



## **Five Week Science Program**

### **Lesson Summaries**

# Unit 1 Overview

## Food for the Future

### Lesson 1: Introduction to Veggie U/Are We What We Eat?

Before introducing the Veggie U curriculum, distribute the *Veggitudes Pre-Survey*. Students should complete this questionnaire with no prior discussion on the topic. Veggie U will be introduced using KWL chart, Journal Covers created, and journaling will begin by students listing foods they like to eat. Students will be divided into Farm Groups and will brainstorm together to name their farms.

### Lesson 2: We Are What We Eat!

The first DVD segment, *Grow Well, Eat Well, Be Well*, will be shown giving an overview of the farm, composting operation and the worm farm. The segment ends with a scene of the vegetable packing room, showing a box of like the one that will arrive today to serve to your class tomorrow. Discuss your geographic location, climate, local soils, and the benefits and challenges of growing vegetables locally. Discuss with class "In What Ways do Plants Keep Us Healthy?" Further discuss use of student journals.

### Lesson 3: Time to Taste the Vegetables!

Use your VeggieCash to purchase enough vegetables for your students to share at your vegetable tasting today. Vegetables will need to be cleaned and cut. Some extra grown-up help may be helpful here. Discuss pre-existing attitudes students may have about vegetables. Allow students to view each vegetable and to guess its name, then have students feel and taste the vegetables and write their observations in the *Veggie U Journals*.

### Lesson 4: Act like a Farmer/Planting the Squash Pot

You will use contents from both the *box containing soil, seeds, flats and materials* needed for planting, and the *box containing the grow light components*. Review information from DVD segment *Grow Well, Eat Well, Be Well*. Discuss methods used to rejuvenate nutrient-depleted soil. Discuss composting. The second DVD segment, *Planting Your Squash* will show how to plant the squash pot, but the technique has changed a bit, so consult Lesson 4 before starting. The grow light will be set up.

### Lesson 5: Here Come the Worms!

Review composting, and ways to improve soil. Introduce how worms aid in making soil better. View DVD segment *Making Your Worm Farm* and construct worm farms. Read *Wendy the Wonderful Worm*. Discuss structure, function and anatomy of earthworms and how they benefit and enrich soil. Discuss how other animals also play a part (bees pollinating, birds dispersing seeds).

# Unit 2 Overview

## Seeds and Soil

### **Lesson 6: Soil Sample ID**

Discuss and observe the different types of soil included in the kit and review the composition of various types of soil important to plant growth. Create a poster displaying different types of soil. You will need to begin prep for Lesson 9 by sprouting mung bean seeds.

### **Lesson 7: Planting Our Root Viewers**

View *Planting Your Root Viewers* on DVD and review characteristics of each soil type from Lesson 6. Use potting soil, clay, compost and sand (4 mediums from kit) to plant pea seeds in provided root viewers. Students begin ongoing observations to determine when seeds that are planted in 4 different mediums and at 4 different depths germinate, sketching and recording observations on journal pages.

### **Lesson 8: Planting Lettuce Trays/What are the Mystery Seeds**

View DVD segment *Planting Your Seed Trays*. Student farm groups will plant trays with red and green lettuce seed, and with numbered mystery seeds. Students make journal entries with illustrations describing the planting, or predicting which mystery seeds will germinate first and why. Extra seeds are included to encourage experimentation and observation.

### **Lesson 9: All About Seeds**

Students will observe, draw and label different kinds of seeds and be able to identify the parts of a germinating seed. Sprouted mung beans are examined and tasted. Remind students that they will need to bring in samples of leaves for an activity on Tuesday.

### **Lesson 10: Observe and Investigate**

Students will conduct an investigation to determine the needs of germinating seeds and will test necessary components for plant growth. Radish seeds will be planted and will be allowed to germinate in four different conditions, wet, dry, light or dark. Students observe and record which seeds germinate and which do not utilizing the scientific method. *All About Seeds Quiz*.

# Unit 3 Overview

## Parts of a Plant

### **Lesson 11: Plant Structure - Stems**

The importance of plant stems will be discussed today. Specialized cell structures within stems will be introduced. Students will observe celery stalks placed in dyed water to show how nutrients and moisture are conducted through the stem. Students will continue with observation of growth in seed trays and observation and care of the worm farm.

