



The Book Planter



Ag in the Classroom

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July 2021: *George Crum and the Saratoga Chip*

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Growing up in the 1830s in Saratoga Springs, New York, wasn't easy for George Crum. Picked on at school because of the color of his skin, George escapes into his favorite pastimes—hunting and fishing. Soon George learns to cook too, and as a young man he lands a job as a chef at the fancy Moon's Lake House. George loves his work, except for the fussy customers who are always complaining! One hot day George's patience boils over, and he cooks up a potato dish so unique it changes his life forever. Readers will delight in this spirited story of the invention of the potato chip—one of America's favorite snack foods.¹



North Carolina Ag Facts

- Potatoes are native to the Peruvian Andes. They were introduced in North America in the 1700s.²
- A potato is about 80% water.²
- The potato is the world's fourth-largest food crop, following rice, wheat and maize.²
- Most of North Carolina's production of potatoes is in the following nine coastal counties: Beaufort, Camden, Carteret, Currituck, Hyde, Pamlico, Pasquotank, Tyrrell, and Washington.³
- 75% of the potatoes grown in North Carolina are processed into potato chips.²

Did You Know? – Potato Chips⁵

Farmers harvest green potatoes for what they call "chip potatoes." Regular potato harvest requires killing the vegetative growth to help stop the potato growth (so the potatoes do not get too big), and setting the skin (maintaining the potatoes' skin for cosmetic purposes). Chip potatoes are cut for chips, so harvesting doesn't require the extra step to maintain the potatoes' skin, nor do farmers have to worry about cooling down the potatoes to avoid rot. Chip potatoes are harvested in early June in North Carolina, which is right on time for the Fourth of July holiday—one of the biggest chip days the country has.

Chip potatoes are harvested and sent to the chip plant within two days! When they arrive at the chip plant, they are processed within 24 to 48 hours. They are washed, peeled, and dropped into spinning blades which slice them thinly into chips. A second wash removes the starch that is released when the potatoes are sliced. They are then fried, dried, seasoned, and bagged. The whole process can take less than 30 minutes, depending on the thickness of the slices and whether they are kettle-cooked.

Background⁴

The story of George Crum is part biography, part culinary history, and part legend. There are questions and conflicting information surrounding the creation of the potato chip, including the identity of the restaurant patron who complained about the French fries. For a time there were claims that shipping and railroad giant Cornelius Vanderbilt was the picky customer. However, it seems likely this was not the case. There has also been speculation that George's sister, Kate, had a hand in the creation of his signature dish. As with many spur of the moment inventions, it is hard to get every detail pinned down.

Before Reading⁴

Questions

Before introducing the book to students, you may wish to develop background, tap prior knowledge, and promote anticipation with questions such as the following:

1. What is your favorite snack food? What do you think it is made from?
2. Do you have a hobby? Would you like to turn this hobby into a career? Why or why not?
3. Can you tell us about an inventor you have heard of? How does the person's invention help others?
4. What does the phrase "to be treated equally" mean to you? What are some ways people are not treated equally? What are some ways we can make sure everyone is treated equally?

Exploring the Book

1. Display the book and read the title. Ask students what they think the title means. What is a Saratoga chip? What kind of work does the man in the picture do?
2. Display the back cover and talk about the illustration. Ask students to use this image plus the one on the front cover to predict what the story might be about.
3. Walk students through the book, looking carefully at the illustrations. Encourage students to note when and where the story seems to take place. Also, note the expressions on the faces in the illustrations. Explain to students that these expressions help tell the story.

Setting a Purpose for Reading

Ask students to read to find out who George Crum was, what he invented and what George Crum thought was important in life.

Vocabulary

Write the following words from the story on the board. Have students look up any unfamiliar words and then write a definition or description for each word. Finally, ask students to write a sentence or two using each word.

encourage	strut	fascinate	imitate
iridescent	amuse	technique	prominent
fashionable	feistiness	mischievous	inferior
graciously			

After Reading

Discussion Questions

After students have read the book, use these or similar questions to generate discussion, enhance comprehension, and develop understanding of the content. Encourage students to refer back to the text and illustrations in the book to support their responses.

