



STEMsational Ag: The Virtual Farm

MIDDLE TENNESSEE STATE UNIVERSITY



Module 1: Cereal - Thinking Outside the Box UNIT 2: COOKING WITH WHOLE GRAINS Kindergarten – Grade 2



National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE

**MIDDLE
TENNESSEE**
STATE UNIVERSITY.
CENTER FOR HEALTH
AND HUMAN SERVICES

**MIDDLE
TENNESSEE**
STATE UNIVERSITY.
SCHOOL OF
AGRICULTURE

**MIDDLE
TENNESSEE**
STATE UNIVERSITY.

I AM *true*
BLUE
MIDDLE TENNESSEE STATE UNIVERSITY



Fermentation Science

This work is supported by the Agriculture and Food Research Initiative, Education and Workforce Development Program. [grant no. 2021-67037-33380/project accession no. 1024880], from the U.S. Department of Agriculture, National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.

0322-0533 / Middle Tennessee State University does not discriminate against students, employees, or applicants for admission or employment on the basis of race, color, religion, creed, national origin, sex, sexual orientation, gender identity/expression, disability, age, status as a protected veteran, genetic information, or any other legally protected class with respect to all employment, programs, and activities sponsored by MTSU. The Assistant to the President for Institutional Equity and Compliance has been designated to handle inquiries regarding the non-discrimination policies and can be reached at Cope Administration Building 116, 1301 East Main Street, Murfreesboro, TN 37132; Christy.Sigler@mtsu.edu; or 615-898-2185. The MTSU policy on non-discrimination can be found at mtsu.edu/iec.

Materials are intended for educational purposes only. Content Contributors and the STEMsational Ag team have reviewed to ensure all content is cited. Please contact STEMsationalAg@mtsu.edu with any concerns.



STEMsational Ag—The Virtual Farm

Welcome to Module 1 Unit 2: Cooking with Whole Grains



Introduction:

In this unit, learn how to identify whole versus refined grains, as well as several fun ways to prepare them.

Pre-assessment:

- On a piece of paper and draw or write your answer to the question or type them in a word document on your computer.
- What is a grain?





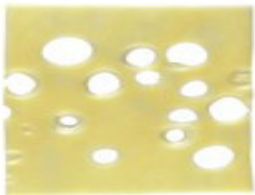









Complete this activity:

- Students will cut out the food cards from the "Slap It."
- The cards contain examples from each of the five food categories of MyPlate: fruit, vegetable, protein, grain, and dairy.

Slap It Game Cards

Cut out the cards from the table below and follow the directions in the course to learn how to play the game.

Apple 	Wheat Bread 	Banana 
White Flour 	Swiss Cheese 	Tuna Fish 
Roasted Chicken 	Broccoli 	Wheat Pasta 
Brown and Wild Rice 	Yogurt 	Peas 



<p>Peanut Butter</p> 	<p>White Bread</p> 	<p>Milk</p> 
<p>Wheat Flour</p> 	<p>Berries</p> 	<p>Carrots</p> 
<p>Lettuce</p> 	<p>White Pasta</p> 	<p>Eggs</p> 
<p>Pineapple</p> 	<p>Meatballs</p> 	<p>White Rice</p> 



Option 1 (Best suited for more than one learner):

1. Once the cards are cut, mix up the cards and place them in a deck face down.
2. Students will take turns turning over one card at a time from the top of the deck.
If a grain card is turned over, slap it!
3. The goal is to be the first person to slap the card if it is a grain.
4. Whoever slaps the card first, collects the card.
5. At the end when all the cards are turned over, each player counts up their collected cards to see who has the most. The player who collects the most grain cards is the winner!
6. Check your answers using "**Slap It**" Answer Key pages 17 & 18.

Option 2 (Can be played with one or more students):

1. Once the cards are cut, group the cards into the five MyPlate categories:
fruit, vegetable, protein, grain, and dairy.
2. Check your answers using "**Slap It**" Answer Key pages 17 & 18.



Purpose:

The purpose of this lesson is to help learners discover what the MyPlate guidelines mean in a practical way.

