

DIG IN! AT A GLANCE

LESSON 1 The World of Edible Plants.....p. 12

PACING GUIDE: TOTAL TIME REQUIRED: 165 minutes / 3 sessions

Session 1: Getting Started 45 min (Science)

Session 2: Activity I “Deliciously Edible Plant Parts” 60 min (Science)

Session 3: Activity II “Fruits and Vegetables on MyPlate” 40 min (Science/Health);

Reflect 20 min (English Language Arts)

Standards Met:*

Science: (A) Science as Inquiry: *Abilities necessary to do scientific inquiry; Understanding about scientific inquiry.* (C) Life Science: *Structure and function in living systems (form follows function); Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms (classification).* (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

English Language Arts: (Writing 2) Text Types and Purposes: *Write informative texts to examine a topic, and convey ideas, concepts, and information clearly through selection, organization, and analysis of relevant content.* (Language 6) Vocabulary Acquisition and Use: *Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core;

Health standards – American Cancer Society

LEARNING OBJECTIVES:

Students will be able to...

- Identify fruits and vegetables that come from different parts of plants (root, stem, leaf, flower, fruit, and seed).
- Describe the function of each plant part.
- Explain how foods from plants fit into the five food groups.



LESSON 2 Farm to Plate.....p. 19

PACING GUIDE: TOTAL TIME REQUIRED: 190 minutes / 3 sessions

Session 1: Getting Started 30 min;

Activity I “The Farm to Plate Game” 40 min (Science/Social Studies)

Session 2: Activity II “Map the Distance” 60 min (Math)

Session 3: Activity III “Harvest, Prepare, and Taste Dark-Green Leafy Greens!”

30 min (Health); **Reflect** 30 min (English Language Arts)

Standards Met:*

Science: (A) Science as Inquiry: *Abilities necessary to do scientific inquiry; Understanding about scientific inquiry.* (C) Life Science: *Structure and function in living systems; Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms (classification).* (E) Science & Technology: *Abilities of technological design.* (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

Math: Number and Operations: *Perform operations with multidigit whole numbers.* Measurement & Data: *Represent and interpret data.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (3) *Demonstrate the ability to access valid information and products and services to enhance health.*

Social Studies: (Science, Technology, and Society 8) *Science and technology have had both positive and negative impacts upon individuals, societies, and the environments in the past and present.*

English Language Arts: (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society; **Social Studies** standards – National Council for the Social Studies

LEARNING OBJECTIVES:

Students will be able to...

- Explain the food system and describe how food travels from where it is grown to their plate.
- Describe how plants are connected to the foods people eat.
- Grow (and harvest) a dark-green leafy vegetable and describe its taste.
- Demonstrate and explain the importance of hand washing and properly cleaning fruits and vegetables before eating them.

LESSON 3 Healthy From the Ground Up.....p. 26

PACING GUIDE: TOTAL TIME REQUIRED: 165 minutes / 3 sessions

Session 1: Getting Started 20 min (Health); **Activity I “Seed Race!”** 40 min (Science)

Session 2: Activity II “Veggies: Nature’s Rock Stars” 40 min (Health/Science/Math);

Activity III “Taste the Power of the Bean!” 20 min (Science/Health)

Session 3: Reflect 45 min (English Language Arts/Health)

Standards Met:*

Science: (A) Science as Inquiry: *Abilities necessary to do scientific inquiry; Understanding about scientific inquiry.* (C) Life Science: *Structure and function in living systems; Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms.* (D) Earth Science: *Structure of the Earth (soil, water, sun).* (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (3) *Demonstrate the ability to access valid information and products and services to enhance health.*

English Language Arts: (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.*

Math: Number and Operations: *Perform operations with multidigit whole numbers.* Measurement & Data: *Represent and interpret data.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

LEARNING OBJECTIVES

Students will be able to...

- Describe how both plants and people need nutrients to grow and be healthy.
- Identify nutrients provided by fruits and vegetables.
- Explain the importance of eating a variety of vegetables from all of the vegetable subgroups.
- Identify beans and peas.
- Summarize the health benefits of eating beans and peas.



LESSON 4 Seeking Out What We Need.....p. 32

PACING GUIDE: TOTAL TIME REQUIRED: 120 minutes / 3 sessions

Session 1: Getting Started 10 min;

Activity I “A-Maze-ing Light” 40 min, 2 weeks observation (Science)

Session 2: Activity II “Seeking Out What We Need” 40 min (Science/Health)

Session 3: Activity III “Tasty Broccoli” 20 min (Health); **Reflect** 10 min

Standards Met:*

Science: (A) Science as Inquiry: *Abilities necessary to do scientific inquiry; Understanding about scientific inquiry.* (C) Life Science: *Structure and function in living systems; Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms (classification).* (D) Earth Science: *Structure of the Earth (soil, water, sun).* (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (6) *Demonstrate the ability to use goal-setting skills to enhance health.* (7) *Demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health standards** – American Cancer Society

LEARNING OBJECTIVES

Students will be able to...

