

America's Scientific
Revolutionaries

Catharine Haines

Cathy Haines

AMERICAN PHILOSOPHICAL SOCIETY

RICHARD LOUNSBERY FOUNDATION

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AMERICA'S SCIENTIFIC REVOLUTIONARIES: Catharine Haines

Introduction

Pair this learning activity with the short educational film “Scientific Revolutionaries: Catharine Haines” to explore how primary sources help us understand the use of recipe books and home remedies in the 18th century.

How have approaches to home remedies changed over time?

Inquiry Design Model (IDM)

Compelling question:

How have approaches to home remedies changed over time?

PA State Aligned System standards:

CC.3.5.6-8.B: Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions. **CC.3.5.6-8.F:** Analyze the author's purpose in providing an explanation, describing a procedure or discussing an experiment in a text. **CC.8.5.6-8.B:** Determine the central ideas or information of a primary or secondary source, provide an accurate summary of the source distinct from prior knowledge of opinions. **CC.8.5.6-8.D:** Determine the meaning of words & phrases as they are used in a text, including vocabulary specific to domains related to history/social studies. **CC.3.5.9-10.A:** Cite specific textual evidence to support analysis and technical texts, attending to precise details of explanations or descriptions. **CC.3.5.9-10.B:** Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon or concept; provide an accurate summary of the text. **CC.3.5.9-10.D:** Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics. **CC.1.2.3.G:** Use information gained from text features to demonstrate understanding of a text.

Staging the Question: Discuss students' experiences about where they see science and medicine intersect with everyday life. For example, what are some ways family members treated your symptoms or helped you feel better while you were sick?

Supporting question #1:	Supporting question #2:	Supporting question #3:
Why were ingredients used in recipes for food also used in medicines?	Why did some 18th-century families rely on recipe books like Catharine's?	Why was it important to preserve and exchange this information?
Formative performance task:	Formative performance task:	Formative performance task:
- Watch "Scientific Revolutionaries: Catharine Haines." - Read medical recipe cards. - List & discuss ingredients you see mentioned.	- Read through the symptom cards. - Pair recipe card with the symptom card. - Discuss the choices you made and your reasons.	- Read the recipe on page 23 and the historical context. - Discuss the recipe. - Discuss how Catharine got this recipe.
Featured sources:	Featured sources:	Featured sources:
"Scientific Revolutionaries: Catharine Haines." - Historical Context for Catharine Haines. - Medical recipe cards - Vocabulary list	- Symptom cards - Medical recipe cards - Vocabulary list	- Recipe "For weakness and indigestion." - Historical context for the 18th century medical and healing community.
Summative performance task	Construct an argument that addresses the compelling question using specific claims and relevant evidence from historical resources while acknowledging competing views.	
	Extension: As a class, discuss the recipe book as a historical source about daily life in 18th century Philadelphia and colonial North America.	

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INSTRUCTIONS

The following activity can be done in small groups or individually.

- Why were ingredients used in recipes for food also used in medicines?
 - Watch the short film, “Scientific Revolutionaries: Catharine Haines.”
 - Read through at least three medical recipe cards from Catharine Haines
 - List & discuss ingredients you see mentioned.
- Why did some 18th-century families rely on recipe books like Catharine’s?
 - Read through the symptom cards.
 - Consider and discuss which recipe goes with the symptom card.
 - Discuss why you matched the symptom with the medical recipe.
- Why was it important to preserve and exchange this information?
 - Read through the recipe “For weakness and indegestion.”
 - Discuss what you see in the recipe.
 - Read the historical context provided about the medical and healing community in Philadelphia.
 - Discuss how Catharine got this recipe and why it is important to know where it came from.



WHY WERE INGREDIENTS USED IN RECIPES FOR FOOD ALSO USED IN MEDICINES?

Watch the short film, "Scientific Revolutionaries: Catharine Haines."
<https://youtu.be/bS8luM9Wqlo>

Who was Catharine Haines?

