

# WHO KNOWS WHO GROWS...

## “MUFFIN STUFFIN”?

Recommended Grade Levels	Average Time to Complete	Thank you to the following educators for developing specific components of this lesson plan.
Elementary	<b>Anticipatory Set &amp; Facilitation:</b> 90 minutes <b>Conclusion/Assessment Options:</b> 45 minutes	<ul style="list-style-type: none"> <li>▪ Joanna Krogstad; F.C.S. Educator; Manhattan High School</li> <li>▪ Printing of the book, <b>Who Knows Who Grows...“Muffin Stuffin”?</b>, was funded by The Montana Wheat and Barley Committee</li> <li>▪ Montana Department of Agriculture, Ag in the Classroom Project, <a href="http://www.Agr.mt.gov">www.Agr.mt.gov</a></li> </ul>

NATIONAL STANDARDS	LESSON PLAN OBJECTIVES
<p><b>Common Core K-5 English/Language Arts Standards:</b></p> <p>Anchor for Reading 1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.</p> <p>Anchor for Reading 2 Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.</p> <p>Anchor for Reading 10 Read and comprehend complex literary and informational texts independently and proficiently.</p> <p><b>National Family and Consumer Sciences Standards:</b></p> <p>1.2.4 Demonstrate teamwork skills in school, community and workplace settings.</p> <p>8.1.1 Explain the roles, duties, and functions of individuals engaged in food production and services careers.</p>	<ul style="list-style-type: none"> <li>▪ Students will be introduced to agricultural commodities which are grown in Montana and other states.</li> <li>▪ Students will prepare muffins made from primarily Montana agricultural products.</li> <li>▪ Students will become familiarized with basic measurement equivalents used in culinary arts. (extension activity)</li> </ul>

### TEACHER NOTES...

This lesson is designed to be taught by either Early Childhood Education or Culinary Arts secondary students.

Things to consider...

1. Prior to the lesson the high school students spent one class period in the library gathering ten items of interest about each of the ingredients in the recipe. The goal is for them to share their information with the elementary students as they rotated between tables during the lab portion of this lesson.
2. Check to make sure there are no elementary students with allergies.
3. Ask elementary teacher to provide a list of student names for name tags.
4. There are many items for older students to prepare prior to teaching lesson.
5. Make one batch of muffins prior to teaching the lesson and have it ready to serve.
6. Students should rehearse the lesson several times prior to teaching it to the elementary students.
7. Copies of Who Knows Who Grows...“Muffin Stuffin”? books for each student can be preordered.
8. Montana Ag in the Classroom pencils for each student can also be preordered.
9. Please allow plenty of time for shipping.

## MATERIALS

MATERIALS PROVIDED WITHIN THIS LESSON PLAN	RESOURCES AVAILABLE IN A SEPARATE DOWNLOAD AT ...	MATERIALS THAT MAY NEED TO BE ACQUIRED SEPARATELY	
<ul style="list-style-type: none"> <li>▪ Vocabulary Sheet Handout</li> <li>▪ KWL Chart</li> <li>▪ Muffin Name Tag Templates</li> <li>▪ What I Know Cards</li> <li>▪ What I Wonder Cards</li> <li>▪ What I Learned Cards</li> <li>▪ Lab Identification Posters</li> <li>▪ Lab Table Tents</li> <li>▪ Muffin Stuffin Recipe Handout</li> <li>▪ Muffin Stuffin &amp; Measuring! Measurement Equivalent Cards</li> </ul>	<ul style="list-style-type: none"> <li>▪ Flipsnack: <b>Who Knows Who Grows...”Muffin Stuffin”?</b> <a href="http://www.flipsnack.com/5D687897C6F/fztketu7.html">http://www.flipsnack.com/5D687897C6F/fztketu7.html</a></li> <li>▪ <b>Farmer Style</b> (Gangnam Style Parody) <a href="https://youtu.be/LX153eYcVrY">https://youtu.be/LX153eYcVrY</a> <b>Approximate time:</b> minutes 3:47</li> </ul>	<ul style="list-style-type: none"> <li>whole wheat flour</li> <li>sugar</li> <li>oatmeal</li> <li>eggs</li> <li>oil vanilla</li> <li>baking soda</li> <li>raisins</li> <li>muffin tin</li> <li>cooking spray or paper baking cups</li> <li>measuring cups</li> <li>measuring spoons</li> <li>aprons</li> <li>mixing bowls</li> <li>large spoons</li> </ul>	<ul style="list-style-type: none"> <li>napkins</li> <li>plastic</li> <li>poster paper or white board</li> <li>timer</li> <li>Hard Copies of Who Knows Who Grows...”Muffin Stuffin”? may be ordered from...</li> <li><b>Lorri Brenneman</b> MT Depart. of Ag Phone: (406)437-1906 E-mail: <a href="mailto:LBrenneman@mt.gov">LBrenneman@mt.gov</a></li> </ul>

