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8th GRADE: “The SCIENCE about Food”

Key Message: Drink and eat less sodium in your overall diet, with a goal of less than 2,200 mg per day.

Secondary Message: Make at least half your grains whole grains

8th Grade | INFORMATIONAL TEXT ARTICLES

1. Whole Grains and Health
2. Sodium and Your Health

Possible Question Stems

Based on 8th Grade Common Core Standards:

- **Explicit Information (Reading Literature (RL) 7.8, Reading for Information (RI) 8.1):**
 - Which of the following quotes best describes _____ ?
 - Which of the following can be reasonably inferred from these two quotes...?
- **Theme / Idea (RL 8.2, RI 8.2)**
 - Which of the following quotes from the passage is evidence of the central theme?
- **Word Use (RL 8.4, RI 8.4)**
 - What is the technical meaning of the word _____ ? (*i.e. What is the technical meaning of whole grains? What is the technical meaning of sodium?*)
 - Which of the following synonyms is closest to the meaning of the word _____ in line x? (*i.e. How does sodium differ from salt?*)
- **Structure (RL 8.5, RI 8.5)**
 - What is the author’s viewpoint on _____ ?
 - Evaluate how the structure of the text contributes to the development of ideas.
- **Purpose (RL 8.6, RI 8.6)**
 - How does paragraph (x) support the author’s position?
 - Based on the author’s information, what is your opinion on...?
- **Arguments / Claims (RI 8.8)**
 - Which of the following claims are used to support the main argument of this passage...?
 - Which of the following claims uses valid reasoning...?

Article 1: Whole Grains and Health

This informational text article will explain what whole grains are, why they are an important part of a healthy diet, and how to incorporate them into your meals. The article will connect to the subject area of **Science** by exploring how grains are refined and how the process affects their nutritional content.

Educational topics covered:

- Grains are a group of plants, like wheat, rice, and oats, that produce seeds we can eat.
- Grains are ground into flour to make products like breads, rolls, and pizza crust.
- Whole grain foods include the whole seed: bran, endosperm, and germ (graphic).
- Refined grains separate out the bran and the germ, using just the endosperm.
- Whole grains have more fiber, which helps to clean out our intestines.
- Dietary fiber, iron, and other nutrients are lost when whole grains are refined and enriched.
- For more fiber, choose foods with whole or 100% grain as the first ingredient (after water).
- Good fiber sources have 10%-19% of the Daily Value; excellent sources have 20% or more.
- Many foods that meet Smart Snack in Schools guidelines are good sources of fiber.
- There are lots of tasty ways to enjoy the tasty wholesomeness of whole grains (list).
- Make half your grains whole grains. Use the ingredient list to confirm that the main ingredient comes from whole grains.

Subject area tie-in: Science

- The science of the grain refinement process

Article 2: Sodium and Your Health

This informational text article will explain what sodium is, where it is found, and how to choose foods with lower sodium levels. The article will connect to the subject area of **Science** by exploring the nutritional properties of sodium and how sodium affects the human body.

Educational topics covered:

- Salt and sodium are not the same thing. Sodium is a mineral, like calcium and potassium. It is found in table salt, but the highest amounts are found in highly processed foods and restaurant foods.
- Sodium is an essential nutrient and is needed by the body in relatively small quantities.
- The recommended amount is no more than 2,200 milligrams (about 1 tsp.) sodium per day for kids ages 9-13.
- The top sources of sodium in kids' diets are pizza, breads and rolls, cold cuts and cured meats, savory snacks, sandwiches, and cheese.
- Most Americans consume too much sodium, an average of 3,500 milligrams per day.
- People who consume more sodium tend to have higher blood pressure and could eventually have an increased risk of developing cardiovascular disease.

- The best way to reduce sodium intake is to eat more fresh, minimally processed foods, and to avoid eating at restaurants too often.
- Reading labels can also help you choose foods with lower sodium levels.
- Look for snack foods that have less than 200 milligrams of sodium per serving.

