



The Book Planter



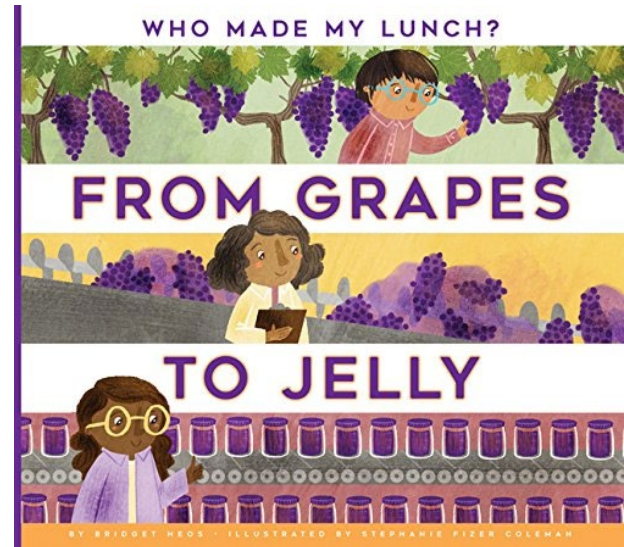
Ag in the Classroom

Post Office Box 27766 | Raleigh, NC 27611 | (919) 782-1705
ncagintheclassroom.com

July 2020: *From Grapes to Jelly*

Written by: Briget Heos

Suppose you want to make your own jelly for your peanut butter sandwich; how would you do it? This book takes you through the journey of grapes as they are transformed into jelly. Do grape farmers plant seeds? Why can't grapes grow on young vines? How are grapes harvested? Who processes grapes into jelly? What's the difference between jam and jelly? What science is involved in making grape jelly? These questions and many more will be answered. The reader will also learn where specific types of grapes are grown. Journey through the many processes of this specialty crop.



Fun Facts

- There are basically two types of grapes grown in North Carolina: bunch grapes and muscadines. Bunch varieties include Concord, Chardonnay, Cabernet-Sauvignon, and Suffolk Red to name a few.¹
- Most of the grapes grown in North Carolina are used to make wine.¹
- The most common grape grown for jelly is the Concord variety. Concord grapes grow best in places with warm days, cool nights, and cold winters.
- In coastal plain areas, Pierce's disease kills or shortens the life expectancy of many popular bunch grapes. Muscadine grapes are noted for having smaller clusters and are not affected by this disease.¹
- Scuppernong is a popular variety of Muscadine grapes.¹

Vocabulary (from the book and **Activities** below)

Bacteria: microscopic, single-celled living things that can be either helpful or harmful.

Harvester: a machine that gathers crops ready for picking.

Pectin: a chemical that occurs naturally in fruit but is also added to jelly for thickening.

Trellis: a framework used to support growing plants.

Vine: a plant with a narrow stem that needs support and grows by winding around anything in its path.

Processing: performing a series of mechanical or chemical operations on something in order to change or preserve it. In agriculture, raw commodities (such as grapes) are processed to prepare them for the consumer. For example, peanuts are ground to make peanut butter.

From Grapes to Jelly – KWL

A KWL chart is made by making three columns with a “K” (what do students **know** about the topic), a “W” (**what** do students **want** to learn), and an “L” (what did the student **learn** about the topic).

1. Show students the cover of the book, *From Grapes to Jelly* by Bridget Heos. Ask students if they know how grape jam/jelly is made. Make sure students are thinking about the whole process, and give them the hint that it starts on the farm.
2. Using a KWL Chart (see **Links**) tell students to write down their answers under the “K” (Know) column. (Answers can vary: in a factory, in a kitchen, etc.)
3. Next, address the “W” (What would you like to know) section on the chart. Ask students to record their answers.
4. Read the book, *From Grapes to Jelly* by Bridget Heos. Encourage students to take notes about the different steps of grape growing, and jam/jelly making and the processes involved.
5. Lastly, ask students to fill in the “L” (what did the student learn) section of their KWL chart.
6. Allow students to share their charts with the class.

Activity 1: Estimate It²

Materials:

- One medium bunch of grapes for each group of 4-5 students
- Food sanitation gloves, one pair for each student (if students plan on eating the grapes)

Instructions:

1. Have each student in the group examine a bunch of grapes and estimate how many grapes are in the bunch.
2. Students can record their estimations.
3. Have each group pick the grapes off the bunch and find out how many are actually on the bunch.
4. Students should record the actual amount of grapes on the bunch.
5. Have the students explain in words why it was easy or hard to estimate the number of grapes on the bunch.
6. Next, have students answer the following questions:

- a. What was the difference between the actual amount of grapes and the estimated amount?
 - b. Was it hard or easy to estimate the number of grapes? Why?
7. Have the students share out what they have written.

