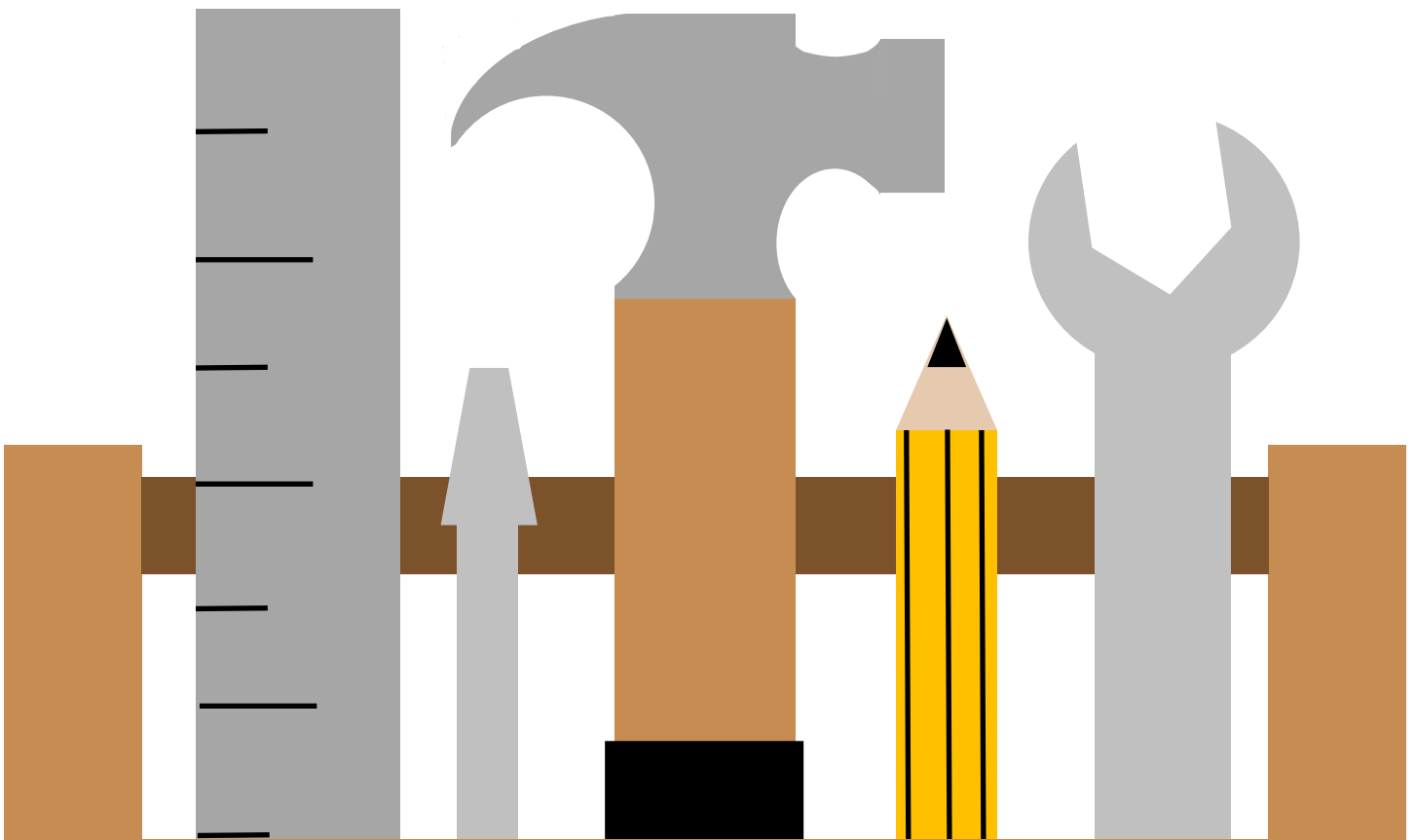


Iowa Agriculture in the Classroom

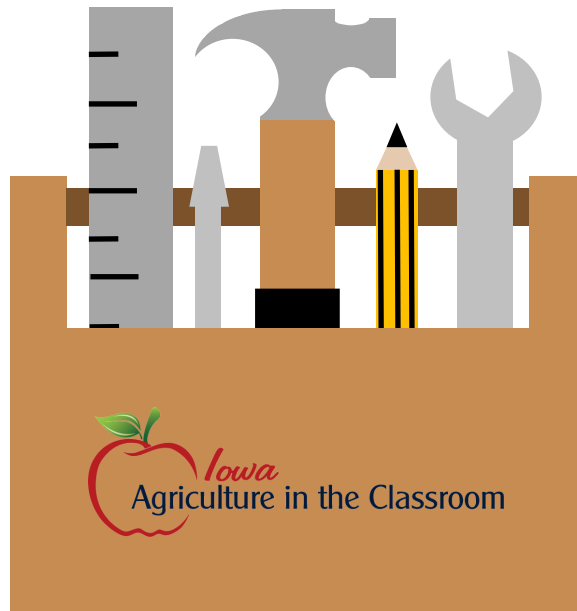


Outreach Toolkit

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What is Agriculture in the Classroom?

Agriculture in the Classroom (AITC) is a national program that helps integrate agriculture concepts into core subjects like science and social studies. On a national level, the National Agriculture in the Classroom Organization functions to organize statewide efforts, garner national support, generate funds and funding opportunities, and create resources. The National Agriculture in the Classroom Organization holds a conference each year in June where hundreds of Agriculture in the Classroom professionals, teachers, and industry supporters gather, teach, and support one another.

On a state level, each state may function differently. Some states have programs as a part of their state department of agriculture or as part of their land grant institution. Other states have programs as a part of their state Farm Bureau organization. Other states, like here in Iowa, the Agriculture in the Classroom state contact organization is a separate non-profit organization. The Iowa Agriculture Literacy Foundation is this organization in Iowa, and serves as the centralized resource for Iowa Agriculture in the Classroom efforts. IALF is supported by various commodity groups, agricultural organizations, and individual patrons.





**Agriculture and
the Environment**



**Plants and Animals for
Food, Fiber & Energy**



Food, Health & Lifestyle



**Science, Technology,
Engineering & Mathematics**



**Culture, Society,
Economy & Geography**

On a local level in Iowa, county Farm Bureau organizations have historically spearheaded Agriculture in the Classroom efforts. This can vary greatly from county to county, with some counties having full or part-time paid coordinators with others using fully volunteer efforts. With any system, IALF is available to provide support, guidance, and resources.