Literal Comprehension

1. Was George a good student in school? How do you know?
2. What kind of relationship did George have with his sister? What are some examples of this in the story?
3. Where did George feel most comfortable? What were his favorite hobbies?
4. Besides his sister, who else helped to change the course of George's life? How did these people help George?
5. What inspired George to fry up a batch of very thin, crisp potato slices? What was the customer's reaction to the fried potatoes? How did George feel after the customer tasted the potatoes?
6. Why was George's potato creation called Saratoga chips? What do we call them today?

Extension/Higher Level Thinking

1. What was it that George "did not like in the least?" What are some examples of this in the story?
2. How did George feel about being a chef at Moon's Lake House? Cite some parts of the story that illustrate how he felt.
3. How did George respond when customers complained about the food he cooked? Do you think the customers' complaints were fair? Why do you think so?
4. Why did George decide to leave Moon's Lake House after cooking there for several years?
5. What kind of restaurant did George open? How was it different from Moon's Lake House?
6. The story says that "everyone was equal at Crum's Place (George's restaurant)." What does this mean? Why was this important to George?

Reader's Response

Use the following questions and writing activities to help students practice active reading and personalize their responses to the book. Suggest that students respond in reader's journals, essays, or oral discussion. You may also want to set aside time for students to share and discuss their written work, if they wish to.

1. In the Author's Note it says that George Crum had a "colorful personality." What does this mean? Do you know anyone with a colorful personality? How is that person "colorful"?
2. Would you want to work with George Crum in his kitchen? Why or why not?
3. How does Moon's Lake House compare to restaurants with which you are familiar? How does Crum's Place compare to restaurants you know about?
4. What attributes did George possess that made him successful in a world that wasn't always fair to him?
5. How did the end of the story make you feel? Do you think George Crum was happy at the end of the story? Why or why not?
6. Make a timeline of events in the story. Have each student put a star beside her or his favorite event. Students may then discuss their favorite events.

7. Create a menu of dishes for Crum's Place. Each dish on the menu should be accompanied by a description. Try to use bold adjectives in the descriptions.
8. Write a restaurant review of Crum's Place. You may need to read a few restaurant reviews first so you know the kinds of information a review includes.

Potato Chip Sequencing

Using the background information in **Did You Know? – Potato Chips**, and the video [How Do They Make Potato Chips?](#) (see **Links**), ask students to sequence the journey of potatoes from the field to the chip bag using words from the chart below for each order of events.

First	Next	Then	Last
To begin	Secondly	Also	At last
In the beginning	Afterwards	Additionally	Finally
It all began	After a while	All of a sudden	Eventually
To start with	Later that day	The next day	In conclusion

Nutritional Values⁴

Have students research the nutritional value of potato chips compared to “plain” potatoes (boiled or baked). Then have them do the same for corn (or tortilla) chips and “plain” corn (on the cob or kernels). For a normal serving, students should compare calories, fat, sodium, protein, vitamins, and fiber. Then help them understand how to evaluate nutritional value of each food and decide which are the healthier foods.

Potato Tasting⁴

Provide potatoes prepared in a variety of ways: potato chips, French fries, baked potatoes, boiled potatoes, mashed potatoes, potato salad, potato pancakes, etc. You may wish to include some dishes with sweetpotatoes. Have each student taste all of the potato dishes and write down at least three adjectives to describe each food. Then chart students' words to develop a common description for each dish. You can also discuss the foods relative to the four basic tastes: sweet, bitter, sour, and salty.

Potato Life Science⁶

1. Provide each student with 10 copies of the [Potato Pattern](#) (see **Links**), and ask them to cut out each one. Explain that they will be using these cutouts to make a journal, and they should color the front and back covers. Ask them to write their names and the title “Potato Journal” on their front covers. Then staple the cutouts together on the top or left side.
2. Place one of the large baking potatoes on a paper plate in a location where students can easily make observations.
3. Ask students to examine the potato and describe it on the first page of their journals. They should make sure to note the date on which observations are made.
4. Ask students if they think the potato is living or nonliving. Discuss the characteristics of living and nonliving things.
5. Explain to students that they will observe the potato to find the number of days that pass before the eyes begin to sprout. The potato contains enough nutrients, energy, and water for the plant to begin to grow without any soil.

