OKLAHOMA CareerTech

Introduction to Agriscience

Unit 2
Supervised Agricultural Experiences

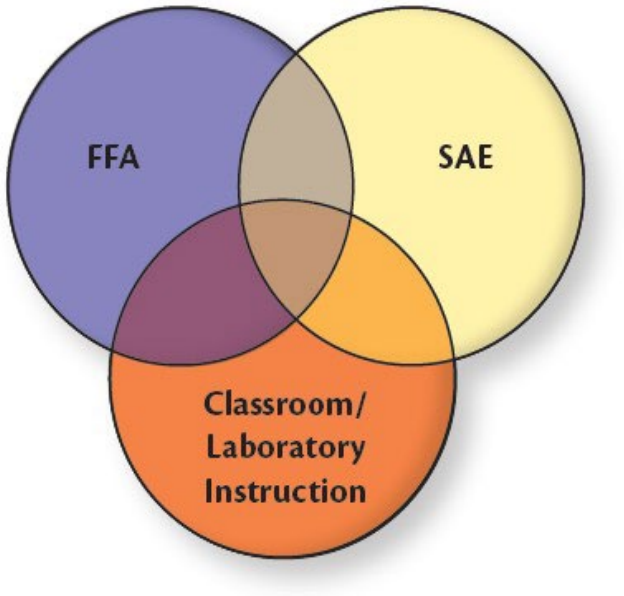
Student Edition

CIMC

AG3001

Unit 2
Supervised Agricultural Experiences

Agricultural Education programs are comprised of three parts: classroom and laboratory instruction, FFA activities, and supervised agricultural experience (SAE) participation. This is also known as the three-circle model. These three parts work together to provide students with experiential learning and career awareness. One of the circles in particular gives students the opportunity to apply what is learned in the classroom – SAEs or supervised agricultural experiences. Through these experiences students are able to explore careers, develop specific industry skills, and learn soft skills such communication.



SAEs are a required component of the Agricultural Education program, and each student must plan and implement an SAE during his or her experience. The Agricultural Education instructor provides supervision and guidance for students in planning and implementing an SAE. A successful SAE combines all four of these components:

1. Teacher-supervised
2. Hands-on
3. Agricultural-related
4. Curriculum-based

OBJECTIVES

1. Discuss the types of Supervised Agricultural Experiences.
2. Outline a personal Supervised Agricultural Experience (SAE) plan.
3. Explore the various records kept for an SAE.
4. Discuss the awards and recognition available through SAEs.

KEY WORDS

assets
capital
chattel mortgage
current
debt
depreciate
enterprise
entrepreneurship
equity
expenses
experience
exploratory
income
internship
inventory
liability
non-current
operating
ownership
placement
principal
productively invested
research
school-based enterprise
service learning
transaction

Types of SAEs

Supervised agricultural experiences allow students the opportunity to experience agriculture in a more hands-on way. There are six types of SAEs that students can choose from: exploratory, placement/internship, ownership/entrepreneurship, research, school-based enterprise, and service learning. With these options, every student in Agricultural Education will be able to effectively have an SAE according to his or her interests and abilities.

An ***exploratory*** SAE is one that allows a student to explore career opportunities in the agriculture industry. This could include shadowing a veterinarian, feed mill operator, cattle rancher or agricultural loan officer. It will hopefully help direct students toward a career goal.

A ***research*** SAE is designed to expose students to the scientific side of agriculture. Students can select an area to research and determine outcomes. Since agriculture is science, this type of SAE and agriculture go hand in hand. A research SAE will not qualify students for advanced FFA degrees; however, awards and other recognitions are available.

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An ***ownership/entrepreneurship*** SAE allows a student to own his or her own business. Examples include producing and marketing livestock, crops, nursery plants, or forest products. It also includes services such as lawn care; processing of agricultural products; or repair, design, or fabrication of equipment related to agriculture.

A ***placement/internship*** SAE is where a student works for someone, either for pay or for the experience. These SAEs may be in agribusinesses, school labs, farms and ranches, or community facilities.

As another option, students can participate in a student-managed entrepreneurial program in the school setting called a ***school-based enterprise*** SAE. This type of SAE is designed to imitate the work environment as closely as possible. School-based enterprise examples include school gardens, production greenhouses, agricultural equipment fabrication or a school store. It is important for students to gain hands-on

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experience in the school setting; however, it should be the goal for students to progress past the school-based SAE to one that is managed outside the school day.

