

Agricultural Literacy Education for Remote Learning

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Introduction

Necessity is the mother of invention. When COVID-19 restrictions sent schools to remote learning, and all field trips or in-person guest speakers were paused during the 2020-2021 school year, the Michigan Agriculture in the Classroom (AITC) program began the problem-solving process to reach teachers and students using quality content and technology. The Michigan AITC program developed and offered four farm boxes (referend to as crates) to assist kindergarten through fifth grade teachers with remote learning. The crates provided teachers with instructional resources using agricultural content as a context for addressing standards in a remote setting.

How it Works/Worked

The crates could be purchased individually or purchased in a subscription model (buy three months and get the fourth month free as an incentive). Each crate contained a printed lesson plan, accompanying storybook, worksheets, manipulatives, a teacher gift, and Ag Mags or commodity-themed extension activities. The crates were developed in two grade band levels, K-2 and 3-5, both featured a Michigan commodity and addressed educational standards (Table 1).

Table 1

Farm Crate Themes and Educational Standards

Month	Theme	Standards	Commodity
September	Math, Easy as Apple Pie	Common Core Math	Apples
October	Pumpkin Spice and Everything Science	NGSS Life Science	Pumpkins
November	Talkin' Turkey	Common Core ELA	Turkeys
December	Trees, Traditions, and Trade	MI Social Studies	Christmas Trees
February	Sounds of the Seasons	Common Core ELA	Dairy
March	Inch by Inch	Common Core Math	Bedding Plants
April	Egg-cellent Experiments	NGSS Life Science	Hens/Eggs
May	Inventions, Engineering, Innovations	NGSS Engineering	Blueberries

Subscribers also gained access to an online module for each theme that could be used synchronously or asynchronously. These modules used Nearpod, an online learning platform and Google slides to guide students through a virtual farm tour, connecting on-farm tasks to the lesson content and storybook. Nearpod provided the ability to add multiple choice, fill in the blank, matching, or labeling activities as comprehension questions.

Each lesson connected to appropriate Next Generation Science, Common Core or Michigan educational standards, and the National Agriculture Literacy Outcomes (Spielmaker, 2013). Farmer “field trip” videos were also developed and included in the Nearpod modules. Graphic design and video production were completed by Michigan Farm Bureau staff. Resources from the National AITC Organization (NAITC, 2020) and the American Farm Bureau Foundation for Agriculture were used as references (American Farm Bureau Foundation for Agriculture, 2021)

Results

In total, 4,789 crates were ordered and shipped in the 2020-21 school year. During the fall of 2020, 1,959 crates were shipped to 152 schools and three agribusinesses, 955 crates were sent to kindergarten through second grade teachers, and 1,004 crates were sent to third through teachers. Crates made their way to rural, suburban, and urban areas; distributed to more than 45% of the

state's counties. During spring semester, 2,830 crates were shipped to 267 schools. Kindergarten through second grade teachers received 1,353 of the crates while 1,477 went to third through fifth grade teachers. Crate distribution expanded to reach 61% of the state's counties.

Most of the crates, 78%, were sponsored by county Farm Bureaus and distributed to schools the county Farm Bureaus would normally engage with throughout the school year. Parent Teacher Organizations, County or Regional School Districts, Community College Science Partnerships, agribusinesses, and private individuals also purchased crates.

A survey link was sent with each crate to collect teacher feedback, however less than 3% of crate recipients responded. Of those who did respond, 49% used the crate as a fun seasonal lesson. Others (38%) used the lesson in coordination with their existing curriculum requirements, 12% were not able to use the crate in the month it was received but planned to use it in the future. The remaining 1% indicated they would not be able to use the crate.

Future Plans

Michigan AITC program leaders were surprised by the demand for these agricultural literacy resources. As a result, the eight crates will be offered again in the 2021-22 school year. The crates are versatile and can easily be used in face-to-face settings. Two new crates, with the themes of insects and renewable fuels, will be added to the line-up. In addition, refresh kits will be available at a discounted rate to encourage educators to reuse the content received last year. These kits will provide renewed access to the digital content and any manipulatives that were not able to be reused from last year's crate. While the demand for crates was high, the survey responses were low. Additional follow-up with participating teachers will be conducted to adequately assess use of content.

While the original focus of the crates was to replace cancelled in-person AITC programming for teachers and students during the 2020-21 school year, the crate resources were developed to be "user friendly," meaning non-formal educators, volunteers, and high school agricultural education students could use these resources to increase agricultural literacy on a local level. Moving forward the resources will be shared with these audiences.

Costs/Resources

Crates were offered at \$30 each or \$90 for four months in the fall semester and \$35 or \$105 in the spring semester. As the program progressed from fall to spring the price was adjusted to be closer to the true cost of the project. Crates were sold through the Michigan Agriculture in the Classroom online store. As with other projects of the Michigan AITC program the Michigan Foundation for Agriculture supported the staff costs. Additionally, due to the Foundation's support, county Farm Bureaus were given a discount to encourage subscription gifts in place of on-farm programming during the COVID-19 pandemic. The cost of the crates (minus time) was on average \$35. The documents, book, student handouts and manipulatives cost approximately \$21, while shipping and shipping materials were about \$13, with an online store transaction fee was \$1.00. The Michigan Agriculture in the Classroom program and Foundation are a non-profit organization therefore no income was generated.

References

American Farm Bureau Foundation for Agriculture. (2021). *Resources*.
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