As a whole, Agriculture in the Classroom programs are encouraged to follow a set of standards put forth by NAITCO called the National Agriculture Literacy Outcomes. These standards tie to the science, social studies, and nutrition standards regulated at the state level. They help organize the learning of agricultural content to ensure that appropriate topics are being studied at each grade level. These standards can be found on the NAITCO website at www.agclassroom.org.

At IALF, we often say that we don't want agriculture to be "one more thing" a teacher needs to add to their curriculum. Instead, we want to see agriculture being used as the context by which science and social studies concepts are being taught. For example, when teaching about plants and plant parts, why not use a soybean plant and talk about why soybean plants are important in Iowa?

Great AITC programs can look very different, but with a little bit of planning and intentionality, they can all be successful!

Tips for Engaging Students

A common question from AITC coordinators is, “How do I keep students’ attention?” Managing students can be a difficult part of classroom presentations, but there are some simple things you can do to keep students on their best behavior!

First, be clear with the classroom teacher that **you expect them to be engaged** and manage misbehaving students. It should not be your role to discipline children. You also want the teacher to be know what you are saying so they can refer back to it in future lessons.

Second, adopt an **attention-getter**.

You can clap, bring a rattle, tell students to “put a bubble in their mouth”, or speak quietly and say, “if you can hear me, clap once (twice, etc.)”. Use this same attention-getter each time and with every presentation. Students will remember it!



