Instructor Guide

Fruit and Vegetable Production Unit for Plant Science Core Curriculum

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Fruit and Vegetable Production Unit for Plant Science Core Curriculum is a curriculum designed to provide instruction about the production of fruit and vegetable crops for tenth grade students. Funding for the curriculum development project was provided through a grant from the Missouri Department of Elementary and Secondary Education (MDESE).

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Foreword

Missouri offers a variety of opportunities for fruit and vegetable producers. *Fruit and Vegetable Production Unit for Plant Science Core Curriculum* was developed to provide students with an overview of fundamental production concerns as well as useful information about specific crops.

Fruit and Vegetable Production Unit for Plant Science Core Curriculum is designed as a four-week course for tenth grade students. Lessons focus on planting and growing considerations as well as financial and marketing concerns. Lesson-level activities and a unit-level activity have been included to provide opportunities for students to apply skills and concepts covered in the curriculum and for instructors to assess student performance. Crosswalk tables are included to show where *Fruit and Vegetable Production Unit for Plant Science Core Curriculum* competencies relate to Missouri's Show-Me Standards, Frameworks for Curriculum Development, and Grade-Level Expectations for science. A suggested teaching calendar is included at the end of the table of contents.

This instructor guide and the corresponding student reference contain six lessons: Managing Financial Resources, Developing a Marketing Plan, Site Evaluation, Integrated Pest Management, Vegetable Production, and Fruit Production. In addition, the instructor guide includes completed production charts for over 30 fruit and vegetable crops as well as blank charts to copy and distribute to students to fill out during class discussion or as part of their assigned work. The instructor can also use the blank charts to develop additional charts for other crops he or she wishes to discuss.

Terry Heiman, Director
Agricultural Education
Division of Career Education
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Introduction

Fruit and Vegetable Production Unit for Plant Science Core Curriculum is a four-week course designed to introduce students to fundamental concepts and information related to the production of fruit and vegetable crops. Because of the broad scope of the material and the limited time available, the course has been arranged so that main topics related to fruit and vegetable production are discussed in the study questions and information regarding specific fruits and vegetables is included in supplemental charts, which will be chosen by the instructor to accompany the appropriate lessons. There are a number of advantages to arranging the curriculum this way.

- By putting crop-specific information in the charts, study questions can be used to focus on key concepts. Because an entire lesson is not needed to address each crop, the number of crops available to the instructor has nearly tripled compared to the previous edition of this curriculum guide.

- Having a wide variety of completed charts allows the instructor to tailor the material to his or her specific needs. Crops can be chosen based on regional production; the crops discussed can be changed from year to year; and new or specialty crops can be added or removed to reflect changes in the market. The instructor can also update and modify existing charts as needed.

- Because students will fill out their own charts, the instructor can use the charts as an additional tool for assessment, if desired.

- Having students fill out the charts for themselves is an interactive strategy that should aid in content retention and promote higher-level learning.

- The informational headings on the charts are based on points that will be addressed by lesson topics and study questions. This allows the instructor to reinforce these concepts by presenting them in a new context and by connecting them to real-world situations.

- As an additional feature, the resources used to compile the charts have been placed at the bottom of each chart as footnotes. In the case of links to Web resources, this allows the instructor to quickly and easily access additional information about a specific crop while online without searching through the complete list of references.

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Fruit and Vegetable Production Unit for Plant Science Core Curriculum

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COMPETENCIES/OBJECTIVES

1. Explain the importance of financial planning in fruit and vegetable production.
2. Describe approaches for the marketing of fresh fruits and vegetables.
3. Classify characteristics of selecting and planning for fruit and vegetable production.
4. Explain management practices for pest control.
5. Identify characteristics of cool season, long season, and warm season vegetable crops.
6. Identify characteristics of small fruits and tree fruits.

UNIT OBJECTIVE

Students will demonstrate their knowledge of production requirements for fruits and vegetables by developing a calendar for cultivating and harvesting 10 fruits and vegetables.

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Fruit and Vegetable Production Unit for Plant Science Core Curriculum - Competency Crosswalk

