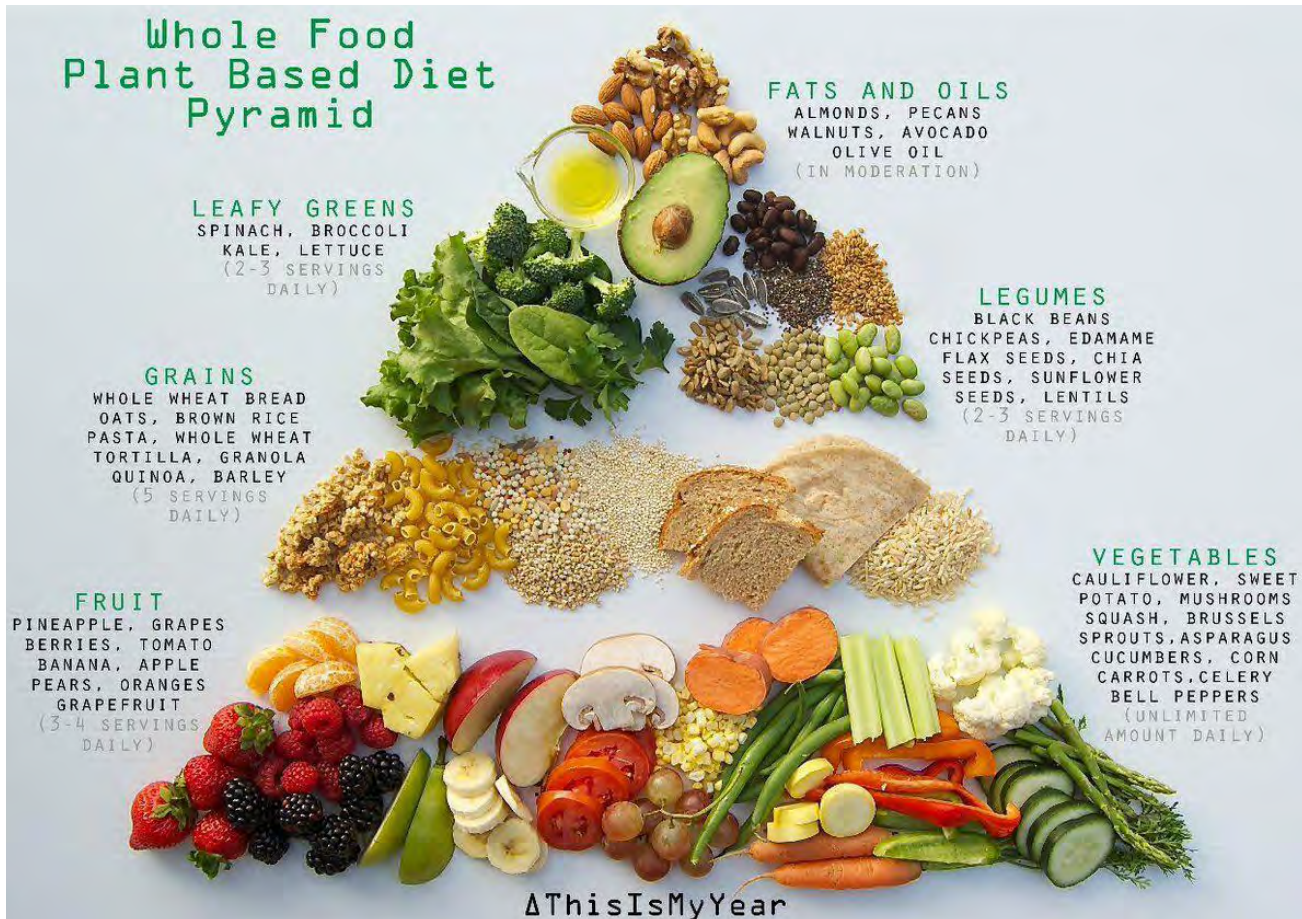


FOOD AND THE BODY: THE BENEFITS OF PLANT-BASED EATING



SUMMARY

This lesson will give students an understanding of what a whole food plant-based diet is and why it is a highly recommended way to eat. The lesson emphasizes the advantages of such a diet to the body's and the environment's wellbeing, as well as how eating a diet abundant in animal protein and overly processed foods is detrimental. Throughout the lesson, students will be provided with the necessary knowledge on how to consume a plant-based diet in a balanced way and participate in motivating activities.