Student Learning Outcomes for the Unit:

- Students will categorize MyPlate food items that are grains.
- Students will read a book to understand why eating whole grains is important to health.
- Students will check a pantry for whole grain food items and learn about proper storage.
- Students will diagram the amount and types of whole grains they can eat on MyPlate.
- Students will help cook a whole grain snack using a paper bag and microwave.

National Agricultural Literacy Outcomes

Food, Health, and Lifestyle, Theme 3

T3, K-2

A. Identify healthy food options.

C. Understand where different types of foods should be stored safely at home.

Vocabulary:

- **MyPlate:** a picture of a plate with parts drawn to show what and how much of the healthy food and beverage groups we should eat: fruits, vegetables, grains, protein, and dairy
- **Grain:** the seed of a plant we eat or use to produce a new food like rice and corn or pasta and bread
- **Whole Grain:** the grain with all three of its parts still present: bran, endosperm, and germ
- **Refined Grain:** the grain with some of its three parts removed, which also removes some of what makes it good for your health
- **Pantry:** a place where we store foods like whole grains that do not require colder temperatures to remain safe to eat



Materials Needed:

- Scissors
- Brown lunch bag
- Popcorn kernels
- Popcorn seasoning of choice

Read a book:

- Read the book "Grains on MyPlate" by Mari Schuh
- For Educators, while reading the book with the students, be sure pause after reading each page to allow students to see the pictures and point out important features such as what grains are, where they come from, and why we eat them.
- For Students: Answer the following questions by writing them down on paper to discuss your answers with a parent or another adult.
- What are grains?
- Where do grains come from?
- Why do we eat grains?



<https://youtu.be/PvHOH0alki0>



Storing Grains in Our Home

- There are many ways to store food in our homes. We can use a food pantry, a refrigerator, or a freezer to store food.
- What kinds of foods do you store in a pantry? A refrigerator? A freezer?
 - The pantry is used to store items that do not need to be kept cold, such as canned goods, boxed foods, or foods in jars.
 - The refrigerator is used to store foods that must be kept cold to stay fresh, such as some fruits and vegetables, meat, dairy products, eggs, and seafood.
 - The freezer is used to freeze foods that we want to use later, such as left over meals, frozen fruits and vegetables, and bread.
- Where do you think whole grains should be stored to keep them fresh?
 - Answer: the pantry!
- Do you have any grains in your pantry?
 - Make a list of foods that are grains that are in your pantry at home.
 - If you're not at home, make a list of foods that are grains that should be stored in the pantry.
 - Discuss your answers with a friend, classmate, family member, or teacher.
- If you have access to a computer, check out the website **<https://wholegrainscouncil.org>** for more information on Whole Grains A-Z. Pages 9-10 show examples of what you will find on the website.



STEMsational Ag:

The Virtual Farm

MIDDLE TENNESSEE STATE UNIVERSITY

WHOLE GRAINS A TO Z

<https://wholegrainscouncil.org>



WHOLE GRAINS 101

WHOLE GRAIN STAMP

FIND WHOLE GRAINS

RECIPES

RESOURCES

GET INVOLVED



Home | Whole Grains 101

WHOLE GRAINS A TO Z

Check out our "Encyclopedia of Whole Grains" to get a quick overview of all the different grains you could sample, and a few interesting facts about each one. Then dive deeper if you want more.



+ Amaranth (*Amaranthus cruentus*)

+ Barley (*Hordeum vulgare*)

+ Buckwheat (*Fagopyrum esculentum*)

+ Bulgur (*Triticum* spp.)

+ Corn (*Zea mays*)

+ Einkorn (*Triticum monococcum* L.)

+ Farro / Emmer (*Triticum turgidum dicoccum*)

+ Fonio (see Millet)

+ Freekeh (*Triticum turgidum* var. *durum*)

+ Kamut® Khorasan Grain (*triticum turgidum turanicum*)

+ Kañiwa (*Chenopodium pallidicaule*)

+ Kamut® Khorasan Grain (*triticum turgidum turanicum*)

+ Kañiwa (*Chenopodium pallidicaule*)

+ Millet (*Panicum miliaceum*, *Pennisetum glaucum*, *Setaria italica*, *Eleusine coracana*, *Digitaria exilis*)

+ Oats (*Avena sativa*)

+ Quinoa (*Chenopodium quinoa*)

+ Rice (*Oryza sativa*)

+ Rye (*Secale cereale*)

+ Sorghum / Milo (*Sorghum* spp.)