## PURPOSE

The purpose of this lesson is to introduce elementary students to Montana agricultural resources and allow them to create a food from these resources. They will be exposed to measurement equivalents as they pertain to the culinary classroom. Students will use a KWL chart to assist them in understanding what they know, what they wonder about, and finally what they learned from the lesson.

## PROCESS

### ANTICIPATORY SET

#### KWL

**Approximate time:** 10 minutes

\*note: If this activity is too advanced for K/1 students they students could draw pictures on their cards rather than write

1. Re-Create the **KWL chart** on the white board or poster paper. (pg.5)
2. Distribute one **What I Know** note card and a writing utensil to each student. (pg. 8)
3. Show students, *Who Knows Who Grows...”Muffin Stuffin “?* book cover and give a brief description of what the book is about. The Flipsnack URL provided in the materials section can also be used to project the story on a projector if no books are available.
4. Ask students to write one thing they know about farming practices in Montana on their **What I Know** note card. Add each student’s card to the **What I Know** column of the KWL chart.
5. Read the answers out loud and tell the students more time will be spent on the chart as the lesson is completed.

### VOCABULARY REINFORCEMENT ACTIVITY

**Approximate time:** 10 minutes

Vocabulary Reinforcement Activity:

1. Divide the class into two teams with an equal amount of students on each team.
2. Provide each student with a **Vocabulary Activity Words** sheet. (pg. 6)
3. Team 1 selects one person to stand with their back to the white board.
4. Team 2 selects one person to write a vocabulary word on the board behind the member from team 1.
5. Team 1 gives the definition followed by clues and hints to the member of their team at the board to help verify the word.
6. Once the student gets the word right, it is the other teams turn to repeat this process.

\*This process is repeated by each team until all of the words have been used.

### RECOMMENDED FACILITATION

1. Each student will receive a second note card, **What I Wonder**. (pg. 9)
2. Tell students that the second note card, **What I Wonder**, is to write down questions or ideas that come to mind while the story is being read.
3. Begin reading the *Who Knows Who Grows... "Muffin Stuffin"*? stopping periodically to allow students to write down questions or ideas. The FlipSnack digital version can also be used as referenced in the 'Resources to Download Separately' section of this lesson.
4. When you have completed the book, ask the students to post their **What I Wonder** cards on the **What I Wonder** column of the **KWL Chart**.
5. Give each student the final note card, **What I Learned**, (pg. 10) and ask them to write one thing they learned from *Who Knows Who Grows... "Muffin Stuffin"*? and have them post those answers on the **What I Learned** column of the **KWL Chart**.
6. Tell students that we will go over the **KWL chart** to wrap up our time together.

### CONCLUSION

1. Compile all materials necessary to create muffins prior to class.
  2. Enough muffins should be prebaked and packaged so that each student receives a muffin upon completion of the lesson.
  3. Place **Lab Identification Posters** (pgs. 12-17) or **Table Tents** (pgs.18-23) on each station, (there are six stations total, one for each main ingredient)
  4. Distribute recipe ingredients, measuring spoons, and measuring cups to each assigned station.
  5. Assign 1-2 peer helpers to each station and one peer helper to rotate with each group of students from station to station.
  6. Break students into small groups of 2-4 students per group.
  7. Students need to wash hands prior to beginning the lab.
  8. Each group will need two bowls, one for dry ingredients and one for wet ingredients, a copy of the **Muffin Stuffin Recipe**, (pg.7) and a mixing spoon.
  9. Groups will rotate between all six stations to receive the needed ingredients. A timer will be set and only two minutes will be allowed per station.
  10. When students have rotated between all six stations they will pour their muffin mix into muffin tins lined with muffin cups.
  11. While muffins cook gather students and view the following video...
- Farmer Style (Gangnam Style Parody), <https://youtu.be/LX153eYcVrY> , **Approximate time:** 3:47 minutes

## ASSESSMENT

### KWL Review

**Approximate time:** 10 minutes

- Discuss the **What I Learned** column of the KWL Chart and see if any of the questions have been answered while reading the text. Lead a class discussion from the chart and clear up any unanswered questions.
- As students leave the classroom give the teacher enough muffins and napkins for each student to enjoy.

