
Final Report

DEVELOPING SUSTAINABLE
SUMMER OUTREACH
INITIATIVES:
LESSONS FROM THE
CYBERCHASE SUMMER
CHALLENGE

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OUTREACH INITIATIVES:
Lessons From the *Cyberchase*
Summer Challenge

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EXECUTIVE SUMMARY

DEVELOPING SUSTAINABLE SUMMER OUTREACH INITIATIVES: LESSONS FROM THE *CYBERCHASE* SUMMER CHALLENGE

The 2010 *Cyberchase* Summer Challenge Outreach initiative was designed to allow local public television stations to develop community-appropriate outreach plans as part of a unique summer launch of a new season of shows for a PBS children's television program. The *Cyberchase* Summer Challenge was a national initiative; eight stations were selected for a pilot study of best practices related to summer programming. Grantee stations were provided modest funding and material support, including branded give-aways, DVDs of the summer season, copies of outreach guides, promotional materials, and access to a *Cyberchase* character costume, as well as ongoing support from the *Cyberchase* outreach manager: when grantee stations had questions about an activity and how to break it down, they got help.

Each station developed an outreach program and worked with new and existing community partners, including public libraries, summer school programs, summer camps in cultural centers and low-income centers, and corporate volunteer tutors. Programs variously employed in-depth strategies, targeted to a small group of children over several weeks of the summer, or reached out to a range of communities in their broadcast area with one-off programs. While all the programs involved screening of one or more *Cyberchase* episodes, stations brought together different pairings of the television show with locally designed or previously implemented math materials and activities, hands-on activities developed from *Cyberchase* materials, and appearances by the character Digit. The initiative provided an opportunity for local public television stations and their partners to pilot outreach activities that were sensitive to local communities and needs.

RMC's evaluation focused on understanding how public television stations and their outreach partners can build sustainable, replicable outreach models; the nature of PBS-partner relations across a sampling of large and small communities; how outreach programs are designed and implemented; and opportunities for fundraising and advertising. The evaluation examined how stations and their community partners created a successful rollout that was cost-effective, involved a great number of children and was promoted well.

BEST PRACTICES

The goal of this evaluation study was to identify practices that could contribute to sustainable summer programming for public broadcasting stations. The following practices have been culled from the case studies collected during the evaluation. Fundamentally, no station contact felt that the outreach initiatives, as implemented, could have been conducted without WNET's support. In addition to the financial support, the *Cyberchase* give-aways,

printed versions of the Cyberchase activity books and guides, pencils, tattoos, and other materials were also important in the projects' success. Every site relied on the DVD of the *Cyberchase* Summer Challenge season in its programming.

The practices suggested below do not offer a standard approach. Rather, the evaluators recognize that the communities served by public television stations differ in terms of clientele, broadcast scope, audience socio-economic and cultural backgrounds and rural or urban characteristics, and the availability of local resources for informal education opportunities, among other variables. Furthermore, different outreach plans—broad dissemination versus in-depth instruction—reflect different priorities, ranging from broad program promotion to targeted learning for a specific group. The following suggestions include best practices related to each of these approaches, and then offer suggestions applicable across outreach plans.

Broad Outreach

The summer tour model offers a means for outreach across a large area with multiple one-off events. Explore new partnerships and venues such as farmers markets and health fairs, as well as familiar ones, such as libraries.

For covering a large geographic area and for rural areas, the summer tour may serve to stretch resources and reach a broad array of learners. This approach can be conducted in familiar venues such as libraries, expanding familiar reading programming to introduce math and other content, or in new types of venues, where community members are aggregating, such as farmer's markets, and health fairs. Similar events conducted at multiple sites focus resources on expanded a station's outreach network and require greater effort in building partnerships and communication, while minimizing implementation planning. This was successfully employed in two projects, one reaching twenty unique sites over a 260 mile radius, and another reaching a smaller number of venues, but covering the 21-county broadcast area.

Ongoing Engagement

Utilize the serial nature of the television program to create opportunities for extending programming with a single audience

Working in-depth with a limited number of partners over an extended period creates opportunities for greater engagement in children's television materials for children, implementation partners, and/or venue staff. Children gain long-term exposure to the property and benefit from consistent ongoing programming for greater learning. Program partners also gain greater familiarity and commitment to the property.

Implement a community-wide competition, with a tiered process including learning, activity and judging as a means of developing repeat visitors.

Planning and Promotion

Begin planning, fundraising and promotion early.

Commitment to conducting summer programming and availability of resources and materials needs to begin early – such as late winter to accommodate early school closing schedules.

Begin reaching out to new partners and conducting promotional activities early.

Leverage partner relationships to reach their constituencies.

Tap into ongoing children’s summer programs or local events such as farmers’ markets which conduct their own marketing and/or recruitment. Rely on partners to conduct outreach and promotion for local events, reaching out to their membership and local venues and methods for publicity, whether it is signage within a library or community center, newspaper or online promotion.

Develop evaluation instruments to understand program impacts, whether they concern changes in attitudes, such as increasing the appeal of math, or content learning, such as specific math concepts or skills.

Reasonable outcomes may include content learning and/or attitudinal change. The development and use of pre/post surveys or satisfaction measures are valuable for articulating reasonable impacts and helping stations and partners understand the effectiveness of their work. Evaluation data can be used to make program improvements, validate a job well done, and strengthen funding requests for future programming.

Partnerships

Identify structured summer programs with an educational focus for implementation of ongoing educational experiences.

Structured summer programs with an educational focus offer an ideal partner for infusing children’s television programming. Participating children arrive with the expectation of doing “academic” work, in contrast to camp environments. Because these programs continue for a period of time, they provide children with ongoing exposure to materials, and allow students to gain confidence over time. The social nature of television viewing and activities complement individualized computer-based math instruction and can bring diversity to the summer program day.

