



Lesson Plan

Succulents

Created: 02/2019 by the National FFA Organization

SAE Video Summary: Follow along as Silvio introduces us to his supervised agricultural experience (SAE) program that involves working in the school greenhouse where he grows and propagates succulents. Silvio shares with us how his SAE has grown since he started and what is necessary to have a successful SAE.

STUDENT LEARNING OBJECTIVES:

After completing these activities, students will ...

1. Compare and contrast the growing requirements of succulents versus other plants.
2. Write the steps of plant propagation.
3. Design a plan for a plant propagation demonstration.

TIME REQUIRED: 60 minutes

RESOURCES:

1. "Silvio Barnes – SAE – Succulents," <https://vimeo.com/300298447>

EQUIPMENT AND SUPPLIES NEEDED:

1. A copy of the "Bell Ringer" handout for each student or display the handout on the screen/TV
2. A copy of the "Succulents" worksheet for each student
3. A copy of the "Succulents vs. Other Plants" worksheet for each student
4. A copy of the "Plant Propagation" worksheet for each student
5. A copy of the "Teach Elementary Students or Classmates!" worksheet for each student
6. Internet access to play the video in real time or embed it in a PowerPoint ahead of time

THIS QUICK LESSON PLAN WOULD WORK WELL AS:

1. A horticulture lesson.
2. An SAE lesson.

STUDENT ACTIVITY SHEETS:

Direct access to student activity sheets without lesson plan or answer key for easy upload to learning management systems or printing for classwork.

<https://ffa.box.com/s/e66grsrp5azsyjgx0a8gq21cymr5zk7r> (Word)

<https://ffa.box.com/s/dt8rekdbf9o3r9okwsht6ru2opod2f1b> (PDF)

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

FFA Precept

- FFA.PL-A.Action: Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-B.Relationship: Build relationships, work as a team player and appreciate the talents of others.
- FFA.PL-D.Character: Conduct oneself appropriately in relation to others regardless of the situation.
- FFA.PL-F.Continuous Improvement: Accept responsibility for learning and personal growth.
- FFA.PG-H.Social Growth: Successfully interact with others and adapt to various social situations.
- FFA.CS-M.Communication: Effectively interact with others in personal and professional settings.
- FFA.CS-N.Decision Making: Analyze a situation and execute an appropriate course of action.
- FFA.CS-O.Flexibility/Adaptability: Be flexible in various situations and adapt to change.

Common Core – Reading: Informational Text

- CCSS.ELA-LITERACY.RI.9-10.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).

Common Core – Writing

- CCSS.ELA-LITERACY.W.9-10.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.
- CCSS.ELA-LITERACY.W.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- CCSS.ELA-LITERACY.W.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core – Speaking and Listening

- CCSS.ELA-LITERACY.SL.9-10.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core – Literacy in Science & Technical Subjects: Writing

- CCSS.ELA-Literacy.WHST.9.10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
- CCSS.ELA-Literacy.WHST.9.10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- CCSS.ELA-Literacy.WHST.9.10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Common Core – Math Practices

- CCSS.MP1: Make sense of problems and persevere in solving them.
- CCSS.MP2: Reason abstractly and quantitatively.
- CCSS.MP6: Attend to precision.

AFNR Career Ready Practices

- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.06. Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.
- CRP.11. Use technology to enhance productivity. Career-ready individuals find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems.

Partnership for 21st Century Skills

- Collaboration
- Communication
- Flexibility and Adaptability
- Information, Communications, and Technology Literacy
- Initiative and Self-Direction
- Leadership and Responsibility
- Productivity and Accountability
- Think Creatively
- Social and Cross-Cultural Skills
- Work Creatively with Others

LESSON PLAN:

1. ***Bell Ringer:*** Have students find a picture of a succulent and another plant (for example, petunia). Students should identify at least two differences between the plants. For example, succulents typically have thicker leaves. *(If students do not have access to computers, use the "Bell Ringer" handout for the bell ringer.)*
2. ***Introduction:*** *Succulents are one of the most commonly used types of plants for plant propagation. Plant propagation is an important part of the plant industry. Silvio introduces us to his SAE, where he has used plant propagation to expand his project.*
3. ***Activity:***
 - a. Part 1: Each student will need a copy of the worksheet "Succulents." Students will complete the worksheet while watching the video "Silvio Barnes – SAE – Succulents." The video URL is <https://vimeo.com/300298447>.

