



# The Book Planter



## Ag in the Classroom

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### September 2021 Book – Graphic Novel

#### *Measuring Up*

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While missing her grandmother back in Taiwan, Cici navigates the blending of her Taiwanese culture and her new American identity with heart, bravery, and cooking! This heartwarming graphic novel proves food always has a way of bringing people together no matter the distance.

#### **Graphic Novels and the Importance of Visual Literacy<sup>1</sup>**

##### What are Graphic Novels?

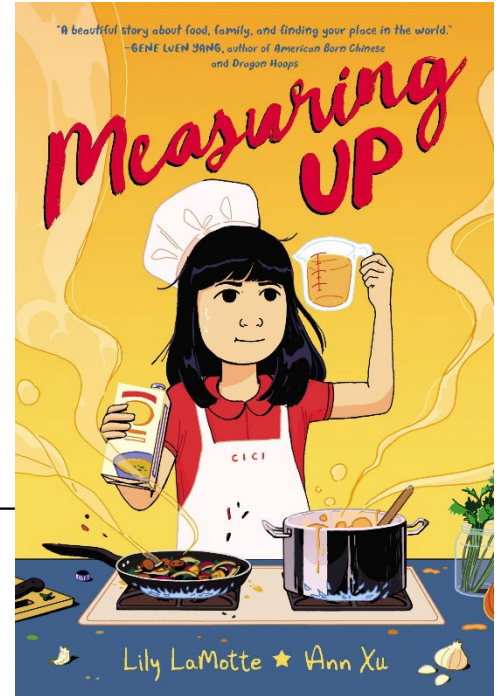
Graphic novels are stories told through sequential art, a series of panels containing art and text that—when read in sequence—express narrative action.

##### Visual Literacy:

As our world becomes more and more visually dependent, graphic novels offer young readers the tool of visual literacy. They ask readers to decode visual cues and decide what they mean. On top of that, they offer reader engagement unlike any other format, and are the ideal medium to establish a lifelong love of reading.

##### Critical Thinking Skills:

Graphic novels are highly engaging! They compel readers to use their critical thinking skills by asking them to infer time and space from one panel to the next, and to interpret other details such as color, motion lines, and panel placement. Critical thinking skills such as these can be applied beyond graphic novels in areas such as science, politics, history, and much more.



#### **Story Discussion Questions<sup>1</sup>**

1. On page 15, what can you infer about the pictures? (*Cici and her dad's work are similar.*) What do you think Cici's dad does for work? How can you tell? Does this mean that cooking and science are similar? How so?
2. Describe Cici's relationship with her parents. Why are they so strict? How does it affect her social life? What are their hopes for her future? How does her vision for the future differ from theirs? When do these differences cause conflict? How is it resolved? Explain how Miranda has a similar problem.
3. In what ways is it hard for Cici to move to America? What are the differences between her old and new situations? Identify times that she faces bias and

ignorance about her background. How is moving to America easier than she expects? How does cooking help bridge the two worlds?

4. The deadline of A-ma's birthday and the weekly contests make time a central element in the novel. How is time used to create suspense? How is the passage of time conveyed in captions, speech, and pictures? Analyze how time passes on pp. 44, 57, 160-61, and other pages, and how do you know.
5. The novel uses different forms of the printed word to convey information and emotion: speech bubbles, captions, sound effects, footnotes, and labels for small pictures like ingredients. Find examples of each of these and analyze how they are used. Compare and contrast the uses to a traditional novel.
6. The varying perspectives in panels conveys different emotions and information. Find close-ups of faces and compare them to panels that show entire figures. What do the facial expressions and body language show? Why use three close-ups on p. 11 or a view from above on p. 99? Analyze panels with other perspectives, too.