Identify informal learning institutions and after-school programs rather than formal summer education programs where scheduling may be less flexible.

Informal learning institutions and after-school programs offer greater flexibility in programming than formal education programs, whose more rigid calendars made it difficult for them to adapt to television production and roll-out of schedules of broadcast and online offerings.

Identify under-resourced programs where involvement in national projects and access to resources is appreciated and generates excitement

Programs serving low-income families are often strapped for resources, and public television incentives, DVDs, educator guides and incentives are particularly appreciated. The opportunity to participate in a national program offers additional caché for groups who may not often have such opportunities.

Prepare a partner toolkit that provides relevant background information and materials for communicating roles and responsibilities.

Partner toolkits or agreement letters can help clarify expectations for all parties. These can include background materials relating to the children's television property and the local station, as well as detailed information describing partnership roles and responsibilities, descriptive materials detailing the ideal outreach event, and/or plans for promotion and outreach. This offers an efficient means of communicating a consistent set of information to multiple partners who would be carrying out similar roles. Such documents offer a reference point which can be revisited later in the collaboration and minimize miscommunication.

Explore partnerships with organizations with shared missions and complementary resources.

Partners with access to very different types of resources, such as corporate volunteers and summer program serving low-income students, can be effectively matched for effective outreach. For instance, leveraging corporate volunteers to provide on-site contact with the target audience frees station outreach staff to conduct additional promotional and outreach activities.

Build on existing partners to experiment with new content and programming.

Building on and expanding successful partnerships offers an effective strategy for introducing new types of programming. Because existing partners already have established relations of trust, they may be more open to trying new or different content-related projects. This was successfully used by a number of station coordinators who reached out to partners that had previously participated in reading-related activities and were excited to implement math activities.

Explore inter-departmental collaboration to increase funding.

Outreach activities can be strengthened by bringing together station staff and resources from education, outreach and/or corporate and membership departments. For instance, corporate support offices can help identify local corporate sponsors who could serve as tutors or provide in-kind and financial support for community-based outreach activities. Education staff can provide training or assistance in adapting activities for local needs.

Implementation

Be aware of audience needs; review materials beforehand and adapt concepts and activities to the learner. Offer suggestions for modifying activities in accordance with audience skill levels.

Partners were most successful when they reviewed episodes and tested activities prior to their use with students. Adapt activities for students' skill levels by simplifying concepts as necessary, as well as modifying activities for the amount of time and the resources available for the activity. Include activities which involve a take-home product (such as the pop-up cards), which are tend to be popular among students.

Schedule at least an hour for a Cyberchase session, including both an episode screening and an activity. Introduce key concepts before screening episodes and follow-up with discussion afterwards. Look for ways to extend learning in the context of the venue or program.

A minimum of one hour was needed for viewing a 30-minute episode and conducting a follow-up activity in a classroom setting. Students can be divided into small groups for activities. Introduce key concepts prior to screening and follow-up with discussion afterwards. Help students make connections between episode content and activities. For shorter periods, explore use of 10 or 15 minute segments from the program episodes. Use local environments and materials to develop additional follow-up activities reinforcing program content as well as making connections between program content and children's everyday lives.

Exploit culminating events for reaching a larger audience or testing new partnerships.

Several sites hosted successful culminating events for ongoing participants which simultaneously opened up these events to a broader community. Culminating events offered a way to celebrate program participation, share experiences (e.g., math games), and to provide special activities such as ice cream making and character visits. These events can also provide an opportunity to begin building new partner relationships, by engaging partners in a limited engagement.

THE *CYBERCHASE* SUMMER CHALLENGE EVALUATION

INTRODUCTION

The 2010 *Cyberchase* Summer Challenge Outreach initiative was designed to allow local public television stations to develop community-appropriate outreach plans as part of a unique summer launch of a new season of shows for a PBS children's television program. The *Cyberchase* Summer Challenge was a national initiative; eight stations were selected for a pilot study of best practices related to summer programming. Grantee stations were provided modest funding and material support, including branded give-aways, DVDs of the summer season, copies of outreach guides, promotional materials, and access to a *Cyberchase* character costume, as well as ongoing support from the *Cyberchase* outreach manager: when grantee stations had questions about an activity and how to break it down, they got help.

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RMC's evaluation focused on understanding how public television stations and their outreach partners can build sustainable, replicable outreach models; the nature of PBS-partner relations across a sampling of large and small communities; how outreach programs are designed and implemented; and opportunities for fundraising and advertising. The evaluation examined how stations and their community partners created a successful rollout that was cost-effective, involved a great number of children and was promoted well.

THE *CYBERCHASE* SUMMER CHALLENGE

As described in WNET's RFP for participation:

The Cyberchase Summer Challenge seeks to engage a previously untapped market: children participating in informal summer programs. Children's organizations, particularly those that reach under-served children, often see a dramatic growth in program attendance during the summer. The Challenge provides an opportunity to provide these partners with events and activities that fight "the summer slump. As part of the upcoming Cyberchase Summer

Challenge, the Cyberchase Outreach Department is launching an outreach initiative to develop an understanding of strategies for utilizing Cyberchase in educational and community settings. We are interested in investigating best practices for program implementation, including: extending the educational content of the series into local communities, partnership building and recruitment, promotion, project management, program rollout strategies, and local fundraising. The primary objective of this initiative will be to promote summer math learning through projects that can become robust and sustainable models that can be easily replicated by PBS stations nationwide.