## EXTENSION ACTIVITY

### Muffin Stuffin & Measuring

- Playing a game is more fun than memorizing a long list of measurements. Muffin Stuffin & Measuring helps you learn important recipe measurement equivalents.
- The deck contains 20 pairs and a Muffin Stuffin & Measuring! card. Pairs are the recipe measurement equivalents. For example:  
 $3 \text{ tsp.} = 1 \text{ Tbsp.}$  or  $16 \text{ Tbsp.} = 1 \text{ cup, etc...}$
- The object of the game is to find and discard equivalent pairs. Muffin Stuffin Measuring! is played like "Old Maid". Two to six may play.

#### Preparation:

- Copy pages 26-29 on cardstock. Print page 30 on the back of each set of cards. Run enough copies for each group to have a complete set. Note: Each set could be printed on different color card stock to make it easy to identify cards within a specific set.
- Copy enough **Measurement and Equivalent** cards, (pg. 24) for each student.

#### How to Play:

1. Shuffle and deal all cards.
2. Players look at their cards. They discard equivalent pairs from their hand to center of the table, face up. These pairs are out of the game.
3. The dealer now draws a card from the player on the right. If he can make a pair with a card from his hand, he discards the pair. If not, he keeps the card.
4. The next player draws and the game continues in this manner until all pairs are matched.
5. If an incorrect pair is discarded at any time, the player must return that pair to his hand and miss his next turn.
6. The first player to discard all his cards is the winner.
7. Player left holding the Muffin Stuffin & Measuring! card is the loser.

\*Note To Teacher: This game may be simplified by eliminating some pairs from the deck.

# KWL Chart

Topic: *Who Knows Who Grows... "Muffin Stuffin"?*

What I Know	What I Wonder	What I Learned
<p>List things that you already are aware of regarding farming or agriculture.</p>	<p>In this column write things that you have questions or wonder about from the reading and list them here.</p>	<p>In this column, list new facts or concepts that you learned from the reading.</p>

## Vocabulary Activity Words

Term	Definition
Agriculture	The science or occupation of cultivating the soil, producing crops, and raising livestock
Crush	To break into fine pieces by pressing, pounding, or grinding
Diffused	Poured or spread out: not concentrated
Elevator	A building for elevating, storing, unloading, and sometimes grinding grain
Evaporate	To remove some of the water from (as by heating)
Extract	To get out by pressing, distilling, or by a chemical process
Farmer	A person who cultivates land or crops or raises animals
Harvest	The gathering of a crop, or the quantity of a crop gathered in a single season
Impurities	Matter mixed in with something else, usually not wanted in the mixture
Ingredients	One of the substances that make up a mixture
Matter	The substance of which a physical object is composed
Particles	A very small quantity or piece
Partnership	One associated in action with another
Processing	The act of changing or preparing by special treatment
Processing Plant	Building or location where processing occurs
Processor	A person or machine that processes
Screens	A network of wire set in a frame and used for separating different-sized parts
Steamed	To expose to the action of steam (as for softening or cooking)
Sugar Crystals	Fine particles of sugar which have been processed and evaporated

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# Muffin Stuffin Recipe

- \_\_\_1. Preheat your oven to 400°.
- \_\_\_2. Grease your muffin tins *or* line the muffin tins with paper baking cups.
- \_\_\_3. In your dry ingredients bowl, mix:

1  $\frac{3}{4}$  c. whole wheat flour  
1 c. brown sugar  
 $\frac{1}{2}$  c. oatmeal

- \_\_\_4. In your wet ingredients bowl, mix:

1 c. milk  
1 egg  
 $\frac{1}{2}$  c. oil

- \_\_\_5. Combine the wet ingredients with the dry ingredients.

- \_\_\_6. Add:

$\frac{1}{2}$  c. raisins (optional)  
 $\frac{1}{4}$  tsp. vanilla  
1 tsp. baking soda

- \_\_\_7. Fill the muffin tins  $\frac{2}{3}$  full.

- \_\_\_8. Bake at 400 ° for 15-17 minutes.