Duty Band & Task Statement	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
	Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/Physical Education	Math	Science	Social Studies
1	CA 4; MA 1, 3; SS 4	1.4, 1.7, 2.3, 2.7, 3.8, 4.1, 4.5	I.2.a, III.1.a, III.1.i			I.2.b, II.4.h, V.1.a, VII.4.a		IV.D.1.h, IV.D.1.k
2	CA 3, 4; MA 3;	1.1, 1.8, 2.1, 3.8, 4.1	I.2.a, I.2.c, I.2.d, I.3.a, IV.3.a, IV.2.b					
3	CA 1, 4; SC 4, 8; SS 5	1.10	IV.1.e				I.A.3.a, II.A.2.a, VI.A.1.a, VI.B.4.a	III.E.6.n, IV.E.4.g
4	SC 3, 5, 8; PE 5	1.3, 1.10, 2.1, 3.6, 3.8, 4.7	I.3.f, I.6.c		II.B.4.a, II.D.1.b, III.D.1.a, III.D.2.a		I.A.3.a, II.A.2.a, VIII.A.1.a, VIII.B.1.a	
5	CA 1, 4, 6; SC 5	1.5, 1.8, 2.1	I.2.a, I.2.c, I.2.d, I.3.a, III.1.c				VII.A.4.a	
6	CA 1, 4, 6; SC 5	1.5, 1.8, 2.1	I.2.a, I.2.c, I.2.d, I.3.a, III.1.c				VII.A.4.a	

Duty Band & Task Statement	SHOW-ME STANDARDS		CURRICULUM FRAMEWORKS FOR GRADES 9-12					
	Knowledge (Content)	Performance (Goals)	Communication Arts	Fine Arts	Health/Physical Education	Math	Science	Social Studies
Unit Activity	CA 3	1.2	I.2.a, I.2.c, I.2.d, I.3.b, II.2.c, III.1.d,IV.3.b				VI.A.1a, VI.B.4.a, VIII.A.1.a	III.E.6.n, IV.E.4.g

Fruit and Vegetable Production Unit for Plant Science Core Curriculum - Competency Crosswalk

Duty Band & Task Statement	Science 9-12 Grade Level Expectations							
	Strand 1 Matter & Energy	Strand 2 Force & Motion	Strand 3 Living Organisms	Strand 4 Ecology	Strand 5 Earth Systems	Strand 6 Universe	Strand 7 Scientific Inquiry	Strand 8 Science, Technology, & Human Activity
1							1.E.a	
2							1.B.a, 1.C.a, 1.E.a	1.B.a
3				1.C.b, 1.D.a, 3.C.a, 3C.c	1.D.b, 2.A.a, 2.A.b, 3.A.e		1.C.a	1.C.a
4				1.A.a, 1.A.b, 1.D.a, 3.C.a, 3.C.c			1.A.f, 1.C.a, 1.E.a	1.C.a
5							1.A.f, 1.C.a, 1.E.a	
6							1.A.f, 1.C.a, 1.E.a	
Unit Activity				1.A.a, 1.A.b, 3.C.a, 3.C.c	1.D.b, 3.A.e		1.C.a, 1.E.a	1.C.a

Name: _____

Fruit and Vegetable Production Competency Profile

Directions: **Evaluate the student by checking the appropriate number to indicate the degree of competency. The rating for each task should reflect** employability readiness **rather than the grades given in class.**	**Student Rating Scale:** **3 – Mastered** – can work independently with no supervision **2 – Requires Supervision** – can perform the job completely with limited supervision **1 – Not Mastered –** requires instruction and close supervision **N – No Exposure –** no experience or knowledge in this area

NOTE: All competencies involving safety require a Number 3 rating.

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3	2	1	N		
					Fruit and Vegetable Production
				1.	Explain the importance of financial planning in fruit and vegetable production.
				2.	Describe approaches for the marketing of fresh fruits and vegetables.
				3.	Classify characteristics of selecting and planning for fruit and vegetable production.
				4.	Explain management practices for pest control.
				5.	Identify characteristics of cool season, long season, and warm season vegetable crops.
				6.	Identify characteristics of small fruits and tree fruits.
					Other: _____
				Unit Activity	Demonstrate knowledge of production requirements for fruits and vegetables by developing a calendar for cultivating and harvesting 10 fruits and vegetables.

Fruit and Vegetable Production Unit for Plant Science Core Curriculum

Student Names														

Fruit and Vegetable Production

1. Explain the importance of financial planning in fruit and vegetable production.
2. Describe approaches for the marketing of fresh fruits and vegetables.
3. Classify characteristics of selecting and planning for fruit and vegetable production.
4. Explain management practices for pest control.
5. Identify characteristics of cool season, long season, and warm season vegetable crops.
6. Identify characteristics of small fruits and tree fruits.

Unit Activity

Demonstrate knowledge of production requirements for fruits and vegetables by developing a calendar for cultivating and harvesting 10 fruits and vegetables.

Fruit and Vegetable Production Unit for Plant Science Core Curriculum

Teaching Calendar

	Length for Classroom Instruction / Activities (Hours)	Length for Activity Sheets (AS) (Minutes)	
Lesson 1	1	AS 1.1	40
Lesson 2	2	AS 2.1	80
Lesson 3	2	AS 3.1	120
Lesson 4	2	AS 4.1	60
Lesson 5	2	AS 5.1	90
Lesson 6	2	AS 6.1	90
Unit Activity			60