Subject area tie-in: Science

- Nutritional properties of sodium
- The effects of sodium on our body

8th Grade | LESSON PLANS

Lesson Outline

Transfer Objective

Students will be able to independently use their learning from these activities to:

Decrease overall sodium intake by identifying foods with large amounts of sodium and then finding alternatives.

Learning Objectives

Students will be able to:

- Identify high sodium and low sodium food options.
- Compare two or three different foods and make a recommendation based on the amount of sodium.
- Identify ways in which high sodium intake affects their bodies both in the short term (bloating, dehydration) and in the long term (hypertension, heart disease, and osteoporosis).
- Identify “smart snacks” that are low in sodium and higher in whole grains.
- Conclude that sodium intake can be lowered by overall diet habits that include cooking at home more often than eating at restaurants, consuming less processed foods, and evaluating food labels.

Enduring Understandings

- Evaluating foods and labels before you eat can help you make better choices.
- High sodium intake can predispose you to many different health risks.
- Processed foods are often higher in sodium than non-processed foods.

Essential Questions

- *How can I make decisions that keep me healthy?*
- *Why does what we eat matter?*

Activities

- Read “Sodium and Your Health” and “Whole Grains and Health” informational text article
 1. Answer comprehension questions
 2. Answer class discussion questions

- Evaluating amounts of sodium in foods
 1. Teacher will lead presentation and class discussion about sodium's effects on the body in both the short term and long term. Students will describe symptoms they have encountered when eating salty foods (swelling, dehydration, etc.).
 2. Students will compare nutritional information for the same food item prepared in different ways. Ex. soup from a restaurant, soup from a can, homemade soup. Students will identify the amount of sodium in comparable servings of each and rank them according to the amount of sodium.
 3. Students will identify how to find the nutritional information for foods in restaurants and also at home. They will use this information to find the sodium content of one of their favorite foods. Then they will compare that to the suggested daily intake of sodium and describe it in percentages.

Standards

Sodium and the Human Body

Sodium Intake and Nutrition

Challenge and Investigation (handout to be created)

Students will take an inventory of foods and snacks readily available to them either in school, in the cafeteria or in vending machines, or at nearby convenient stores. Students will choose two food items to evaluate and record sodium and nutrition information. Based on the information they discover, compare, and analyze, they will provide a recommendation for the healthier option. As a class, students will work together to create a chart or poster that ranks all of the foods they researched according to sodium content.

Alternative: Hold a class and/or a school-wide competition! Over the course of a week or a month, use the Groups function in SuperTracker to identify and track the sodium present in the foods everyone eats. Either split into groups in the class, or compete as a class with other classes in the school to see who eats the lowest amount of sodium. How do the daily amounts stack up against the recommended daily amount? Offer prizes for the group or class that wins.

Video Tie-in

The video will help build upon the challenge and the interactive by helping students understand the importance of choosing whole foods that are rich in whole grains.