WNET identified eight relevant and age-appropriate station projects for the *Cyberchase* audience (kids 8 – 12, parents, summer program organizers, and formal and informal educators). Projects were expected to deliver effective reach and impact through grassroots promotion efforts and significant media exposure (print, online, on-air, etc.) in local markets. The goal was to promote summer math learning through projects that can serve as robust and sustainable models for replication nationwide by public television stations.

Stations were selected to reflect diversity in terms of station size and geographic location. Each station received a \$3,000 grant toward its project planning budget, used variously for staff, overhead, event promotion and advertising, materials, facility rentals, and talent fees. As part of the grant, stations received an event toolkit on the WNET FTP which included document templates for seeking funding, web banners and signage, clips of the show, coloring pages, research documents, a request form for the Digit Costume, episode descriptions, event tips and an event starter guide, web promos, and images and press releases. Grantee stations also received *Cyberchase* Summer Challenge teacher guides, activity books, stickers, tattoos, and pencils. Additional WNET support included access to the WNET Outreach Manager for help in implementing outreach activities and a *Cyberchase* Summer Challenge Facebook page for communicating with WNET and with other grantee stations. In turn, grantee stations were expected to participate in evaluation activities that would result in understanding best practices. To best support the premiere of *Cyberchase* Summer Challenge, the RFP requested that all events take place between June 1st and July 31st, 2010.

METHODOLOGY

The evaluation focused on documenting replicable and sustainable processes and programmatic approaches to outreach. The evaluation plan used a case study approach involving a series of interviews with grantee station contacts and their local partners. Interviews sought to document the success of planned activities as well as unanticipated outcomes related to outreach. Overall, the evaluation plan aimed to understand the conditions necessary for successful outreach in a variety of contexts and communities and to articulate best practices applicable to future outreach initiatives.

RMC implemented an in-depth, qualitative study to document effective outreach practices and to bring successes to a broad professional audience. Interviews focused on description of challenges and successes public television stations and partner organizations faced in serving large and small, urban and rural, communities.

Data collection included hour-long telephone interviews with eight grantee station contacts prior to their launch (planning interviews) and a second set of interviews at the conclusion of the summer outreach program (final interviews).

- The grantee station planning interviews were conducted in the spring to capture information on station contact activities related to developing partnerships and plans for disseminating materials.
- Late summer/early fall interviews were conducted with station contacts to document the success of partnerships, outreach activities, and plans for ongoing outreach.

In addition, station partners completed an online training survey at the beginning of the outreach initiative, and a total of 16 station partners completed telephone interviews at the conclusion of the summer challenge experience.

In support of these data collection activities, RMC conducted virtual station contact conferences at the beginning and end of the project. These telephone meetings provided an opportunity to review upcoming evaluation activities and for station contacts to share aspects of their summer plans and successes with one another.

Data collection occurred in two phases, baseline and final, as follows:

Baseline activities

- Grantee Station Contacts Evaluation Meeting
- Planning Interviews with Grantee Station Contacts
- Partner Surveys

Final activities

- Grantee Station Contacts Evaluation Meeting
- Grantee Station Contacts Final Interviews
- Selected Partner Interviews

Analysis and Reporting: Qualitative analysis was conducted to develop individual case study profiles and to assess successes and challenges across sites and projects.

ACTIVITIES

Grantee Station Contacts Evaluation Meeting: In association with WNET *Cyberchase* outreach staff, RMC conducted a virtual meeting with the grantee station contacts selected to participate in *Cyberchase* outreach. The meeting focused on building understanding, rapport, and investment in evaluation goals, staff, and activities. In addition, grantee station contacts were able to learn about the outreach plans underway at the various stations around the country.

Planning Interviews with Grantee Station Contacts: RMC conducted individual interviews with the eight grantee station contacts. These hour-long interviews focused on documenting the process by which station contacts planned their dissemination strategies. Station

contacts responded to questions about their criteria for the selection of partners and partnership-building activities, the development of specific outreach activities, and the use of and plans for particular materials provided by *Cyberchase*.

Training Surveys: RMC developed an online survey for completion by the partners of the eight grantee stations following training or orientation to the *Cyberchase* Summer Challenge project. The purpose of these surveys was to gather baseline data on the range of participating partner organizations and feedback on training and on partners' plans for implementing outreach. Surveys comprised a mix of closed- and open-ended questions.

Grantee Station Contact Meeting: Following the format established during the kick-off meeting, RMC convened a second virtual grantee station contact meeting to begin reflection on outreach activities and successes. This constituted the preliminary stage in final data collection and offered the additional benefit of allowing grantee station contacts to share experiences and reflections across sites. Information gathered during this meeting formed the basis for gathering in-depth data on successes and challenges faced by grantee stations. Station contacts were asked to provide the names and contact information for two to three local community partners for inclusion in the final evaluation activities.

Final Grantee Station Interviews: RMC conducted individual telephone interviews with each grantee station contact. Through a series of open-ended questions, station contacts were asked about their outreach activities, experiences developing community partnerships, and activities of their partners.

Partner Interviews: Interviews with partner agency contacts were conducted to document *Cyberchase*-related activities. Partners were selected for interviews by the local grantee station contacts to best reflect their Summer Challenge experiences.

Interview and survey protocols are included in Appendix 1.

Interviews Conducted

The following table identifies planning and final interviews conducted with grantee station contacts and their partners. All interviews were conducted by telephone with the exception of one station: due to the late response of the grantee station contact to evaluator requests for scheduling interviews, the station contact and one partner submitted written responses to interview questions. See Table 1 on following page for a complete list of interviews conducted.

REPORTING

This report synthesizes the findings from these evaluation activities. Each grantee station's *Cyberchase* Summer Challenge program is described in a case study format. This is followed by a brief summary of the findings across sites and best practices suggested by successes in the different communities.