Acknowledgements: Lesson plan developed by Frayda Sherman



Module 2: Food & The Body

The Benefits of Plant-Based Eating

LESSON CONTENTS

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LESSON RESOURCES

greenbeetz.org

our website hosts lesson slides, google forms, lesson videos, and teacher training videos, glossary, standards alignment and more

Worksheets

- Spot the Differences
- Maze of Choices

THE BENEFITS OF PLANT-BASED EATING: AT A GLANCE



ESSENTIAL QUESTION

What are the benefits of eating a whole food plant-based diet for my personal health and the health of the planet?



STUDENT LEARNING GOALS AND OBJECTIVES

After this lesson students will be able to:

- Describe/understand what a whole food plant-based diet is, how it *differs* from a vegan or vegetarian diet, and what foods it includes and limits.
- Identify the **health benefits** of consuming a whole food plant-based diet.
- Identify **environmental benefits** of consuming a whole food plant-based diet.
- Acquire tips for eating a whole food plant-based *balanced* diet.



VOCABULARY

- **Plant-based eating** - a way of eating that focuses on foods that come from plants and limits foods that come from animals.
- **Vegetarian** - a diet that doesn't include any animal products but *may* include animal byproducts such as eggs, cheese, milk and honey.
- **Vegan** - a diet that doesn't include any animal products or byproducts.
- **Legume** - beans, lentils, chickpeas, and peas.
- **Phytonutrients** - special substances that only exist in plants giving them their flavor, color, fiber, and texture.
- **Fiber** - a type of carbohydrate that the body can't digest.
- **Vitamins & Minerals** - essential nutrients that our bodies need in small amounts.
- **Whole foods** - foods that are in their natural form, unchanged, or very close to it.
- **Processed Foods** - foods that have been changed either by mechanical or chemical means.



KEY POINTS

- A plant-based diet consists of whole foods in their most natural unprocessed form. It's full of vegetables, fruits, whole grains, legumes, seeds and nuts, and very little to no animal products. *The emphasis is on plants; whole and unprocessed!* Think potatoes, not potato chips.
- This differs from a **vegetarian diet** which eliminates all animal products and a **vegan diet** which also avoids animal byproducts such as honey, eggs, dairy, etc.
- One reason people eat a plant-based diet is to improve their health. A whole foods plant-based diet can prevent or even reverse diet-related illnesses like obesity, diabetes, heart disease and some types of cancers.
- Care for the environment and humane treatment of animals are other reasons people choose to follow a plant-based diet. Animal farming contributes significantly to global warming by using many natural resources and producing large quantities of greenhouse gasses.
- Some people choose not to eat meat or other animal products out of concern for the health and well-being of animals.

PRIOR KNOWLEDGE AND MISCONCEPTIONS

PRIOR KNOWLEDGE

Students may have a wide range of knowledge on different diet types as well as assumptions and biases towards different diets. Emphasize to your class that whole food plant-based eating is not a strict diet but rather a lifestyle choice, that they can practice once a week, such as meatless Monday, or twice a week, etc.

| COMMON MISCONCEPTIONS | POSSIBLE RESPONSE |
|--|--|
| Plant-based eating means to only eat fruits and vegetables and no animal products. | <p>Eating a plant-based diet focuses on eating plants in their whole, un-changed form including fruits and vegetables as well whole grains, legumes, nuts, seeds, oils etc...</p> <p>The diet can also include animal products in small minimally processed amounts such as meat and cheese; the key is to limit those foods and increase consumption of plant-based foods.</p> |
| French fries are part of a whole food plant-based diet | <p>Plant-based eating is focused on eating <i>whole foods</i> in their <i>natural form</i> or as close to natural as possible. Although french fries are considered a vegetable/vegan food - a french fry is highly processed and deep fried (we visit the effects of food preparation in our Cooking Basics lesson to understand what frying does to the healthfulness of our foods).</p> |
| Plant-based eating is a diet without protein | <p>This is a common misconception that there is no protein in plant foods, that is NOT true.</p> |