- b. Part 2: Each student needs a copy of the worksheet "Succulents vs. Other Plants." Students will research the growing requirements for succulents versus other plants of their choice.
 - c. Part 3: Each student needs a copy of the worksheet "Plant Propagation." Students will research two different types of plant propagation and describe the steps to perform each type of propagation.
 - d. Part 4: Each student needs a copy of the worksheet "Teach Elementary Students or Classmates!" Students will create a plan to demonstrate plant propagation to elementary students.
4. *Follow-up:* Have students create a social media post with three facts they learned from the lesson. Additionally, have students create a hashtag for the social media post.
 5. *Leveling Up:* Invite your local extension agent or a member of the Master Gardener group to speak to your class and/or FFA chapter about plant propagation.
 6. *Exit Ticket:* 3-2-1: Have students write three things they learned, two things they found interesting and one question they still have from the lesson.

NAME: _____

Bell Ringer

DIRECTIONS:

Display the pictures below and have students, on their own paper, identify the visual differences between succulents and the other plant.

Succulent:



Petunia:



NAME: _____

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6; CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1;
MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11

Succulents

DIRECTIONS:

Answer the questions below as you watch the video "Silvio Barnes – SAE – Succulents," available at <https://vimeo.com/300298447>.

1) How did Silvio get started with his SAE?



2) What were two main challenges he faced with his SAE?

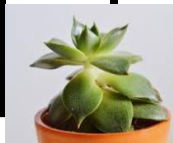


3) Who has helped him the most with his SAE?

4) What has he learned from his SAE?

5) What are two skills he has learned from this SAE?

6) What is the classroom activity that helped him the most with his SAE?



7) What advice does Silvio give to other students who want to start their SAEs?

8) How can you apply the information you learned from this SAE to your current SAE or to your future career?

NAME: _____

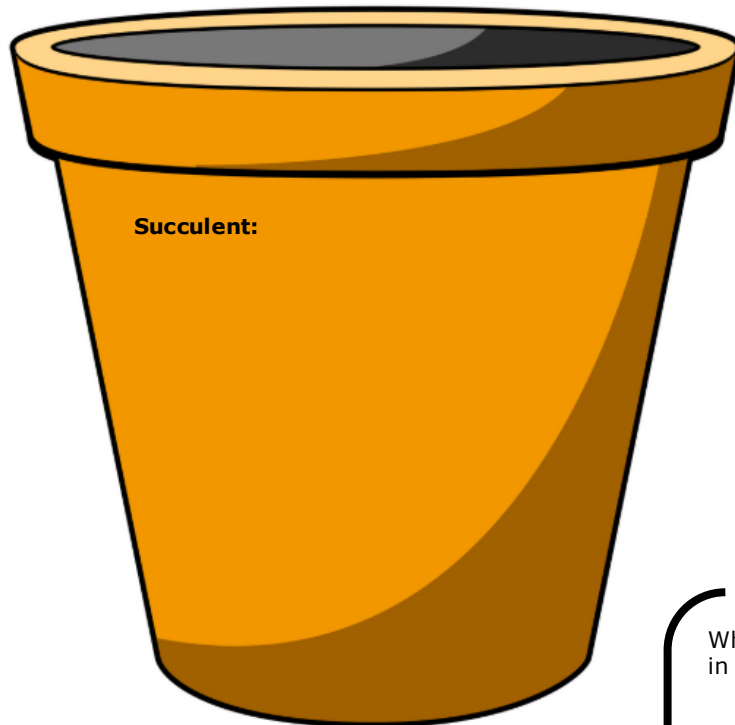
Succulent vs. Other Plants

Aligned to the following standards:
FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6;
CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-
WHST.9.10.6; MP1; MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11