Table 1: Interviews Conducted

Station and Location	Grantee Station Contact by Position Held	Partners Interviewed
KACV Amarillo, Texas	Outreach Coordinator	Librarian, Amarillo Public Library Librarian, Collingsworth Public Library Librarian, Rhoads Memorial Library
KAET Phoenix, Arizona	Associate General Manager, Educational Outreach & Executive Director, ASSET	5th Grade teacher, Barbara C. Robey Elementary School
KETC St. Louis, MO	Special Events Coordinator Director of Corporate Support Education and Community Engagement (Planning interview only)	Global Citizenship Manager, Sigma- Aldrich Education Coordinator, Kingdom House
KIXE Redding, CA	Education Outreach Coordinator	Family & Youth Development Director, Shasta YMCA Education and Program Manager, Turtle Bay Exploration Park
WFSU Tallahassee, FL	Education and Outreach Coordinator	Principal and two teachers, Imagine Charter School
WIPB Muncie, IN	Membership and Outreach Manager	1st/2nd Grade & 3rd/4th grade educators, Motivate Our Minds Educator, Minnetrista
WSKG Binghamton, NY	Manager of Community Outreach and Education	Executive Director, Southside Community Center
WTVI Charlotte, NC	Director of Education & Community Engagement	Senior Auditor, Ernst and Young

CASE STUDIES

KACV

Location: Amarillo, Texas

Partners: Twenty libraries and community centers

Venues: Libraries and community centers across the Texas Panhandle

Time Span of Outreach: Twenty one-hour events

Funding: In-kind support provided by local partners including space, recruitment, and staff

Audiences Reached: 1122 people (844 children; 278 adults)

Station Contact: Outreach Coordinator

KACV took a broad approach to dissemination, reaching across the Texas Panhandle through a one-off program in 20 libraries and community centers. Designed to build on and expand the successful reading tour conducted by KACV in 2009, the project introduced math content to KACV's library programming. A total of 844 children and 278 adults attended the programs.

Partnerships

KACV library and community partners included old partners, such as sites that had participated in a previous KACV summer tour, as well as new partnerships that emerged through a variety of means, with either KACV or the partner initiating contact. In her reflections on enticing libraries to participate, the KACV outreach coordinator noted that being able to include a character visit (Digit) and directing potential partners to the *Cyberchase* website has the greatest appeal. In fact, participating libraries responding to a survey noted that the costumed character was more important than the hands-on activity in attracting their audiences.

Library and community partners were expected to provide space and equipment, if available, for the screening and to conduct local promotion of the event. In some cases, the library staff took a more active role, for example, providing additional *Cyberchase* screenings and identifying books with math content relevant to particular episodes.

Implementation

The KACV outreach coordinator initially worked through the Harrington Library Consortium, the umbrella organization for all libraries in the Panhandle. Many librarians were initially resistant to the idea of doing math in the summer, but changed their minds after they saw the activity guide and the program, and expressed more interest, for example, "I didn't know you could read a book about math or that there could be a cartoon about math."

Working with so many partners across the region presented a communication challenge for KACV's outreach coordinator in efficiently orienting twenty different partners to the *Cyberchase* tour program and partner expectations. In order to address this she developed an informational kit for each library that explained the project, roles, and responsibilities. In most cases, this was very effective, but she was still surprised to find librarians and other local contacts with a poor understanding of the one-hour event.

The outreach program was conducted entirely by a KACV team, comprising the station's outreach coordinator, assisted by the marketing coordinator, and joined by an actor playing Digit. The station tour involved considerable travel to venues around the Panhandle; the team traveled as far as 246 miles for a single event.

The *Cyberchase* programs were facilitated by the KACV outreach coordinator, who opened with a discussion of attitudes towards math. Team members found children for the most part divided about math: they either hated or loved it. This discussion was followed by a screening of the *Ecohaven Ooze* episode, the reading by the outreach coordinator of a math-related book, and opportunities for children to create a *Cyberchase* pop-up card and have a photograph taken with *Cyberchase*'s Digit. All children received a *Cyberchase* "goodie" bag filled with branded materials and a book with math content. In a few locations, the team also walked visitors through the *Cyberchase* website. The *Cyberchase* events lasted one hour, occasionally longer. This was not always a sufficient amount of time to complete the photo session for all of the children attending.

Turnout for the 20 sites varied from 12 to 200 children. At one site with large turnout, a number of summer school students attended. In another, particularly synergistic instance, a book fair was being held at the same time. Less fortunate pairings occurred when the *Cyberchase* visit coincided with the launch of the summer reading program, which generally resulted in competition between programs for children's attention. In a survey conducted prior to project implementation, participating librarians indicated that they were targeting 8-year olds. In actuality, their efforts reached a broader range that included children both younger than 8 and older than 12.

In addition, the KACV outreach coordinator encouraged partners to schedule weekly screenings of *Cyberchase* to extend the summer challenge experience. One library was particularly successful in this endeavor, screening five different *Cyberchase* episodes with audiences ranging from 12 to 20 children in first grade and older. Other libraries were less successful, and had few, if any, visitors for the screenings. One librarian attested to the difficulty of getting attendance for any weekly programs—not just *Cyberchase* screenings. She did, however, introduce relevant books to any visitors who did attend, such as a book of mazes in conjunction with the *Escape from Merlin's Maze* episode. Another librarian encouraged students to conduct the online *Cyberchase* activities, though she found the site, including functions such as becoming a member, difficult to navigate.

Because KACV conducts an annual summer tour featuring a different PBS kids program, the program coordinator can fine-tune the experience at each location, get to know the library facilities, and scout alternative sites nearby. She keeps extensive records about the experience at each site, noting for instance, the extent of publicity for the event, turnout, the



Choosing a math book to take home

quality of the venue for programming in terms of space and air conditioning, the attitude and helpfulness of library staff, and the availability of additional resources, such as alternate spaces in the community.