LESSON BREAKDOWN

| TIME | ACTIVITY | MATERIALS/RESOURCES |
|---------------|--------------------------------|-------------------------------------|
| PART 1 | | |
| 5 min | Introduction: Turn & Talk | Lesson Slides |
| 5 min | Vocabulary Preview | Lesson Slides |
| 3-8 min | Lesson Video: Plant-Based Diet | Vimeo Or Youtube |
| 4-7 min | Class Discussion | Lesson Slides |
| 5-10 min | Activity: Spot the Differences | Spot the Differences activity sheet |
| 5-10 min | Activity: Maze of Choices | Maze of Choices activity sheet |
| 5-10 min | Food Detective Assessment | Exit Card |
| PART 2 | | |
| 5-8 min | Review: Turn & Talk | Lesson Slides |
| 20 min | Activity: In Defense of... | |
| 10 min | Snackz & Factz | Dates with Sunflower Butter |
| 5 min | Test Your Noodle | |
| 3-5 min | Food Detective Assessment | Exit Card |

DETAILED LESSON SCRIPT: PART I

Introduction: Turn & Talk

5 minutes

LESSON SLIDES



Think about your last meal - What was the main food on your plate? Discuss with your partner or with the class about that food, here are some questions to consider:

- Was it an animal-based food and/or a processed food and/or a plant-based food?
- How do you think that food affects your body?
- How do you think the production of that food affects the planet?



Vocabulary Review

5 minutes

Preview the vocabulary by assessing how familiar students are (you can use the thumbs up, thumbs down, or sideways strategy). If most students know a word, you can have students give examples or a definition of each word.

| | |
|--------------------------------|--|
| Plant-based diet | A way of eating that focuses on foods that come from plants and limits foods that come from animals. |
| Vegan | A diet in which a person does not consume any animal products or byproducts. |
| Vegetarian | A diet in which a person opts not to consume any animal products but may consume animal byproducts such as eggs, cheese, milk and honey. |
| Legume | Beans, lentils, chickpeas, and peas. |
| Phytonutrients | Special substances that exist only in plants giving them their flavor, color, fiber, and texture. |
| Fiber | A type of carbohydrate that the body can't digest. |
| Vitamins & Minerals | Essential nutrients that our body needs in small amounts. |
| Whole Foods | Foods that are in their natural form, or unchanged, or very close to it. |
| Processed Food | Foods that have been changed either by mechanical or chemical means. |

Lesson Video: The Benefits of Plant-Based Eating

3-8 minutes

Differentiation

You should decide which structure will help your students access the information:

- Have students ask questions
- Watch the video more than once, pausing at key moments, etc.
- Or, you can allow their responses to be more open-ended and ask: What surprised you? What was most interesting? What was most important?



Class Discussion

4-7 minutes

Have a partner, group and/or open discussion to address these ideas after the video. Display or refer to the Key Points as needed.

Questions to assist the class discussion:

- What was one thing you learned from the video that you didn't know before?
- What is considered a whole food? What foods does a whole food plant-based diet focus on?
- What benefits does eating a diet that is mostly composed of whole plant foods have to both us and the planet?

KEY POINTS

What is a Whole-Food Plant Based Diet?

A plant-based diet consists of whole foods in their most natural unprocessed form. It's full of vegetables, fruits, whole grains, legumes, seeds and nuts, and very little to no animal products. *The emphasis is on plants; whole and unprocessed!* Think potatoes, not potato chips.

How is it any different from a vegan or vegetarian diet?

Vegan or Vegetarian diets can also be Whole Food Plant Based Diets but are not always so in practice. **Vegetarian diets** cut out all animal products and **vegan diets** additionally avoid animal byproducts such as honey, eggs, dairy, etc. But vegan and vegetarian diets can be high in processed foods.

What are the health benefits?

A whole foods plant-based diet can prevent or even reverse diet-related illnesses like obesity, diabetes, heart disease and some types of cancers

Is there an environmental impact?

Whole food plant-based diets have less of an environmental impact than diets that are high in animal products. Animal farming contributes significantly to global warming by using many natural resources and producing large quantities of greenhouse. By eating more plant-based foods and less animal products we are reducing greenhouse gas emissions, water usage, and deforestation.