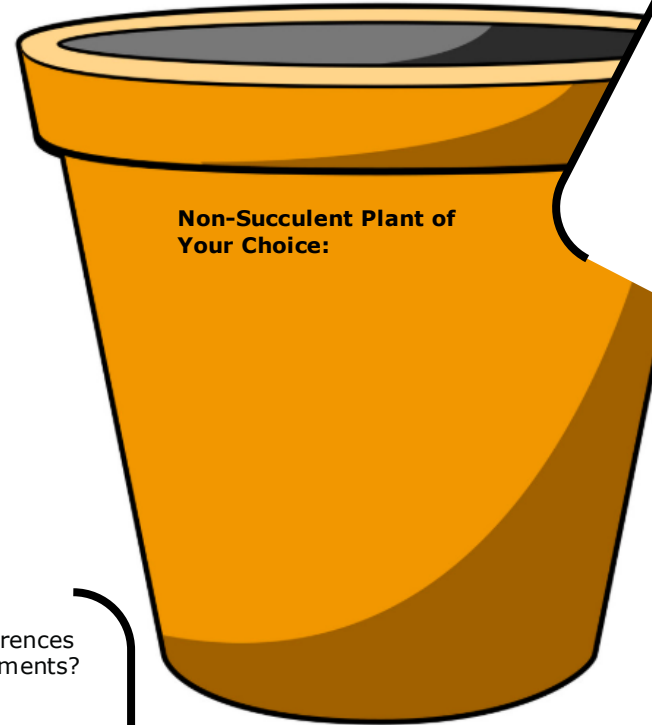
DIRECTIONS

Research the growing requirements for succulents and other types of plants and record the information in the corresponding flower pots below. If additional space is needed, record responses in the boxes under each flower pot. *Suggested website for succulent growth requirements:*

<https://simplysucculents.com/plant-care-information/>. *Suggested websites for other plant growth requirements:* <https://www.gardeners.com/how-to/growing-annual-flowers/5070.html>, <https://extension.umn.edu/flowers/growing-petunias>, <https://www.merriam-webster.com/dictionary/succulent>.



VS.



What is a succulent plant?

What are two differences in growing requirements?

Additional Space – Succulents:

Additional Space – Other plant:

NAME: _____

Plant Propagation

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA. PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6; CCSS.ELA-
SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1;
MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11

DIRECTIONS:

Research the different types of plant propagation and answer the questions below. A Suggested website to use for research is <https://extension.umaine.edu/gardening/manual/propagation/plant-propagation/>.

1) What are the two different types of plant propagation?

Type 1: _____

Type 2: _____



2a) Steps to perform this type of propagation:

2b)

Steps to perform this type of propagation:



3) What are the advantages of asexual plant propagation for a home owner?

Teach Elementary Students or Classmates!

DIRECTIONS:

Create a plan for a plant propagation demonstration for elementary-age students or fellow classmates. A suggested website to use for research is <https://extension.umaine.edu/gardening/manual/propagation/plant-propagation/>.

1) What supplies will you need for this demonstration?



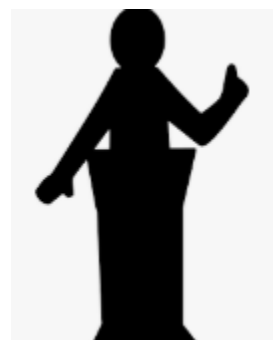
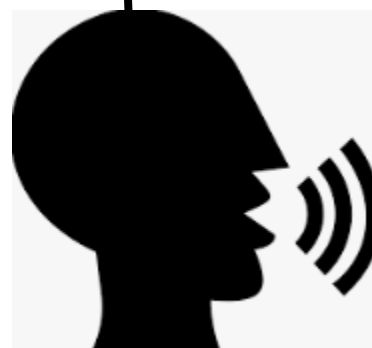
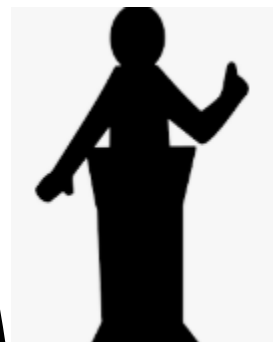
What type of plant propagation will you choose for this demonstration?

