



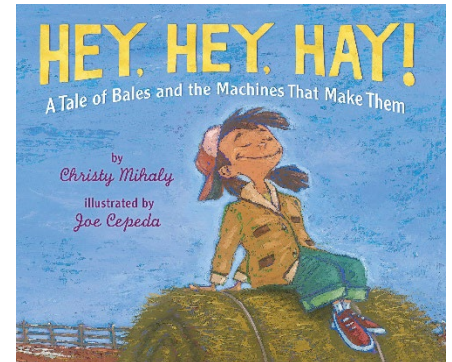
The Book Planter



Ag in the Classroom

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June 2022: *Hey, Hey, Hay!*
Written by: Christy Mihaly
Illustrated by: Joe Cepeda



Every bale of hay has a little bit of summer sun stored in the heart of it—learn from a mother-daughter team how hay is made! Feeding her horses one cold and wintry day, a girl thinks about all the hard work that went into the fresh-smelling bales she’s using. The rhyming text and brilliant full-page paintings follow the girl and her mother through the summer as they cut, spread, dry and bale in the fields.

Mower blades slice through the grass./A new row falls with every pass./Next we spread the grass to dry./The tedder makes those grasses fly!

This celebration of summer, farming, and family, illustrated by Pura Belpré honor artist Joe Cepeda, includes a glossary of haymaking words, and a recipe for making your own switchel—a traditional farm drink, to cool you down in the summer heat.

Vocabulary

Bale: a bundle of hay, which may be round or square.

Baler: a machine that rolls or packs the loose, dried hay into neat packages for storage.

Hay: grass, clover, alfalfa, and similar green plants that have been cut and dried, to be used to feed animals such as horses, cows, sheep, and goats.

Hay rake: a tool that gathers cut hay into long windrows.

Mower: a machine that cuts grass. The farm mower is an extra-large lawn mower.

Switchel: a drink, sometimes called “haymakers’ punch,” traditionally made for thirsty workers at haying time.

Tedder: a machine that picks up and spreads cut hay so it dries quickly and evenly.

Tractor: a strong, big-wheeled vehicle used on farms to pull attachments (mowers, tedders, rakes, balers, etc.) and to lift and move things (like hay bales).

Windrows: long piles of hay in the field, ready to be baled.

Before Reading¹

1. Read the title and discuss the front and back cover illustrations.
2. What does the title and cover illustrations tell us about the book?
3. Where does the story take place (setting)?
4. Write, “Hey” and “Hay” on the board. Discuss the meaning of each. Have students use the words in sentences. Ex. **Hey**, that is my seat! The horse eats **hay**.
5. Ask students to read the words and describe the differences and similarities of the two words.
6. Write “homophone” on the board. A homophone is a word that sounds the same as another word but is spelled differently and has a different meaning. Hey and hay are homophones.

7. Invite students to think of other homophones: to, two, too; stair, stare; sea, see; knight, night. Create a chart.
8. Write “**bale**” on the board. Discuss the meaning of a “**bale** of hay.”
9. Invite students to brainstorm machines that are used on the farm and why machines are important to farmers.
10. Discuss the text type. Will this book be fiction or nonfiction? Why?
11. Write the names of the author and illustrator. Discuss each role.
12. Write the vocabulary words on the board.
13. Have students predict what the words mean. Explain that they will read the words in context to infer the meaning and confirm the meanings using a glossary.
14. Take a picture walk through the book.
15. Predict what the story will be about.

Before Reading: Word Sort and Draw²

1. Before reading the book, provide students with the Word Sort Worksheet (at the end of this Activity Sheet).
2. Write the following words on the board:

Bale	Baler	Hay	Livestock	Hayrake	Native	Straw
Windrow	Mower	Tedder	Switchel			
3. Ask students to sort words into three columns: “Words I Know,” “Words I Think I Know,” and “Words I Don’t Know.”
4. Incorporate math and graphs into the lesson by tracking where each word appears in each column for the class.
5. Start with the “Words I Think I Know,” and share the definitions, as each student writes definitions on the back of the worksheet.
6. After all the words are defined by the class, ask the class to create a non-linguistic representation of the word (a picture, symbol, etc.) to help explain the word.