The KACV coordinator spoke with many of the children and parents at the end of the programs. Parents frequently thanked the coordinators and said they appreciated learning ways to work on math with their children and receiving the online resources and activity books. Parents also related that an earlier broadcast time, such as 3:30 or 4:00 p.m., right when their children got home from school, would be better than 5:00 p.m., when children have moved on to other activities.

The KACV station contact found the conference calls with other grantee station contacts extremely valuable, as was seeing pictures from their summer initiatives. Although she had difficulties using Facebook, she nevertheless would have liked to find additional ways of extending the conversation with other local public television contacts, and felt that in the future, the Thirteen/WNET manager could provoke additional discussions or extend the use of blogs and bulletin board conversations in order to encourage greater exchange.

The KACV outreach coordinator is very enthusiastic about continuing the *Cyberchase* Summer Challenge in the future.



Conducting the Cyberchase pop-up card activity with Digit

Fundraising

A small portion of KACV's annual outreach budget is set aside for the summer program and was used for this initiative. In-kind support provided by libraries included space and publicity for the events using posters provided by KACV. No additional fundraising was conducted, in part because notification that the grant had been awarded was too close to the start of the tour. Funding was further complicated by the late receipt of the *Cyberchase* funding by KACV, well after the station had begun planning the tour.

The outreach coordinator related that the summer grant funding allowed for such a broad effort and underwrote the cost of an actor in the Digit costume. While KACV would be enthusiastic about continuing the summer tour with or without funding, accessing sites outside of Amarillo was only possible because of the *Cyberchase* grant. The outreach coordinator noted that the *Cyberchase* give-aways were also crucial to the program's success. KACV gave out *Cyberchase* booklets, stickers, keychains, and pencils to participating students. Activity books were popular with both children and teachers.

Additional funding would have allowed KACV to conduct multiple hands-on math activities at each site, and to provide math manipulatives such as rulers and cubes for math problems.

Promotion

Libraries were in charge of local promotion. All of the libraries posted signs on their front doors; several also listed the activity on Facebook and library websites. One partner

explained in a follow-up interview that the library advertised in local newspaper, placed fliers for kids in reading classes, and noted *Cyberchase* on the daily sign announcing what's happening that day in library. A few sites received publicity for the event in local newspapers after it happened.

Extending Learning

In most cases, the libraries and community center staff had not conducted any previous STEM programming and their expectation for the program's impacts were broad: keeping children interested in learning throughout the summer and encouraging them to use the library. The Texas libraries feature a reading-based theme each summer. The *Cyberchase* Summer Challenge allowed libraries to begin to see math programming as possible and relevant to their work. The visit was instrumental in changing attitudes, according to the KACV coordinator and librarians interviewed. One librarian interviewed was very enthusiastic about the *Cyberchase* program and hoped to do more math and science in the future, because there were "several kids that are real science and math oriented, and they were really excited," and noted that the program "reached kids for whom reading is not their favorite thing."

The KACV outreach coordinator learned that gathering data on project impacts is difficult and finds developing effective survey questions challenging. She indicated she would benefit from training in developing surveys for use with outreach partners. In the future, KACV would also be interested in conducting a more in-depth follow-up survey to get information on children's ongoing interest in *Cyberchase*, to learn, for example, how many children asked about *Cyberchase* or went online following the KACV visit.

The KACV coordinator is also considering conducting more extensive visits to fewer sites in the future. She would like to provide multiple math-based activities, perhaps simultaneously at different stations set up in the library. She would also like to provide math manipulatives, such as *Cyberchase*-branded measuring tapes and rulers. Additional staff would be required to conduct multiple activities.



Example of KACV library tour, local newspaper coverage

EIGHT/KAET

Location: Phoenix, Arizona

Partners: Arizona Science Center; Lambda Theta Alpha

Venues: City of Phoenix Latino Institute Back to School and Health Fair at Arizona State University; Arizona Science Center; Robey Elementary School

Time Span of Outreach: Multiple one-day events

Funding: In-kind funding by partners included waiving of vendor fees and donation of graphing calculators for prizes

Audiences Reached: Thousands of conference attendees

Station Contact: Associate General Manager, Educational Outreach

Eight/KAET conducted a multi-site dissemination campaign that reached families, educators and classrooms throughout the Phoenix area. Station staff distributed *Cyberchase* materials at different sites and publicized *Cyberchase* online. In addition, Eight provided teacher training for one school district, and materials for classroom use of *Cyberchase* at another elementary school, where *Cyberchase* use has continued into the school year.

Partnerships

KAET faced the unfortunate challenge of partners who decided not to participate just prior to implementation. The *Cyberchase* Summer Challenge had been planned as a centerpiece of the summer school experience in two Phoenix school districts. One district withdrew from the project; the second allowed their teachers to receive *Cyberchase* training and used *Cyberchase* Summer Challenge materials as a supplement to their curriculum. In addition, Eight built on an existing relationship with Robey Elementary School, providing materials and training to a teacher for use in the classroom.

The City of Phoenix Latino Institute, a program of the City of Phoenix Parks and Recreation Department, is an alliance of citizens, government agencies, businesses, and community organizations dedicated to ensuring high quality of life for all. Each summer, the Latino Institute holds a Back to School and Health Fair where participants receive medical services such as immunizations and other health and education information. More than 70 organizations offer information on after-school programs, health, nutrition, education, school registration, finance, voting and voter registration, vital records, and water safety.

An ongoing partner, the Arizona Science Center, provided an additional outreach venue and support during their annual Latino Back to School Event for local area teachers.