Third, remember to **ask questions** throughout your program. With younger students, review what a question is and appropriate ways to ask and answer questions (save stories for the end if there’s time!). Ask some yes/no questions or ask for a show of hands or thumbs-up/down for quick polls. Ask open-ended questions with older students to let them think critically and creatively. Then, give them lots of time to think and answer! You may need to practice your awkward silence tolerance, but you can do it!

Lastly, try to include **hands-on activities** in every lesson. This may look different lesson to lesson, but will keep students excited and paying attention. But – remember not to hand out materials before you want students to use them in case they get distracted!

Students are goofy, excited, and so curious. You will have so much fun working with these young people and teaching them about agriculture!



Program Structure Models

There are many different local AITC program structures. Here are a few different options for programming structures. Different structures may be best for different areas or different goals. Most structures have both pros and cons, but by evaluating the goals of the local program, you can best choose which structure can meet those goals.

- **Teacher-Directed**
 - In terms of truly integrating agriculture into regular classroom instruction, teacher-directed may be one of the best options. With this approach, the coordinator and teacher discuss what units or topics are coming up in the schedule, and work together to decide on what lesson may fit best. Coordinators using this approach may use the lessons on the Curriculum Matrix, or may spend time creating new lessons. This may be more time-intensive because of how tailored each program becomes.
- **Grade-Specific**
 - In areas where coordinators have very high demand, a grade-specific approach is sometimes taken. Second and fourth grades are particularly well-suited to this approach, as their standards have great agricultural connections.
- **Menu of Programs**
 - For coordinators who like tailoring each program, but don't have time to "invent the wheel" each time, something like a menu can be helpful. Find a few lessons that meet standards well in each grade you see and compile them for a teacher to choose from.
- **Teacher-Oriented**
 - A teacher-oriented approach can help reach more students than one in-classroom presenter can reach. Though classroom presentations are a huge part of AITC, it's great to have classroom teachers *also* teaching agriculture in their regular instruction. With this approach, consider working with curriculum coordinators, teacher coaches, and administrators to host teacher trainings during regular in-service times. Hosting a summer professional development workshop is also a great idea.
- **Event-Based**
 - In some areas, particularly where volunteers are heavily relied upon, efforts are concentrated on a specific event, fair, or time-period. This could be an ag day, ag week, or other similar event. With this approach you won't spend as much time in front of students, but it does still take lots of time in terms of coordination and event-planning.

Before choosing which model you'd like to follow, remember that you don't have to follow other program's styles completely! It's possible to take pieces from different programs and combine them in a new way. Think through the program's goals and parameters to best make a plan of action.

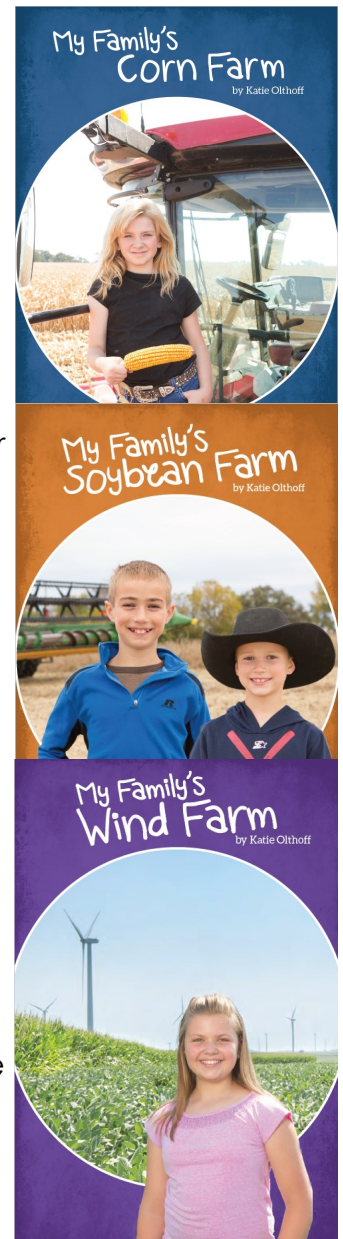
The Iowa Agriculture Literacy Foundation has a host of resources and materials you can use in your programs. If you need help finding exactly the right thing for you, reach out to us and we can help!