Activity 2: *From Grapes to Jelly* Photo Timeline and Safety

1. Print the *From Grapes to Jelly* Photo Timeline (see **Links**), and ask students to arrange the pictures in order that they appear in the book, *From Grapes to Jelly*. Next, they should identify what is happening in each picture.
2. If students do not have space to lay out the pictures in order, they may number the pictures to distinguish their order according to the process they learned from the book. They may also title each picture based on the action taking place. See below for examples of titles.
3. Next, ask the students to look at each picture, and identify the safety measures taken for each step. See possible answers below:
 - a. Planting: gloves, sun protection
 - b. Trimming/Pruning: proper use of the pruners, sun protection, proper attire
 - c. Harvesting: proper/safe use of farm machinery
 - d. Transportation: safe driving, securing the grapes in the truck
 - e. Inspection: food handling gloves, proper attire (Bonus points if the students identify that the inspector could be wearing a hair net.)
 - f. Washing: proper/safe use of the washer
 - g. Mixing: ensuring the recipe is followed precisely
 - h. Filling the jars: proper/safe use of the filling machine, making sure everything is correct as the jars are filled and packaged
 - i. Testing: safe product, unsafe product/batch is discarded

Activity: Other Foods We Get from Grapes³

1. Ask students if they've ever eaten strawberries in January or peppers in November. Explain that because of food **processing**, foods that used to be out of season during much of the year are now available and affordable all year long.
2. Explain that in much of the United States, tomatoes are harvested only in the summer. However tomatoes are sold year-round.
3. Ask students, "If tomatoes grow in the summer months, how are we able to buy them year-round at the grocery store?" For the rest of the year, they are grown in greenhouses so that the climate (weather) is controlled or they are grown in warmer climates and shipped to the United States.

4. Point out that another way to enjoy tomatoes year-round is by eating products made from processed tomatoes.
5. Ask students, "What are some products that are made using processed tomatoes?" Likely answers include pizza sauce, pasta sauce, sun-dried tomatoes, salsa, ketchup, diced tomatoes, tomato paste, tomato soup, tomato juice, etc.
6. Grapes are another example of a food that has several products made from it. Ask students, "What are some foods that are made from grapes?" Raisins, grape juice, vinegar, jam, jellies, and marmalade are some examples.
7. Tell the class that they are going to do an activity focusing on how raisins are made using a type of food processing called dehydration or drying. Ask students, "How do you think raisins are made from grapes?" By drying the grapes. Ask, "What are the pros and cons of buying raisins versus fresh grapes?" Raisins have a longer shelf life and are readily available year round. Grapes may be more expensive during the off season and go bad after a few days. The taste and texture of each is different.

8. **Making Raisins:**

Materials:

- Grapes
- Kitchen towel, mesh food cover, food net
- Cookie sheet
- Water

Steps:

- a) Wash the grapes and spread them onto the cookie sheet. Make sure the grapes are not touching one another.
- b) Find a sunny spot outdoors where you can place your grapes to dehydrate. (For example, place them on a table in a courtyard and label them so no one will disturb them.) Make sure they are safe from animals. Put the towel over the grapes to protect them from pests. A food net or mesh cover also works.
- c) Turn the grapes from side to side twice a day to keep them from sticking.
- d) In 3-7 days, the grapes will change into raisins.

Note: Environmental factors such as direct sunlight, the type of surface under the grapes, and humidity can affect how long the process will take. For areas that experience high humidity levels, you may wish to dry your grapes in a dehydrator or oven. Set your oven for 160° F and leave the grapes to dry for up to 7 hours. Check the progress each hour and turn the grapes frequently to avoid sticking.

Links

- KWL Chart

<https://drive.google.com/file/d/1UtJF6nC7RCgSo8ExsGqwFKPji4CCTvCv/view?usp=sharing>

- *From Grapes to Jelly* Photo Timeline
<https://docs.google.com/presentation/d/1D70hsUrqoM8MaLNygKuAigVgaETMz9bbk-ftJPRI1nI/edit?usp=sharing>
- Genetics in the Vineyards: A Farmer's Challenge to Breed the Greatest Grapes (7th grade lesson)
<https://www.ncfb.org/wp-content/uploads/2019/08/LessonPlanGeneticsInTheVineyards.pdf>

Sources

1. <https://burke.ces.ncsu.edu/wp-content/uploads/2015/01/bunch-grapes-in-the-home-garden-copy.pdf?fw=0&no#%3A~%3Atext=There%20are%20basically%20two%20kinds,the%20mountains%20and%20piedmont%20areas>
2. <https://www.grapesfromcalifornia.com/wp-content/uploads/2017/03/20200420-estimate-it.pdf>
3. https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=50&search_term_lp=grapes

K-5 Subject Areas

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

Common Core/Essential Standards

Reading

- **RL.K.1** With prompting and support, ask and answer questions about key details 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.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.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the **basis for** the answers.
- **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.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **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.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.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.3.1** Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- **RI.3.3** Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- **RI.3.7** Use information gained from illustrations and the words in a text to demonstrate understanding of 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.4.3** 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.4.7** Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears
- **RI.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.

Writing

- **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.1.6** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **W.2.6** Recall information from experiences or gather information from provided sources to answer a question.
- **W.3.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **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.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.1.2** 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.1.5** Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.
- **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.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.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.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.

Mathematics

- **NC.K.CC.5** Count to answer "How many?"

Science

- **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.
- **3.L.2** Understand how plants survive in their environments

Social Studies

- **K.G.2** Understand the interaction between humans and the environment.
- **1.G.2** Understand how humans and the environment interact within the local community.
- **2.G.2** Understand the effects of humans interacting with their environment.

From Grapes to Jelly by Bridget Heos

Photo Timeline

Instructions: Print the photos and have students arrange them in order according to how they appear in the book, *From Grapes to Jelly*.