2) Introduction for the demonstration (How would you introduce this to the students?):

3) Write a step-by-step plan on how to perform the plant propagation method you chose.



4) What you will say during the demonstration? Write it here.



NAME: _____

KEY: Succulents

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6; CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1;
MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11

DIRECTIONS:

Answer the questions below as you watch the video "Silvio Barnes – SAE – Succulents," available at <https://vimeo.com/300298447>.

1) How did Silvio get started with his SAE?

He was given the opportunity to purchase 15 succulents for \$20.00. He now has over 100 plants.



2) What were two main challenges he faced with his SAE?

Two main challenges were making sure his plants are healthy and keeping an eye out for pests and diseases.



3) Who has helped him the most with his SAE?

His teacher has helped him the most with his SAE.

4) What has he learned from his SAE?

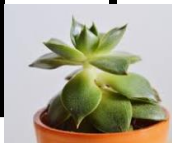
He has learned patience from his SAE.

5) What are two skills he has learned from this SAE?

He has learned a good work ethic and time management skills.

6) What is the classroom activity that helped him the most with his SAE?

The research component in his classes really helped him learn about his plants.



7) What advice does Silvio give to other students who want to start their SAEs?

The advice he gives to other students is to pick something you are passionate about and can devote time to.

8) How can you apply the information you learned from this SAE to your current SAE or to your future career?

Answers will vary.

NAME: _____

KEY: Succulent vs. Other Plants

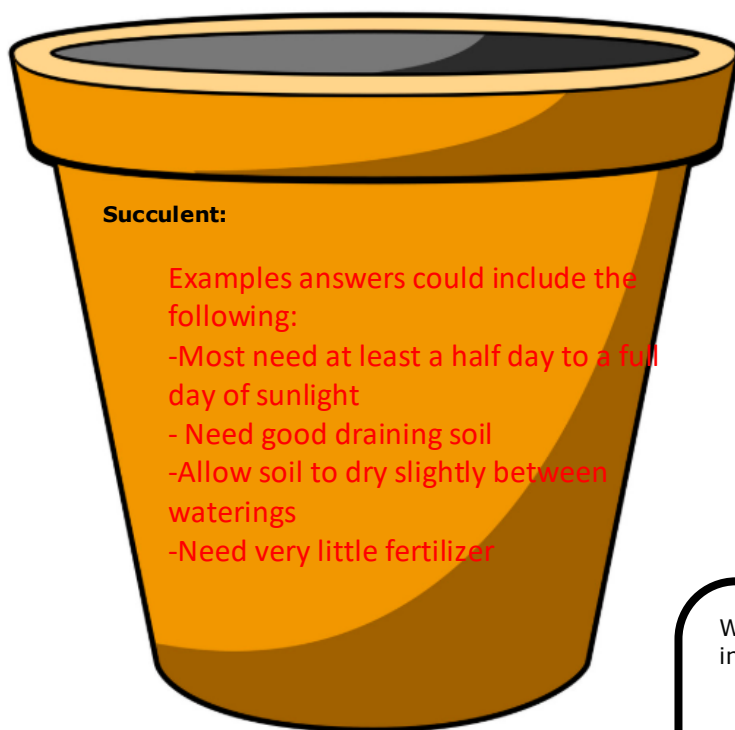
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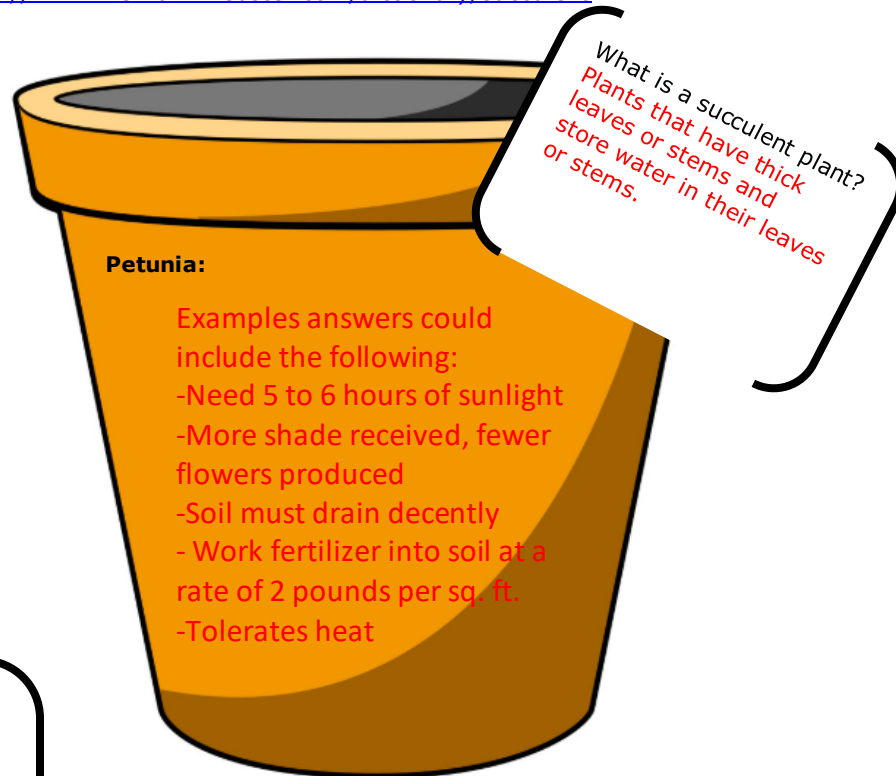
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VS.



