:** *Recipe A uses more scientific language. The recipe is written in Latin, the language of scientists and doctors.*

**2. List the different kinds of measurements used in the two recipes. Which seems to be the most accurate?**

**ANSWER:** Recipe A uses drams and ounces. Recipe B uses ounce, quarts, and spoonfuls. Recipe A seems to be the accurate.

**3. Which recipe came from the home health care giver's recipe book? How can you tell?**

**ANSWER:** Recipe B came from a home health care giver's recipe book. You can tell by the title and the fact that it is written in English; not Latin.

**4. If you were treating someone in the home today, could you find the ingredients to treat the bite of a mad dog?**

**ANSWER:** You could find most of the ingredients, but Venice treacle and filed pewter or tin might be difficult to locate.

**5. Would either of these recipes be effective for treating illness today? Will the gargle help a sore throat? Will the second recipe cure the bite of a mad dog? Are any of the ingredients harmful?**

The gargle contains ingredients that might soothe a sore throat. Recipe B, for the bite of a mad dog will not work. Pewter and tin filings taken internally can cause lead poisoning.

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