- **Lesson plans**

- There are over 100 lesson plans aligned to Iowa Core Standards on the IALF website. Each lesson has all necessary files linked. Lessons are always free to download and use. Find lesson plans under the Resources and Iowa Core Lessons tabs.

- **Publications**

- ***Iowa Ag Today – elementary, English:*** Written at a fourth-grade reading level, cross-curricular, and tied to standards, this set of six student publications is available to order on our website for \$0.50 per pack of 25. Each pack of 25 comes with a teacher guide complete with discussion questions, vocabulary and definitions, pre/post-test, a worksheet, and more.
- ***Iowa Ag Today – elementary, Spanish:*** The first three issues of the English version have been translated into Spanish for emerging bilingual students, as well as other foreign language instruction. Request packs of 25 copies free of charge from info@iowaagliteracy.org.
- ***Iowa Ag Today – middle school:*** These student magazines are a more grown-up version of our elementary issues, written at a seventh-grade reading level, and with a more focused subject area. There are currently three issues: Culture and Society (social studies connections), Science and Agriculture, and Food and Agriculture (family and consumer science connections). Request packs of 25 copies free of charge from info@iowaagliteracy.org. When a new issue is released, it will be direct-mailed to the appropriate middle school teacher in each district.
- ***My Family's Farm book series:*** Each book in this series follows a real-life student around their family's farm. The books are written from the student's point of view and are written at a third-grade reading level. There are currently eight books in the series: *My Family's Beef*



Farm, My Family's Corn Farm, My Family's Soybean Farm, My Family's Pig Farm, My Family's Apple Farm, My Family's Egg Farm, My Family's Wind Farm, and My Family's Turkey Farm. Each book has two corresponding lesson plans on the IALF website. Request copies to be used for an educational purpose free of charge from info@iowaagliteracy.org. When a new book is released, it will be direct-mailed to every third grade teacher in the state.

- **Grants and Awards**

- **Teacher Supplement Grant:** This grant program is open to all Pre-K-12th grade teachers in Iowa who are looking to incorporate more agriculture into their classroom. Teachers may receive up to \$250 in funding for projects with clear connections to core standards, agriculture topics, and that have good impact and depth-of-learning. Grant applications open in late fall, and close in early spring. Find applications and more information on the IALF website under Resources and Grants.
- **Excellence in Teaching About Agriculture Award:** This award opportunity is open to any Iowa teacher who incorporates agriculture into their classroom instruction. This is a self-nominated award program, in which teachers fill out an application and supply other supporting documents. The winning teacher will receive \$500 as well as up to \$1,000 of their travel expenses paid to attend the National Agriculture in the Classroom Conference. Winners will be recognized at this conference, and will be submitted in the National Excellence in Teaching About Agriculture Award competition. Applications open up in the fall and are awarded in the spring.



• Student Competitions

- **Gobble Up! Turkey Marketing Competition:** This competition is open to third-12th grade classrooms in Iowa. Teachers may register their class to compete, and will receive the full set of rules and educational resources about turkey nutrition and production. There are three age divisions (elementary, middle school, and high school), with each division having slightly different rules. Final projects will showcase an interesting turkey recipe or product and a marketing plan or advertisement for that product. The competition opens for registration in late August, projects are due in early November, and winners are announced by Thanksgiving. The top three projects in each division will receive cash prizes and printed certificates. Register on the IALF website under Resources and For Students.
- **High Steaks! Beef Marketing Competition:** This competition is open to third-12th grade classrooms in Iowa. Teachers may register their class to compete, and will receive the full set of rules and educational resources about beef nutrition and production. There are three age divisions (elementary, middle school, and high school), with each division having slightly different rules. Final projects will showcase an interesting beef recipe or product and a marketing plan or advertisement for that product. The competition opens for registration in January, projects are due in March, and winners are announced in April. The top three projects in each division will receive cash prizes and printed certificates. Register on the IALF website under Resources and For Students.

