



## Kansas Corn's Teacher-Led STEM-Based Education Program

Offering curriculum, materials  
and training opportunities  
for K-12 Kansas Educators

Welcome to our quarterly newsletter! See  
what we have to offer to Kansas educators!

A newsletter written **by** teachers **for** teachers to keep up on what's happening with Kansas Corn's STEM-based education program! We've got curriculum, materials and training for K-12 teachers interested in incorporating inquiry techniques, and using corn to help students see how technology fits into their lives and their future!

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### Elementary Focus

#### New Lessons and Classroom Materials for Elementary Educators

Kansas elementary teachers can get curriculum and materials for a one-week inquiry-based unit using corn provided by the Kansas Corn Commission. Kansas Corn's popular Seed to STEM program for secondary school science teachers is in its second year, and the new elementary program is a valuable expansion to Kansas Corn's educational offerings, according to Educational Curriculum Manager Sharon Thielen, PhD.

"Elementary teachers can visit our [kscorn.com](http://kscorn.com) website and directly download our lessons. If they want the materials provided for the learning activities, they simply fill out a form on our website and we send them a free teacher's kit," Thielen said.

Lessons for Kindergarten-First Grade; third grade and fourth grade are now available at [kscorn.com](http://kscorn.com). Lessons for second and fifth grade will be available soon. All units are connected to the Next Generation Science Standards and include up to three fun activities that will motivate learning. Free teacher kits with supplies for the one-week unit, are available to Kansas teachers.



#### K-1 Unit—Corn & Life: A Kernel's Adventure

In the first lesson students explore how important corn is in their daily lives by discovering the many products made with corn. In the second lesson, the students are asked to find the seed of a corn



#### Grade 3 Unit— Corn: Staying Alive

Students propose ideas about what they think corn seeds need to germinate and grow. Students learn how to investigate to solve a problem specifically looking at how the material the seed is planted in,



#### 4<sup>th</sup> Grade Unit— Corn: Structurally Speaking

This unit includes three lessons that focus on structures and functions of both a corn plant and a corn seed. Students will plant corn seeds and determine what is needed to grow a healthy plant;

plant. The students will test their ideas by planting various parts of the plant to see what grows.

such as soil, sand, rocks, will impact the growth of the corn plant.

observe seed germination; learn the structures and functions of the seed and end with a lesson observing a full corn plant.

## Big News for 2018 Seed to STEM Workshops!

*By Anna Lukert, St. Mary's High School, Seed to STEM Lead Teacher*

This year our Seed to STEM workshops will be led by science teachers like you from across the state of Kansas. They will have a new focus on telling the story of corn through a systematic approach that hits on all of the Nextgen Science Standards while relating the lesson to growing corn in Kansas! We will also be offering a new middle school track which will run simultaneously to the high school workshops to focus more on the differences in standards for those grades. We will include the same great field trips including dinner at the farm and the same focus on ethanol production with the grand finale being a tour of an ethanol plant. We will be presenting in a new format with some newly revised curriculum and a greater focus on the story of corn throughout the workshops. Be looking for the new curriculum, new tips and videos from Kansas Corn Lead Teachers on our newly remodeled website at [www.kscorn.com](http://www.kscorn.com) under education (don't worry [seed2stem.org](http://seed2stem.org) will still get you there too!). Our Lead Teachers will also be sharing some of the labs at area conferences, come check it out and say hello at the Mid-Winter Ag Educators Symposium January 26th and 27th in Lawrence; at Kansas CTE conference on Tuesday, February 6th in Manhattan; and KATS Kamp!



The dates for the summer workshops will be announced soon. This year an application process is required in order to be selected to attend. To apply visit [www.kscorn.com](http://www.kscorn.com) under education 6-12 training.



## Introducing the Seed to STEM Lead Teachers

*"I am excited to teach this year and share the knowledge I have learned from the workshops and ideas we have developed for the classroom". Lead teachers will be participating in the 2018 Commodity Classic and learning about new and exciting advances in agriculture to share with all of you. They serve as a great resource!"*

--Jed Heath



*By Jed Heath, Maize South High School, Seed to STEM Lead Teacher*

These eight teachers will be training and reviewing labs for the upcoming workshops and they serve as your contact for any questions regarding curriculum and labs. These teachers have participated in one of both of the summer Seed to STEM workshops.

### Our Seed to STEM Lead Teachers

[Adam Williams](#)- Newton High School

[Lacie Fair](#)- Newton High School

[Jed Heath](#)- Maize South High School

[Blake Smith](#)- Maize South High School

[Brent Conner](#)- Salina South Middle School

[Brian Nelson](#)- Hadley Middle School

[James Burk](#)- Trego High School

[Anna Lukert](#)- St. Mary's High School

## Teaching About GMOs in the Classroom

*By Blake Smith, Maize South High School, Seed to STEM Lead Teacher*

Schools across the country have been slowly implementing the Next Generation Science Standards (NGSS) for the past few years. These standards have changed the way we teach science, making it more inquiry-based and requiring higher-level thinking from our students.