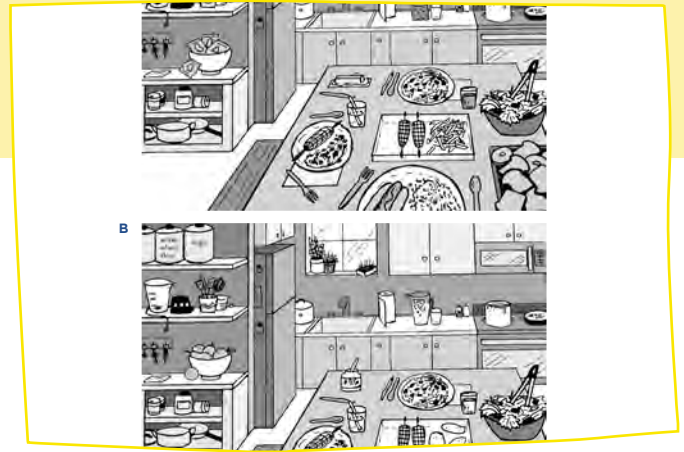
Activity: Spot the Differences

5-10 minutes

Have your students compare the two images of a family meal and circle the differences. After they have found the differences, have a short conversation about how the differences they spotted would play into a whole food plant-based diet.

Questions consideration:

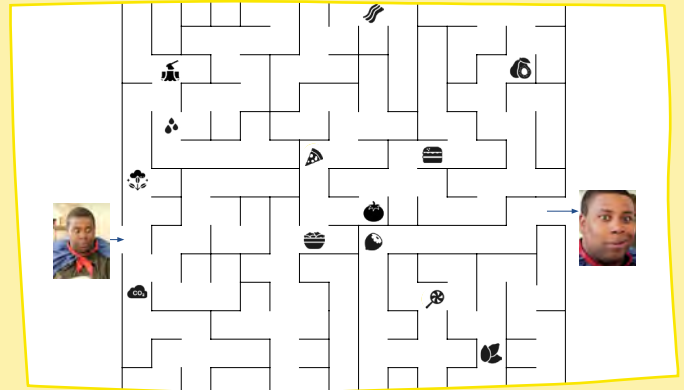
- What were the differences?
- Which picture represents a whole-food plant-based diet and why?



Activity: Maze of Choices

5-10 minutes

Captain Trashbag wants to follow a whole-foods plant-based diet but doesn't know what foods to choose! Help him get through the many food decisions he must make at every turn on the Maze of Choices handout.



Discussion questions:

- Which food choices helped Captain Trashbag find his way out of the maze? List 3.
- Which food choices led Captain Trashbag to lose his way? List 3.
- What kind of food choices should Captain Trashbag make in the future if he ever finds himself lost again?

Food Detective Assessment

3 minutes

Have your students answer the following on an Exit Card:

Name some key differences (at least 3) between food choices that are high in animal protein and processed foods versus those that are whole food plant-based? Consider specific foods and their impacts.

DETAILED LESSON SCRIPT: PART II

Review: Turn & Talk

5 minutes

LESSON SLIDES



Review the Key Points and Vocabulary to get your students ready for the following activity.



Activity: In Defense Of...

20 minutes

Captain Trashbag is brought to Food Court for eating in a way that is hurting his body and the environment. His food choices will be examined, and the jury will have to decide if he is guilty or not, he will be assigned a defender. The body, and the environment will also have a defender. Once there is a verdict, if he is found guilty, the jury will come up with a correctional meal plan that Captain Trashbag must follow in order to do right by his body and the environment.

This can be completed as a class activity or as a smaller group activity. The roles should be rotated per food choices being examined, so that more students get to have a chance to play the different roles.



The food choice scenarios being examined should be read by the teacher one at a time. After reading 1 food choice, let each defender have a turn to defend. After each defender has had a turn to make their argument, let the jury decide whether or not Captain TrashBag is guilty and if, yes, ask them to come up with a correctional plan. Then rotate students to different roles and repeat with another food choice and so on.

| STUDENT ROLES | DESCRIPTION |
|--|--|
| Captain Trashbag (1 student) | Consumes mostly animal products and processed sugary foods. He doesn't care how the food he eats affects his health or the planet. As a result of his actions, he is being brought before the food court, where the court will determine whether or not he should be found guilty. |
| Defender of Captain Trashbag (1 student) | The defender of Captain Trashbag will defend Captain Trashbag's choice of foods. The defender will need to tell the jury why the food that Captain Trashbag is eating is okay to eat, and why he shouldn't be found guilty. |

Roles and activity scenarios continue on next page...