### **Activity 1: Supermarket Smarts<sup>2</sup>**

#### Background Knowledge:

##### 4 Cs of Food Safety

- Clean – Wash hands and surfaces often. Wash hands with warm, soapy water, and cutting boards, dishes, utensils, and surfaces with hot, soapy water before and after food preparation.
- Cook – Cook foods to proper temperatures. Using a food thermometer is the only reliable way to ensure that hamburgers, meat, and poultry reach a safe internal temperature.
- Chill – Refrigerate promptly. Refrigerate or freeze foods quickly because cold temperatures keep harmful bacteria from growing and multiplying. Follow the 2-Hour Rule: Refrigerate or freeze perishables, prepared foods, and leftovers within 2 hours or less.
- Combat Cross-Contamination (Separate) – Keep raw meats, poultry, and seafood—and the juices from raw foods—away from other foods in your shopping cart, on kitchen counters, and in your refrigerator.

#### Procedures:

1. Engage with students by saying, “I have a challenge for you! Today we are going to take on the role of managing specific departments in a supermarket. But before we begin, let's find out what Dr. X and Tracy have to say about food safety at the supermarket and in restaurants. Here are some questions to think about while you're watching the video:
  - a. How do supermarkets practice the 4 Cs?
  - b. How are supermarkets a link in the cold chain?

- c. What does Dr. X mean when he says, “The responsibility for food safety is literally in your hands.”
2. Show video Module 4, Part 1 – Retail:  
<https://www.youtube.com/watch?v=j8YfUEzBQ20&t=1623s>
3. Note: Advanced preparation is helpful. Write the names of each supermarket department on a separate piece of paper. These departments offer a variety of food safety principles.
  - a. Meat/Poultry/Seafood
  - b. Deli
  - c. Produce
  - d. Dairy/Eggs
  - e. Checkout
  - f. Employee break area
4. Divide the class into 5-6 teams. Have a member from each team select a department. You can have them choose at random by placing the department papers into a grocery bag.
5. Tell the teams, “Today you’ll be the manager of your supermarket department. Your challenge is to reduce the opportunity for foodborne pathogens to grow or spread. Work with your teammates to create a food safety program for your department.” Ask the teams to think about how the COVID-19 pandemic required extra safety measures in grocery stores. Tell them to also include these safety precautions into their food safety program for their department.
6. Have each team develop a plan for ensuring that the food in their department is safe and COVID-19 precautions are met, and prepare an innovative presentation to present their plan. Students can consider the following actions:
  - a. Research the food safety needs of the department by using the Internet and/or interviewing a store manager.
  - b. Research local, state, and federal regulations to find out what procedures the store personnel must follow.
7. Design the department so that it follows the 4 Cs of Food Safety.
  - a. Analyze the role of the 4 Cs of Food Safety within the department.
  - b. How does the cold chain come into play in the department?
  - c. Include handwashing recommendations for the employees.
8. Present the department design to the class, and show how food safety was incorporated into the department. Make a PowerPoint presentation, blog post, web page, poster, advertisement, poem, song, play, 3-D model, or narrated video. Or, come up with another original idea.
9. Have the class compare the food safety needs found in each of the five departments. Ask students, “What are the similarities and differences?”

10. Bring the lesson together with the book, *Measuring Up*, by asking the students, "How are the 4 Cs of Food Safety important in the home kitchen? Did Cici adhere to the 4 Cs?"
11. Let the students discuss examples from the book where they noticed Cici was using food safety in the kitchen, and examples where she was not. In the examples where she was not, have the students write a Standard Operating Procedure (SOP) for the task that would correct any food safety problems.
  - a. Example: Cici is cooking chicken.
    - i. Wash hands, and wipe down surfaces with disinfectant.
    - ii. Remove chicken from refrigeration.
    - iii. Take chicken out of the packaging.
    - iv. Wash hands.
    - v. Prepare chicken in a clean skillet.
    - vi. Temperature check the chicken to ensure it has reached an internal temperature of 165 degrees Fahrenheit.
    - vii. Wipe all surfaces down with disinfectant.

## **Activity 2: Ultra High Pressure Treatment – Food Preservation<sup>3</sup>**

### Materials Needed:

- 2 empty plastic soda bottles (not rigid bottles)
- 2 grapes
- A variety of foods preserved in different ways, for example: tomatoes – fresh, sun-dried, canned; Fish – salted, fresh, canned; Fruit – fresh, dried, canned; Herbs – fresh, dried

### Vocabulary:

**Ultra high pressure treatment (UHP):** a method of preserving and sterilizing food, in which a product is processed under very high pressure, leading to the inactivation of certain microorganisms and enzymes in the food.