6. Tell students that they will also observe a potato planted in soil and compare its growth to that of the potato with no soil. Show students a bag of potting soil and ask them if it is living or nonliving. Point out that the soil contains nonliving nutrients that the potato will use as it grows.
7. Plant and care for the potato as follows:
 - Fill the pot approximately one-quarter full of potting soil. Place the potato on top of the soil and cover with three to four inches of soil or until the pot is about half full.
 - Position light to shine on pot.
 - Water lightly. Do not over water or the potato may rot. After green sprouts appear, pay attention to the soil moisture and water when dry.
 - As shoots appear and get tall, cover them with soil, and tie them to a stake.
 - When flowers start to appear, stop watering to prevent the potatoes from rotting.
 - As the potato grows, it may push up the dirt around the stem or even crack the container in which it is planted.
 - After six to eight weeks, when the potato plant has finished flowering or the top starts to die, harvest the potatoes by gently pulling the plant out of the pot.
 - Lay the plant on newspaper.
 - Have students sift through the dirt to find any potatoes left behind in the pot.
8. Instruct students to document their observations of the potatoes in their journals at regular intervals (e.g., one a week).
9. As the potatoes grow, or after harvesting the first new potatoes from the potted plant, discuss the differences that students observe between growing a potato with and without soil. Discuss the importance of soil to plants as an example of the interaction between living and nonliving things. Ask students if they can think of any other nonliving things that affect plants (e.g., light, water, temperature).

Links

- How Do They Make Potato Chips? (video)
<https://www.youtube.com/watch?v=PdyDIMqcRUU>
- Potato Pattern
https://cdn.agclassroom.org/media/uploads/2016/09/28/potato_pattern.pdf

Sources

1. <https://www.leeandlow.com/books/george-crum-and-the-saratoga-chip>
2. <https://ncfieldfamily.org/farm/fun-facts-about-north-carolina-potatoes/>
3. <https://www.ncagr.gov/agscool/teacher/commodities/potato.htm>
4. https://www.leeandlow.com/books/george-crum-and-the-saratoga-chip/teachers_guide
5. <https://ncfieldfamily.org/farm/crops-forestry/get-the-dirt-on-north-carolina-potatoes/>
6. <https://www.agclassroom.org/matrix/lesson/524/>

K-5 Subject Areas

Reading, Writing, Speaking and Listening, Health, Science, and Social Studies

NC Standard Course of Study

Reading

- **RL.K.1** With prompting and support, ask and answer questions about key details in a text.
- **RL.K.2** With prompting and support, retell familiar stories, including key details.
- **RL.K.3** With prompting and support, identify characters, settings, and major events in a story.
- **RI.K.5** Identify the front cover, back cover, and title page of a book.
- **RI.K.7** With prompting and support, describe how the words and illustrations work together to provide information.
- **RI.K.1** With prompting and support, ask and answer questions about key details in a text.
- **RI.K.2** With prompting and support, identify the main topic and retell key details of a text.
- **RI.K.3** With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
- **RL.1.1** Ask and answer questions about key details in a text.
- **RL.1.2** Retell stories, including key details, and demonstrate understanding of their central message or lesson.
- **RL.1.3** Describe characters, settings, and major events in a story, using key details.
- **RL.1.7** Use illustrations and details in a story to describe its characters, setting, or events.
- **RI.1.1** Ask and answer questions about key details in a text.
- **RI.1.2** Identify the main topic and retell key details of a text.
- **RI.1.3** Describe the connection between two individuals, events, ideas, or pieces of information in a text.
- **RI.1.4** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.
- **RI.1.6** Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
- **RI.1.7** Use the illustrations and details in a text to describe its key ideas.
- **RL.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RL.2.3** Describe how characters in a story respond to major events and challenges.
- **RL.2.7** Use information gained from the illustrations and words in a print or digital text to demonstrate understanding of its characters, setting, or plot.
- **RI.2.1** Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
- **RI.2.3** Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.
- **RI.2.4** Determine the meaning of words and phrases in a text relevant to a grade 2 topic or subject area.
- **RI.2.6** Identify the author's main purpose of a text, including what the author wants to answer, explain, or describe.
- **RI.2.7** Explain how specific images contribute to and clarify a text.
- **RL.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- **RL.3.3** Describe characters in a story and explain how their actions contribute to the sequence of events.
- **RL.3.6** Distinguish their own point of view from that of the narrator or those of the characters.
- **RL.3.7** Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story.
- **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.3.6** Distinguish their own point of view from that of the author of a text
- **RI.3.7** Use information gained from illustrations and the words in a text to demonstrate understanding of the text.
- **RL.4.1** Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.4.2** Determine a theme of a story, drama, or poem from details in the text; summarize the text
- **RL.4.3** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text.
- **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.4.5** Describe the overall structure of events, ideas, concepts, or information in a text or part of a text.
- **RI.4.7** Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears.
- **RL.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.5.2** Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
- **RL.5.3** Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text.
- **RI.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RI.5.2** Determine two or more main ideas of a text and explain how they are supported by key details; summarize 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.