Activity: In Defense Of... (CONTINUED)

| STUDENT ROLES | DESCRIPTION |
|--|---|
| Defender of the Body & Environment (1 student) | The defender of the Body and the Environment must tell the jury why Captain Trashbag's diet and food choices are hurting the body and the environment. The defender must convince the jury why Captain Trashbag is guilty. |
| Jury (the rest of the class) | The jury will determine if Captain Trashbag is guilty or not. If found guilty, the jury will have to come up with a meal plan for that specific meal or snack that Captain Trashbag will have to follow as a way to do right by his body and the environment. |

Food Choices Scenarios:

1. Every morning after waking up, Captain Trashbag drinks an entire bottle of fruit punch, eats nothing except the bacon and sausage on his plate, and pushes aside his peanut butter whole wheat bread toast and berries.
2. When Captain Trashbag needs a snack at work, he skips on the oranges, apples, and bananas in favor of a handful of beef jerky and a bag of chips.
3. Whenever Captain Trashbag watches TV, he snacks on chocolate milk and caramel popcorn and doesn't even side glance at the crispy grapes and toasted peanuts.
4. When Captain Trashbag attends any sports games, he always buys a hotdog and a large Coke or other soft drink. The food stand offers grilled corn, hummus and pretzels and many other snacks, but Captain Trashbag never chooses those.
5. When Captain Trashbag dines out with his family, he orders a burger with fries and, when asked what kind of burger bun he prefers, he always replies "normal" and never "whole wheat."
6. Whenever Captain Trashbag eats dessert, he always chooses to eat either a glazed doughnut or cotton candy flavored ice cream. He is offered frozen sorbet (made from real fruits) and even a whole wheat oatmeal cookie, but he doesn't glance at those options.

Snackz & Factz: Stuffed Dates with Seed Butter

10 minutes

Instructions:

1. Give each student a date and a tbsp of choice of nut/seed butter.
2. Have the students pit their date and place the butter in the center of both halves of the date. Then sandwich the date.
3. Sprinkle salt on top (optional)



Discussion Question:

Why do you think that a stuffed date with almond butter was chosen for a snack today?

Display and talk about the Factz below as you taste your snackz

MATERIALS

- Dates (Medjool if possible)
- Seed Butter (sunflower seed, etc.)
- Salt (*optional*)

FACTZ

Each ingredient in today's snack is plant-based. While the date was dried and the sunflower seeds were grounded into butter, they both grew on a tree and a flower respectively.

Each Dates are the fruit of the date palm tree and are very nutritious. They are high in dietary fiber, and a good source of important minerals, such as potassium. The best part, though, is that all their sweetness comes from their natural state.

A single sunflower can contain 1,000 to 2,000 seeds! Sunflowers are native to the Americas and sunflower butter contains a lot of healthy fats, which are very beneficial for heart health.

A delicious snack can be healthy. There is a wide variety of sweet treats that are not only **enjoyable** to our sense of taste, but also **great** for our health and **friendly** to the environment.

Test Your Noodle

5 minutes | (Optional: Google Form)

1. Name 3 food categories that are part of a whole foods plant-based diet.
(Whole grain, fruit, vegetables, legumes, nuts, seeds)

2. What are some foods that will have the most beneficial impact on your health and the planet?

a. Soda/Sugar-sweetened beverage

b. Berries

c. Hamburger

d. Tortilla chips

e. Walnuts

(Fruits/berries - contain phytonutrients and a lot of vitamins. Nuts/walnuts- don't emit a lot of greenhouse gasses in production)

3. What are some foods that will have the most harmful impact on your health and the planet?

a. Berries

b. Walnuts

c. Soda/Sugar-sweetened beverage

d. Hamburger

e. Tortilla Chips

(Sugar Beverage/Cola - can increase risk of obesity. Meat/beef - produces a lot of greenhouse gasses in production)

4. True or false: A whole food plant-based diet has very few food options and are usually not very tasty. **(False)**

5. True or false: Eating a whole food plant-based diet means I can never eat meat. **(False)**

Food Detective Assessment

3 minutes

Have students answer the following on an Exit Card:

- *What are some meal ideas for someone who is trying to eat a whole food plant-based diet? Consider either breakfast, lunch, snack, or dinner.*
- *Which of these meals, if any, do you think you might want to try?*