+ Spelt (*Triticum aestivum spelta*)

+ Teff (*Eragrostis tef*)

+ Triticale (x *triticosecale rimpau*)

+ Wheat (*Triticum aestivum*; *Triticum turgidum*)

+ Wild Rice (*Zizania* spp.)



Complete the MyPlate Coloring Sheet

- Use the MyPlate Coloring Sheet (on page 12).
- Write the letter "G" where the grains go on the plate.
- Draw lines on the plate so that grains take up half of the plate.
- Now, use words or draw pictures of grains you would like to eat for breakfast, lunch, snack, and dinner.
- Optional, tell a friend, family member, or teacher where you would put the grains on the plate and which grains you would like to eat for breakfast, lunch, snack, and dinner.
- Need a little help? View the infographic below, "Whole Grains to Pack in Lunchboxes," for examples of whole grain foods.

Whole Grains to Pack in Lunchboxes



1 slice whole wheat bread



1 whole wheat tortilla



1/2 whole wheat English muffin



1/2 cup brown rice



1/2 cup whole grain pasta



1 small muffin



5 whole grain crackers



1 mini whole wheat bagel



3 cups popcorn



1 oz tortilla chips



1 cup whole grain cereal



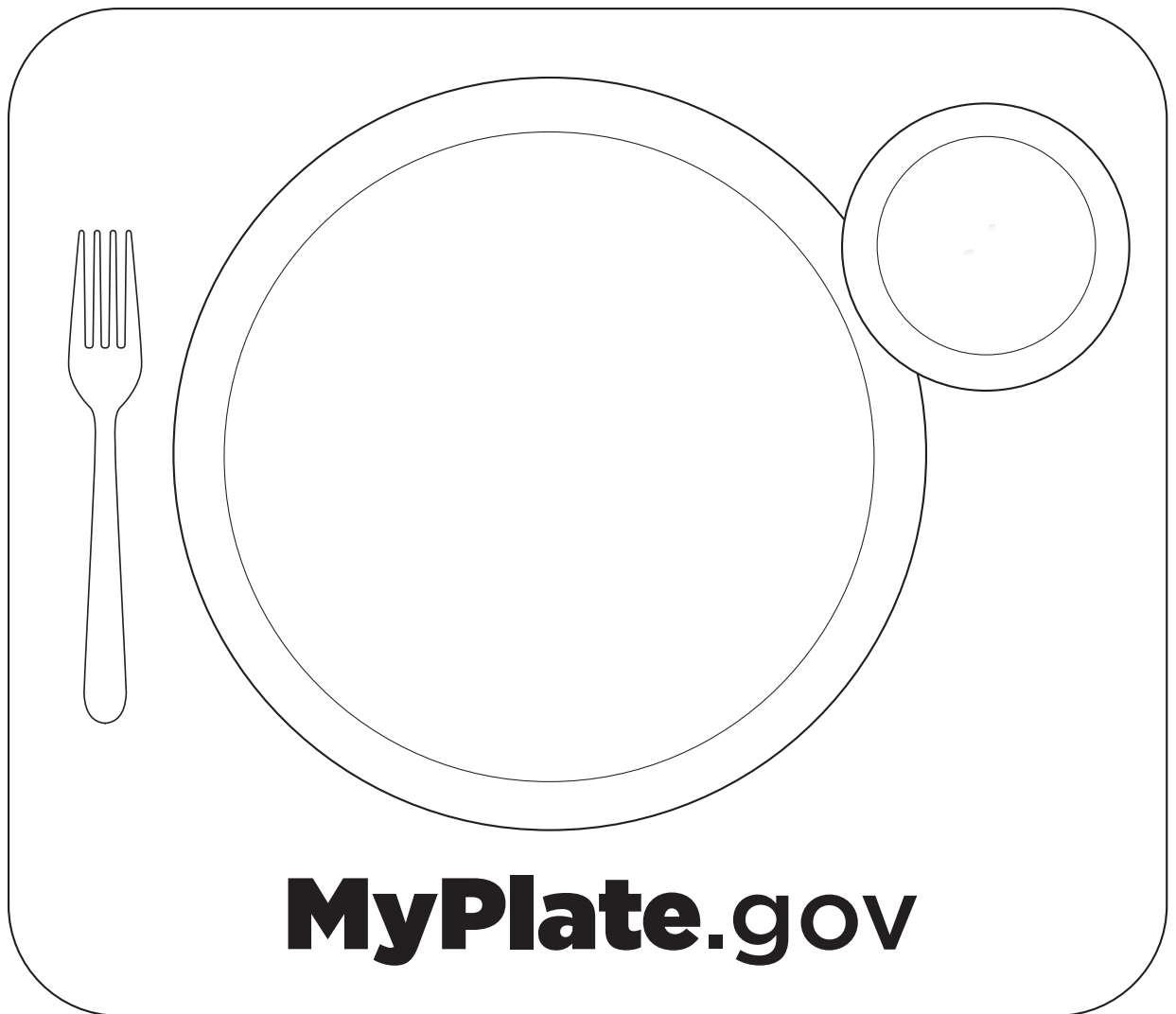
1/2 whole wheat pita



STEMsational Ag:

The Virtual Farm

MIDDLE TENNESSEE STATE UNIVERSITY





Cook a Whole Grain Snack: Popcorn in a Brown Bag

- Ask an adult to help you with this recipe.
- First, find a brown paper bag (lunch bag size) and pour a single layer of popcorn kernels into the bottom of the bag.
- Fold down the top of the bag twice.
- Place the bag in the microwave standing upright.
- Cook on the popcorn setting (approximately two minutes, or until kernel popping sounds slow).
- Carefully open the bag (it's hot!) and sprinkle in your popcorn seasoning of choice:
 - Salt
 - Low sodium seasoning
 - Cheesy-flavored nutritional yeast
- Fold the bag to close it again, and shake it up!
- Enjoy!



Activity Option 1: Play Slap It!

1. Students are to return to the "Slap It" cards.
2. Pull out all the cards that are grain foods (whole or refined grains).
The rest of the cards can be put to the side, face down.
3. You should have cards in front of you that fall into one of these food types:
bread, rice, pasta, or flour.
4. Next, group the cards based on the food type (i.e., bread, rice, pasta, flour).
5. Last, place the whole grain foods in a vertical line on the left side of your surface
and place the refined grains in a vertical line on the right side of your surface.
6. Check your answers using the "Grain Pairs Answer Key" on pages 17 & 18.
See how many you can get correct!

Activity Option 2: Create a balanced meal!