The standards are more broad than the old

standards, which is actually a good thing! It gives teachers the ability to include curriculum they would not have been able to include in the past. At Maize South High School in Wichita, the Earth Science curriculum now includes a unit on sustainability, taught with an emphasis on corn and farming.

For the first-time last year, students learned about farming by visiting a farm close to the school. Students toured Seiler Farms in Sedgwick, learning about new farming technology and the challenges farmers can face as the world's population explodes. Students were also immersed in GMO education when a representative from Monsanto was brought-in. Misconceptions were cleared-up and students got the chance to debate the ethics of GMOs.



This year, teachers at Maize South High are taking the sustainability curriculum to the next level. Students will be using data from the High Plains Regional Climate Center to determine growing degree days and other climate considerations farmers use on a daily basis. The goal is to expand the ag education into classrooms and schools where that was previous not available.

To access the GMO activity visit the biotechnology section of our [Seed to STEM curriculum at kscom.com](http://kscom.com).



## Blog: Where Our Economy Meets Education

*Lacie Fair, left, (pictured with fellow Seed to STEM lead teacher Anna Lukert), provided this blog for our education newsletter*

*By Lacie Fair, Newton High School; Seed to STEM Lead Teacher*

Agriculture is so much more than farming! Ask any student in your class today “what does it mean to be in agriculture?” You will likely get answers like, “driving a tractor” or “feeding animals”. So many of our students are blind to the possibilities that Ag related careers can offer them. According to the Kansas State Department of Agriculture more than 246,877 people are employed through ag related jobs. That's 13% of the entire workforce of the state! These individuals help to contribute over \$67.5 billion dollars into our state economy, accounting for an incredible 44.5 percent of the state's total economy. Talk about job security! So why not open our student's minds to one of the biggest fields in the state? Let's help show them that careers in ag can include communication, economics, education, engineering, agronomy, food science, animal science and so much more.

“Kansas leads the world in the success of each student.” This is newest vision from our leaders at the Kansas State Department of Education. One way to help achieve this goal is to strive to provide students with career focused instruction. This helps students to develop specific skills related to their career field of interest leading to increased post-secondary success. Why not pair this approach with Ag related careers? Newton High School in Newton, KS is doing just that by embarking on a new journey to focus instruction on agriculture. During the 2018-2019 school year NHS will be starting an Ag Career Academy where students with an interest in ag fields can have a tailored learning experience. Instead of looking solely at Agricultural classes in terms of possible electives, a team of teachers will be planning and incorporating agriculture into all the core areas of instruction. This year the team is focusing on planning curriculum to focus on project based learning and direct hands-on and first-person experiences in the field of Ag. Everything from Aquaponics to Zoonotic disease will be fair game as teachers determine how to spice up standards based curriculums with ag based themes and experiences. After all, where would we be without ag? It's time to start growing the next generation of Ag Leaders from the ground up!

For references and to learn more:

[http://nhs-usd373-ks.schoolloop.com/cms/page\\_view?d=x&piid=&vpid=1506680623421](http://nhs-usd373-ks.schoolloop.com/cms/page_view?d=x&piid=&vpid=1506680623421)

<http://agriculture.ks.gov/about-kda/kansas-agriculture>

<http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/Communications-and-Recognition-Programs/Vision-Kansans-Can>

# Request CASE and Seed to STEM Supplies

## Request for CASE lab supplies

CASE (Curriculum for Agricultural Science Education) enhances a teacher's ability to integrate and highlight STEM related content in the agricultural classroom through inquiry based instruction. When teachers become CASE certified they are given curriculum to be used in the classroom. Specifically, lessons that are directly related to the corn industry include plant growth and development, ethanol, precision GPS, satellites, addressing world hunger and legal land descriptions.

CASE certified teachers who are committed to teaching about corn and/or biofuels in one of the following labs AND you have not yet received CASE supplies from Kansas Corn you are invited to request funding for CASE materials. Following labs are being funded:

- AFNR-Clean Smoke Lab
- ASA-Need for Feed
- APT-Renewable Fuel
- APT-Energy Output

To request supplies [visit this link](#). Make sure to fill in the box asking which CASE lab you will be teaching and total number of students you will be teaching the lab to during the school year. Upon filling out that form we will notify you of the amount you get to spend on the supplies. Deadline to make the request for delivery this January is December 13<sup>th</sup>.

## Request for Seed to STEM lab supplies

Through Kansas Corn's continual support of Seed to STEM, those teachers who have attended a summer workshop have the opportunity to request additional resources for the classroom.

1. Teachers who are committed to teaching the corn distillation lab can request a distillation kit by [visiting this link](#) on the Kansas Corn website. Kits will be available for distribution in late January. Please allow 2 weeks to process your request. In addition, teachers can also request funding to take students on a tour of an ethanol plant. The same request form can be used to request funding.
2. Teachers who complete the Seed to STEM Assessment Survey will be sent a mini grant application. If you are selected to receive a grant you will be able to select which Seed to STEM lab materials you need to use in your classroom. Deadline to complete the Seed to STEM Assessment Survey and the mini grant application is January 5.

**QUESTIONS?** [contact Sharon Thielen](#)

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