- Catharine Haines was born in 1761 and was the eldest child of Reuben Haines I and Margaret Wistar Haines.
- Her family were Quakers, and they believed that women and men should both be formally educated. Catharine Haines learned how to read, write, do mathematics, and think critically. This was uncommon for many women in the 1700s.
- In 1776 at the age of 15, she began a recipe notebook that included both medicinal and culinary recipes. In this book, she combined knowledge passed on through the family with her own practical experience.
- During the 1793 yellow fever epidemic, Catharine Haines turned to her recipes to ease her mother's fever. She used cold vinegar and water to help her mother. She also recommended recipes to treat other family members.
- Catharine Haines continued to share recipes throughout her life. Her letters included recipes for herbal medicine and her treatments. In this way Catharine contributed to the growing exchange of knowledge between trained doctors and everyday people.



WHY WERE INGREDIENTS USED IN RECIPES FOR FOOD ALSO USED IN MEDICINES?

Now print out the medical recipe cards from Catharine Haines found on the following pages. Please note, they are double-sided. There is an image of the handwritten recipe on one side and a typed transcription on the other.

Read through at least three of the recipes. There are eight all together.

List and discuss the ingredients they mention.

Extra Challenge: Try to read the handwritten recipe first before looking at the typed version.

Some of the terms used in the recipes are unfamiliar to us today. Use the vocabulary list on pages 16 and 17 to help you understand the recipes better.

Why do you think ingredients for food were also used in medical recipes?

Better Ointment

Take half a pound Turpentine
Half pound fresh Butter without Salt
two Ounces Beeswax
a Quarter Sweet Oil

To preserve Yellow Peaches

Pare & Stone them, and to
1 Peach 1 Pound of Loaf

Take ripe Nettle Seeds put
them in to Thyme Water drink
of it when you are in pain

an ointment made of fresh
butter without Salt & Mugworth stewed
together to Rub the breast

& then a poultice of Sower
Leaven wett with Rum mixed
with Mullen leaves cut small
& a littel Life Everlasting
to put on the Stomack
to drink a tea made of white
plantain self holt & sage tea.
mixed together

Take ripe Nettle Seeds put
them in to Thyme Water, drink
of it when you are in pain

an ointment made of fresh butter without
Salt & Mugworth stewed together to Rub
the breast & then a poultice of Sower
Leaven welt with Rum mixed with Mullen
leaves cut small & a little Life Everlasting
to put on the stomach - to drink a tea
made of white planton self hale & sage tea
mixed together

Lapus Calimaniæ's 3 worth put
in a half a gill of white Rose water
& shake it well & wash the Eyes
every 3 or 4 hour with it

Best Rheubarb grated }
Orange peel finely pared } Each one Ounce
Caraway Seeds bruised }

Infuse 3 Days in a Quart of white
Wine — Take half a Wine Glass, or so
much as will just keep the Body open,
every Day sitting down to Dinner —

Lapus Calimanses 3d worth put
in a half a gill of white Rose water
& shake it well & wash the Eyes
every 3 or 4 hour with it

Best Rhubarb grated	} Each one Ounce
Orange peel finely pared	
Carraway Seeds bruised	

Infuse 3 Days in a quart of white
Wine - Take half a Wine Glass, or so much
as will just keep the Body open, every Day
sitting Down to Dinner -

Three Cloves Garlick well bruised, put into a Gill
of water, boil it about 20 minutes, then put in half
a pint of new milk, boil that up, & a few spoonful
of Buttermilk till it turns. — Drink the Whey off
about Bloodwarm, just at going to bed

Take two Goose Quills, cut them off about
a quarter an Inch above the Barrel, take
off the End, then cut two holes in the Barrel
one opposite the other abt. an Inch from
the Top. Hold the Close ends, one in each
Corner of the Mouth, and breathe through
them, keeping the Mouth shut

Three Cloves Garlick well bruised. put into a Gill of water. boil it about 20 minutes. Then put in half a pint of new milk. boil That up, & a few spoonful of Buttermilk till it turns. - drink The Whey off about Bloodwarm, just at going to bed