Writing

- **W.K.3** Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and with guidance and support, provide a reaction to what happened.
- **W.K.5** Participate in shared investigation of grade appropriate topics and writing projects.
- **W.K.6** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **W.1.3** Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal transition words to signal event order, and provide some sense of closure.
- **W.1.5** Participate in shared research and writing projects
- **W.1.6** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **W.2.3** Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal transition words to signal event order, and provide a sense of closure.
- **W.2.5** Participate in shared research and writing projects.
- **W.2.6** Recall information from experiences or gather information from provided sources to answer a question.
- **W.3.3** Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- **W.3.5** Conduct short research projects that build knowledge about a topic
- **W.3.6** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.
- **W.4.3** Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- **W.4.5** Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- **W.5.3** Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
- **W.5.5** Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.

Speaking and Listening

- **SL.K.1** Participate in collaborative conversations with diverse partners about kindergarten topics and texts with peers and adults in small and larger groups.
- **SL.K.2** Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.
- **SL.K.3** Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- **SL.K.4** Speak audibly and express thoughts, feelings, and ideas clearly.

- **SL.1.1** Participate in collaborative conversations with diverse partners about grade 1 topics and texts with peers and adults in small and larger groups.
- **SL.1.2** Ask and answer questions about key details in a text read aloud or information presented orally or through other media.
- **SL.1.3** Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.
- **SL.1.4** Produce complete sentences to describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- **SL.2.1** Participate in collaborative conversations with diverse partners about grade 2 topics and texts with peers and adults in small and larger groups.
- **SL.2.2** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.
- **SL.2.3** Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.
- **SL.2.4** Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent and complete sentences.
- **SL.3.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.3.2** Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.3.3** Ask and answer questions about information from a speaker, offering appropriate elaboration and detail.
- **SL.3.4** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly in complete sentences at an understandable pace.
- **SL.4.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.4.4** Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; adjust speech as appropriate to formal and informal discourse.
- **SL.5.1** Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.
- **SL.5.4** Report on a topic or text or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; adapt speech to a variety of contexts and tasks.

Health

- **K.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.
- **1.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.
- **2.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.
- **3.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.
- **4.PCH.3** Analyze health information and products.
- **4.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.
- **5.NPA.2** Understand the importance of consuming a variety of nutrient dense foods and beverages in moderation.

Science

- **K.E.1** Understand change and observable patterns of weather that occur from day to day and throughout the year.
- **1.E.2** Understand the physical properties of Earth materials that make them useful in different ways.
- **1.L.1** Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.
- **1.L.2** Summarize the needs of living organisms for energy and growth.
- **2.L.2** Remember that organisms differ from or are similar to their parents based on the characteristics of the organism.
- **3.L.2** Understand how plants survive in their environments.

- **4.L.2** Understand food and the benefits of vitamins, minerals and exercise.
- **5.L.2** Understand the interdependence of plants and animals with their ecosystem.

Social Studies

- **K.C.1** Understand how individuals are similar and different.
- **1.H.1** Understand that history tells a story of how people and events changed society over time.
- **1.G.2** Understand how humans and the environment interact within the local community.
- **1.C.1** Understand the diversity of people in the local community
- **2.H.1** Understand how various sources provide information about the past.
- **2.G.2** Understand the effects of humans interacting with their environment.
- **2.C.1** Understand how various cultures influence communities.
- **3.H.1** Understand how events, individuals and ideas have influenced the history of local and regional communities.
- **3.H.2** Use historical thinking skills to understand the context of events, people and places.
- **3.E.2** Understand entrepreneurship in a market economy.
- **3.C&G.2** Understand how citizens participate in their communities.
- **3.C.1** Understand how diverse cultures are visible in local and regional communities.
- **5.G.1** Understand how human activity has and continues to shape the United States.
- **5.C.1** Understand how increased diversity resulted from migration, settlement patterns and economic development in the United States.