- Demonstrate an understanding of the scientific method by making hypotheses and drawing conclusions based on their own discoveries.
- Identify sources of fruits and vegetables in their school and home environment.
- Describe ways they can add more fruits and vegetables to their meals each day.

LESSON 5 Eat Your Colors.....p. 37

PACING GUIDE: TOTAL TIME REQUIRED: 95 minutes / 3 sessions

Session 1: Getting Started 15 min;

Activity I “Triple Taste Combo Game” 20 min (English Language Arts)

Session 2: Activity II “Get Your Engine Going” 20 min (Health/Science)

Session 3: Activity III “Garden Designers” 30 min

(Math/Art – can be done with art teacher); **Reflect** 10 min

Standards Met:*

English Language Arts: (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.* (Writing 2) Text Types and Purposes: *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly through the selection, organization, and analysis of relevant content.*

Science: (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

Math: Measurement & Data: *Geometric measurement – understanding concepts of volume and relate volume to multiplication and addition.* Ratios & Proportional Relationships: *Understanding ratio concepts and use ratio reasoning to solve problems.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.* (6) *Demonstrate the ability to use goal-setting skills to enhance health.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

LEARNING OBJECTIVES

Students will be able to...

- Describe ways to include a variety of fruits and vegetables in their diet.
- Design and plan a colorful garden using a variety of vegetables that grow well together.
- Plan a healthy meal featuring the vegetable subgroups.



LESSON 6 The Global Garden.....p. 41

PACING GUIDE: TOTAL TIME REQUIRED: 140 minutes / 3 sessions

Session 1: Getting Started 10 min;

Activity I “Fruits and Vegetables Around the World” 40 min
(Social Studies/Health)

Session 2: Activity II “Global Recipes” 20 min (English Language Arts/Health);

Activity III “Tasty Chickpeas” 40 min (Health)

Session 3: Activity IV “Garden Pen Pals” 20 min (English Language Arts);

Reflect 10 min

Standards Met:*

English Language Arts: (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.* (Writing 2) Text Types and Purposes: *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly through the selection, organization, and analysis of relevant content.* (Speaking and Listening 1, 2) Comprehension and Collaboration: *Engage effectively in a range of collaborative discussions. Summarize and interpret information presented in diverse media and formats.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.*

Social Studies: (Global Connections 9) *Global factors such as cultural, economic, and political connections are changing the places in which people live (e.g., through trade, migration, increased travel, and communication); Global connections may make cultures more alike or increase their sense of distinctiveness.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society; **Social Studies** standards – National Council for the Social Studies

LEARNING OBJECTIVES

Students will be able to...

- Explain how an environment influences the type of fruits and vegetables that are grown and eaten in a region/culture.
- List ways fruits and vegetables grown in the school garden are prepared and eaten in different regions of the United States and the world.
- Describe various units of measurement used to communicate quantities in a recipe (such as serving sizes and ingredient amounts).
- Identify vegetables that are part of the **Beans and Peas Vegetable Subgroup**.
- Identify three ways chickpeas (garbanzo beans) can be eaten as part of a meal.

LESSON 7 Chef Challenge.....p. 46

PACING GUIDE: TOTAL TIME REQUIRED: 185 minutes / 3 sessions

Session 1: Getting Started 30 min (Math);

Activity I “Kitchen Measurements” 40 min (Math)

Session 2: Activity II “Taste Your Colors” 40 min (English Language Arts)

Session 3: Activity III “Chef Challenge” 60 min (Health); **Reflect** 15 min

Standards Met:*

Math: Operations & Algebraic Thinking: *Write and interpret numerical expressions; Analyze patterns and relationships.* Measurement & Data: *Convert like measurement units within a given measurement system; Represent and interpret data.* Geometric measurement: *Understand concepts of volume and relate volume to multiplication and to addition.*

Health: (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.*

English Language Arts: (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.* (Writing 2) Text Types and Purposes: *Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly through the selection, organization, and analysis of relevant content.* (Speaking and Listening 1, 2) Comprehension and Collaboration: *Engage effectively in a range of collaborative discussions. Summarize and interpret information presented in diverse media and formats.*

Health (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

LEARNING OBJECTIVES

Students will be able to...

- Identify and choose appropriate units of measurement for liquid and dry food ingredients.
- Demonstrate an understanding of unit relationships (proportion) and fractions.
- Explain the amount of fruits and vegetables 5th and 6th graders need each day.
- Convert measurements and make calculations between units of volume and mass.