Take two Goose Quills, cut them off about a quarter an Inch above the Barrel, take off the End, then cut two holes in the Barrel one opposite the other about an Inch from the Top - hold the Close ends, one in each Corner of the Mouth, and breathe through them, keeping the Mouth shut -

Take an Equal Quantity of Cerament
Chalk & Double refined Sugar, & apply it
to the wound, or if Spitting Blood take as
much as will lay on ~~the~~ an English Shilly
or If the Nose should Bleed stuff it up wth
the Nostrill

X
Take half a pound Turpentine
half pound fresh Butter without Salt
two Ounces Beeswax
a quarter Sweet Oil
Two Large green Indian Turnips or as many
small ones in proportion
handful green Plantain Leaves
handful green Leaves of white Lilies
Bruise the Leaves & Turnips, put all together into
a new earthen Pot. Now them close covered till crisp
then Strain it thro' a clean Linnen Cloth & when
near Cold add a quarter of an Ounce of yellow
Chenopely powdered minding to mix it well
this ointment is good for scald head

Take an Equal Quantity of Cinament Chalk
& Double refined Sugar, & apply it to the
would, or if Spitting Blood take as much as
will lay on an English Shilling or If the Nose
should Bleed snuf it up the Nostrill

Take half a pound Turpentine
half pound fresh Butter without Salt
Two Ounces Beeswax
a Quarter Sweet Oil
Two Large green Indian Turnips or as many
small ones in proportion
handful green Plantain Leaves
handful green Leaves of white Lilies
Bruise the Leaves & Turnips, put all together into a new
earthen Pot. Stew them close cover'd till Crisp then Strain it
thro' a clean Linnen cloth & when near Cold ass a quarter of an
Ounce of yellow Oker finely powder'd minding to mix it well
This ointment is good for scald head.

VOCABULARY LIST

Nettle seeds: The stinging nettle has been a staple in herbal medicine since ancient times.

“Mugworth” or Mugwort: A plant that grows in many parts of the world including North America and was used to treat a variety of ailments like skin rashes and headaches. It is related to ragweed.

“Sower Leaven welt”: This is probably related to bread making, likely the starter.

“Mullen” or Mullein: Verbascum thapsus, this plant is used in herbal medicine to treat skin ailments like rashes, warts, and sores.

Life Everlasting: (*Pseudognaphalium obtusifolium*), a plant found on dry open sandy places throughout Eastern North America.

Poultice: A medicinal paste made of herbs, plants or other substances that is placed on skin with a wound.

“White planton self hale”: This could be *Prunella vulgaris* or its common name, “self heal or heal all”. Or, it could be *Plantago major*, known in some indigenous communities as “white man’s footprint.” Both herbs are used in healing burns, insect bites, sores, and minor wounds.

Lapus Calimanses: This plant might be a relative of chamomile.

Gill: A measurement of liquid. 1 gill = 4 ounces.

Dram: A measurement of liquid. 32 drams = 1 gill.

VOCABULARY LIST

Bloodwarm: This is referencing a temperature which would be around 98-100 degrees Fahrenheit.

Barrel: The hollow shaft located at the bottom of a bird feather.

“Cinament”: This word could be cinnamon.

Turpentine: A substance/ fluid that is distilled from the resin of a tree.

Sweet oil: Any mild plant oil.

Indian Turnip: Arisaema triphyllum, commonly called Jack-in-the-pulpit, is a flowering plant, could be poisonous if not properly prepared. It was used in treatments for joint pain, chestpain, and as a topical.

Plantain leaves: Plantago major was brought from Europe by colonists and is found across North America now. It was used in healing burns, insect bites, sores, and minor wounds.

“Oker” or ochre: An earth pigment composed of clay, sand, and different kinds of iron minerals. Usually yellow, red, or brown in color.

Scald: When the scalp becomes irritated, inflamed, and/or infected.

Collick or colic: Intestinal or inner pain.