Program Implementation and Challenges

Eight began the *Cyberchase* Summer Challenge anticipating working with summer school programs in two school districts. The withdrawal of these key partners at the beginning of

the summer was a major challenge. Ultimately, the station conducted predominantly one-day outreach activities aimed at disseminating materials to families, educators, and classrooms.

The City of Phoenix Latino Institute Back to School and Health Fair offered a significant opportunity to reach families with school-aged children. Attended by more than 7,000 people, the Fair included an Eight/KAET booth featuring *Cyberchase* materials and activities. With the help of a local Hispanic sorority, Lambda Theta Alpha, Eight/KAET staff conducted the pop-up card and other activities from the *Cyberchase* Summer Challenge Guide and Activity Book, displayed *Cyberchase* on a laptop computer, and gave out *Cyberchase* pencils, tattoos, and other materials.



The Latino Back to School Event at the Arizona Science Center provided an opportunity to reach local teachers. Eight distributed educational outreach guides and give-aways to some of the more than 600 teachers attending the event.



Eight conducted teacher training for 35 members of the summer school staff at the Isaac School District at the end of May using available online and print materials. These were followed up with class sets of Summer Challenge resources, including educator and activity guides, pencils and other give-aways, provided to each of the teachers.



Robev Elementary School children use Cyberchase to review 4th grade math

The station provided *Cyberchase* Challenge resources to a 5th grade classroom at a local elementary school for use during the beginning weeks of school in the fall. The teacher received *Cyberchase* training and materials for use in the classroom and implemented *Cyberchase* as a refresher for the previous year's content and for providing homework assignments. The programming provided a way of reviewing math from the previous year and of transitioning into 5th-grade work.

Station staff found the communication with other grantees valuable, and particularly appreciated the ideas and photos shared on Facebook.

Fundraising

Community partners hosting the two summer events waived all vendor fees for Eight's participation. Scottsdale Community College donated five graphing calculators for prizes connected with the Arizona Science Center event.

Promotion/PR

Eight promotional activities focused on getting the word out about the *Cyberchase* Summer Challenge materials for use during both the summer and school year ahead. From May



Disseminating Cyberchase materials at the Phoenix Latino Institute Back to School and Health Fair, with the help of Lambda Theta Alpha volunteers

through mid-October, *Cyberchase* was promoted on Eight's Home page, through Facebook and Twitter, and in the Eight print magazine.

In addition, Eight promoted the use of *Cyberchase* Summer Challenge materials for use in classrooms during the school year. Eight's e-newsletter featured *Cyberchase* and was sent to over 28,000 educators throughout the state.

Extending Learning

Because of changes in the partnerships, Eight was not able to conduct hands-on activities with students during the summer as planned. The station was nevertheless able to provide materials and training to a range of educators, and implemented the full suite of materials with the 5th-grade students at Robey Elementary School.

eight EDUCATIONAL OUTREACH
ASSET

Your **PBS Connection**
Volume 1 - Issue 4 Grades 3-5

Go! Cyberchase

Home Program Resources Reviewed Sites for Math, Technology, & Language Arts 21st Century Resources Connecting with the Arts

Go! Cyberchase PBS Kids Program Promoting Math Education For Grades 3-5

Jump start your math instruction by using PBS Kids' standards based program **CYBERCHASE** that targets children in grades 3 - 5. Combine the award winning TV program with online activities. **CYBERCHASE** has been on the air since 2001 using the National Council of Teachers of Mathematics (NCTM) standards as a basis for all of its math activities. This newsletter focuses on 8 episodes that will air during the summer. All of the activities and online resources have been aligned with the Arizona Articulated Math Standards.

Produced by Thirteen/WNET New York and Nelvana International, the Award-winning series **CYBERCHASE** is the only mathematics series for children on American television. Designed for kids ages 8 to 12 and packed with mystery, humor, and action, each episode delivers positive messages about math by teaching concepts in a fun way that kids can understand. **CYBERCHASE** teaches kids that math is everywhere, everyone can be good at it, and it's fun! **CYBERCHASE** Online for Teachers provides everything you need to bring the math adventure and learning fun of **CYBERCHASE** to your students.

Each episode is a thrilling adventure driven by a different math concept. From tackling time in ancient Egyptian tombs to cracking codes in creepy caves, kids learn that math is everywhere and fun to use! In For Real, the live-action segment following each animated episode, kids are shown how math can help solve life's wacky problems in the real world. Beyond the TV episodes, learning continues through dynamic online activities that help kids explore their world -- and have a blast with math in their schools and homes! [Click here for more information...](#)

[Click here](#) to preview the program.

BE Connected to educational television, professional development opportunities and classroom resources related to PBS Programs.

Coming Soon!
Become an **ASSET educator**

Have you scheduled your PBS Outreach workshop yet?

Contact the [ASSET Professional Development Team](#) to get your workshop on the calendar. Remember we can come to you to share all the high quality online and broadcast resources from PBS!

Connecting with the Arts

In Episode 406: A Change of Art, statues of Hacker are popping up all across Cyberspace. It's his latest scheme - art therapy! Heartbroken after losing to the kids yet again, Hacker throws himself into sculpture and gives his work away. Problem is, wherever one turns up, the power goes off. [More...](#)

Eight's e-newsletter featured Cyberchase and was sent to over 28,000 educators throughout the state

KETC

Location: St. Louis, Missouri

Partners: Sigma-Aldrich, AmerenUE

Venues: Kingdom House; KETC (culminating party)

Time Span of Outreach: one-hour per week for six weeks

Funding: In-kind funding including Kingdom House space and recruitment of children. Employee time, cash, copying and backpacks from Sigma-Aldrich. Employee time and demonstration equipment from AmerenUE.