Students may also develop and manage a ***service learning*** SAE for a school, community organization, or non-profit organization. All steps from the needs assessment to planning and implementation to evaluation must be done by the student or group of students. This project cannot be part of an ongoing chapter project or community fundraiser.

The agriculture industry has over 300 various careers available. Through SAEs students can gain experiential learning that can lead to a rewarding career in agriculture. It is essential for students to not only learn skills through SAEs but also document those skills and experiences through a variety of record keeping methods.

Personal SAE Plan

After learning about the different SAEs, it is important for a student to develop a personal SAE plan. This plan can start out simple and adapt as interests in agriculture change. The first step is to determine your interests. An online interest survey or simply visiting with your instructor can help guide you.

There are a few factors to consider when developing an SAE plan. After determining your interests, you will want to consider your budget, capital investment such as land or animals, time commitment, and what you would like to learn.

If your interests lead you to an SAE that will require a financial commitment, it will be important to discuss this with a parent or guardian. A budget is an outline of possible expenses and income for an SAE project. This will help guide you in determining the scope and magnitude of your SAE. As your project grows and changes, so will your budget. For this reason, budgets should be assessed on a continual basis.

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Some SAEs require a capital investment, such as the purchase of land, livestock or equipment. Investments such as this can be productive over time but must be accounted for in your budget planning. If you desire an SAE that requires capital investments, there are SAE student financing programs available. You can also ask local business owners for sponsorships and support to start your SAE project.
As you plan your SAE, it is also important to consider the amount of time you have to spend on a project. Each type of SAE requires a different time commitment. For example, livestock projects need daily care, whereas an agriculture-related job may not be every day. If you have questions about the amount of time a particular SAE may require, discuss with your instructor, parent or guardian.

What do you want to learn? Learning experiences are a large part of SAE programs. When planning your SAE, determine what it is that you would like to gain from the project. Are there skills you want to learn? Would these skills lead toward further education or employment after graduation? Since skills and experiences are recorded in your record book, it will be important to determine how you would like to see your SAE grow and the learning you would like to gain.

Record Keeping

Maintaining good records is essential in personal finance and in managing an SAE. This record keeping does not just involve financial transactions but also skills learned, certifications attained, and planning and reflection. Each type of SAE has necessary documentation, some being more financial than others. This documentation can be used to show program and student growth, and can at times be used for industry certifications and as part of the SAE grading component of the agricultural education program. Keeping records takes time and effort, but it is essential. Sound decision making for an SAE program is supported by the quality of the records that were kept to help make those decisions. A student should work as hard at record keeping as any other part of the SAE program.

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Often there are records kept that do not directly relate to the SAE, such as non-SAE income, jobs performed not related to agriculture, or volunteer work. For example,

winnings from a speech contest or a gift from a family member is considered non-SAE income. Working as a babysitter or at the local fast-food restaurant is an example of a job performed not related to the SAE. All of these records are worth keeping because the income derived from the non-SAE income could be used to finance a student's SAE program. Providing information on the sources of funds is important.

Entrepreneurship Records

An entrepreneurship SAE is a student-owned business; so, the records kept are like that of any other business. Businesses track sales, expenses, customer information, supplies or materials on hand, and other details needed to operate.

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Inventory

So, how does a business know what ***assets***, or supplies or materials, are on hand? By conducting an inventory. An ***inventory*** is a list of the items or assets a business owns. It includes all the goods the business sells such as livestock or crops, as well as items that are consumed to produce those goods such as feed, fuel, or fertilizer.

Inventories are an essential component of SAE record keeping. Knowing what is in the inventory allows for planning and decision making. They provide a "snapshot" for a specific time during the record keeping period and are broken into two main categories: current (operating) inventory and non-current (capital) inventory.

- ***Current (operating) inventory*** is assets that can be converted to cash or used within approximately one year. This includes feed, fertilizer, veterinary supplies, livestock purchased for resale, or market animals raised.

- ***Non-current (capital) inventory*** is assets that have an expected useful life of more than one year. This could include most breeding stock (cows, sows, ewes), land, buildings, and equipment such as feeders, panels, and trailers.

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An inventory may also include items the business uses to operate such as land, machinery, and computers. An inventory is used for several reasons. It is needed to complete financial statements and insurance records, manage taxes, determine what goods need to be stocked, and other important purposes. The term ***productively invested*** refers to all asset costs including the initial investment plus other expenses on the asset. An inventory will assist in determining the amount productively invested in an SAE.