Tetter: a skin condition that causes itchy bumps and/or pus filled patches. Examples of this could be eczema or ringworm.

WHY DID SOME 18TH-CENTURY FAMILIES RELY ON RECIPE BOOKS LIKE CATHARINE'S?

Now print out the symptom cards found on the following pages. Do not print them double-sided.

Read through the symptoms. Which symptom do you think Catharine treated with which medical recipe? Match each medical recipe card with a symptom card.

Discuss why you made each pairing. What context clues did you use? Why do you think Catharine used those ingredients for those symptoms?

Why do you think some 18th-century families relied on recipe books like Catharine's?

18 For a bad Cough

My stomach hurts.

I have red itchy bumps on my skin.

My eyes hurt. They are itchy and are looking red.

I'm gassy and feel sick. My stomach hurts and I have to use the bathroom a lot.

I have the hiccups and I can't seem to
get rid of them.

My head is very itchy and sensitive.
I'm losing my hair and my head hurts
from this all.

I'm having trouble catching my breath. I need something to help my throat at night.

I fell down and scrapped my leg. It hurts and is bleeding.

ACTIVITY CARDS ANSWER SHEET

Recipe: Take ripe Nettle Seeds
put them in to Thyme Water, drink
of it when you are in pain

Answer: My stomach hurts.

Recipe title: For the Collick

Recipe: an ointment made of
fresh butter without Salt &
Mugworth stewed together to
Rub the breast & then a poultice
of Sower Leaven welt with Rum
mixed with Mullen leaves cut small
& a little Life Everlasting to put on
the stomach - to drink a tea made
of white planton self hale & sage
tea mixed together

Answer: I have red itchy bumps
on my skin.

Recipe title: Receipt for Hives

Recipe: Lopus Calimanses 3d
worth put in a half a gill of white
Rose water & shake it well & wash
the Eyes every 3 or 4 hour with it

Answer: My eyes hurt. They are
itchy and are looking red.

Recipe title: For the Red Sore
Eyes

ACTIVITY CARDS ANSWER SHEET

Recipe: Best Rhubarb grated
Orange peel finely pared
Caraway Seeds bruised
Each one Ounce
Infuse 3 Days in a quart of white
Wine - Take half a Wine Glass, or
so much as will just keep the
Body open, every Day sitting
Down to Dinner -

Answer: I'm gassy and feel sick. My
stomach hurts and I have to use
the bathroom a lot.

Recipe title: To Keep the Body
open and Help Digestion

Recipe: Three Cloves Garlick well
bruised. put into a Gill of water.
boil it about 20 minutes. Then
put in half a pint of new milk. boil
That up, & a few spoonful of
Buttermilk till it turns. - drink The
Whey off about Bloodwarm, just
at going to bed

Answer: I'm having trouble
catching my breath. I need
something to help my throat at
night.

Recipe title: To make garlic for an
asthma and suffocation

Recipe: Take two Goose Quills,
cut them off about a quarter an
Inch above the Barrel, take off the
End, then cut two holes in the
Barrel one opposite the other
about an Inch from the Top - hold
the Close ends, one in each
Corner of the Mouth, and breathe
through them, keeping the Mouth
shut -

Answer: I have hiccups and I can't
seem to get rid of them.

Recipe title: To cure hiccoughs

ACTIVITY CARDS ANSWER SHEET

Recipe: Take an Equal Quantity of Cinament Chalk & Double refined Sugar, & apply it to the wound, or if Spitting Blood take as much as will lay on an English Shilling or If the Nose should Bleed snuf it up the Nostrill

Answer: I fell down and scraped my leg. My leg hurts and is bleeding.

Recipe title: To stop a Bleeding inward or outward

Recipe: Take half a pound Turpentine, half pound fresh Butter without Salt, Two Ounces Beeswax, a Quarter Sweet Oil Two Large green Indian Turnips or as many small ones in proportion, handful green Plantain Leaves, handful green Leaves of white Lilies. Bruise the Leaves & Turnips, put all together into a new earthen Pot. Stew them close cover'd till Crisp then Strain it thro' a clean Linnen cloth & when near Cold ass a quarter of an Ounce of yellow Oker finely powder'd minding to mix it well This ointment is good for scald head.