LESSON 8 Fruits and Veggies Many Ways.....p. 52

PACING GUIDE: TOTAL TIME REQUIRED: 120 minutes / 3 sessions

Session 1: Getting Started 10 min;

Activity I “Fantastic Fiber” 20 min (Health/Science)

Session 2: Activity II “Fiber Investigation” 40 min

(Health/Science/English Language Arts/Math)

Session 3: Activity III “Fabulous Fruit” 40 min (Health); **Reflect** 10 min

Standards Met:*

Science: (A) Science as Inquiry: *Abilities necessary to do scientific inquiry; Understanding about scientific inquiry.* (B) Physical Science: *Properties and change of properties in matter; Transfer of energy.* (C) Life Science: *Structure and function in living systems; Regulation and behavior; Populations and ecosystems; Diversity and adaptations of organisms.* (F) Science in Personal and Social Perspectives: *Personal health; Risks and benefits.*

English Language Arts: (Reading 1) Key Ideas and Details: *Quote accurately from a text and cite textual evidence to support analysis of what the text says explicitly and when drawing inferences from the text.* (Reading 3) Key Ideas and Details: *Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.*

Math: Operations & Algebraic Thinking: *Write and interpret numerical expressions; Analyze patterns and relationships.* Measurement & Data: *Convert like measurement units within a given measurement system; Represent and interpret data.* Geometric measurement: *Understand concepts of volume and relate volume to multiplication and to addition.*

Health (1) *Comprehend concepts related to health promotion and disease prevention to enhance health.* (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

LEARNING OBJECTIVES

Students will be able to...

- Describe the health benefits of dietary fiber.
- Identify fruits and vegetables that are high in dietary fiber.
- Discuss ways to enjoy fruit at breakfast and as snacks.

LESSON 9 The Power of Choice.....p. 56

PACING GUIDE: TOTAL TIME REQUIRED: 150 minutes / 3 sessions

Session 1: Getting Started 10 min;

Activity I “The Power of Choice” 40 min (Health/Science)

Session 2: Activity II “Fruit Imposters” 20 min (Health/Science);

Activity III “Melon Fruit Salsa” 40 min (Health)

Session 3: Reflect 40 min (English Language Arts)

Standards Met:*

English Language Arts: (Writing 5) Production and Distribution of Writing: *With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; and demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.*

(Reading 1) Key Ideas and Details: *Quote accurately from a text and cite textual evidence to support analysis of what the text says explicitly and when drawing inferences from the text.* (Reading 3) Key Ideas and Details: *Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.* (Reading 7) Integration of Knowledge and Ideas: *Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. Integrate information from different media and formats, and in words in words to develop a coherent understanding of a topic or issue.*

LEARNING OBJECTIVES

Students will be able to...

- Summarize a variety of nutritious food choices in the Fruit Group and Vegetable Group.
- Identify foods that are higher or lower in sodium, added sugars, and solid fats.
- Summarize the benefits of limiting the consumption of solid fats, sodium, and added sugars.
- Differentiate between fruit drinks and 100% fruit juice.



Math: Operations & Algebraic Thinking: *Write and interpret numerical expressions; Analyze patterns and relationships.* Measurement & Data: *Convert like measurement units within a given measurement system; Represent and interpret data.* Geometric measurement: *Understand concepts of volume and relate volume to multiplication and to addition.*

Health: (2) *Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.* (4) *Demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.* (8) *Demonstrate the ability to advocate for personal, family, and community health.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

LESSON 10 Harvest Celebration!.....p. 60

PACING GUIDE: TOTAL TIME REQUIRED: 145 minutes / 3 sessions

Session 1: Getting Started 15 min; **Activity I “Reflecting on Our Journey”**
30 min (English Language Arts)

Session 2: Activity II “What We Learned”
40 min (English Language Arts/Health/Science/Math*)

Session 3: Harvest Celebration 60 min**

*Standards met will depend on project. See p. 61.

**Time will vary. See suggested schedule in lesson on p. 60.

LEARNING OBJECTIVES

Students will be able to...

- Creatively share what they’ve learned about gardening, nutrition, and fruits and vegetables using a variety of media (written and oral).
- Promote the benefits of eating more fruits and vegetables to a diverse audience.

Standards Met:*

English Language Arts: (Speaking and Listening 1) Comprehension and Collaboration: *Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5-6 topics and texts, building on others’ ideas and expressing their own clearly.* (Speaking and Listening 2) Comprehension and Collaboration: *Summarize and interpret information presented in diverse media and formats, including visually, quantitatively, and orally, and explain how it contributes to a topic, text, or issue under study.* (Speaking and Listening 4) Presentation of Knowledge and Ideas: *Report on a topic or text or present an opinion, sequencing ideas logically, using pertinent facts and relevant, descriptive details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation at an understandable pace.* (Speaking and Listening 5) Presentation of Knowledge and Ideas: *Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations when appropriate to clarify information and enhance the development of main ideas or themes.* (Writing 1) Text Types and Purposes: *Write opinion pieces on topics or texts, supporting a point of view with clear reasons and relevant information/evidence.* (Writing 5) Production and Distribution of Writing: *With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.*

Math: Operations & Algebraic Thinking: *Write and interpret numerical expressions; Analyze patterns and relationships.* Measurement & Data: *Represent and interpret data.* Geometric measurement: *Understand concepts of volume and relate volume to multiplication and to addition.*

Health: (4) *Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.* (8) *Students will demonstrate the ability to advocate for personal, family, and community health.*

***Sources:** **Science** standards – National Academy of Sciences; **English Language Arts** and **Math** standards – Common Core; **Health** standards – American Cancer Society

REPRODUCIBLE STUDENT HANDOUTS.....p. 63

GARDENING GUIDE.....p. 91

ACKNOWLEDGMENTS.....p. 108