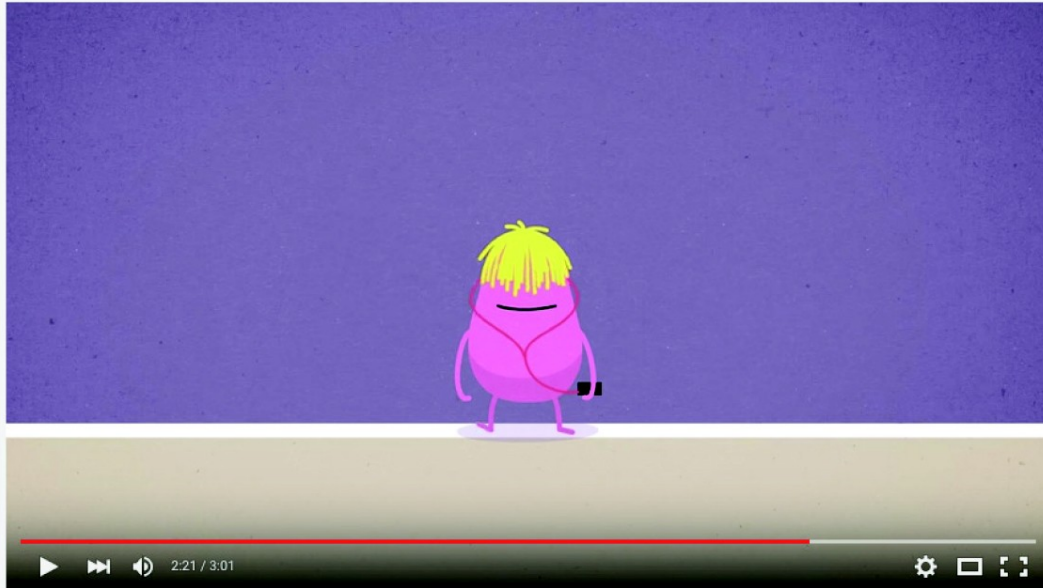
Interactive Application Tie-in

The interactive application will tie directly into the challenge by helping students to analyze and answer questions about the contents of their food and snacks, including sodium content and serving size.

8th Grade | ANIMATED VIDEO • CHOICE A

Yo, Broccoli

Reference for animation/illustration style: <https://youtu.be/IJNR2EpS0jw>



CONCEPT: We can reach more kids' minds, if not their palette's, through humor and music. And maybe a little celebrity boost wouldn't hurt.

OPEN: on a typical 8th grader as they go through their day, from home to school to neighborhood. At every chance to eat a non-nourishing, salty snack, there is a subtle reminder in the lyrics.

AT HOME: The student at home looks at a pantry full of packaged, salty snacks. These words are really bad and will get us laughed at, but this is the direction:

CUT TO: Student looking in family kitchen pantry closet
Crackers, pretzels, cookies, chips,
you gotta break yourself free.
Stop eating snacks from boxes.
Where are the apples? Yo, Broccoli.

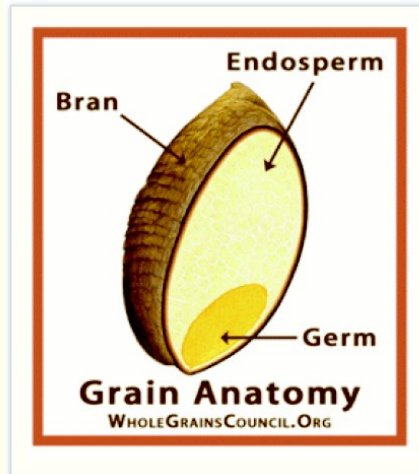
CUT TO: Student is now on lunch break, visiting the corner bodega.
At lunch, more junk
As far as I can see
Real snacks don't come from bodegas
Can I get a carrot? Yo Broccoli.

CUT TO: Student is now at a school vending machine; he holds a bag of chips at the camera
You gotta read labels,
information is the key.
These chips? A half day of sodium.
How about something real? Yo Broccoli.

Note: we do NOT recommend these be the exact words, but a song can be kid-friendly, humorous, and engaging, using the right music production company.

8th Grade | ANIMATED VIDEO • CHOICE B

Whole Grains: Explained

Reference for animation/illustration style: <https://vimeo.com/146869349>

CONCEPT: Our hero and host of the video is an animated whole grain. The video will show a split-screen to tell the story of the difference between a grain that becomes refined into many of the common foods we eat, and the health benefits of leaving a whole grain intact.

PART ONE: Whole Grains. Explained.

Voiceover: *In order to explain whole grains, we'll start at the beginning. A whole grain, simply, is the entire seed of a plant. It is made up of three edible parts: the bran, the germ, and the endosperm. Whole grains can include wheat, oats, rice, barley, quinoa, spelt, and rye, (show all the many types of grains) and contain many key nutrients that are important to our health.*

PART TWO: Help Whole Grains Remain.

Our hero, the animated grain remains on the screen.

VO: *But whole grains can take two paths to becoming the food you eat.*

One whole grain morphs into two identical grains on a split-screen. The grain on the right will eventually become refined, while the grain on the left will remain whole, while watching the process of grain refining.

