Introduction

In this series of 4 videos, Marshall Ott interviews his mother, Jennifer Ott, the program director for the Desert Farming Initiative at the University of Nevada Reno.

View or download videos [online](https://www.youtube.com/playlist?list=PLGdlCTs4dQTdFThAVQn_yZYcp_8ZMbTLf) at: <https://www.youtube.com/playlist?list=PLGdlCTs4dQTdFThAVQn_yZYcp_8ZMbTLf>

Video 1: Growing food in high desert climates (2:01)

Video 2: Irrigation tools in the greenhouse (2:45)

Video 3: Drip Irrigation tools (2:05)

Video 4: Working at Desert Farming Initiative (2:00)

These videos support the following lesson plans in this unit:

* Importance of Water to Agriculture
* Irrigating Desert Land
* Conservation Aware

Grade Level(s)

3 - 5

Estimated Time

10 minutes per video

Purpose

Students will be able to understand the challenges of growing food in the desert climate, different structures used to grow food, sources of water for food production, tools farmers use to conserve water, and career opportunities in food and agriculture.

**Materials**

* Videos 1-3
* Student worksheets to accompany each video

Instructions

In this document you will find a set of comprehension questions for each of the videos and an accompanying answer sheet. It is suggested that the teacher reviews the questions with the class before watching a video, so they can be active listeners during the video clip. Students may write answers to the questions and then watch the video again to go over the answers. You may also need to stop at various points throughout the clip to allow time for students to process what they are hearing and complete the worksheet.

Educational Standards Addressed

**Nevada Academic Content Science Standards/Next Generation Science Standards**

5-ESS3-1 Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment.

Nevada Academic Content Standards for Social Studies

SS.4.24. Examine how and why Nevada’s landscape has been impacted by humans.

SS.4.25. Analyze how technological changes have impacted the environment and economy of Nevada.

**National Agricultural Literacy Outcomes**

T1.3-5b Explain how the interaction of the sun, soil, water, and weather in plant and animal growth impacts agricultural production.

T1.3-5e Recognize the natural resources used in agricultural practices to produce food, feed, clothing, landscaping plants and fuel.

T4.3-5b Describe how technology helps farmers/ranchers increase their outputs (yields) with fewer inputs (less water) while using the same amount of space.

T4.3-5d Provide examples of science being applied in farming for food, clothing, and shelter products.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Desert Farming Initiative video series: *Growing Food in High Desert Climates*

1. What are the three reasons Desert Farming Initiative grows fruit and vegetables?

a.

b.

c.

2. Name some of the fruits and vegetables that they grow at Desert Farming Initiative. What is your favorite fruit and/or vegetable and why?

3. Where does the water come from that they use on the farm?

4. How does the farm use water beyond irrigating the crops?

Desert Farming Initiative video series: *Growing Food in High Desert Climates*

ANSWERS

1. What are the three reasons the Desert Farming Initiative grows fruits and

 vegetables?

 The first reason the Desert Farming Initiative grows fruits and vegetables is

 that it educates students about farming in Nevada.

The second reason, they work with professors at the University on their research projects,

 The third reason is to sell food to restaurants and schools in Northern Nevada.

1. Name some of the fruits and vegetables that they grow at Desert Farming Initiative. What is your favorite fruit and/or vegetable and why?

Some of the fruits that were mentioned in the video were watermelon, cantaloupe, raspberries, and strawberries. Vegetables mentioned were carrots, lettuce, broccoli, kale, and asparagus.

1. Where does the water come from that they use at the farm?

 The water that the farm uses is municipal water. It is the same water that

 people get when they turn on their kitchen faucet.

1. Besides using the water to irrigate the crops, what else is the water used for?

They use water at the farm to wash the fruits and vegetables to ensure they are clean and before being packed and transported to restaurants or schools to be eaten.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Desert Farming Initiative video series: *Irrigation tools in the greenhouse*

1. What is irrigation?
2. What is a crop?
3. What is the purpose of a greenhouse?
4. Briefly explain how the soaker hose and mat system works in the greenhouse.
5. Briefly explain how the mister system works in the greenhouse.
6. How are they able to conserve water in the greenhouse?