### **Lesson 12: Plant Structure – Leaves**

Students will learn about leaves today. They will discover how plant life produces the air they breathe. Students will classify various leaves as simple or complex according to their characteristics.

### **Lesson 13: Parts of a Flower**

Students will learn about the unique plant structures that function as the reproductive factories for seeds by learning the parts of a flower.

### **Lesson 14: Observing Root Systems**

Students observe growth in root viewers. Discuss how roots grow and factors that affect that growth. Compare and contrast root systems of seeds planted in different soils and at different depths in root viewers. Students may sketch and label the roots systems they observe in their journals.

### **Lesson 15: Putting It All Together**

Students examine their growing plants. Discuss how growing conditions and methods of planting affect a plant's growth. Students compare and contrast the observations they've recorded in their journals. Introduce and discuss the life cycle of plants from seed to decomposition. Students may illustrate plant growth stages in their journal. *Life Cycle of a Plant Quiz.*

# Unit 4 Overview

## Healthy Eating

### **Lesson 16: Watch Me Grow**

Students will learn that they need nutrients just like the plants they have grown. Introduce the USDA's MyPlate concept and graphics showing food groups and recommended portions the body needs to be healthy. Discuss the nutritional values of different foods. Students chart what they need to eat versus what they have eaten and use MyPlate worksheet. Remind students to bring in food nutrition labels from home for Lesson 18.

### **Lesson 17: Balancing Your Energy**

Balancing calories consumed with calories expended is the key to maintaining a healthy weight. Students will learn the importance of this balance with discussions of calories and exercise. The concept of energy density of foods is discussed.

### **Lesson 18: What's in a Label**

So much of what we consume comes in a package. The students will examine the nutrient labels on foods that they have brought from home and evaluate foods for "whoa" or "go". Discussion will focus on fats and serving sizes and a portion size guide will be introduced.

### **Lesson 19: Color MyPlate**

Discuss unique elements of fresh produce. Students explore which foods provide different nutrients (vitamins, minerals, phytochemicals) and how they each enhance health. Students will learn that fruits and vegetables are the cornerstone of a healthy diet. Students will create their own MyPlate.

### **Lesson 20: My recipe for Success**

Students will use the information learned this week to develop a plan for healthy eating. Discuss simple ways to improve daily food choices. Students interview each other about their fruit and vegetable preferences using the Food Interview worksheet.

# Unit 5 Overview

## Feast for the Future

### **Lesson 21: Planning the Feast**

To prepare for the culminating project, students begin planning an exciting event for some special visitors. They design and deliver invitations. Students will also conclude their study of worms by relocating the class worms to a healthy living space and recycling their worm farms.

### **Lesson 22: Plans for the Feast**

Students will continue their special event preparations today. Students will design menus for their special “feast” on Friday and brainstorm a list of things need for the feast. Compile a list of visitors that will be attending the Feast. Allow students to use their creativity to design and create menus, place settings and table decorations for the Feast. Review previous unit material with students in preparation for assessments.

### **Lesson 23 Think like a Chef**

Feast of the Future menus will be completed today. Recipes, including ‘Veggie U Crunch’ will be presented. Students may complete the *Veggie U Program Assessment* (optional).

### **Lesson 24: Feast Preparations/What are the Mystery Seeds?**

Students will conduct and record their final observations of the seeds they planted and the Mystery Seeds identities will be revealed. The class will prepare the room for tomorrow’s event! The teacher will take a final count of how many visitors will be joining the class on Friday. *Veggitudes Post-Survey* will be administered.

### **Lesson 25: Enjoy the Feast of the Future!**

Veggies grown by students, in particular the lettuces, can be harvested. Students will lead and assist in all aspects of the event including: food preparation, serving and clean up, introducing guests and making verbal presentations about what they learned during the program. Students will enjoy tasting and sharing the vegetables they have grown during Veggie U!

### **Just for Fun!**

**Try these activities as a review or just for fun!**

Plant Math! Interesting Plant Facts (Enrichment Activities)

Veggie U Bingo (Enrichment Activities)

Veggie U Songs (Enrichment Activities))