Answer: My head is very itchy and sensitive. I'm losing my hair and my head hurts from this all.

Recipe title: Tetter ointment

WHY WAS IT IMPORTANT TO PRESERVE AND EXCHANGE THIS INFORMATION?

Read through the recipe below (typed transcription is on the next page). Take note of things you find interesting in the recipe. Use the vocabulary list on page 17.

For weakness and Indigestion
prescribed by Dr Fothergill

Gentian half an ounce
Orange Peel a Quarter of an ounce
the ^{peel} of one Lemon
Cut and infuse them in 3 quarters of a pint
Boiling water till cold
of the above infusion 4 ounces
Salt of Worm wood 4 Scruples
Aromatick Tincture half an ounce
Simple Pepper Mint water 4 ounces

Three Spoonfulls to be taken a little before
~~dinner~~ Noon & at night

WHY WAS IT IMPORTANT TO PRESERVE AND EXCHANGE THIS INFORMATION?

For weakness and Indigestion
prescribed by Dr. Fothergill
Gentian half an ounce
Orange peel a Quarter of an ounce
the Peel of one Lemon
Cut and infuse them in 3 quarters of a pint
boiling water till cold
of the above infusion 4 ounces
Salt of worm wood 4 Scruples
Aromatick Tincture half an ounce
Simple Pepper Mint water 4 ounces
Three Spoonfulls to be taken a little before Noon & at
night

Discuss what you found in the recipe.

- What kinds of ingredients did the recipe use?
- How were the ingredients prepared?
- Did they need any special equipment or skills?
- What kind of treatment is it? For example, do you drink/eat it, apply it to your skin, wear it around your neck?
- Where did the recipe come from?
- What questions did you think of while you were reading the recipe?

VOCABULARY LIST

“Indegestion” or indigestion: Indigestion is when a person experiences discomfort or pain in their stomach.

Gentian: A plant whose roots and leaves were used for a variety of medicinal purposes from digestive issues to fevers to wounds.

Salt of worm wood: This was made from the ashes of the wormwood plant.

Scruples: a unit of weight.

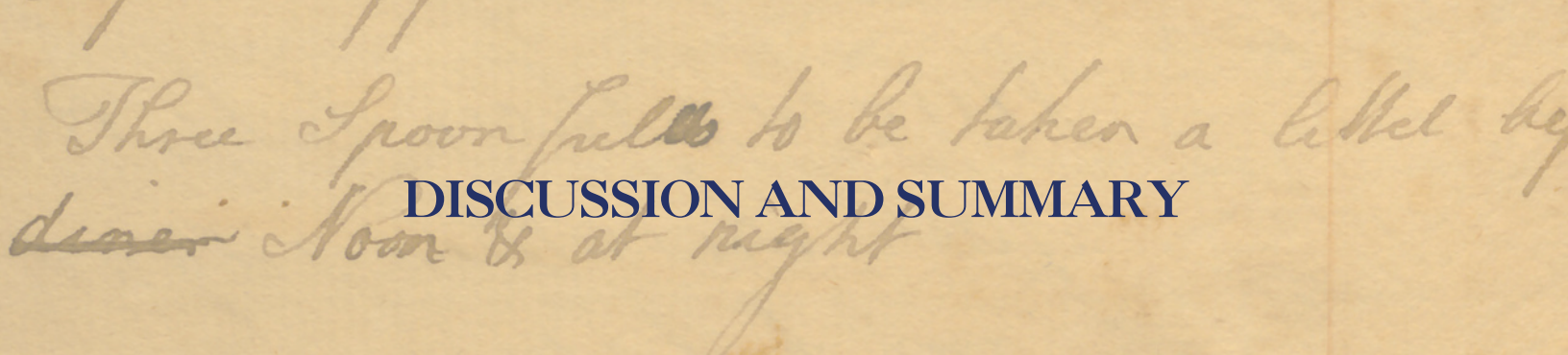
Aromatic Tincture: “Aromatic” is a different spelling for “aromatic.” An aromatic tincture is a liquid with a pleasant or distinct smell that is made from soaking certain plant materials in it.

