

RMEP

Rural Math Excel Partnership

May 25, 2016



Cumberland math teacher, Todd Meinhard, center, talks to students and parents during Family Math Night.



Meet the staff of the Rural Math Excel Partnership

Dr. Hobart Harmon, Director; Mrs. Jennifer Stevens, Project Manager; Ms. Veronica Tate, VASS President/CEO; Mrs. Sandy Wilborn, Math Specialist; and Mrs. Sue Adams, Media Specialist.

Summer of 2015

During the summer of 2015, select high implementing Algebra I, Geometry, Algebra II, and Algebra, Functions, and Data Analysis (AFDA) teachers attended a two-day institute. The session took place on July 14-15 at the Southern Virginia Higher Education Center (SVHEC) in South Boston. Training activities included resolving issues in the past year's implementation, creating real-world math problems for the classroom, reviewing and revising the Family Math Night protocol, exploring changes to MARI, and using webinars. A one-day make-up session was held on July 22 at the SVHEC. All 24 teachers in the project completed training prior to the start of the new school year.

Teacher Training



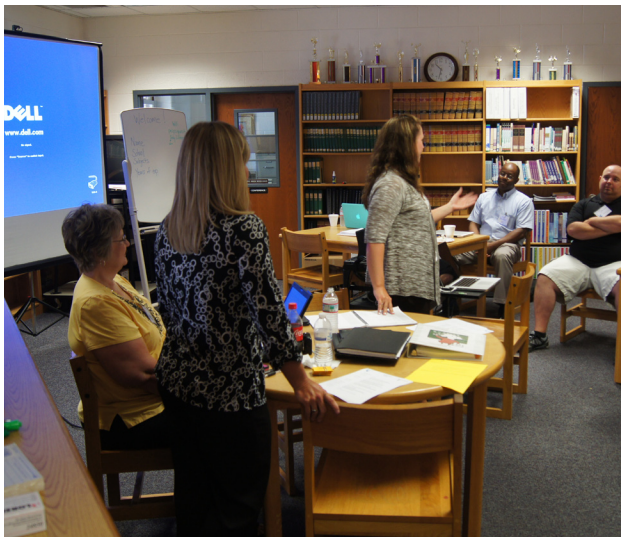
Math Specialist Sandy Wilborn leads math teacher training held at the Southern Virginia Higher Education Center.

Teacher Support

Throughout the 2015-2016 school year, project staff provided ongoing support to teachers. This year, VASS created usernames and passwords for all students in MARI, eliminating many of the issues faced last year with students mistyping information and/or forgetting login credentials. Initial visits with schools were conducted to help students log into and link their MARI accounts to Khan Academy, complete assignments, and view their progress. Some teachers required more in-person support than others. Communication was continual with teachers regarding updates, progress, and problem resolution via email and webinars.

Family Math Nights

All of the 11 schools participating in the project held a Family Math Night (FMN) in the fall. The three schools on block scheduling also held a FMN in the spring of 2016. VASS staff worked collaboratively with teachers to present information to parents and family members of students. The same agenda was used as in the previous years for the FMN. It included a PowerPoint presentation about the project and shared responsibility roles of teachers, parents/guardians, and the community; discussions by technicians on how math is used in the workplace; demonstrations on using MARI and Khan Academy technology; demonstrations of websites with resources for students and parents; and explanations of the Dream It! Do It! Virginia and Virginia Education Wizard websites for career exploration. At each event, dinner and door prizes were provided. Attendance varied from school to school; however, parents asked questions and were very interested in the information conveyed.



VASS staff talk to teachers and evaluators during training.

Community Teams

What We Are Learning



Participants checked out the displays at the Charlotte County Community Event.

All five counties representing the six LEAs have now been able to form community event teams and conduct a community event. Three of the five teams have held multiple events. For the second time, teams in Cumberland County and Prince Edward County joined efforts to hold a multi-county community STEM careers event. On Feb 23, 2016 more than 50 persons attended the event held at the Moton Museum in Farmville, VA. This is the school (now museum) that is an historical

landmark associated with the Brown vs Board of Education case. The Museum is operated in collaboration with Longwood University. Students from Cumberland were transported by school bus to the event.