VO: *Grains can remain whole. Or they can become refined.*

The process of grain refining is explained by the VO, while the grain on the right begins going through the process. We can see the grain going down an animated converter belt into a factory: the outer layers are stripped off; it is ground into flour; the flour turns into common white flour products, like a donut, a loaf of white bread, or a slice of pizza.

VO: *As a result of refining, the grains are missing about 2/3 of the essential nutrients of whole grains. The better choice is...*

The whole grain on the right morphs into several whole-grain products, like a bowl of oatmeal, a whole-wheat loaf of bread, a bowl of brown rice, maybe in a soup.

VO: *Look for products made from whole grain that contain the antioxidants, fiber, vitamins, and minerals that are essential to good health. Whole grains will be listed as the first or second ingredient on the ingredients list (after water).*

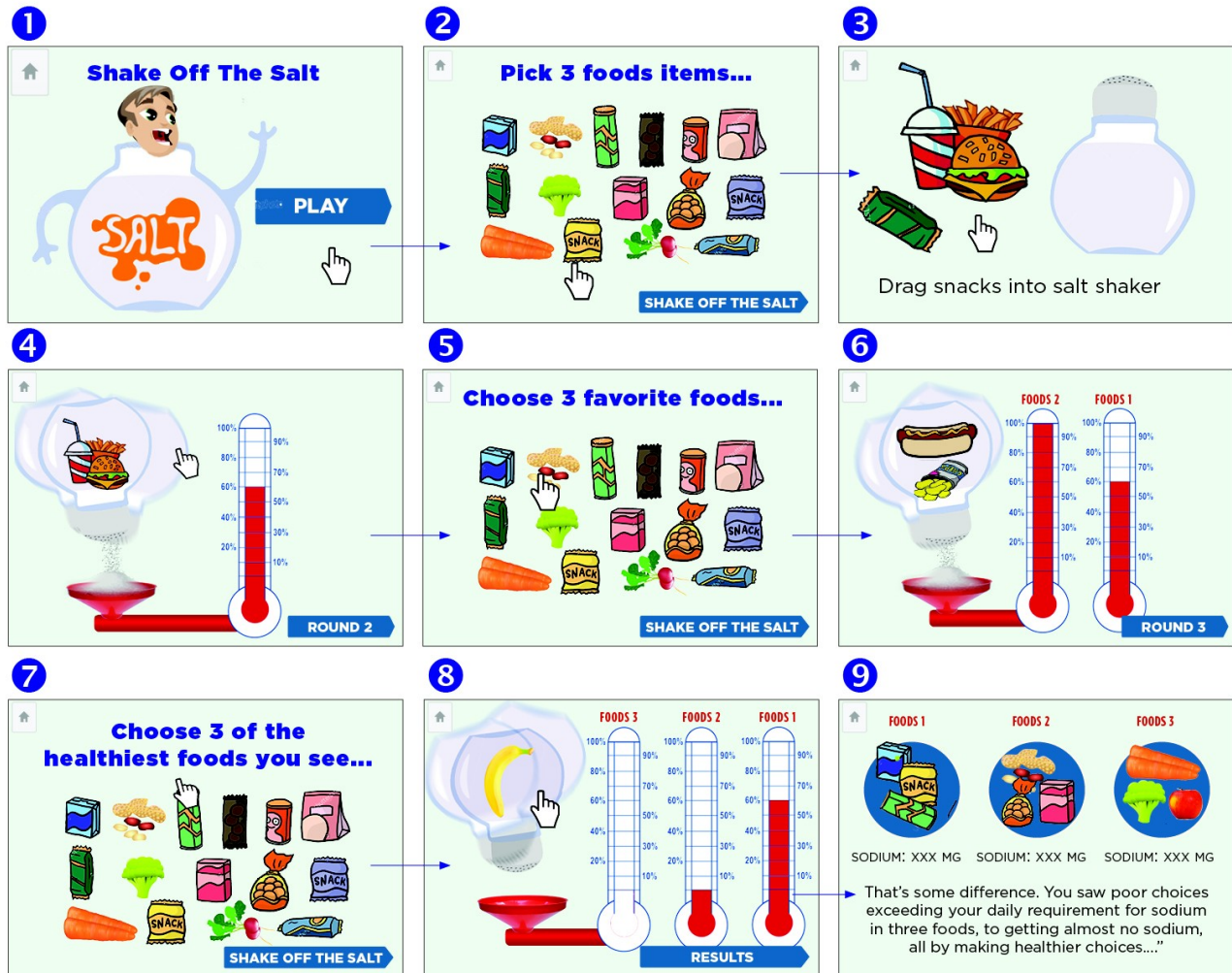
PART THREE: The Whole Grain Campaign

The whole grain on the right now can pop into 9 or 10 whole grains. Each of these will morph into a healthy, whole-grain food product.

VO: *To get the most of grains, make at least half your grains whole. Get your family and friends to eat as many whole grains as possible. How do you do that? Well, at breakfast time, try have a bowl of oatmeal. (One of the grains transforms into oatmeal.) A multigrain waffle with fruit. (another grain transforms into a stack of waffles.) Or a whole-grain muffin. (another grain turns into a muffin.) At lunch, skip the white bread, and have a sandwich with whole-wheat bread. (one of the grains turns into a sandwich.) Or, add rice to a salad. (another grain turns into a salad.) At snacktime, skip the salty or sweet snacks, and enjoy whole-wheat crackers (another grain turns into whole wheat crackers), or a granola bar without too much added sugar (more grains: oats, quinoa). Finally, at dinner, substitute whole-wheat pasta for white flour pasta, add brown rice to dishes, or ancient grains like faro, quinoa, and barley.*

8th Grade | INTERACTIVE APPLICATION

Shake Off The Salt



- 1 Home: splash page, short intro animation of a salt shaker, dancing, shaking, with upbeat music and sound effects