• Lending Library

- IALF has a collection of books, DVDs, kits, posters, games, props, and more that are free to check out and use. Find the full list of materials on the website under Resources and Lending Library. To request materials, email info@iowaagliteracy.org.

• Implementation Support

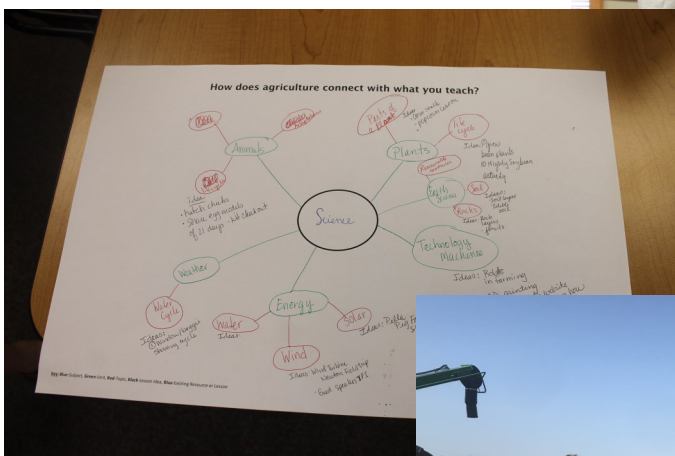
- **FarmChat®:** FarmChat® is a virtual field trip, where students can stay in their classroom and videochat live with a farmer or agribusiness about what's happening at their operation. Students can get live looks in livestock barns, tour industry buildings, and even ride along in tractors and other implements! IALF can help provide guidance on the best practices, tips, and support for getting these programs going.
- **Journey 2050:** This is an online or in-app gaming platform and education curriculum made by Nutrien and gifted to the National Agriculture in the Classroom Organization. It follows farmers in Canada, Kenya, and India and analyzes the sustainability practices farmers make every day. IALF can provide training sessions for leading these programs.

• Professional Development

- **For teachers:** IALF is present at many of the places teachers find their professional development. IALF staff can present at teacher in-service days, teaching conferences, and also hosts two-day workshops in the summer with the help of local hosts. Online courses are also offered during the school year.
- **For AITC professionals:** Every fall, IALF hosts a statewide Agriculture in the Classroom workshop. Attendees hear from speakers, participate in hands-on activities, hear about what's new in AITC, and receive further training and inspiration. Look for an email from Melissa Anderson in early fall to save the date and RSVP. IALF is also available for on-demand meetings and trainings.

• Seeds

- IALF receives seeds from Corteva Agriscience to be used in education. Seed types may vary, but can include corn, soybeans, sunflower, sorghum, alfalfa, canola, and others. Email info@iowaagliteracy.org to request.



Other Helpful Resources

IALF is not the only organization with helpful materials. Check out the following organizations and their resources:

The National Agriculture in the Classroom Organization has a few key resources. The Curriculum Matrix is a collection of lesson plans from across the country that tie to standards, include supporting documents, and have a high-quality agriculture connection. The Ag Classroom E-Store includes many materials and kits that can be used for lessons on the Curriculum Matrix. NAITCO also has grant and award opportunities for classrooms and to attend the National Agriculture in the Classroom conference. Find more and explore at www.agclassroom.org.

The American Farm Bureau Foundation for Agriculture has many materials for purchase, including high-quality agriculture books, teacher guides, Ag Mags, and more. Visit <https://www.agfoundation.org> to explore.

Nutrients for Life is an organization that focuses on soil health resources and curriculum. Find materials like student readers, lesson plans, and even flash cards on their website: www.nutrientsforlife.org.

The FB Store has Iowa Agriculture in the Classroom materials available for purchase, like tote bags, stickers, stress toys, and more. Contact your county Farm Bureau office to place an order.



STEM festivals are increasingly popular in the state. Many schools, counties, or STEM Hubs organize their own. Consider signing up for the email list of the Iowa Governor's STEM Region your county is in to get notifications of upcoming events. These events can be a great way to interact with youth and families in an out-of-school setting.