Since buildings, fences, machinery, and equipment ***depreciate*** or decline in value over time, the cost minus depreciation method should be used for calculating the value of these items. There are various scenarios in which depreciation is used depending upon the particular investment asset. When calculating the value of capital livestock animals, a generally accepted practice is to deduct depreciation if the animals are purchased and not deduct depreciation if the animals have been raised by the individual.

UNITS AND VALUATION

Livestock
price per pound (lb.)
price per hundred weight (cwt.)
price per head

Stored Crops
small grains — price per bushel (bu.)
peanuts, pecans, soybeans — price per ton or price per pound
hay — price per ton or price per bale
cotton — price per ton

Growing Assets
growing crops — production costs invested per acre
growing horticulture plants not ready for market — production cost invested per flat, pot, or individual plant
purchased animals for resale — purchase price plus production costs invested per individual animal

Other Assets
feed — price per hundred weight or price per ton
fuel — price per gallon
fertilizer — price per ton or price per bag
equipment and machinery — price per item
land — price per acre

Transactions

To determine if an entrepreneurship SAE is profitable, all financial transactions must be recorded. A ***transaction*** is any exchange of money including the purchase of feed, livestock, entry fees, or supplies (expenses), or it could be the sale of hay, livestock, or labor in exchange for supplies (income). ***Expenses*** are the transactions where money is spent, and ***income*** is where money is gained. It is important that records are accurate to determine the profitability of the SAE program.

Current (operating) income, or cash sales, is money received from the sale of current (operating) assets. Examples would be market animals for show or commercial use, crops, and raised market livestock. Income or premiums derived from exhibition should be recorded as income. Non-current (capital) sales include money received from the sale of assets that are non-current (capital) assets. Examples would be breeding livestock, machinery, and land.

Expenses are the cost of goods and services involved with producing a product or a service. Non-current (capital) expenses are the total purchase price of non-current

(capital) assets. Some examples include machinery, breeding livestock, land, or buildings. Current (operating) expenses are those that are required to conduct and manage an SAE. Some examples of cash current (operating) expenses are the purchase of goods you intend to resell later (such as bedding plants or market animals), animal supplements and feeds, fertilizer, seed, chemicals, fuel, veterinary supplies, insurance, and machinery rent.

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Often bartering, exchange labor, and gifts are used to operate an SAE, also known as noncash transactions. This is done when products are gifted/bartered or labor is performed in exchange for goods. A parent/guardian or sponsor often pays for the expenses in an SAE in exchange for work. In a record keeping system, there will be two transactions for non-cash expenses: one showing the expense amount, and one denoting the barter, exchange or gift, and the two must be equal.

Non-Cash Transaction Examples

EXAMPLE #1: Three bred gilts were traded to a neighbor in exchange for 225 bushels of corn valued at $600. This is an example of bartering and the $600 should be recorded as non-cash operating expense-feed, as well as a barter exchange.

EXAMPLE #2: A veterinary office visit was received in exchange for summer labor; record the estimated value of $150 as non-cash operating expense-veterinary, as well as a labor exchange.

EXAMPLE #3: A gift of 20 fence T-posts was received with an estimated value of $80. Record the amount as non-cash capital expense-supplies.

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Liabilities and Equity

Liabilities can also be categorized as current (operating) or non-current (capital). A ***liability*** is any money, goods, and/or services for which you owe. Current (operating) liabilities include items you owe that are due within the next 12 months, such as taxes, rent, or leases, as well as outstanding feed bills, veterinary invoices, past due insurance premiums, and charge accounts. Non-current (capital) liabilities are notes, chattel mortgages, and contracts that are *not d*ue within the next 12 months. A ***chattel mortgage*** is a loan secured by moveable personal property rather than by land or permanent fixtures.

If a partial payment is due in the current year on a non-current (capital) asset such as a chattel mortgage, contract or deed, it would be recorded as a total current portion of non-current debt.

