NORTH CAROLINA
State Board of Education
Department of Public Instruction

Report to the North Carolina General Assembly

Mitigating Learning Loss in STEM due to COVID-19 with Betabox

SL 2021-25, sec. 3.5(a)(33)

Date Due: October 1, 2022

DPI Chronological Schedule, 2022-2023

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Legislative Requirements

Session Law 2021-25 sec 3.5(a) (33)

$2,042,000 to contract with Betabox, Inc., in response to the COVID-19 pandemic, to mitigate learning loss in the areas of science, technology, engineering, and mathematics by providing students in public school units with experiences, curriculum, instructional coaching, hands-on equipment, and other needed resources. The Department, in consultation with Betabox, Inc., shall submit an interim report by October 1, 2022, and a final report by October 1, 2024, to the Joint Legislative Education Oversight Committee, the Senate Appropriations Committee on Education/Higher Education, the House Appropriations Committee on Education, and the Fiscal Research Division on the use of the funds allocated pursuant to this subdivision and their impact on student success.

Impact of the Betabox Program

Betabox Program Update - Activation Phase Complete

The Betabox Pilot has successfully completed the activation phase of the program timeline on schedule. Three new Betabox Mobile Units have been manufactured, each outfitted with 3D printers, laptops, robotic cars, and drones to deliver the Betabox Self-Driving Cars experience. The program has been marketed to schools, and 65 applications representing 110 schools have been received from eligible districts. Betabox received a purchase order and an executed contract on May 8th, at which point the program began approving applications and enrolling eligible schools. To date, 23 schools have been enrolled and Betabox has planned 40 event days.

Completed & Scheduled Event Days			
Event Name	**Location**	**Dates**	**Event Days**
Summer Bridge Academy*	Caldwell, NC	June 27-28	2
Northeast Guilford High School	McLeansville NC	June 30	1
Chapel Hill High School*	Chapel Hill, NC	July 12	1
McDougle Middle School*	Chapel Hill, NC	July 13	1
Culbreth Middle School*	Chapel Hill, NC	July 14	1
Alexander Central High School	Taylorsville NC	August 3	1
Vance Community Day*	Henderson, NC	August 6	1
SEA Tech	Hayne, NC	September 22-33	2
Columbus County Schools	Columbus County, NC	September 26-29	4
Williston Middle School	Wilmington, NC	October 3-4	2
W.C. Friday Middle School	Dallas, NC	October 10-11	2
Alexander Central Schools	Taylorsville, NC	October 12-13	2
Cherryville High School	Cherryville, NC	October 17-18	2
East Alexander Middle School	Hiddenite, NC	November 14-15	2
Orange County Middle Schools	Orange NC	November 15-18	4

Western Guilford High School	Greensboro, NC	Nov 28-Dec 1	4
Polk County Middle School	Mill Spring, NC	Fall	2
Eugene Ashley High School	Wilmington, NC	Fall	2
Emma B Trask Middle School	McLeansville, NC	Fall	2
West Alexander Middle School	Taylorsville, NC	Fall	2

*Selected summer programs are receiving 1-day events, but are not enrolled in a full program implementation. Economic status eligibility based on summer-program enrollment not NC Report Card of host school.

School District Applications and Enrollment

In March 2022, Betabox opened an application link at https://betaboxlearning.com/nc-program and hosted a series of webinars for schools to learn more about the program. Betabox currently is receiving 20 applications a month, and to date have received more school interest than available slots. Betabox established a wait list which they expect will grow to at least 100 additional schools over the next six months.

Program Enrollment Status as of 8/15/22			
Program Target	**Target Value**	**Current Value**	**% Of Target**
Eligible Schools Applied	100	110	110%
Schools Enrolled	100	23	23%
Event Days Planned or Completed	150	40	26%
Event Days Completed	150	8	5%
Teachers Onboarded	300 - 450	0	0%

In their applications, schools were asked to describe how this program could benefit their students. A sample set of responses have been included as an attachment to this report. Overall, Betabox observed an alignment between the self-reported needs of schools in the application and the findings of the COVID learning loss report published by the NCDPI Office of Learning Recovery and Acceleration.

Program Timeline Update

Betabox Program Timeline (RFQ & Contract Version)			
Program Phase		**Description Current Status**	
Activation	March - May 2022	Construction of three (3) Betabox learning labs, program marketing, staffing and training.	**Completed**
Operations Phase 1	June – September 2022	School enrollment,Operations. Plan to complete 25%-35% of proposed onsite field trip engagements.	**On Track**
NCDPI Interim Report Due	October 1, 2022		**Upcoming**
Operations Phase 2	October 2022 - October 2023	Target to complete remaining on site field trip engagements	**Upcoming**
NCDPI Annual Report Due	October 1, 2023		
NCDPI Annual Report Due	October 1, 2024		**Upcoming**

Appendix A: School Applications Selected Quotes

Below are a few selected quotes from school applications to the program that are representative of the broader responses from teachers and administrators. The full list of applications is available upon request.

