



The Book Planter



Ag in the Classroom

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November 2021: *Pancakes for Breakfast*

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Missing ingredients and mischievous pets create one humorous complication after another for a little old lady determined to make pancakes for breakfast in this wordless picture book classic. Readers are able to see the work that goes into making food, but more importantly how raw products become ingredients for this beloved breakfast food.



Ag Facts

- Maple syrup does not freeze.¹
- The butter mold was patented on March 18, 1890 in Vermont. The butter mold was created to make butter more preservable to get it from more rural areas to more urban areas.²
- There are five types of butter: salted (also known as sweet cream butter), unsalted, European-style, clarified, and spreadable. Each has its own specific use in cooking and baking.³
- “Soft,” low-protein wheats – including most North Carolina-grown wheat – contain less gluten and are used for cakes, desserts, pastries and snack foods like crackers. “Hard,” high-protein wheats, on the other hand, are better for breads, thanks to higher levels of gluten, a protein that helps dough rise.⁴
- Soft wheat varieties, which account for the majority of North Carolina-grown wheat, are used mostly for flour to be baked in cakes, pastries, desserts, and snack foods.⁴

Vocabulary¹

Chemical change: a change that results in the formation of a new chemical substance through the making or breaking of bonds between atoms.

Physical change: a change in a substance that does not alter its chemical identify, including changes in shape, physical state, size, or temperature. This type of change is usually reversible.

Interest Approach—Engagement

1. Ask students what they ate for breakfast. As students to name their breakfast foods, make a list on the board.
2. Introduce the book *Pancakes for Breakfast* by Tomie dePaola. Ask students if they can think of any reasons why cooking breakfast would be scientific. Prompt them to consider measuring, mixing, and heating ingredients to make something new. Some students may not have had any experience making pancake batter from scratch.

3. Read the book to the class, stopping to ask what is happening in the pictures and what the next ingredient will be in the recipe. As you list each ingredient, ask the students if they know where it came from. Point out the source of each ingredient. Flour comes from wheat plants, eggs come from chickens, milk comes from cows, etc.

Activity 1: Pancakes, Pancakes!

1. Tell the students that they are going to make pancakes by mixing ingredients together inside a Ziploc bag. Ask students to list the ingredients. Write the pancake ingredients list on the board, filling in the measurements and any ingredients that the students don't mention.
2. Ask students to observe and describe the ingredients before they are mixed.
3. Have students make a storyboard or sequencing chart that allows them to describe each step that goes into making pancakes. Separating the steps will make it easier for students to recognize where physical and chemical changes take place.
4. Ask the students:
 - Have you ever made pancakes before?
 - Did you make the pancakes the same way we are making them today?
 - Did you use all the same ingredients in your pancakes?
 - Where did the ingredients come from?
 - When we measure the flour, are we changing the substance? Why?
 - When we crack the eggs open, do the eggs change?
 - What happens to the appearance of the flour when we add the buttermilk and eggs?
 - What would happen if we didn't mix the ingredients together? Could we still make pancakes?
 - Why will the batter look different after it is cooked? How should it look?
 - Have you ever used a recipe before? Why are recipes important?
5. Students should use observational skills and questions to think critically about the changes that are taking place.
6. Have the students identify which steps of the process are physical and which are chemical changes (all of the actions are physical changes with the exception of the cooking of the pancake itself).
7. Ask the students why following a recipe would be important in relation to what they know about physical and chemical changes.
8. After the batter is ready, tell students that they are ready to cook the pancakes. Ask them to think about the batter and watch it very carefully as it is poured out onto the griddle.
9. Ask the students:

- What state of matter is the pancake batter? (*liquid*)
- How can you tell that it is a liquid? (*it takes on the shape of the container*)
- What would happen if we poured this liquid onto a cold griddle? (*it would keep running until it reached the edge of the pan*)
- Why does the heat make the liquid form a circle? (*the batter begins to get solid as the heat starts to cook it*)



Pancakes, National Agriculture in the Classroom

10. Explain to students that the pancake batter looks different, but it still contains the original ingredients. The batter changed from a liquid to a solid, and the substance is **chemically changed** because of the heat. It cannot be changed back into its original form.

11. You may choose to make butter with the students (see [Butter-Making Instructions, Links](#)) to highlight an example of a physical change. Turning liquid cream into solid butter is a **physical change** because no new chemical substance is formed.

Activity 2: Predict and Skip⁵

Show the book, *Pancakes for Breakfast* by Tomie dePaola, to students. Read the book with students, allowing them to create the dialogue for the book. When you get to the middle, ask students to predict the ending. From the middle section, skip to the end of the book. Have students discuss what they thought about a story without a middle part. Did the fact that the book had no words affect what they found out? Ask students to think about what happened in the middle of the book.