When preparing for a STEM festival or similar family event, there are many things to consider. Think about the educational value. Does this activity teach about agriculture AND science, technology, engineering, and/or math? Is this activity engaging and hands-on? Is the activity quick? Are the materials easy to obtain and prepare? Is it portable? Does it require electricity, water, or other infrastructure? If the student takes something with them, is it easy to carry or stash in a bag?

Consider also that the students and parents you interact with will have very different backgrounds, education, and abilities. Are you able to work with these different people so they can also be a part of the activity? Think through some quick ways you can scale up, scale down, or modify the activity for different demographics.

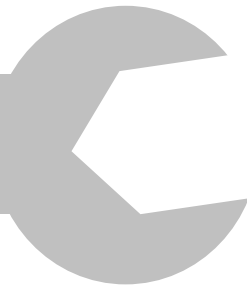
When attending an event, avoid simply handing out giveaway items, having an unmanned booth, or having a wall of displayed information. The best activities at a festival or fair are:

- Quick
- Cost efficient
- Easy to prepare
- Educational
- Directly tied to agriculture
- Succinct in message
- Hands-on
- Portable
- Modifiable for age/ability
- Representative of two or more STEM areas (if for a STEM festival)

The IALF Ag on the Go booklet has several activity ideas perfect for this type of event. Email info@iowaagliteracy.org to request a physical booklet, or visit the IALF website under Resources and Other to download the PDF.



Promotional Resources

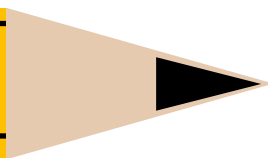


When starting a new program, you likely want to look the part! Branding can be an important aspect in looking professional and gaining trust from teachers. Here's a cheat sheet for where to find resources:

- Iowa Agriculture in the Classroom logo: email info@iowaagliteracy.org for digital file
- County-specific Agriculture in the Classroom logo: email info@iowaagliteracy.org for digital file
- Business cards: Contact the Farm Bureau Print Shop, Joann Nunnikoven, printingcenter@insidefb.com
- AITC Promo Sheet Template: email Cindy at chall@iowaagliteracy.org for digital file
- Nametags: American Marketing, 440 East Grand, Des Moines, IA 50309, 515-282-6203



Education Jargon



The education world can seem like it speaks a different language. Here are a few buzzwords to help keep you ahead of the game.

Science phenomenon: A science phenomenon is something that happens in real-life that can be explained with science. Think why plants grow toward the sun. These are used as the start of science lessons.

Standards: Teachers need to follow standards to ensure students are learning appropriate content. Learn more on the next page!

PD: Professional Development; can either be meetings at school, or courses outside of school that earn teachers their teaching license renewal credit.

STEM: STEM stands for science, technology, engineering, and math. There is a push for an increase in education in these areas.

Connecting Programs to Standards

If you have a previous background in education, you may know that what teachers teach is dictated by standards set at the state and national level. Common Core, the national standards, apply to math and English language arts. The Iowa Core applies to science, social studies, and 21st century skills.

The state of Iowa has adopted Next Generation Science Standards (NGSS) as the Iowa Core Science standards. This means that any state that uses NGSS uses the same science standards as Iowa. Iowa has built its own social studies standards, but they built them within the C3 framework that is nationally recognized.

As an agriculture literacy organization, IALF and NAITCO also follow the National Agriculture Literacy Outcomes (NALOs). These standards help us break down learning so students are discovering appropriate agricultural content as they continue through school. These align well to national and state standards, and are aligned appropriately on all IALF and NAITCO lesson plans. You can find the NALOs at www.agclassroom.org.

