



MYSTERY #2

THE HISTORY OF CORN

High School Teacher Guide



This teacher guide is broken into different sections with suggestions of how to use the reader in the classroom and provides ideas on how to extend the learning for your students. A PDF version of this teacher guide with active links can be found at kansascornstem.com under Mystery Corn Reader.

Reader QR Code Links

If your students are unable to use QR codes in the classroom here are the links you can use to share the videos in alternative ways.

- History of Corn: <https://bit.ly/3MjwGRY>
- Biotechnology Experts: <https://bit.ly/3yv1M3a>
- Importance of GMOs to Farmers: <https://bit.ly/3rHqlpY>
- Get to know GMO Seed Improvement: <https://bit.ly/3T619Vy>
- Glass Gem Corn: <https://bit.ly/3rlstO7>

Vocabulary Words

There are ten vocabulary words to be found throughout the reader. They are bold with a small explanation to help define the word. Other ways to learn more about these are:

- Have your students find the definitions to the words on their own before reading.
- Draw pictures of the words which will help them make meaningful connections.
- Words that could be studied further to create extension are: heterozygous, recessive, genotype, dominate and genetics.

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Focusing on the history of corn, students will learn that corn originates from a grass grown in Mesoamerica.

- Have students compare and contrast teosinte to modern corn using the Venn diagram in the reader.
- Students will read how corn was ground and used by many Native cultures and see a photo from the cliff dwelling of peoples of Mesa Verde. To expand learning you can have students conduct research on various agriculture practices for this area. For instance, crops were grown on the tops of the mesa so they could receive water from rainfall.
- Further research can be done about Mesa Verde as part of the social studies connections.
- Corn facts could be used to make a math connection on measurements.

Find more fun and interactive resources at kansascornstem.com



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Genetically modified organisms (GMOs) are a big part of the history of corn. This topic gives students the opportunity to learn what a GMO is while working on their writing skills.

- Students will start to get an idea of what a GMO is and keep expanding on that knowledge throughout the page. Have students watch the “Importance of GMOs to Farmers” video to learn more about why GMOs are important.
- Students can explore many important careers that help with the advancement of corn and other crops. Have students explore biotechnology careers with the provided QR code. Note that the website allows you to load more careers besides those found on the bottom of the first page. You could have students report on careers they found or turn this into a writing assignment.
- Have students complete the GMO activity. It will help students understand what genetically modified foods are, especially corn, and how and why they were created.
 - Students will learn to use appropriate vocabulary to identify and construct an argument for the benefits and potential cons of genetically modified foods.
 - Students will root their C.E.R writing and arguments with evidence using various resources in the activity sheet.
- Optional: Have students use this link provided by the Smithsonian in 2020 for corn history. <https://si.edu/3CqWjvs>

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This Corn Science Investigation is a great time to continue the discussion about genetic modifications and selective breeding strategies for many different foods. Students will be working on Punnett squares for corn traits.

- The lab is set up to discuss normal and albino corn. You could change this to tall and dwarf corn if you choose.
- For materials, you can use any color craft pom poms or adapt to use supplies you have available. Make sure the items used are two colors and the same type of item.
- If you choose to change the genes that are being modeled, make sure that you provide or have students find out which are the dominant and which are the recessive before beginning.

Additional Kansas Corn STEM Resources

This reader can be used as a stand-alone activity, or you can pair it with other Kansas Corn STEM offerings.

- **Lesson** – *Genetically Modified Information?* is a lesson that would complement this reader and uses limited resources. You can find the lesson guide and training video here: <https://kscorn.com/lesson/gmo/>
- **Breakout Box Challenge** – Challenge your students to learn more about corn using a breakout box. “G.M. Whoa” would go well with this reader. It is available online or for physical breakout boxes. Check out the lesson and others at <https://kscorn.com/topic/breakout-box/>
- **Guest Speaker** – Request a guest speaker to visit the classroom and expand learning about ethanol and corn. <https://kscorn.com/guestspeaker/>
- **Lessons** – Other middle school labs can be found in the lesson library. Check out the TEACH-FLEX lessons that use easy to find classroom materials to complete a lab. <https://kscorn.com/lesson-library/>
- **Seed to STEM Workshop** – Seed to STEM is a 2-day workshop where teachers learn 10 labs, attend a farm dinner and ethanol plant and receive \$500 in supplies to use in their classroom. To learn more about the workshop go to: <https://kscorn.com/middle-school-science-teacher-professional-development/#AboutSeedtoSTEMWorkshops>