During Reading¹

1. Read the story aloud.
2. Ask students to follow along as you read and think about the rhyme of the text.
3. What is the setting?
4. Who is telling the story (point of view)?
5. Who is the main character? What does she do and feel?
6. What other characters are in the story?
7. Think about word meaning. Discuss strategies you use when you come to a word that you do not know or understand.
8. Predict what will happen in the story.
9. What is the sequence of events?
10. How do the illustrations and words help us understand what the story is about?
11. What do the illustrations tell us that the words do not?
12. Look at the facial expressions and body language of the characters.
13. How do the punctuation marks (period, commas, exclamation point, and quotation marks) help us know what the characters are saying and feeling?
14. Have the students read the book independently.

After Reading¹

1. Write down the inferred meanings of: **hay, mower, tedder, switchel, windrows, bale, baler, baling, and hay rake**. Go to the glossary and check the meanings.
2. Summarize the book.
3. Why is *Hey, Hey, Hey!* considered realistic fiction?
4. Make a list of rhyming words from the story.
5. Write a flow chart explaining the process of baling hay.
6. Using what you know about the story elements (setting, events, and characters), answer the questions below. Prove your answer by using the book. Identify whether you found the answers using the illustrations, the words, or both.
 - a. During what season does the book begin?
 - b. When is the hay fully grown?
 - c. How does the main character feel about hay?
 - d. How does she know when to cut the hay?
 - e. What word means “cut” in the book?
 - f. When do the stalks and stems scatter?
 - g. What does the tedder do?
 - h. What words describe the heat of summer?
 - i. Why does the girl love to take a break with her mom?
 - j. How long does the hay need to dry?
 - k. What is the dry hay called?
 - l. What does the baler do?
 - m. What crop does the family harvest?
 - n. Where do they store the bales of hay?

Write About It¹

1. How does the author, Christy Mihaly, develop the themes of family, hard work, farming, and machines?
2. Describe the main character in the story including her traits, motivations, and feelings? Explain how her actions contribute to the sequence of events.
3. What can you learn from the main character in the story?
4. Do you think it would be fun to work on a farm? Explain.
5. Explain how specific aspects of the text’s illustrations contribute to what is conveyed by the words in a story. Discuss how the illustrations by Joe Cepeda create mood and emphasize aspects of the characters and setting.

Activity 1: Hay vs. Straw²

This worksheet is attached at the end of this activity sheet.

Answer Key: What is Hay?

1. The prairie has been tilled and used for crop land or been covered with urbanization.
2. A plant that has a pod where seeds develop and has nitrogen fixing nodules on the roots.
3. Answers will vary but should contain information about decomposition.

- Answers vary, but hay is a grass like, and you may eat grasses like alfalfa sprouts on a sandwich. Hay contains much fiber and could lead to poor digestion in humans.

Answer Key: What is Straw?

- Hay is feed, straw is bedding.
- Straw is an insulator and serves as good bedding. Hay has nutritional value that replaces animals grazing on fresh pasture land.
- Hay may be heavier as it is cut green and has not totally dried down. Straw is made of scraps of dry, hollow material. Straw may be lighter.
- Both must be kept dry to protect the integrity of the item. Wet straw will not be good bedding and wet hay can lead to mold issues.

Activity 2: Feed Sack²

Materials:

- One sandwich-size plastic bag
- Hershey's kisses (use sparingly)
- ½ cup granola
- Multi-colored candy (1 tsp)
- Yarn
- ¼ cup corn nuts
- ½ cup shredded wheat
- ½ cup cheerios

Instructions:

- Copy the Horse Feed Sack chart below and insert the paper into your sandwich bag.
- Add all of the food ingredients to the bag. Tell a friend what horses eat and how the things in the bag represent what horse eat.
- Have students determine their own nutritional needs using [MyPlate](https://myplate.gov) and compare and contrast to the horse feed chart.
- Have students plan a healthy meal using MyPlate.
- Enjoy your snack!

Horse Feed Sack Chart

Horses Eat/Drink:	Represented by:	Nutritional Need:
Water	Hershey's Kisses	Water
Corn	Corn Nuts	Protein/Carbohydrates
Oats	Granola	Protein/Vitamin B
Hay	Shredded Wheat	Protein/Minerals/Vitamins
Sugar Beet Pulp	M&M's	Carbohydrates
Bran	Cheerios	Protein/Carbohydrates

Activity 3: Electro-What?²

- Ask students to reflect on a time when they were hot and thirsty and how they were able to quench their thirst.