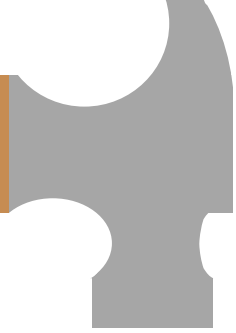
Lesson plans written in Iowa are aligned to Iowa Core Science (NGSS), Iowa Core Social Studies (built from the C3 framework), Common Core math, Common Core English Language Arts, and Iowa Core 21st Century Skills. Lesson plans available on the NAITCO Curriculum Matrix are aligned to NGSS, the C3 social studies framework, Common Core math, and Common Core English Language Arts.

To find the full listings of Iowa Core standards, visit www.iowacore.gov. If the full standards are proving too daunting, consider looking into the Parent Guide that gives an educational summary of what a student should know by the end of each grade.

The IALF staff is also available to help align program content to standards.



Writing a Mission Statement



“The Iowa Agriculture Literacy Foundation mission is to educate lowans with a focus on youth regarding the breadth and global significance of agriculture.”

When building a new Agriculture in the Classroom program, it is important to have goals. Start by thinking big picture and writing a mission statement. What is your organization? What is it you wish to accomplish? Think either individually or with a few key constituents to help formulate this mission. It should help direct your overall program and let others know your purpose.

Think about it: What are some key pieces of your program? Jot these down to begin formulating your mission. Review the Logic Model for Agricultural Literacy Programming on the next page for ideas.

Logic Model for Agricultural Literacy Programming

Situation: Agriculture¹ provides the very sustenance of life and without it no society can survive. Agriculture impacts the food, health, economy, environment, technology, and well-being of all. By 2050 it is projected the world's population will reach 9 billion people requiring agriculture production to double—with less land and water—while sustaining our planet. More food will have to be produced in the next 50 years than the past 10,000 combined.² The U.S. agricultural industry annually produces about \$159 billion in toward GDP, netting a positive \$37.4 billion trade balance.³ Approximately 21 million U.S. workers (or about 15% of the total U.S. workforce), are in food and fiber industries. There are approximately 54,000 annual jobs in agriculture but only about 29,000 students—a 45% gap—are graduating in directly related degree programs.⁴ A majority of consumers—youth and adults—do not have a fundamental understanding of agriculture or how agriculture impacts their lives.⁵ In order to meet the challenges of the future, it is imperative that youth and adults are informed consumers, advocates, and policy makers.

Inputs

Financial Resources

- Public funding
- Private funding

Human Resources

- Time
- Expertise

Collaboration Partners

- Educators of PK–Adult
- Funders
- Other programs
- Agricultural industry
- Farm-based organizations
- Other agriculture-based youth organizations
- Public and private institutions/organizations
- Colleges and universities
- Federal and state agencies

Program Resources

- Agricultural literacy researchers
- Research-based materials/curriculum
- Professional development for state contacts, volunteers, and other professionals

Outputs

Activities

K–20 Students/Youth

- Develop and present hands-on career awareness resources
- Develop research-based, standard-based, authentic, and relevant agricultural related materials

Educators of PK–Adult

- Develop research/standard-based, authentic and relevant related materials for use in the classroom
- Provide training opportunities
- Establish and conduct pre-service programs at post-secondary institutions
- Conduct in-service training
- Recruit and train volunteers
- Align work to education standards

Policymakers

- Provide science-based information to consumers and policy makers on multiple dimensions of complex issues

Consumers

- Develop agricultural awareness programs for general public

Participants

K–20 Students/Youth

- Formal Classrooms
- Informal Settings

Educators

- Teachers
- Counselors
- School administrators
- Volunteers
- Post-secondary Educators
- Program sponsors
- Agriculture community
- Federal and state agencies
- Consumers

Boundary Partners

- Program sponsors
- Agricultural community
- Federal and state agencies

Consumers

- Public

Knowledge/Attitudes/Skills

K–20 Youth

- Understand how Science, Technology, Engineering and Mathematics (STEM) is integrated into agriculture
- Identify and understand the connections between academic subjects and agricultural careers including, but not limited to, STEM
- Understand the relationships among agriculture, the environment, plants and animals for food, fiber, energy, health, society, and economics
- Understand the importance and value of agriculture in their daily lives

Educators of PK–Adult understand and integrate the above youth outcomes into academic subjects, and career and technical education

Education policymakers understand the significance of agricultural concepts and examples, and the importance of integrating them into teacher preparation training

Post-secondary faculty understand the importance of integrating agricultural concepts in all subjects

Guidance counselors understand the breadth of agricultural careers

State departments of education and local school districts understand the significance of integrating agricultural literacy concepts into all curricula

Policymakers understand that a strong agricultural economy is important to states, regions, and the U.S.; understand the impacts of their decisions

Outcomes: Changes in...