A highlight of the event was speaker Kantis Simmons, an African-American former rocket scientist who is a nation-

ally renowned motivational speaker on academic success and author of *Playing Your 'A' Game*. A local videographer was hired to produce a tape of the session for use in Family Math Nights and other community events. We greatly appreciate the leadership of 4H youth specialist Linda Eanes (Cumberland County) and Jennifer Bowen (Prince Edward County) and their teams in making the event possible.

The Halifax County community event team used a portion of the tape in its highly successful event on March 22, 2016. Held at The Prizery at the Innovation Center in South Boston, persons employed as technicians in STEM related occupations from the area conducted demonstrations and prepared exhibits. More than 40 students and their parents learned the value of math in performing a job. Examples included how state police calculates your speed from aircraft; how math is used in electrical projects in construction of a home; how math is used in calculating payroll; how math is used



Technician Clint Card talks about his job during a Family Math Night presentation.

Lessons Learned

What We are Learning (continued)

in designing an engineering project; how geometry is used in a machinist technician occupation; how an engineer calculates if a building will move under a load (e.g., snow on roof); and how math is used to build an electrical transformer. Students and parents also toured certain technician programs at the Southern VA Higher Education Center, including the advanced manufacturing program facility. Thanks go to the leadership of Halifax County 4H youth specialist Sonya Furgurson and her team for making the event possible.

We also greatly appreciate the leadership of Brian Hairston, 4H youth specialist in Henry County, and Mrs. Susan Adams former deputy county administrator in Charlotte County, now county administrator in Appomattox County, and their teams. Their events are helping us learn how communities can support student success in math that is important to the future careers of students and to workforce development of local communities.

Some important lessons learned are the leader of a community event team can become stalled with “who needs to be on the team” efforts and/or in brainstorming sessions to identify ideas for a community event. A team may be more easily formed if a project activity is quickly decided by a few team members, with follow-up meetings focused very clearly on the activity. Formation of a community team and its advancement may be more viable if the leadership team can partner with an economic development partner (county office or Chamber of Commerce) to advance an activity that can focus team members. The activity can serve to focus meeting time on “doing” rather than planning. It also is easy to underestimate the time a 4H youth development specialist will require to lead a team. Activity focused teams may help team members share the load and commit time to performing certain team responsibilities.

Three strategies appear most promising. One strategy is for

the team leader to focus team planning on a specific idea rather than brainstorming ideas in several meetings. Team leader collaboration with a Chamber of Commerce or economic development organization in formulating the idea appears advantageous. This seems to facilitate the team coalescing around a “let’s try it” action-oriented attitude that fosters refinement/improvement of event planning and selection of who in the community can help conduct the community event (e.g., technicians in different STEM occupations as presenters).

A second strategy is for the team to intentionally collaborate with math teachers at the school(s) to involve students and their parents and a community resident in a homework activity like the Math at Work in Our Community activity used by the Charlotte County community event team. The third strategy is where a “shared town” is common between residents in two counties, the community event team from each county might partner to conduct an excellent event. Transportation will need to be provided for some students and parents to attend the event. It is important also for the school leadership and teachers to help communicate the event’s importance to students and parents and encourage participation.



Technology Challenges and Solutions



After dealing with a multitude of technology challenges in year 2, much progress was made in year 3 to provide safe internet access to students outside of school and to give both teachers and students a user-friendly experience with Khan Academy homework assignments in the MARI personalized learning platform. In the summer of 2015, VASS worked with partners at Verizon Wireless and GCR Company to create a virtual private network (VPN) to ensure adequate content filtering, as required by the Children's Internet Protection Act (CIPA), and restrictions on data usage to keep project costs at a minimum. As students used tablets at home to access their online homework, their internet traffic was forced through the VPN which was secured with a SonicWall. VASS staff worked with GCR Company to configure the content filter settings in a way that reduced student access to not only inappropriate content but also data-intensive sites such as YouTube, Facebook, and other video, music streaming, and social media websites. Since the content filtering

was provided within the internet connection itself, students were unable to get around the security via the hard reset. This solution was a major advancement for the project since it allowed staff, teachers, and students to concentrate on the task at hand instead of dealing with tablet security issues that were such a problem in year 2.