MAZE PATH KEY

| | | |
|---|----|---|
|  Foods that emit minimal amounts of greenhouse gasses. (<i>Fruits, vegetables, nuts, beans, etc.</i>) | or |  Foods that produce a lot of greenhouse gasses. (<i>Beef, pork, cheese, etc.</i>) |
|  Foods that cause high rates of deforestation. (<i>Mainly Beef, etc.</i>) | or |  Foods that require less water. (<i>Fruits, vegetables, grains, etc.</i>) |
|  Sugar rich foods. (<i>Soft drinks, ice cream, cookies, etc.</i>) | or |  Fiber rich food. (<i>Oats, beans, broccoli, berries, etc.</i>) |
|  Fruits and vegetables. (<i>Mangos, pears, tomatoes, peppers, cucumber, etc.</i>) | or |  Processed foods. (<i>Chips, hotdogs, fries, cereal, pizza, etc.</i>) |
|  Foods with vitamins and minerals. (<i>Green leafy vegetables, potatoes, avocado, carrot, banana, orange, etc.</i>) | or |  Foods that increase risk of cardiovascular disease. (<i>Foods high in fat, salt, and sugar: bacon, deli meats, red meat, baked goods, etc.</i>) |
|  Foods that increase risk of <u>cancer</u> . (<i>Foods high in fat, salt, sugar: red meat, salami, hamburger, soda, etc.</i>) | or |  Foods with phytonutrients. (<i>Colorful vegetables and fruits: watermelon, spinach, tomatoes, berries, etc.</i>) |
|  Food that increase risk of <u>obesity</u> . (<i>Foods high in fat, salt, sugar: chips, chocolate, candy, pizza, soda, etc.</i>) | or |  Foods that help to maintain and manage a healthy weight. (<i>Whole grains, fruits, vegetables, legumes, nuts, etc.</i>) |
|  Whole grains. (<i>Whole wheat bread, oatmeal, brown rice, etc.</i>) | or |  Refined grains. (<i>White bread, white rice, refined pasta, etc.</i>) |
|  Red Meat. (<i>Steak, lambchops, bacon, etc.</i>) | or |  Legumes. (<i>Blackbeans, soybeans, chickpeas, etc.</i>) |
|  Seeds. (<i>Sunflower, pumpkin, sesame, etc.</i>) | or |  Sweets. (<i>Soda, candy, donuts, etc.</i>) |
|  Chips. (<i>Potato chips, spicy cheese puffs, tortilla, etc.</i>) | or |  Nuts. (<i>Almonds, pistachio, cashews, etc.</i>) |

1. Which food choices helped Captain Trashbag find his way out of the maze? List 3
2. Which food choices caused Captain Trashbag to frequently lose his way? List 3
3. What kind of food choices should Captain Trashbag make in the future if he ever finds himself lost again?



Activity: Spot the Differences

Spot all eight differences in each image.