- 2 Screen shows about 15 food items to choose from. The choices represent the typical food an 8th grader may eat on any given day: breakfast options like egg sandwich, a piece of fruit, a bottle of added-sugar fruit juice; lunch options like burgers, French fries, burritos; snack options like chips, pretzels, candy; healthier snacks like fruit, unsalted nuts or veggies/carrot sticks/celery sticks; and dinner options like chicken, pizza, take-out meals, and healthier options like salad or veggies. **VO:** "Throughout a typical day, some of the food choices you make may be adding too much salt to your diet. Let's see if we can find these foods that are high in salt. Pick 3 food items that you think contain the highest amount of sodium." User makes choices. Clicks: "Shake Off The Salt"
- 3 User drags snacks into the salt shaker.
- 4 User prompted to shake the container, and as they do, the salt falls off the foods, and registers on the salt meter. This meter represents an entire day's requirement of sodium, so by encouraging students to choose unhealthy food items, they are, in fact, educating themselves and becoming aware of good and bad choices. Hopefully, their choices in this first "unhealthy" round will result in the meter settling in at or above 100% of their entire day's requirement. **Note:** If user makes healthy choices, congratulatory messages and sound effects appear.
- 5 After the total amount of salt is measured in Round 1, the game resets to the Round 2. 15 new food items appear on the screen. **VO:** "This time, try to choose three of your favorite foods, food you eat almost everyday. Could be from breakfast, lunch or dinner." User makes choices and clicks, "Shake Off The Salt."
- 6 After these three 'favorite' foods get shaken and the total amount of salt is measured, again, we assume, the total amount of sodium will be very high. The game resets to the Slide 3.
- 7 Prompt: **VO:** "Now, last challenge: try to choose three of the healthiest foods you see. These are foods that are minimally processed, and have the lowest amount of sodium." Again, three healthy food items are chosen, and the amount of sodium is measured. Hopefully, this round will see a dramatically lower amount of sodium, so students can understand and begin being aware of unhealthy food choices, healthy food choices, and how some of the foods they eat everyday fall on that scale.