Another problem faced in year 2 was the inconvenience and length of time it took to get tablets distributed to students and student accounts set up in MARI and Khan Academy. Moving to the new implementation plan of working with selected high-implementing teachers reduced the number of students in the project such that VASS was able to provide all students with tablets instead of providing them to only those students who reported not having internet access at home. This solution eliminated the need for the internet access surveys at the beginning of the year (or at the beginning of each semester for schools on 4x4 block schedules), thus reducing the time needed to get implementation

started. VASS was also able to secure Google Apps for Education which allowed staff to create uniform student Gmail accounts for all project participants using rosters provided by teachers. Students were then able to log in to both MARI and Khan Academy using these accounts, so no time during classroom instruction was necessary to get students set up, and the emails and passwords were formatted in a way such that students could remember them easily. Project staff visited classrooms at the start of the new school year to walk students through logging in and completing assignments to ensure ease of use and teacher confidence in the implementation plan.

As with all technology integration projects, there were minor glitches throughout the year that required immediate and swift attention. Teachers emailed or called project staff whenever a problem was noted, and staff worked with partners at Verizon, GCR Company, and/or MARI to resolve them as soon as possible. At times, solutions required staff to visit schools to download new compatible browsers on tablets, hold webinars to provide assistance to teachers, and work with MARI developers to make changes to the learning platform. However, much was learned throughout the process, and data has shown a dramatic increase in teacher assignments made and students assignments completed during the 2015-2016 school year.

VASS Hosts Informative RMEP Webinar

As a method to help disseminate information about the RMEP project, VASS staff hosted an hour-long webinar entitled Rural Math Excel Partnership: Sharing the Responsibility for Student Success in Math and Future Careers. Attendees included teachers, school and division administrators, community and business partners, and parents. The first segment of the webinar provided background information on the mission of VASS, the nature and purpose of the U.S. Department of Education i3 award, and the RMEP project's "shared responsibility" model and intended outcomes.

The second segment of the webinar provided an opportunity for the following categories of project participants to share reflections about their RMEP experience: teacher; community team leader; parent; and principal. Todd Meinhard, an Algebra II teacher at Cumberland High School in Cumberland County, described how the RMEP project helped him link math instruction to the skills needed in technician-level jobs and the application of those skills in the workplace. Jennifer Bowen, a community team leader representing the Virginia Cooperative Extension in Prince Edward County, noted the benefit of hands-on STEM-related experiences in helping students make connections between math instruction and real-world scenarios. She also commented that working with local volunteers to organize events for the RMEP project strengthened the relationship between community organizations



and the surrounding school system. Kathryn Roberts, parent of a participating middle school student in Halifax County, explained that the RMEP project enabled the design of individualized online homework for students that did not require textbooks to be brought home. She also stated that the project encouraged increased parental involvement in the homework process because math expertise was not needed to assist students in completing homework. Jeff Scales, principal of Cumberland High School, highlighted the need to engage various facets of the community in helping students understand the importance of math skills for job access and preparation.

The reflections from RMEP project participants included both the positive impacts of RMEP as well as challenges encountered while implementing the various aspects of the project. For example, all of the webinar presenters noted challenges to increasing parental participation

in activities outside of the regular school day, such as the Family Math Nights and STEM career events; e.g., competing family priorities. Some participants noted issues related to ensuring appropriate use of the tablets to complete homework assignments. The final segment of the webinar shared information about the June 2016 Rural Math Excel Partnership Conference at The Prizery in South Boston, Virginia. Agenda details and registration information were shared. Webinar participants were asked to complete a survey to provide feedback about the experience. Survey results indicated that: 100% of participants thought the webinar was informative or very informative; 90% of participants believe there is a need or great need to implement a model of shared responsibility for math instruction in their school division; and 75% of participants indicated they would likely or very likely attend the June 2016 conference if invited. The full webinar may be viewed online on the VASS website: www.vaadvstudies.org/.