What are two differences in growing requirements?

- Fertilizer requirements
- Succulents don't tolerate heat as well as petunias.

Additional Space – Succulents:

Additional Space – Petunia:

NAME: _____

KEY: Plant Propagation

Aligned to the following standards:

FFA.PL-A.; FFA.PL-B.; FFA.PL-D.; FFA.PL-F.; FFA.PG-H.; FFA.CS-M.; FFA.CS-N.; FFA.CS-O;
CCSS.ELA-RI.9-10.4; CCSS.ELA-W.9-10.2; CCSS.W.9-10.4; CCSS.ELA-W.9-10.6; CCSS.ELA-SL.9-10.4; CCSS.ELA-WHST.9.10.2; CCSS.ELA-WHST.9.10.4; CCSS.ELA-WHST.9.10.6; MP1;
MP2; MP6; CRP.04; CRP.06; CRP.08; CRP.11

DIRECTIONS:

Research the different types of plant propagation and answer the questions below. A suggested website to use for research is <https://extension.umaine.edu/gardening/manual/propagation/plant-propagation/>.

1) What are the two different types of plant propagation?

Asexual Propagation

Sexual Propagation



2a) Steps to perform this type of propagation:

Type of propagation: Sexual

Steps to perform propagation:

-Obtain good quality seed from a reliable dealer.

-Meet germination requirements (water, oxygen, light and heat)

2b) Steps to perform this type of propagation:

Type of propagation: Asexual

Steps to perform propagation:

Cuttings:(other types are layering, division, budding & grafting)

-Cut at angle, remove flowers/flower buds to allow cutting to use energy for root formation, to increase root formation use rooting hormone, place in indirect light.



3) What are the advantages of plant propagation for a home owner?

Answers could vary, but may include the following:

-Easy

-Cheap method to obtain new plants

KEY: Teach Elementary Students or Classmates!

DIRECTIONS:

Create a plan for a demonstration for elementary-age students or fellow classmates. A suggested website to use for research is <https://extension.umaine.edu/gardening/manual/propagation/plant-propagation/>.

1) What supplies will you need for this demonstration?

Suggested supplies:

-child-safe scissors

-small pots or small cups

-soil

-seeds or stock plant

-rooting hormone (if doing asexual propagation)



What type of plant propagation will you choose for this demonstration plan?
Answer will vary.

2) Introduction for the demonstration (How would you introduce this to the students?):

Answer will vary.

3) Write a step-by-step plan on how to perform the plant propagation method you chose.

Answers may vary, but could include the following:

-Introduction

-Explain advantages of plant propagation

-Demonstrate plant propagation (asexual or sexual propagation).

-Assist students in performing the plant propagation