A



B

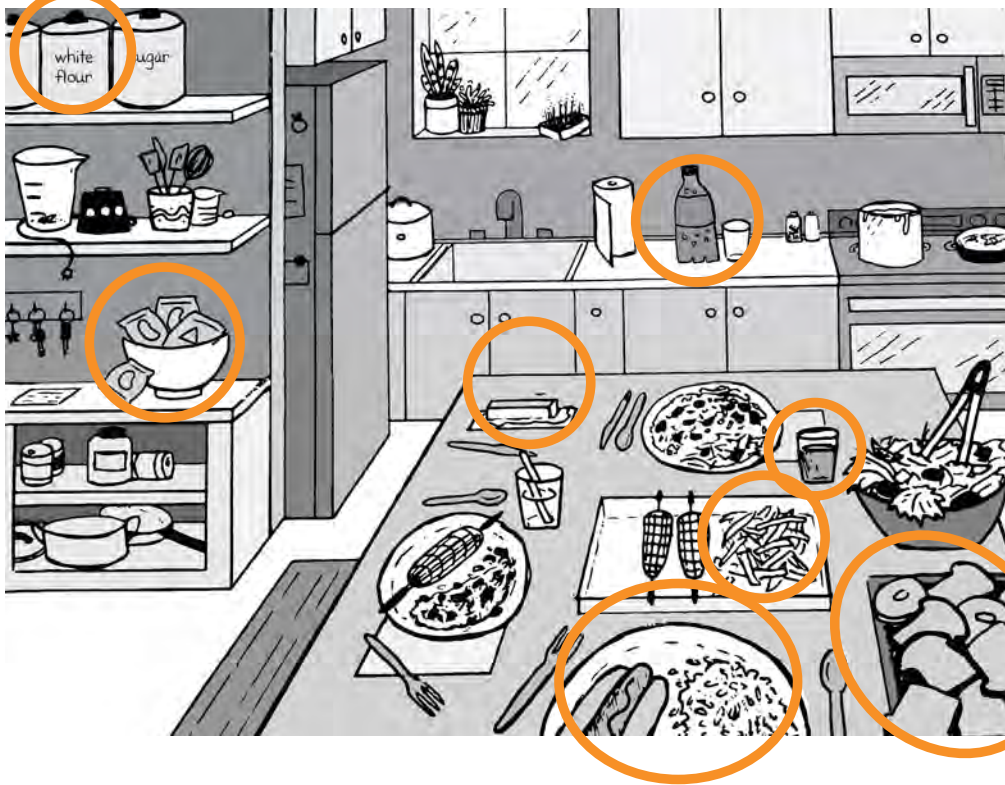




Activity: Spot the Differences — ANSWER KEY

Spot all eight differences in each image.

A



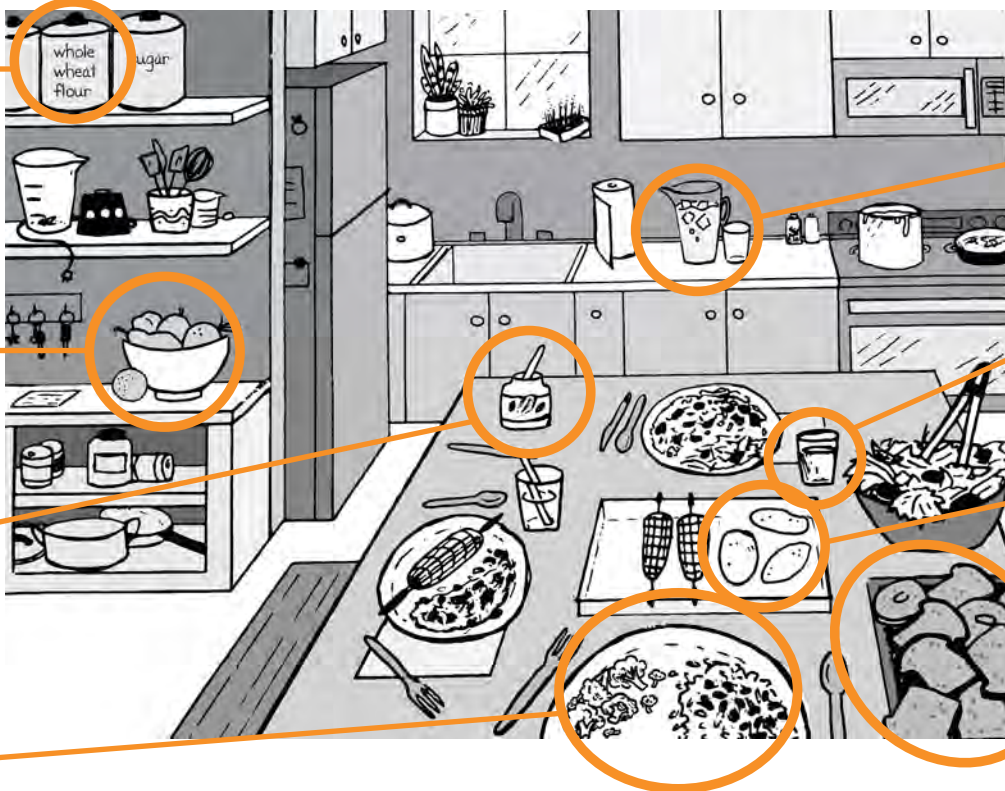
B

Whole wheat flour instead of white

Bowl of fruit instead of chips

Nut or seed spread instead of butter

Broccoli and beans and rice instead of hot dog and rice



Water instead of soda

Water instead of sugar beverage

Baked potatoes instead of fries

Whole wheat bread instead of white/refined