2. Compile a list of items that were used to quench their thirst. Discuss the impact of each of the following:
 - a. Water
 - b. Milk
 - c. Soda
 - d. Fruit Juice
 - e. Kool-Aid
 - f. Gatorade
 - g. Flavored Water
3. Discuss the word **electrolyte**, the definition of the word, and the facts below.
 - a. **Electrolyte**: a liquid or gel that contains ions and can be found in living cells, blood or organic matter.
 - b. Common electrolytes in our bodies include sodium and potassium. Sodium regulates water in our body. Potassium regulates human heartbeat and aids in muscle function. Too much or too little of both of these electrolytes can be dangerous. Electrolytes are lost when people sweat.
4. Ask students if they can recall what switchel is from the book *Hey, Hey, Hay!*
5. Because switchel is made with apple cider vinegar (a rich source of potassium) and pure maple syrup (which also contains potassium, as well as calcium, magnesium, and sodium), it's an all-natural alternative to sugary sports drinks that will help maintain a good electrolyte balance in the body.
6. Use the recipe for switchel from the book, and create your own switchel.
7. After sampling the switchel, ask the students which drink on the market is most comparable.

Switchel Recipe

- 2 tablespoons apple cider vinegar
- 4 tablespoons pure maple syrup
- 1 teaspoon fresh grated ginger
- 4 cups water

Combine the ingredients in a large jar with a lid and shake. Pour the mixture over ice cubes to serve right away, or chill in refrigerator for a few hours. Stir well before serving. Makes approximately one quart.

Extension:

1. Find the price of a Gatorade. Determine the price per ounce/cup.
2. Next find the price of a batch of switchel. Determine the price per ounce/cup.
3. Reflect upon which is more affordable and why people are or are not likely to use the more affordable option.

Links

- *Hey, Hey, Hay!* Read Aloud (Video)
https://www.youtube.com/watch?v=Ay4npl6L_DY
- USDA MyPlate
<https://www.myplate.gov/>

Sources

1. https://holidayhouse.com/wp-content/uploads/2018/12/Hey_Hey_Hay_Lesson_Plan.pdf
2. <http://www.agintheclassroom.org/TeacherResources/AgMags/Companion%20Guide%20for%20Hey,%20Hey,%20Hay!.pdf>

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.3** With prompting and support, identify characters, settings, and major events in a story.
- **RL.K.9** With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories.
- **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.1.9** Compare and contrast the adventures and experiences of characters in stories.
- **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.4.3** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in 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.K.3** With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in 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.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.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.4.5** 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.
- **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.5.7** Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question or to solve a problem efficiently.
- **RI.5.9** Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably

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.1.5** 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.2.5** 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.3.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **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.4.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **W.4.5** Conduct short research projects that build knowledge through investigation of different aspects of a topic.
- **W.5.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **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.K.5** Add drawings or other visual displays to descriptions as desired to provide additional detail.
- **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.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.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.4.2** 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.

Science

- **K.L.1.2** Compare characteristics of living and nonliving things in terms of their structure and growth.
- **1.L.1.1** Recognize that plants and animals need air, water, light (plants only), space, food and shelter and that these may be found in their environment.
- **1.L.1.2** Give examples of how the needs of different plants and animals can be met by their environments in North Carolina or different places throughout the world.
- **1.L.1.3** Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there (e.g., reuse or recycle products to avoid littering).
- **4.L.1.2** Explain how animals meet their needs by using behaviors in response to information received from the environment.
- **4.L.1.3** Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion).

Health

- **K.NPA.1.1** Classify foods by groups in MyPlate.
- **1.NPA. 1.1** Select a variety of foods based on MyPlate.
- **2.NPA.1.1** Recognize the interrelationship of parts of MyPlate.
- **2.NPA.2.1** Summarize motivations for eating food, including hunger vs. satiety.
- **3.NPA.1.2** Check Food Facts Labels to determine foods that are low in sugar and high in calcium.

- **3.NPA.2.1** Identify the sources of a variety of foods.
- **3.NPA.2.2** Categorize beverages that are more nutrient dense.
- **4.NPA.1.1** Plan meals using MyPlate.
- **5.NPA.1.1** Use MyPlate to make healthy choices of foods and beverages.