Audiences Reached: 30 low-income children

Station Contact: Special Events Coordinator, Office of Corporate Support

The KETC *Cyberchase* Summer Challenge program reached thirty low-income children at the Kingdom House summer camp through weekly *Cyberchase* experiences over a six-week period. The culminating event was held at the KETC studios, where students screened a final *Cyberchase* episode and had a party. In developing the project, KETC expanded its relationship with corporate sponsor Sigma-Aldrich, and brought on two new partners, a local social services agency and the local utility company in providing the Summer Challenge experience.

Partnerships

KETC worked with two very different partners: Sigma-Aldrich, the local *Cyberchase* sponsor, and Kingdom House, a social services agency. The two organizations, one an established KETC partner and one entirely new to KETC's outreach, provided the essential components for the project, including capable volunteers, in-kind funding and additional resources, which were provided by Sigma-Aldrich, and interested children and an inner-city venue, provided by Kingdom House.

Sigma-Aldrich is an international biotech company with corporate offices in St. Louis. The firm's Global Citizenship program has an established volunteer tutoring program focused on reading in the St. Louis schools. Sigma-Aldrich has also worked with KETC in the past and was a regular supporter of KETC's annual Arthur's Picnic in the Park, a public event that showcased children's television programming. When state funding for Arthur's Picnic was cut, Sigma-Aldrich took the opportunity to reach out to the community by sponsoring the *Cyberchase* Summer Challenge. From Sigma-Aldrich's perspective, the Summer Challenge offered a means of expanding its tutoring repertoire to include STEM tutoring. It was the group's a first experience in working with educational television content.

When it became clear that the St. Louis schools would not be available to host the *Cyberchase* summer challenge, KETC reached out to Kingdom House to provide *Cyberchase*

programming for their students. The Kingdom House settlement house and social services agency was founded in 1902 and provides on-site community services from an Early Head Start program to a senior companion program. Kingdom House serves 150 low-income young people, ages 6- to 14-years old, and offers a seven-week summer program. The Kingdom House summer camp offers a full day of activities, including puppetry, music, arts and crafts, financial literacy lessons, a science program, fitness or swimming, and African dance. It was in the course of these activities that children received an hour of *Cyberchase* each Friday.

KETC built a second new partnership with AmerenUE, a local utility company that participated in the station party at the end of the summer. The KETC special events coordinator noted that *Cyberchase* offered a unique opportunity to build this relationship, because of the project's educational nature. The philanthropic offices of AmerenUE are usually closed to media entities.

Implementation

The KETC *Cyberchase* proposal outlined a plan to conduct the *Cyberchase* Summer Challenge initiative in the St. Louis public schools, where Sigma-Aldrich volunteer tutors were already working. When the public school summer programs did not materialize as expected, KETC reached out to Kingdom House to provide access to students who could benefit from the programming. KETC special events coordinator told representatives of Kingdom House about the show and the multicultural characters, and provided copies of the activity guide and other materials. Kingdom House was appreciative of the opportunity for special summer programming. A group of thirty children, ages 6 to 8, were selected to participate.

Each Friday's hour-long session comprised the screening of a *Cyberchase* episode and a hands-on activity. Screenings were preceded by discussion with the children of the episode's broader concepts and were followed by an activity chosen to highlight specific content areas. The children were divided into groups of five for the activities. The Sigma-Aldrich Global Citizenship manager noted that the connections between episodes and activities were effective, observing that when the children started an activity, they often noted the connections with comments like, "Oh, they did that in the episode."

At the beginning of the summer, KETC provided a one-hour training for the Sigma-Aldrich volunteers. The training covered approaches to teaching math, rather than the *Cyberchase* curriculum itself. Volunteers were encouraged to ask open-ended questions, help children think for themselves, and assure children that making mistakes and getting the wrong answer is okay. Activities were tested, selected, and modified by the Sigma-Aldrich manager over the course of the summer.

The global citizenship manager at Sigma-Aldrich found it was important to test the activities and to adapt them before use. At first, his team overestimated what could be accomplished in a single hour and anticipated that children would be able to conduct four puzzles at different lab stations, when in fact time only permitted one activity. Children were both younger than the target age and working below grade level, so the activities and concepts needed to be simplified. For example, the children did not understand the concept of increments or how to measure and math skills such as multiplication were well beyond their skill level. The *You Be the Judge* activity also appeared too advanced, and the graph provided in *Go for the Goal* was

too small for the children to work with. Additional considerations for selecting activities included the available space; for instance, the program was held indoors, which created a challenge for the activity involving shadows, and modifications included shortening the times in activities such as *Go for the Goal*.

KETC support included provision of promotional items, occasional visits during the Friday sessions, and hosting of the final event, a visit to the television station, where children watched an episode of *Cyberchase*, ate lunch, made ice cream following another *Cyberchase* activity, and watched a safety demonstration presented by the local electric utility. The safety demonstration featured grilling hot dogs on power lines to illustrate the temperature that can be generated by electricity to the children, and giving them the opportunity to interact with professionals who use math in their careers.



AmerenUE grills hotdogs to demonstrate the temperature that can be generated by electrical lines

Fundraising Tactics

KETC conducted the *Cyberchase* Summer Challenge project out of its Corporate Support Office. The *Cyberchase* Summer Challenge funding was seen as seed money for the initiative, and the Corporate Support Office staff reached out to partners for in-kind services as well as additional funding. Sigma-Aldrich provided the volunteer time (two hours per week for six weeks, not including training time) and supplies, made copies for the activities, and contributed to the materials including Sigma-Aldrich backpacks, distributed at the final party.

Kingdom House provided the children, space, and had a television and DVD player ready for use each week.

AmerenUE provided cash support and donated employee time (twelve staff members) and equipment use (power generation display) for the final event.