- ✓ **flour** –Montana farmers grow wheat. The flour comes from the seeds of the wheat plant. The seeds, or *wheat berries*, are crushed many times into wheat.
- ✓ **brown sugar** – Montana farmers grow sugar beets. The sugar beets are washed, sliced, and processed into brown and white sugars.
- ✓ **oatmeal** – Montana farmers grow oats. The oats are processed into oatmeal.
- ✓ **milk** – Montana has many dairy cows which produce milk.
- ✓ **eggs** – Montana farmers raise chickens and gather their eggs for market.
- ✓ **oil** – Montana farmers grow canola, sunflower, and other oil seed crops that make cooking oil.
- ✓ **raisins** – Raisins are dried grapes. California grows most of the grapes in the U.S., but Washington and Oregon also grow grapes.
- ✓ **vanilla** - Vanilla is made from vanilla beans, a crop of Mexico and Central America.
- ✓ **baking soda** – Baking soda is mined from the earth, much of it from an area near Green River, Wyoming.



### **KWL Note Cards**

**Directions:** Print one **What I Know** muffin note card for each student. Cut each card out separately.

\*Each set of KWL cards could be printed on different colored paper to indicate which column of the KWL Chart it belongs in.



**KWL Note Cards**

**Directions:** Print one **What I Wonder** mufin note card for each student.

\*Each set of KWL cards could be printed on different colored paper to indicate which column of the KWL Chart it belongs in.

**KWL Note Cards**

**Directions:** Print one **What I Learned** muffin note card for each student.

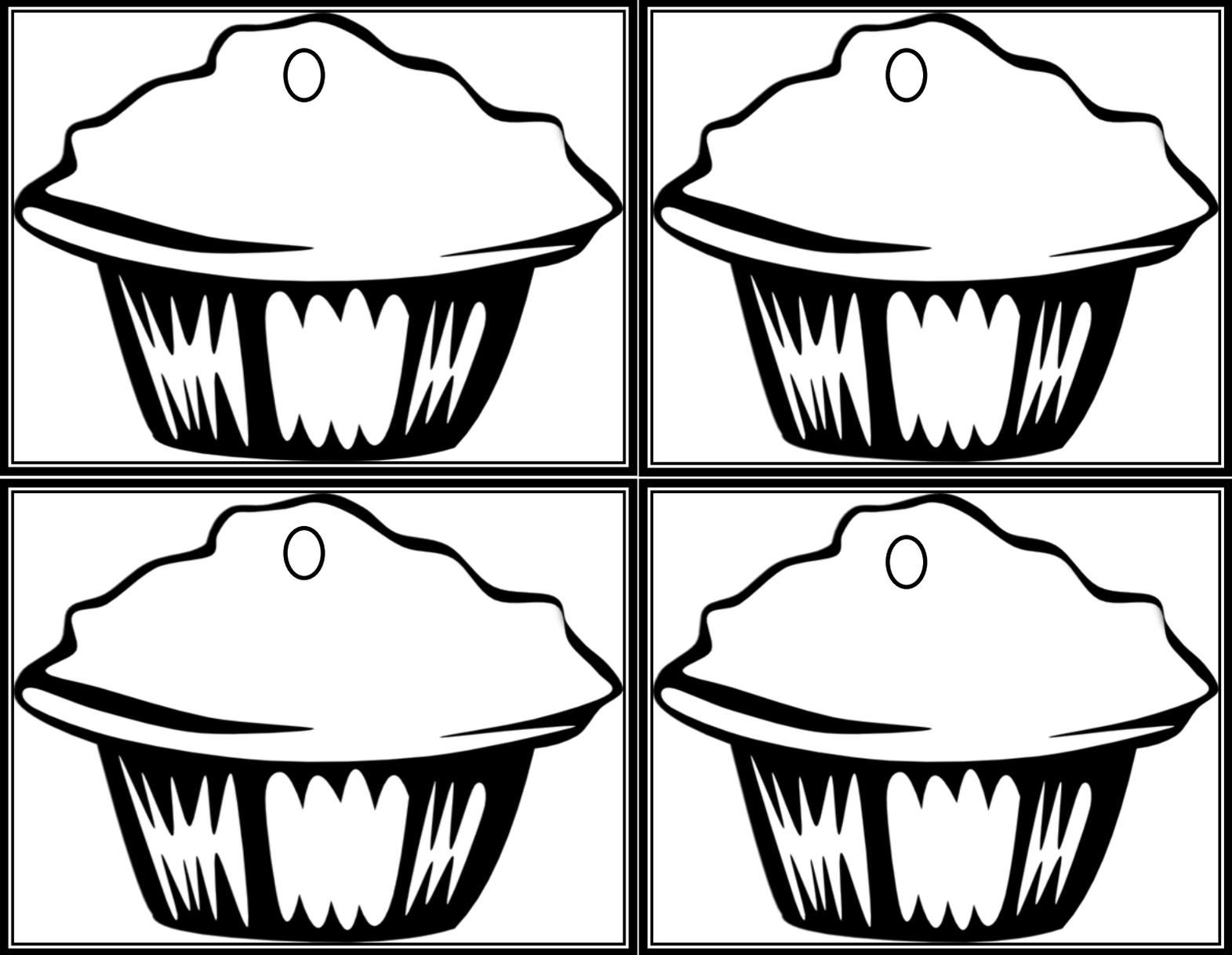
\*Each set of KWL cards could be printed on different colored paper to indicate which column of the KWL Chart it belongs in.