Social Studies

- **K.B.1.1** Identify cultural practices in local communities and around the world.
- **1.G.2.1** Explain ways people change the environment (planting trees, recycling, cutting down trees, building homes, building streets, etc.).
- **1.G.2.2** Explain how people use natural resources in the community.
- **2.G.1** Understand how interaction between humans and the physical environment is impacted by movement and settlement.
- **EX.2.G.1** Use geographic representations and terms to describe surroundings.
- **3.H.1.3** Exemplify the ideas that were significant in the development of local communities and regions.
- **4.E.1.3** Explain ways in which factors of production are influenced by the availability of resources in North Carolina.

Math

- **3.OA.3** Represent, interpret, and solve one-step problems involving multiplication and division.
- **3.OA.7** Demonstrate fluency with multiplication and division with factors, quotients and divisors up to and including 10.
- **3.MD.2** Solve problems involving customary measurement.
- **3.MD.7** Relate area to the operations of multiplication and addition.
- **5.MD.5** Relate volume to the operations of multiplication and addition.



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Name _____

Hay vs. Straw Worksheet

Instructions: Read the information about hay and straw below and then answer the questions.

Hay	Straw
<p>Hay is a grass that has been cut, dried, and stored for animal feed. Many kinds of plants can be used as hay. Alfalfa and clover are common types. As Americans moved west onto the Great Plains in the 19th century, they would often use the prairie grasses that were growing there to feed their livestock. Hay includes legumes such as alfalfa and clover or grasses such as timothy, oat, fescue and Bermuda. Most of the time, seeds are still intact in a hay bale.</p> <p><u>The Color of Hay</u></p> <p>Hay is green, especially when seen next to the more golden hue of straw.</p> <p><u>Making Hay</u></p> <p>Plants are harvested when alive and usually cut before the seed matures, then dried. Hay bales sometimes have too much moisture content on the inside and can mold (bad for animals) or even burst into flames because heat increases on the inside due to the decomposition process.</p> <p><u>Hay Nutritional Value</u></p> <p>There are many types of hay used to feed livestock. Some contain more protein and carbohydrates to fuel hard working horses. Specific types of hay are fed to animals depending on their nutritional needs.</p> <p><u>Hay Uses</u></p> <p>Horses, cattle, sheep, goats and other animals eat hay especially when fresh pasture is not available due to seasonal or access limitations.</p>	<p>Straw is a by-product of the grain harvest, e.g., wheat, oats, and barley.</p> <p><u>The Color of Straw</u></p> <p>Straw is yellow or golden in color – many are familiar with straw hats or straw woven baskets.</p> <p><u>How Straw is Made</u></p> <p>The hollow stalks leftover after threshing are dried then formed into bales. Bales of straw have very little moisture content.</p> <p><u>Straw Nutritional Value</u></p> <p>There isn't much nutritional value in dry straw, therefore it's not usually fed to livestock.</p> <p><u>Uses of Straw</u></p> <p>Because it's light and fluffy, it makes a nice bedding for animals. Straw can mulch your plants and keep the soil moist, keeping the top layer from drying out. It can also suppress weeds and it will compost naturally into your garden over time. Did you know straw is used as an ingredient in biofuels, packaging materials and paper manufacturing?</p> <p>Hay versus Straw: Hay and straw are commonly confused. Hay is made from the stems, leaves, and seed heads of plants that are fresh. It is cut and baled when it has the most nutritional value, and is fed to livestock. Straw is also made from the stems and leaves of plants, but is cut after the plants have been allowed to mature and the seed heads have been harvested for something else. Straw has very little nutritional value, and is best used as bedding for animals</p>

<p style="text-align: center;">What is Hay?</p> <ol style="list-style-type: none"> 1. Why do we no longer use prairie grasses like we did in the 19th century? 2. What is a legume? 3. Hay can sometimes burst into flames. Explain how a green plant can catch fire. 4. Explain how hay would have nutritional value. 	<p style="text-align: center;">What is Straw?</p> <ol style="list-style-type: none"> 1. On a livestock farm you may find both hay and straw. What are the primary uses for each? 2. Why would a farmer need to have access to both hay and straw in the winter? 3. If you have equal size bales of straw and hay, which do you think would weigh more? 4. What issues do you see with farmers storing both hay and straw?
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Name: _____

Word Sort and Draw Worksheet

Words I Know	Words I Think I Know	Words I Don't Know