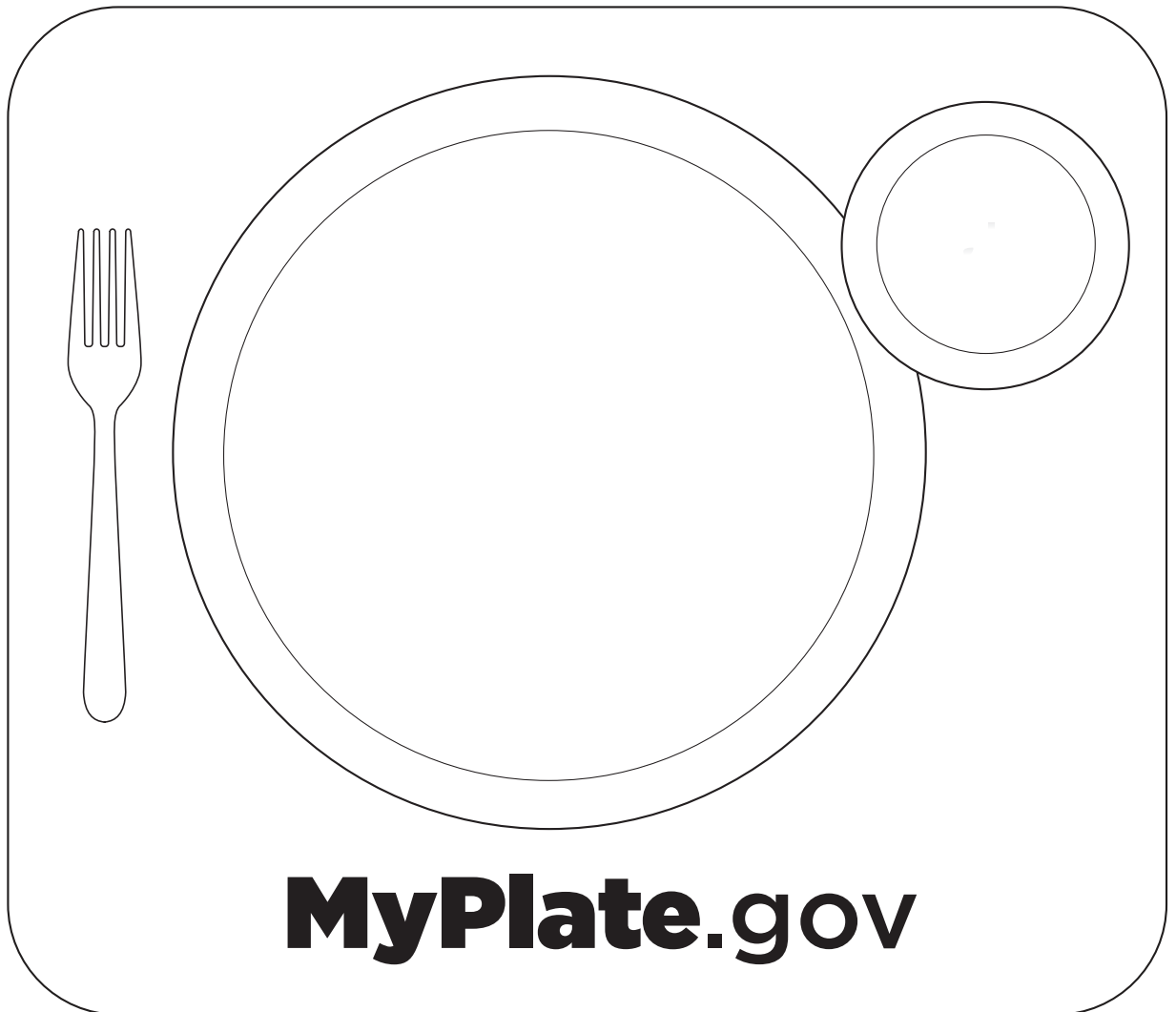
1. Use the "MyPlate coloring sheet" to create a balanced meal.
2. Pick foods from each MyPlate food group and write the name of the food or
draw a picture of it on the MyPlate coloring sheet. Then, label each food group.
Include a whole grain of your choice.
3. Share your MyPlate coloring sheet with a friend or family member and tell them
what you learned in this lesson!



STEMsational Ag:





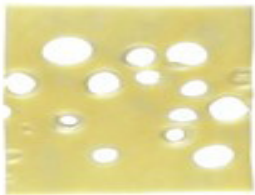







The Virtual Farm

MIDDLE TENNESSEE STATE UNIVERSITY












"Slap It" Answer Key from pages 3 & 4.

Apple = Fruit 	Wheat Bread = Grain 	Banana = Fruit 
White Flour = Grain 	Swiss Cheese = Dairy 	Tuna Fish = Protein 
Roasted Chicken = Protein 	Broccoli = Vegetable 	Wheat Pasta = Grain 
Brown and Wild Rice = Grain 	Yogurt = Dairy 	Peas = Vegetable 



"Slap It" Answer Key from pages 3 & 4.

<p>Peanut Butter = Protein</p> 	<p>White Bread = Grain</p> 	<p>Milk = Milk</p> 
<p>Wheat Flour = Grain</p> 	<p>Berries = Fruit</p> 	<p>Carrots = Vegetable</p> 
<p>Lettuce = Vegetable</p> 	<p>White Pasta = Grain</p> 	<p>Eggs = Protein</p> 
<p>Pineapple = Fruit</p> 	<p>Meatballs = Protein</p> 	<p>White Rice = Grain</p> 



Post-Assessment

Take out a piece of paper and draw or write your answer to the question or type them in a word document on your computer.

Question:

What is a grain?