WHY WAS IT IMPORTANT TO PRESERVE AND EXCHANGE THIS INFORMATION?

Who was part of the 18th-century medical and healing community in Philadelphia?

- Catharine wrote her recipe book in 1776 when she was fifteen years old. She probably collected this healing knowledge from a network of experienced healers. This network included her family, neighbors, and the many women healers in Philadelphia. Dr. Caspar Wistar (the younger) and William Chancellor were part of this local network.
- Caspar Wistar was Catharine's cousin. He was a physician, an anatomist, and also a Quaker. He practiced medicine in Philadelphia and later taught medicine at the College of Philadelphia, now called the University of Pennsylvania.
- William Chancellor sold medicines imported from London at his apothecary on Market Street. An apothecary was similar to a pharmacy today.
- Catharine's recipe book also included treatments from Dr. John Fothergill in London. John Fothergill was a well-known medical doctor, amateur botanist, and a Quaker. He studied medicine at the University of Edinburgh. In his letters, he regularly exchanged medical knowledge with Quakers in Philadelphia.
- Catharine also contributed to this network. Later in her life she shared her treatments and recipes with her family and community in letters.

Why do you think it is important to understand how Catharine got this recipe? What does it tell you about how medical and healing knowledge was preserved and exchanged?



DISCUSSION AND SUMMARY

Think about the last time you or someone you know was sick.

- What did they do to relieve their symptoms?
- Where did they go for advice?
- How did they get the treatment they used?
- What skills and background were needed to treat their symptoms?
- What obstacles did they face?

Now consider what you have learned about Catharine Haines.

- What did she do to relieve symptoms?
- Where did she go to for advice?
- How did she get the treatment she used?
- What skills or background did she need?
- What obstacles could she have faced?

How, if at all, have approaches to home remedies changed over time?



The background image shows a handwritten recipe on aged, yellowed paper. The text is written in a cursive script. The visible text includes 'Simple Pepper & Mint water 4 ounces' and 'Three Spoon fulls to be taken a little'. The title 'EXTENSION ACTIVITY' is printed in a bold, serif font over the center of the image.

EXTENSION ACTIVITY

Discuss the recipe book as a historical source about daily life in 18th century Philadelphia and colonial North America.

- What else does this recipe book tell you about Catharine's daily life?
- What types of illnesses did people experience? How do you think it affected their daily activities?
- What kinds of resources were available? Do you think they were available to everyone?

AMERICAN PHILOSOPHICAL SOCIETY

About the Center for the History of Science

The Center for the History of Science encourages greater engagement with the extensive holdings on this topic housed at the American Philosophical Society's Library & Museum. The Society has promoted research across the sciences since its founding in 1743, an objective that in turn shaped the scope of its collections. Many of the APS's earliest Members engaged in the pursuit of "natural philosophy"—what might now be considered scientific or technological inquiry. Throughout the 19th, 20th, and into the 21st centuries, the Society supported the development of new scientific theories and discoveries in topics as diverse as geology, paleontology, astronomy, medicine, evolutionary biology, genetics, physics, mathematics, and computing. The Society continues to collect broadly in these and other areas; today, the history of science collections represent well over half of the materials held at the Library & Museum.

"America's Scientific Revolutionaries"

Inspired by the 250th anniversary of the Declaration of Independence, "America's Scientific Revolutionaries" is a two-year initiative exploring the contributions of lesser-known scientists and physicians active during the Age of Revolutions. The project is generously supported by the Richard Lounsbery Foundation, and consists of public programs, educational resources, podcasts, and written profiles intended to enrich public understanding of the historical significance of scientific ideas in the formation of the United States. To learn more, please visit <https://www.amphilsoc.org/americas-scientific-revolutionaries>.