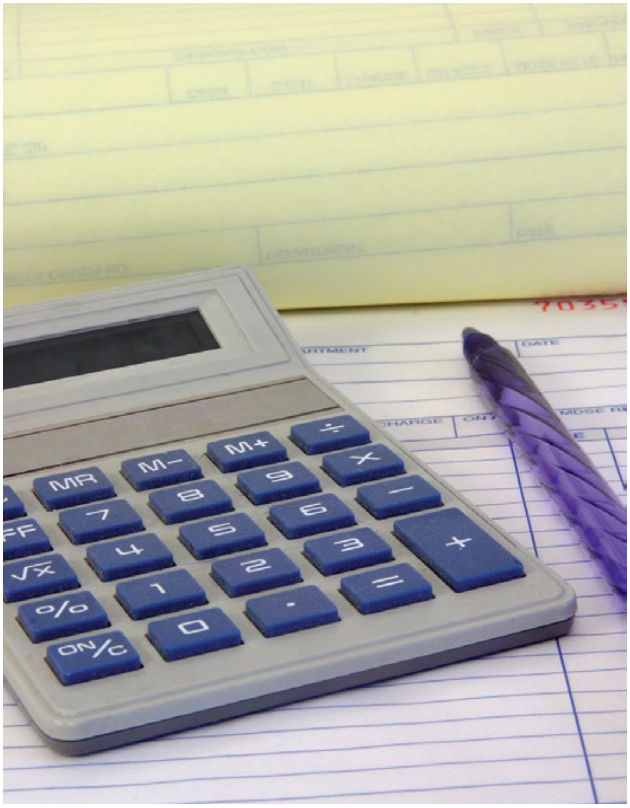
> For example, a student has a chattel mortgage of $9,000 for a pickup truck that is payable over a four-year period, and $2,400 must be paid on the principal this next year. ***Principal*** is the actual amount borrowed; it does not include any interest, or late payment finance charges, but may include loan origination finance charges. The remaining $6,600 becomes a non-current liability.

All assets and liabilities show owner's ***equity*** or net worth. All of the liabilities and debts against the SAE are subtracted from the SAE assets and investments. ***Debt*** is the amount of money owed on an asset or investment, such as money owed to a co-op or an individual. What remains is the owner's equity in the SAE program. There is a maximum possible increase in owner's equity. The increase cannot be greater than the difference between the total source of funds (earnings) and the total use of funds including personal expenses, such as entertainment, clothing, school tuition, books and other expenses associated with education.

It is not uncommon for a student's owner's equity to be negative, especially in the first year or two of the SAE program. Large increases in inventory, coupled with the debt incurred in increased inventories with no return on the investment yet, could lead to a negative owner's equity. It is not bad to have a negative owner's equity at first, but eventually, students should begin to see a return on their investments.

Placement Records

A placement SAE does not involve ownership or inventory; instead, it involves receiving work experience without ownership. Examples of this would be working at a veterinary clinic, grooming at a horse stable, working at a nursery, or working at a corporate swine facility. Students gain experience, skills and work-based training without the financial investment of an ownership (or entrepreneurship) SAE, which is beneficial for students who are unable to purchase livestock, feed, and supplies.



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A placement SAE also involves no market risk unlike an entrepreneurship SAE where students may deal with the rise and fall of wheat or cattle prices. The income derived from the placement SAE can count toward the net profit requirement for the State and American FFA Degree; however, the investment requirements must still be met. All proficiency award areas have either a placement, entrepreneurship, or combination application.

There are required records for a placement SAE, such as hours worked or volunteered. Along with these hours, the skills performed or attained are also recorded. If there is

income or expenses involved with the placement SAE, those details would also need to be recorded.

Exploratory Records

An exploratory SAE allows students to discover a variety of agricultural areas and careers. Examples of exploratory SAEs include observing a florist, interviewing an agricultural loan officer, assisting on a cattle ranch for a day, attending an agricultural career day at a college or university, or writing a research report on an agricultural career.

With any exploratory activity, there are records to be kept. These records will likely not have a financial component; however, skills learned and observed, or written details of an interview or experience can be recorded. Any experience completed through an exploratory SAE should be documented to show SAE growth.

Research Records

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Agriculture is science, and with science comes research. Advancements in agriculture have prospered through the efforts of scientific researchers and technicians who seek to answer questions and make agriculture better. As an SAE option, students can choose to complete a scientific research project. The records for a Research SAE include all documentation that pertains to the research process, also known as the scientific method.

Scientific Method

1. State the problem – what question do you want answered?
2. Form a hypothesis – what do you believe will be the experiment outcome based on information gathered?
3. Test the hypothesis – what experiment will you conduct to test your hypothesis?
4. Analyze the data – what data can you record and summarize?
5. Report the data – what are the written conclusions to support or reject your hypothesis?