Leadership Advisory Team Meets

December 2015

Team Members

*Mr. Jeff Scales, principal,
Cumberland County High School*

*Dr. Scott Critzer, Director of Student
Services, Charlotte County Schools*

*Dr. Merle Herndon, Superintendent,
Halifax County Schools, (Alternates
Frosty Owen and Nancy Zirkle)*

*Dr. Jared Cotton, Superintendent,
Henry County Schools*

*Mr. Jeff Arnold, VP of Workforce
Services, Danville Community
College*

*Dr. Julie Brown, Director of
Advanced Learning, Institute for
Advanced Learning and Research*

*Dr. Christy Lowery-Carter, Assistant
Professor of Mathmatics, Southside
VA Community College*

*Dr. Kristen Westover, VP of Academ-
ic and Student Development, Patrick
Henry Community College*

*Ms. Katherine DeRosear, Director of
Workforce Development, Virginia
Manufacturing Association*

*Ms. Sonya Furguson, 4H Youth
Development Coordinator, Halifax
Cooperative Extension*

*Mr. Jason Kirkhart, owner, Beetoobi
IT Solutions*

*Wyatt Long and Ms. Ashley Long,
student & parent, Cumberland
County High School*

*Ms. Amy Lewis, teacher, Halifax
County Middle School*

*Mr. Greg Hawley, teacher, Prince
Edward County High School*

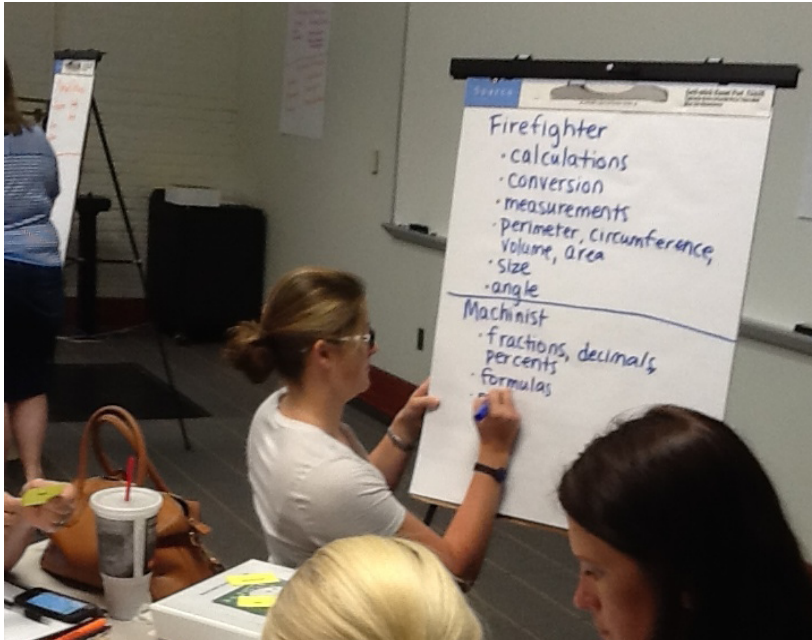
Back row from left:

*Hobart Harmon, Jeff Arnold, Sonya Furguson, Jeff
Scales, and Scott Critzer.*

Front row from left:

*Paul Nichols, Christy Lowery-Carter, Nancy Zirkle,
Sandy Wilborn and Jennifer Stevens.*





Above, math teachers working on an activity during summer training. On the right, a group gather to launch a rocket during the engineering challenge at the Prince Edward and Cumberland Community Event.



For more information on RMEP, please email vassinfo@vaadvstudies.org or call the office at 434-575-0692.



Above, attendees at Prince Edward County Family Math Night. On right, Kevin Chrystie, a product design engineer at the Southern Virginia Higher Education Center, talks to teachers about the math he uses in his job.



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