Desert Farming Initiative video series: *Irrigation tools in the greenhouse*

ANSWERS

1. What is irrigation?

Irrigation is the supply of water to land or crops to help them grow.

1. What is a crop?

A crop is a cultivated plant that is grown as food, especially a grain, fruit, or

vegetable.

1. What is the purpose of a greenhouse?

The purpose of a greenhouse is to be able to grow food year-round and control
environmental conditions like temperature and humidity.

1. Briefly explain how the soaker hose and mat system works in the greenhouse.

Water comes through pipes into the greenhouse and runs into soaker tubes

 that have 1000’s of small holes which lets the water run out onto absorbent mats.

The mats allow water to be taken up through holes in the plant containers and delivered straight to the plant’s root system.

1. Briefly explain how the mister system works in the greenhouse.

Misters have water running through pipes which force water out onto the plants in a light spray. Used to provide water to seeds before they develop their root system.

1. How are they able to conserve water in the greenhouse?

The greenhouse has timers and sensors that deliver water at times the plants need it. In the summer the timers are set higher to deliver more water and in the winter the timers are set lower as they need less water

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Desert Farming Initiative video series: *Drip Irrigation Tools*

1. What crops are grown in the hoop houses?
2. What is a hoop house and how does it function?
3. How do they irrigate the crops in the hoop houses?
4. What other tools besides drip irrigation does the farm use to conserve water in the hoop houses?
5. What is evaporation?

**Desert Farming Initiative video series: *Drip Irrigation Tools***ANSWERS

1. What crops are grown in the hoop houses?

The crops that are grown in the hoop houses at the farm are curly kale, dino kale, and lettuce.

1. What is a hoop house and how does it function?

A hoop house is in between a greenhouse and an outdoor field. The hoop house does not have any artificial heating and cooling. They are structures covered by plastic. They keep the heat in during the winter months and then shade the crops in the summertime.

1. How do they irrigate the crops in the hoop houses?

They irrigate crops in the hoop houses are by drip irrigation where tubes are put on the ground and water is released through tiny holes in the hose right at the base of the crops to target water at the root zone.

1. What other tools besides drip irrigation does the farm use to conserve water in the hoop houses?

The farm uses plastic mulch which is put over the soil bed. Holes are poked in the plastic for the plants to come through. Underneath is the drip irrigation system to get water to the plants. The plastic mulch keeps the soil in place and reduces evaporation of the irrigation water.

1. What is evaporation?

Evaporation is the process of turning from a liquid into a vapor.

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Desert Farming Initiative video series: *Working at the Desert Farming Initiative***

1. What does Ms. Jennifer do at the Desert Farming Initiative?
2. What is agriculture?
3. What subjects in school helped prepare Ms. Jennifer for her job, and how?
4. What is the difference between insects and pests?
5. What is Ms. Jennifer’s favorite part of her job?

**Desert Farming Initiative video series: *Working at the Desert Farming Initiative***

ANSWERS

1. What does Ms. Jennifer do at the Desert Farming Initiative?

Jennifer works at growing fruits and vegetables, working with local farmers, and working with schools and students to teach them about agriculture.

1. What is agriculture?

Agriculture is the science, art or practice of cultivating the soil, producing crops, and raising livestock.

1. What subjects in school helped prepare Ms. Jennifer for her job, and how?

The subjects that helped Jennifer the most were:

 1) Chemistry, by learning about soils, and the elements in soils.;

2) Biology, learning about different insects; and

3) Mathematics, mixing fertilizers and how much to apply, and selling crops and how much it costs to produce food.

1. What is the difference between insects and pests?

Insects-pollinate fruits, flowers, and vegetables and eat other insects or weeds. Pests- a species that is not native and whose introduction causes harm.

1. What is Ms. Jennifer’s favorite part of her job?

The favorite part of her job is working with local farmers and helping them learn new techniques to help us conserve water in the high desert.

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