An experiment should include a dependent variable that does not change and an independent variable that does change. An experiment should also include an experimental group and a control group. The control group is what the experimental group is compared against.

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School-Based Enterprise & Service-Learning Records

When an SAE is completed at the school using school resources or as a service project, the hours worked or volunteered should be recorded. The skills attained through these projects are an important part of the learning assessment for these types of SAEs. Other project documents such as the written project plan or evaluation can also be used as recorded documentation. In some instances, there might be inventory to keep if the projects require supplies.

Awards and Recognition

After you've started your SAE and have shown growth, you may choose to apply for awards. The Agricultural Proficiency Awards program allows students to showcase the skills, achievements and records attained through their SAE program. There are over 45 official proficiency award areas and two types within those areas: placement and entrepreneurship. Some proficiencies offer both placement and entrepreneurship while others may offer one option. Examples of proficiency awards include areas such as Agricultural Communications, Dairy Production, Equine Science, and Outdoor Recreation to name a few. A full list of proficiency awards can be found on the National FFA website or in the FFA Student Handbook.

Photo provided

For students who have chosen a research SAE, agriscience fairs are available to showcase their research. There are six categories of agriscience: Animal Systems; Environmental Services/Natural Resource Systems; Food Products and Processing Systems; Plant Systems; Power, Structure and Technical Systems; and Social Systems.

Along with the agriscience fair competition awards, state and national awards are available. National FFA supports an Agriscience Student Recognition Program for members to receive scholarships in pursuit of a career in agricultural sciences. Agriscience proficiency awards are also available in the areas of Plant Systems, Animal Systems and Integrated Systems.

The FFA and SAEs overlap in the three-circle model, and that overlap provides students the opportunity to earn FFA degrees partly based on their SAEs. The youngest FFA members can earn the Discovery FFA Degree. As part of the requirements for this degree, members must have knowledge of agriculture-related careers and SAE opportunities.

The requirements for an SAE expand as students progress through the Agricultural Education program. The Greenhand FFA Degree requires students to have a plan for a supervised agricultural experience program, where the Chapter FFA Degree requires students to have either productively earned and invested $150 or worked/volunteered 45 hours in an SAE program. The requirements continue to change with the State FFA Degree and American FFA Degree as a student's SAE grows and becomes more productive.

FFA DEGREE SAE REQUIREMENTS*

Discovery FFA Degree
Have knowledge of agriculture-related careers and ownership and entrepreneurial opportunities

Greenhand FFA Degree
Have satisfactory plans for a supervised agricultural experience (SAE) program

Chapter FFA Degree
Have earned and productively invested at least $150 or worked/volunteered 45 hours outside of scheduled class, and have developed plans for continued growth and improvement in a supervised agricultural experience (SAE) program

State FFA Degree*
Have earned and productively invested at least $1,000 or worked/volunteered at least 300 hours outside of scheduled class, or a combination thereof

American FFA Degree**
Have earned at least $10,000 and productively invested at least $7,500; or earned and productively invested $2,000 and worked 2,250 hours outside of scheduled class

*Some states have varying degree requirements. For example, in Oklahoma the requirement to earn the State FFA Degree is $2,000 productively earned and invested, and unpaid hours are not accepted.
Additional details can be found in the FFA Student Handbook or the National FFA website **www.ffa.org, or in your respective state's FFA constitution.

UNIT SUMMARY

What records have you kept? Maybe you keep record of your grades or the money you make from doing household chores. There are many types of records kept throughout our lifetime. Your opportunity to have a Supervised Agricultural Experience program will strengthen your recordkeeping skills. It is important to remember that keeping good records reflects on the quality of your SAE program and can one day lead to proficiency awards, degrees and other recognitions. Poor records may show a false picture of your program and more importantly may lead to poor decision making.

UNIT REVIEW

1. Explain the six types of SAEs and give an example of each.
2. When might a student choose to have an exploratory SAE?
3. Why is it important to develop an SAE plan?
4. What factors should be considered when developing an SAE plan?
5. Why is record keeping important?
6. What are two examples of non-SAE income?
7. What is the purpose of an inventory?
8. What is the difference between current and non-current?
9. Define current (operating) income and give one example.
10. Define non-current (capital) sales and give one example.
11. What is a liability?
12. How is a placement SAE different than an entrepreneurship SAE?
13. What is an example of a record for an exploratory SAE?
14. Explain the scientific method for research.
15. What are three different awards or recognition available based on SAEs?