Finally, read the book all the way through. Ask students if they were surprised by the any of the details they learned were in the middle of the book. Did they correctly predict the events of the book?

Activity 3: Story Writing

Pancakes for Breakfast by Tomie dePaola is a wordless book. Using the vocabulary words below, encourage students to write their own story words for the book. Students should start at the beginning of the book and write words for each page, one page at a time.

a	bowl	first	lightly
again	breakfast	flour	long
all	butter	for	lumpy
and	by	griddle	maple
at	cook	hot	melted
baking	cups	if	milk
batter	don't	in	mix
be	dry	ingredients	new
beat	eggs	into	on
blend	enough	large	only

pancakes	should	sugar	the
pour	sift	syrup	to
powder	spoon	tablespoons	try
sale	stir	teaspoon	with
salt	succeed	teaspoons	you

Activity 4: Emotional Intelligence⁵

Students feel emotions, and sometimes it is up to adults (teachers, parents, mentors) to help them notice and name those emotions. That develops emotional intelligence. Using the Emotions printable, show students examples of what each emotion looks like.

As you read *Pancakes for Breakfast*, ask students to refer to the emotions they learned. On a sticky note, have students draw the face the main character is feeling on each page—or every few pages—and stick it on the page. Ask students to practice making a face that matches the emotion the character is feeling. Talk about how they know these emotions—what helps them recognize them? What does the character’s face look like? How can you tell what they are feeling?

Links

- Butter-Making to Demonstrate Physical Change
https://cdn.agclassroom.org/media/uploads/2015/11/19/Butter-Making_Instructions_1.pdf

Sources

1. <https://www.agclassroom.org/matrix/lesson/369/>
2. <https://museumonmainstreet.org/content/history-butter-mold-north-carolina>
3. <https://jackson.ces.ncsu.edu/2017/10/better-baking-with-butter/>
4. <https://homegrown.extension.ncsu.edu/2021/07/flour-power-supporting-north-carolinas-wheat-industry/>
5. <https://imaginationsoup.net/wp-content/uploads/2018/02/Activities-for-Wordless-Picture-Books-with-Your-Kids.pdf>

K-5 Subject Areas

Reading, Writing, Speaking and Listening, and Science

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.5** Recognize common types of texts.
- **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.
- **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.2.5** Describe the overall structure of a story, including describing how the beginning introduces the story, the events unfold in the middle, and the ending concludes the action.
- **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.
- **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.3.7** Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story.
- **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.

- **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.
- **RL.5.1** Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
- **RL.5.7** Analyze how visual and multimedia elements contribute to the meaning, tone, or aesthetics of a 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.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.
- **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.2.7** Explain how specific images contribute to and clarify 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.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.6** With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **W.1.2** Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide closure.
- **W.2.2** Write informative /explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section..
- **W.3.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **W.4.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly.
- **W.5.2** Write informative /explanatory texts to examine a topic and convey ideas and information clearly

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.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.3.4** 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.

Science

- **K.P.2.1** Classify objects by observable physical properties (including size, color, shape, texture, weight and flexibility).
- **3.P.2.2** Compare solids, liquids, and gases based on their basic properties.
- **3.P.2.3** Summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, such as melting ice or ice cream, boiling water or an egg, or freezing water.
- **4.P.2.1** Compare the physical properties of samples of matter (strength, hardness, flexibility, ability to conduct heat, ability to conduct electricity, ability to be attracted by magnets, reactions to water and fire).
- **1.L.1** Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.



Butter-Making to Demonstrate Physical Change

Directions: *Show students how to turn a liquid into a solid that they can eat! To make butter, you will need baby food jars and heavy whipping cream. Then simply follow these steps:*

1. Divide students into groups of two to four.
2. Observe and discuss what the whipping cream is like in its liquid form. Tell students that a change will be taking place with the whipping cream.
3. Pour the heavy whipping cream into baby food jars until they are half full.
4. Let the students screw on lids. Before shaking, check to make sure the lids are closed securely.
5. Have the students take turns shaking the jar to “churn” the cream.
6. They should shake the jars until they can no longer hear the liquid moving. Then, shake a little longer until the cream separates.
7. Check the jars to see if the cream has separated into milky liquid (buttermilk) and creamy solid butter.
8. Help students carefully pour off the liquid. Serve the butter on bread, crackers, or pancakes.
9. Explain that the physical change that turns milk into butter can be reversed by heating the butter so that it melts, and then mixing the liquid (buttermilk) back in.

Tip: The cream will separate faster if it is kept cold right up until the students start shaking.

Emotions



happy



sad



angry



excited



afraid



shy



guilty



tired



jealous



loved



hopeful



bored



proud



sorry



embarrassed



surprised