**Name Tags**

**Directions:** Print muffin name tags on card stock and cut out. Hole punch the top of each muffin and string yarn through hole. Write each elementary students name on a muffin.

\*Muffins could be printed in six different colors to indicate which lab group students are reassigned to.



# Flour



Montana farmers grow wheat. The flour comes from the seeds of the wheat plant. The seeds, or *wheat berries*, are crushed many times into wheat.

# Brown Sugar



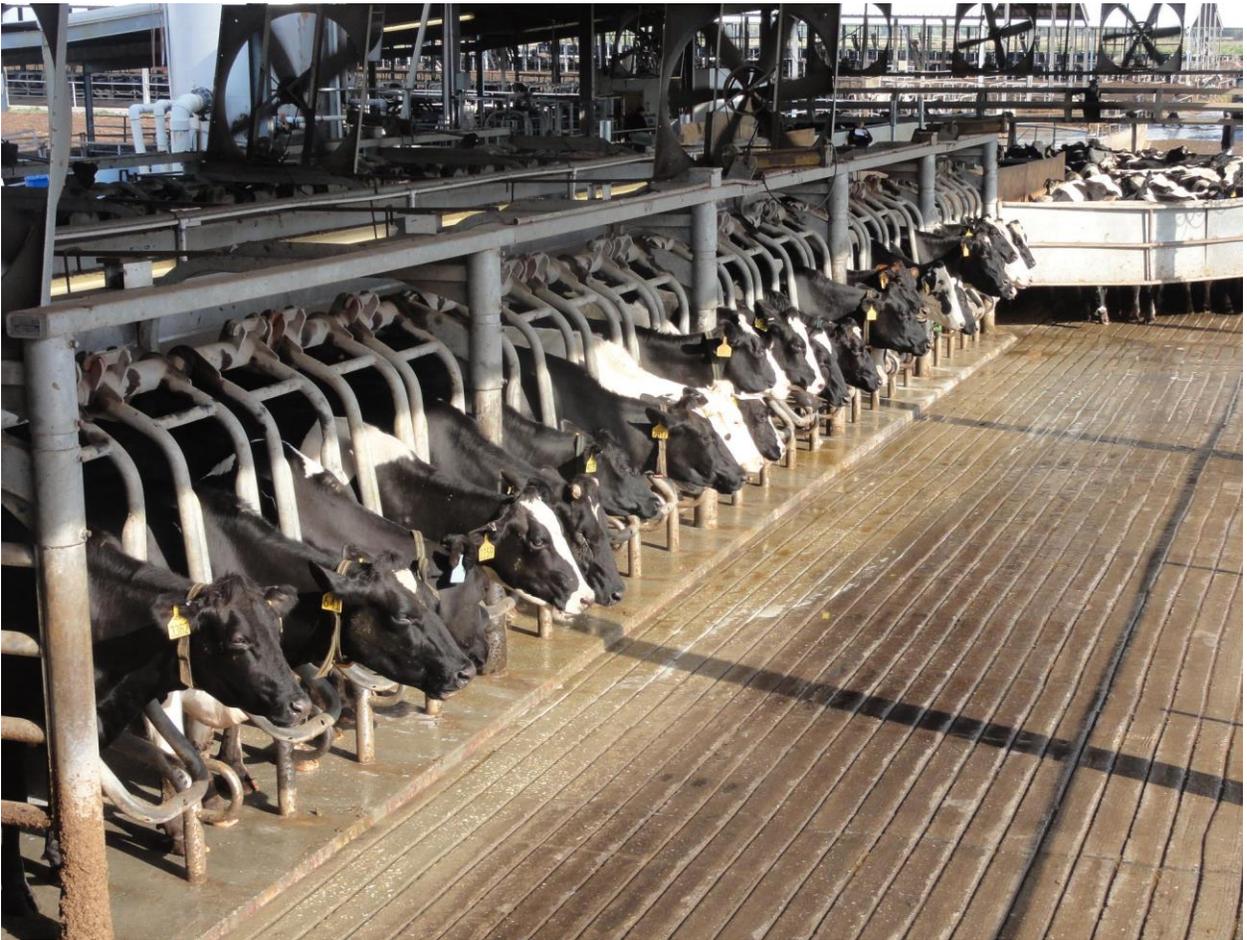
Montana farmers grow sugar beets. The sugar beets are washed, sliced, and processed into brown and white sugars.