Behaviors/Practices

K–20 Youth

- Practice and apply STEM skills in the context of agriculture
- Explore and pursue courses and careers related to agriculture and STEM
- Demonstrate or explain relationships among agriculture, the environment, plants and animals for food, fiber, energy, health, society, and economics
- Explain the value of agriculture and how it is important in their daily lives

Educators of PK–Adult

- Effectively integrate agriculture into all curricula
- Emphasize agricultural careers in all academic courses, especially sciences

Education policymakers

- Advocate for inclusion of agricultural concepts in educational standards and their integration into teacher and counselor preparation training
- Increase the number of graduates in post-secondary education agricultural programs

Post-secondary faculty integrate agriculture across degree programs and utilize agricultural materials in pre-service classes

Guidance counselors encourage youth to pursue agricultural careers

State departments of education and local school districts integrate and contextualize agriculture literacy concepts into all curricula and standards

Policymakers establish policies that positively support agricultural research, education, production, and land use

Conditions

- ▶ Agricultural policies positively impact global health, food, technology, the environment, and the economy

- ▶ The needs of agricultural employers are met with a well-prepared, skilled, and flexible workforce

- ▶ A diverse U.S. agricultural industry is an economic engine that is valued by all

- ▶ Farmers provide—and consumers have access to—healthy and nutritious food choices

- ▶ Youth and adult consumers are agriculturally literate, make informed decisions, and advocate for agriculture

- ▶ The world has a secure, safe, and adequate food supply

- ▶ The U.S. remains a sovereign nation

Setting Program Goals



Once you have a mission, you can start making individual goals. Some programs work with their board to develop big, year-end goals (think of these as stretch goals), and then formulate several smaller SMART goals to help achieve them.

The SMART goal formula is a great way to make sure your goal is good. Think, is this goal **specific, measurable, attainable, realistic**, and **time-bound**? If so, you have a SMART goal. Some examples of a SMART goal might be:

- To host five library programs in my county next summer using agricultural books and a hands-on activity.
- To increase our Facebook page following by 30% by the end of the calendar year.
- To attend five teacher in-service days in my county by the end of the semester to introduce myself, my program, and network with teachers.

Think about it: What might one stretch goal for your program be? One SMART goal?

Keeping records of your programs and impact can be an important part in funding your program and illustrating to your constituents how their funds are being used. IALF also reaches out to all AITC contacts at the end of the calendar year for their program numbers so they can have an accurate picture of Iowa Agriculture in the Classroom impact. These numbers are also submitted to the NAITCO for record keeping and funding opportunities.

Consider recording each of the following areas:

- Date of program
- Event title
- Activity, lesson, or topic covered
- Location or school
- Event type (classroom visit, family night, library event, etc.)
- Audience
- Elementary students reached
- Secondary students reached
- Adults reached
- Elementary teachers reached
- Secondary teachers reached



IALF uses an Excel form to track their numbers in a similar way. If you would like an Excel template to track your outreach, please email info@iowaagliteracy.org.

This data is largely quantitative. It helps outside supporters see your impact. However, qualitative data is also helpful, especially in storytelling. Keep notes of what students tell you after the lesson. Write down what positive (or negative) feedback you hear from teachers. Remember to also take pictures with the teacher's permission! Pictures are worth a thousand words and can be a helpful piece in your AITC program story. Use these to develop your program, and to tell the story of your program's impact.

Contact Information

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Thank you for your work in
agriculture literacy and
Agriculture in the Classroom!



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