Gaston County

"Our teachers need resources like these that will enable our students to explore using hands-on activities. Due to Covid, our students have received a large portion of their school instruction via technology - in the form of chromebooks. While this has helped us continue to be successful throughout the Covid pandemic, this has not proven the most beneficial for middle school students. Middle school students learn best through hands-on experiences. The Betabox Program would allow us to give a large percentage of our student body the high quality hands-on learning experiences they need." - Stacey Boyd, Stanley Middle School

"From the research I have done on Betabox it looks like a very intriguing opportunity. We live in a very rural and impoverished area. Our student population is transient, and I believe that an opportunity like Betabox would open some valuable insight into worlds that our students do not know exist" - Craig Short, WC Friday Middle School

"Betabox has the ability to bring our school into the 21st century with engineering and technology programs. This is so needed as it can provide the missing link connecting theory with practice. Covid has prevented any extras such as field trips, speakers, or interactive ventures for 2 years. We have a very talented group of students who thirst for knowledge outside the realm of a textbook. Girls and boys will have an opportunity to learn with a hands-on approach." - Carolyn J Sanders, Cherryville HS

Cumberland County

"Betabox will give students the opportunity to become familiar with how engineering, technology, and science play an important part in future learning and job opportunities. When our students explore subjects through the Betabox Program, my hope is , they will expand their understanding of difficult subjects and develop an appreciation for them. I expect our students to find a new desire to learn about these areas where they may not have shown much interest. " - Valerie Michaelis, Anne Chesnutt Middle

Wayne County

"Since being a mathematics teacher at Eastern Wayne High for 4 years, the students here have not been provided any opportunities to take field trips or have on-site field to expand their knowledge in STEM and this is even prior to the Covid era. This may be due to the lack of information that teachers do not have available at their fingertips. This program can open up and provide a wealth of knowledge to both teachers and students as well as provide meaningful and engaging lessons where students will retain the information they learn." - Tameshia Willoughby, Eastern Wayne HS

New Hanover County

"The current climate of a majority of my teenage students is apathy. The disengagement has been higher than ever as we returned from shutdown and quarantines in masks. Students have forgotten how to learn to a certain extent. They want to google answers and experience instant gratification to any question being posed. I would love to see these hands-on STEM engagement opportunities bring the spark back into their eyes and help them enjoy a bit of a challenge as well as teach them the content along the way.

As for the teachers, we are also experiencing a degree of apathy and disengagement. Teaching remotely was tough and teaching a science course was even tougher. Those students didn't get to experience so many lab opportunities and trying to replicate those online were almost impossible and stressful. Returning to students glued to cell phones has disheartened many of us and we feel our spark dimming too. Being able to hook our students and reel them back in with engaging content and experiences would be a wonderful opportunity." - Jeremy Buie, Eugene Ashley High School

Caldwell County

“Our students are hungry for opportunities to enrich their learning. Due to the shut down with Covid-19, time was lost to make a lot of meaningful connections with students and hands-on STEM projects. Some of my most gifted 8th graders were not successful on a virtual platform due to a lack of motivation when they were quarantined as 6th graders. This Betabox program would provide them insight and the ability to connect with science and future career aspirations. I have students that have been building their own Battle Bots and excelling with coding. The engineering teacher and myself can only accommodate and provide so much due to limited budgets. This program could be a game changer for our school.” - Sharon Hubbard, Gamewell Middle

Polk County

“Our school improvement plan targets learning loss as a result of the COVID pandemic, specifically in the areas of English-Language Arts and Mathematics. Having access to game design, coding, robotics, and animation activities through the Betabox program would be incorporated into our core subject classes, as well as our Exploratory classes to specifically address those goals. Students would be challenged to write about and orally present their experiences from the Betabox activities building ELA skills while applying math skills to create and solve game design, coding, robotics challenges. One of the more important aspects of this program is that students would practice and apply these skills in active, engaging, and exciting real-world applications.“ - Dale Rush, Polk County Middle

Guilford County

“This program would help to increase the student’s exposure to STEM. Peaking their interest could also impact our course requests, assisting us with including more STEM offerings if the demand is there.Many of our students don’t have access to STEM or knowledge of anyone living and working in STEM. They have lacked the experiences of field trips and access to the technologies that other schools possess.” - Shaniqua Burnette, Western Guilford High School