### Procedures:

1. Start a discussion by asking, "How do you suppose your great, great, great grandparents kept their food safe without refrigerators, sophisticated manufacturing processes, or without even having electricity?" (Students may suggest salting, drying, canning, chilling, or freezing, etc. Ice houses kept foods chilled year round, and foods could freeze outside during the winter. List students' responses.)
2. "What do all these methods have in common?" (They either kill bacteria or slow down their growth. Plus, they all change the taste or texture of the food.)
3. "In addition to destroying bacteria, what are some other issues scientists have to think about when they're developing methods to preserve food?" (Scientists are

- continually searching for new methods to kill harmful bacteria in food without damaging the look, taste, texture, or nutritional value of food.)
4. Show a variety of foods preserved in different ways and discuss how each method may affect the texture, taste, nutritional value, color, etc. of the food. What are the positive and negative aspects of each method?
  5. Prepare students for a video clip. Here are some questions for them to think about while they are watching:
    - a. What new ways of processing foods does Dr. Sizer talk about in the video? (*The discussion should lead to pasteurization, irradiation, and ultra high pressure treatment.*)
    - b. What are the benefits of ultra high pressure treatment over other forms of pasteurization? (*High pressure can kill bacteria without affecting the nutrition, color, or texture of food.*)
    - c. Why can you use ultra high pressure treatment with orange juice and not a marshmallow? (*Orange juice contains water that protects it from being crushed by the ultra high pressure. A marshmallow contains air and would be compressed to the size of a BB.*)
  6. Show the video Module 3 – Processing and Transportation (*Time: 7 minutes*):  
<https://www.youtube.com/watch?v=j8YfUEzBQ20&t=1194s>
  7. With a brief introduction to these food processing methods, let's see how ultra high pressure treatment works.
  8. Ask two students to fill the 2 plastic bottles completely to the top with water, put a grape in each bottle, and tightly close the caps. The water bottle represents the ultra high pressure equipment and the grape is the food being pressurized.
  9. Ask the following questions:
    - a. "Why can't you crush the grape?" (*Water in foods protects the food structure from physical damage during compression. As long as the food is mostly air-free and contains water, pressure doesn't "crush" the food.*)
    - b. "Why is pressure being applied to the food?" (*Pressure is applied to kill the bacteria.*)
    - c. "How are bacteria killed by the high pressure?" (*Bacteria are living organisms and the pressure affects their cellular functions. When high pressure is applied to all sides, the enzymes are inactivated.*)
  10. Ask students to research and write about food preservation methods:
    - a. Drying
    - b. Freezing
    - c. Fermenting
    - d. Pickling
    - e. Canning

11. Ask students to hypothesize about other ways science might help us preserve foods in the future. Students can design an experiment to test their hypotheses.

### **Activity 3: Instant Pot Taiwanese Sticky Rice<sup>4</sup>**

Equipment: Instant Pot

Ingredients:

- 1 tablespoon peanut oil or canola
- 1 tablespoon shallot thinly sliced
- ¼ lb pork belly or lean meat, cut into small pieces
- ¼ cup dried shrimp soak 15 minutes, then drain
- 4 heads dried shitake mushrooms soak in water for 30 minutes, then thinly slice
- 2 cups glutinous rice or short grain sweet rice
- 1 tablespoon soy sauce
- 1 tablespoon oyster sauce
- 1 tablespoon rice wine michiu
- 1 tablespoon sesame oil
- 1 tablespoon sugar
- 1 dash white pepper
- 1 ½ cups water

Instructions:

1. Press the sauté button on the Instant Pot.
2. When hot, add the peanut oil and shallot. Sauté for about 2 minutes. Be careful, shallots burn easily. Remove shallot from the pan and set aside.
3. Sauté the pork.
4. Add the rest of the ingredients into the pot and mix.
5. Put the lid on the pot cook on the rice setting with high pressure. This will take about 12 minutes. Then allow the pressure to release naturally for at least 15 minutes.