# Oatmeal



Montana farmers grow oats. The oats are processed into oatmeal.

# Milk



Montana has many dairy cows which produce milk.

# Eggs



Montana farmers raise chickens and gather their eggs for market.

# Oil



Montana farmers grow canola, sunflower, and other oil seed crops that make cooking oil.

## Table Tents

# Flour



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# Brown Sugar



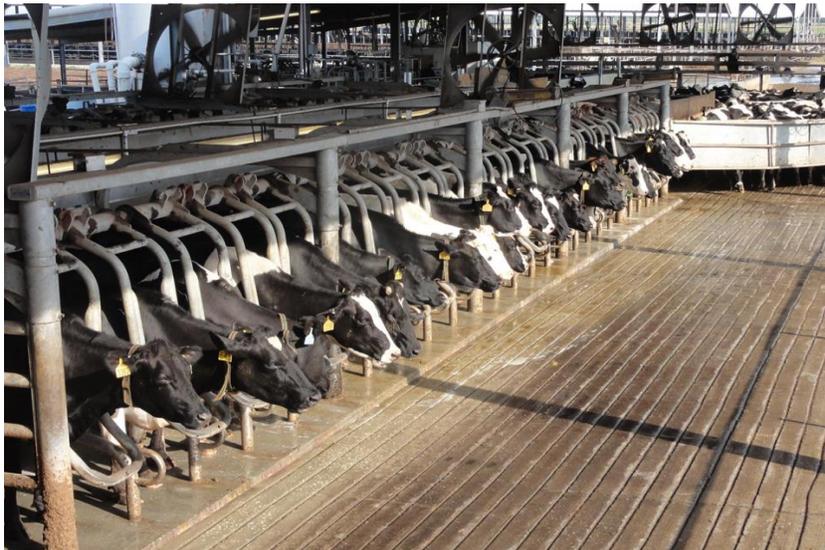
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## Muffin Stuffin & Measurement!

Measurement and Equivalents	Measurement and Equivalents
1/8 tsp. or less = a pinch	1/8 tsp. or less = a pinch
1/16 tsp. = a dash	1/16 tsp. = a dash
1 Tbsp. = 3 tsp.	1 Tbsp. = 3 tsp.
1/8 c. = 2 Tbsp.	1/8 c. = 2 Tbsp.
1/6 c. = 2 Tbsp. + 2 tsp.	1/6 c. = 2 Tbsp. + 2 tsp.
1/4 c. = 4 Tbsp.	1/4 c. = 4 Tbsp.
1/3 c. = 5 Tbsp. + 1 tsp.	1/3 c. = 5 Tbsp. + 1 tsp.
3/8 c. = 6 Tbsp.	3/8 c. = 6 Tbsp.
1/2 c. = 8 Tbsp.	1/2 c. = 8 Tbsp.
3/4 c. = 12 Tbsp.	3/4 c. = 12 Tbsp.
1 c. = 16 Tbsp.	1 c. = 16 Tbsp.
Cup = c.	Cup = c.
Tablespoon = Tbsp.	Tablespoon = Tbsp.
teaspoon = tsp.	teaspoon = tsp.

## Instructions for Muffin Stuffin & Measuring!

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### Note To Teacher:

This game may be simplified by eliminating some pairs from the deck.

