

## Gee Whiz in Agriculture Content Standards

### “Yams in Space!”

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

**Objectives:**

#### Career Readiness-

1. **Students will identify their career interests and aptitudes to develop an educational plan which supports personal career goals.**

**Benchmarks: K-4: 1 A, B, C; 5-8: 1 A, B, C, D**

**Project Area Skill: The youth understand the importance of learning about diverse methods of growing food in non-traditional environments. The idea of growing crops in space using hydroponics and aquaponics will open many career opportunities for youth wishing to broaden their knowledge of the horticulture field.**

2. **Students will utilize and manage resources effectively to produce quality services and products.**

**Benchmarks: K-4: 2 A, B, C; 5-8: 2 A, B**

**Project Area Skill: The youth responsibly complete assignments within the topic area using good time management skills. Youth learn to use resources efficiently.**

3. **Students will demonstrate the technological knowledge and skills required for future careers.**

**Benchmarks: K-4: 3 A, B, C, D; 5-8: 3 A, B, C, D**

**Project Area Skill: As part of their assignments, the youth may use computers to complete projects. The space program relies heavily on computers to perform daily tasks. A brief knowledge of this technology allows the youth to better understand how the growing areas may be controlled in a zero gravity environment.**

4. Students will develop and demonstrate responsible and ethical workplace behaviors.

**Benchmarks:** K-4: 4 A, B, C, D, E; 5-8: 4 A, B, C, D

**Project Area Skill:** The youth are able work cooperatively and individually on given assignments. The youth understand the importance of proper behaviors learned at home, and applying them at school.

5. Students will develop effective leadership, interpersonal, and team skills.

**Benchmarks:** K-4: 5 A, B, C, D; 5-8: 5 A, B, C, D

**Project Area Skill:** The youth learn valuable leadership and interpersonal skills as they interact with others in an educational setting. Youth learn to assume different roles as they work to achieve common goals. In a cooperative learning environment, team skills are learned as youth participate in a wide array of activities.

## Gee Whiz in Agriculture Content Standards

### “Yams in Space!”

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

#### **Objectives:**

##### Language Arts-

- 1. Reading and listening for comprehension: Students will apply strategies and skills to comprehend information that is read, heard, and viewed.**

**Benchmarks: K-4: 1 A, B, C, D; 5-8: 1 A, B, C, D**

**Project Area Skill: The youth learn about growing plants in space by completing assignments and reading the student worksheet. Youth learn the material through open communication with each other.**

- 2. Writing and speaking for expression: Students will communicate effectively through speaking and writing.**

**Benchmarks: K-4: 2 A, B, C; 5-8: 2 A, B, C**

**Project Area Skill: The youth complete assignments on the student worksheets. Activities are designed to cover many different curricula. Youth are able to write essays about material that has been learned, and are able to explain opinions or knowledge in front of others through presentations.**

- 3. Literature and media: Students will use literature and media to develop an understanding of people, societies, and self.**

**Benchmarks: K-4: 3 A; 5-8: 3 A**

**Project Area Skill: The youth learn the material in the projects not only through the use of software components, but also by viewing video tapes. The tapes can be utilized as an introduction to the project, or as a summary of knowledge which has been learned throughout the topic.**

## Gee Whiz in Agriculture Content Standards

### “Yams in Space!”

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

**Objectives:**

#### Math-

- 1. Number and operations: Students will understand numerical concepts and mathematical operations.**

**Benchmarks: K-4: 4 A, B, C; 5-8: 4 A, B, C**

**Project Area Skill: The youth understand basic mathematical skills and how they relate to space travel and horticultural science. Youth are able to formulate and compute data in relation to pounds of vegetables produced per plant. Furthermore, youth complete problem solving activities, calculating amounts of produce used to make different foods that may be used in space.**

- 2. Measurement: Students will understand measurement systems and applications.**

**Benchmarks: K-4: 1 A, B, C, D; 5-8: 1 A, B, C, D**

**Project Area Skill: The youth are able to use units of measurement to formulate area requirements of the plants. The youth understand the importance of measuring amounts of compost to be used on the hydroponically grown plants. Moreover, youth are able to understand distance formulations when calculating travel time of a space craft.**

## **Gee Whiz in Agriculture Content Standards**

### **“Yams in Space!”**

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

#### **Objectives:**

##### **Social Studies: Strand: Geography: Content Standard II:**

- 1. Students understand how physical, natural, and cultural processes influence where people live, the ways in which they live, and how societies interact with one another and their environment.**

**F. K-4: Benchmark II: Describe how natural and manmade changes affect the meaning, use, distribution, and value of resources.**

**5-8: Benchmark II: Understand the effects of interactions between human and natural systems in terms of changes in meaning, use, distribution, and relative importance of resources.**

**Project Area Skill: The youth understand the effects that small food plots have on society. They further understand how growing and maintaining these plots affect society. With the advent of space travel, a means to produce food for people is rapidly gaining interest.**

## Gee Whiz in Agriculture Content Standards

### **“Yams in Space!”**

**\*Project Area Skill (PAS) refers to the subject matter based skill which youth demonstrate in relation to the correlating content standard.\***

#### **Objectives:**

##### **Science: Strand: Scientific Thinking and Practice: Content Standard I:**

- 1. Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.**

**K-4: Benchmark I: Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.**

**5-8: Benchmark I: Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.**

**Project Area Skill: The youth are able to use the scientific method to predict how the plants will grow and produce. They understand the importance of regularly noting observations of the plants through the different growth stages.**

##### **Science: Strand: Content of Science: Content Standard II: Life Science:**

- 2. Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.**

**K-4: Benchmark I: Know that living things have diverse forms, structures, functions, and habitats.**

**5-8: Benchmark I: Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.**

**Project Area Skill: The youth recognize that there are many different types of plants which can be grown hydroponically. Also, they understand which plants germinate and mature more quickly to produce edible foods faster. Furthermore, they understand that the plants**

might be affected in different ways in a zero gravity environment versus a regular land environment.

**Science: Strand: Content of Science: Content Standard III: Earth and Space Science:**

3. Understand the structures of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

**K-4: Benchmark I:** Know the structure of the solar system and the objects in the universe.

**5-8: Benchmark I:** Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.

**Project Area Skill:** The youth understand all aspects of the solar system including planetary lineups and the atmospheric makeup. They recognize any variables which may affect space travelers or other living things such as plants. An understanding of the solar system and how it interacts with different forms of matter is important when experimenting with the idea of growing plants in space.

**Science: Strand: Science and Society: Content Standard I:**

4. Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

**K-4: Benchmark I:** Describe how science influences decisions made by individuals and societies.

**5-8: Benchmark I:** Explain how scientific discoveries and inventions have changed individuals and societies.

**Project Area Skill:** The youth understand the important impact that the invention of space travel has had upon the last century. They understand the role they may play in experimenting and developing new and innovative ways that people may use to survive in outer space.