### **Links**

- Career Spotlight! Culinary Arts Teacher  
<https://www.agfoundation.org/news/career-spotlight-culinary-arts-teacher>
- Cooking Using Nutritious Commodities (recipe for ham, cheese and apple quesadilla)  
<https://www.agfoundation.org/files/AFBFA-AgLit-MAF-191008-CookingComLessonPlan.pdf>

### **Sources**

1. [HarperAlley – Teaching Graphic Novels](#)
2. <https://www.agclassroom.org/matrix/lesson/434/>
3. <https://www.agclassroom.org/matrix/lesson/433/>
4. <https://www.mamababymandarin.com/taiwanese-sticky-rice/>



### 3rd-8th Subject Areas

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

#### NC Standard Course of Study

##### Reading

- **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.3.5** Use text features and search tools to locate information relevant to a given topic efficiently.
- **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.4.3** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text.
- **RL.4.7** Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions 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.5.3** Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text.
- **RL.5.6** Describe how a narrator's or speaker's point of view influences how events are described.
- **RL.5.7** Analyze how visual and multimedia elements contribute to the meaning, tone, or aesthetics of a 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.
- **RL.6.1** Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.6.2** Determine a theme of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- **RL.6.3** Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.
- **RI.6.1** Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.6.2** Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
- **RI.6.3** Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text.

- **RI.6.7** Integrate information presented in different media or formats, including visually and quantitatively, as well as in words to develop a coherent understanding of a topic or issue.
- **RL.7.1** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.7.2** Determine a theme of a text and analyze its development over the course of the text; provide an objective summary of the text.
- **RL.7.3** Analyze how particular elements of a story or drama interact.
- **RL.7.5** Analyze how a drama's or poem's (or other literary genre's) form or structure contributes to its meaning.
- **RL.7.6** Analyze how an author develops and contrasts the perspectives of different characters in a text.
- **RI.7.1** Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.7.2** Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
- **RI.7.3** Analyze the interactions between individuals, events, and ideas in a text.
- **RI.7.5** Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.
- **RI.7.6** Determine an author's point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.
- **RL.8.1** Cite textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- **RL.8.2** Determine a theme of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.
- **RL.8.3** Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
- **RI.8.1** Cite textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
- **RI.8.2** Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
- **RI.8.3** Analyze how a text makes connections among and distinctions between individuals, ideas, or events.

#### Writing

- **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.4.6** Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.
- **W.5.6** Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work and provide a list of sources.

#### Speaking and Listening

- **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.4.2** Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.
- **SL.4.3** Identify the reasons and evidence a speaker provides to support particular points.
- **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.5.2** Summarize a written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.



- **SL.5.3** Summarize the points a speaker makes and explain how each claim is supported by reasons and evidence.
- **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.
- **SL.5.5** Include multimedia components and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
- **SL.6.1** Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **SL.6.2** Interpret information presented in diverse media and formats and explain how it contributes to a topic, text, or issue under study.
- **SL.6.3** Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
- **SL.6.4** Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; adapt speech to a variety of contexts and tasks.
- **SL.6.5** Include multimedia components and visual displays in presentations to clarify information.
- **SL.7.1** Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **SL.7.2** Analyze the main ideas and supporting details presented in diverse media and formats and explain how the ideas clarify a topic, text, or issue under study.
- **SL.7.3** Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
- **SL.7.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; adapt speech to a variety of contexts and tasks.
- **SL.7.5** Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
- **SL.8.1** Engage effectively in a range of collaborative discussions (one on one, in groups, and teacher-led) with diverse partners on grade 8 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- **SL.8.2** Analyze the purpose of information presented in diverse media and formats and evaluate the motives behind its presentation.
- **SL.8.3** Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence, and identifying when irrelevant evidence is introduced.
- **SL.8.4** Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; adapt speech to a variety of contexts and tasks.
- **SL.8.5** Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

#### **Health**

- **4.NPA.1.2** Carry out measures to prevent food borne illness, including hand washing and appropriate food storage and preparation.
- **8.NPA.4.2** Differentiate methods of food preparation in terms of their health and safety.

#### **Science**

- **5.P.3** Explain how the properties of some materials change as a result of heating and cooling.
- **6.P.3** Understand characteristics of energy transfer and interactions of matter and energy.