Promotion/PR

KETC promotional activities were aimed at engaging at-home participation in the Summer Challenge. The station ran an article in its May/June guide and conducted on-air promotion. However, KETC staff felt the activities were not well suited to at-home use since they were developed for group use and required extensive parent assistance. No promotional activities were conducted for programming at Kingdom House; students were already attending the summer camp.



Cyberchase screening at the KETC final party

Extending Learning

Sigma-Aldrich's global citizenship manager was disappointed that the short amount of time spent with children made it challenging to establish content learning goals and measure gains, but nevertheless felt that they "were able to move the needle on the concept that [math] is fun. That was a success." This assessment was based on a pre/post test developed for use in the project [see surveys in Appendix 2]. The survey included questions such as "Do you like math" and "Is math one of your favorite activities?" The results suggested modest gains: posttest gains on whether the children liked math increased to 96% (n=27) from 83% (n=12) on the pretest. On another question, in which children selected adjectives describing math, 78% selected "fun" on the posttest, up from 67%; and only 4% selected boring, down from 25% at the beginning of the initiative. The Kingdom House contact concurred that students learned that "[Math] is everyday and it's fun. And it's not something that is hard to learn."

In addition, the Sigma-Aldrich Manager expressed amazement at the children's attention span during the episodes and observed that the children enjoyed the hands-on activities because, "They got to be kids. [*Cyberchase*] disguised [math] in the form of fun." The most successful activities included those in which the students had to produce something, such as the pop-up card activity. The children also appeared to enjoy the robot challenge.

The Sigma-Aldrich Manager would like to see the public television station take a greater role in reviewing, identifying, and suggesting modifications of activities for different ages and audiences. Modifying and carrying out the activities was more time-consuming than expected. The manager also felt that in some cases, the directions in the curriculum could have presented more clearly. That said, given the robust online materials and with sufficient time and effort, he felt his volunteer program could implement a similar *Cyberchase* initiative without the station's support. The Kingdom House contact was also enthusiastic about continuing to use *Cyberchase* materials.

The success of the implementation was related both to the math content and to the program's consistency. Both the Kingdom House contact and the Sigma-Aldrich manager recognized the value for at-risk children of having consistent programming over the course of the summer and of the opportunity to build personal connections with volunteers.

Moving Forward

The Kingdom House contact would be happy to host the *Cyberchase* Summer Challenge again and would like to work with an older age group in the future.

Sigma-Aldrich will continue to work with KETC during the school year and introduce the *Cyberchase* content in two schools. The one-hour training session each week for volunteers is not sustainable (too much time out of work), so Sigma-Aldrich will be experimenting with conducting a one-hour training session at the beginning of the program. The firm will begin with two classes in each school, but principals have said they would like the training for 3rd through 5th graders, and possibly even 2nd graders. Sigma Aldrich will start with a six-week program and dedicate time each week for the volunteers to work with children in the schools. Sigma-Aldrich would like to see volunteers from other companies involved.

KIXE

Location: Redding, California

Partners: Chrysalis School; Turtle Bay Exploration Park; Shasta YMCA; Redding Public Library; Schrader Planetarium; Barnes and Noble Bookstore

Venues: Chrysalis School; Shasta YMCA; Redding Public Library; Barnes and Noble Bookstore (Math Magic workshop sites); Turtle Bay Exploration Park; Schrader Planetarium (culminating activities sites)

Time Span of Outreach: multiple one-day events, culminating in a four-day series of family events

Funding: In-kind funding from partners, including food, prizes, and space for activities.

Audiences Reached: estimated 500 families

Station Contact: Education and Outreach Coordinator

The KIXE *Cyberchase* Summer Challenge engaged children and families in a summer-long math-based contest, involving screenings, workshops, and game days. These events were held at a local museum partner as well as other community sites in and around Redding. The project was developed to leverage multiple local relationships and provide math-based programming for the vast rural area served by KIXE in northern California.

Partnerships

KIXE partnered with five groups with which it had long-standing relationships: Chrysalis School (a K – 8 charter school with a math and science focus), Turtle Bay Exploration Park, the Shasta YMCA, Redding Public Library, and the Schrader Planetarium. KIXE also reached out to Barnes & Noble bookstore to expand its partnership and the venues for the family workshop site.

Several partners served as community event hosts for free *Cyberchase* Screenings & Family Game Nights and for game-making workshops. More extensive partner relationships included activities related to the judging and promotion of the final projects, as well as independent *Cyberchase* activities conducted at the Turtle Bay Exploration Park.

The Turtle Bay Exploration Park is a museum that focuses on the complex relationships between people and their environments, using the unique cultural, historical and natural resources in the Sacramento River Region. Turtle Bay is a long-time partner of KIXE and played a central role in this summer's *Cyberchase* Summer Challenge.

An interview with the Family and Youth Development Director of the Shasta YMCA revealed much about the value of the partnership for that organization. Also a longtime KIXE partner, the YMCA director welcomed the opportunity to expand

people’s sense of what a Y can offer through the *Cyberchase* initiative. “People think of the Y as ‘swim and gym,’ not doing math activities,” he said. He explained further that the *Cyberchase* Summer Challenge was attractive because it was free—an important consideration for families in this rural area that has high unemployment.

Project Implementation

The *Cyberchase* Math Magic workshops informed families about *Cyberchase*, the *Cyberchase* activities and how to create math board games. The *Cyberchase* Math Magic workshops were designed to help families create math board games and enter them in a contest sponsored by KIXE. An estimated 500 families participated in the *Cyberchase* Summer Challenge. The workshops were facilitated by a math instructor from the Chrysalis Charter School.

The station offered a range of venues for the *Cyberchase* activities to give families options for where they participated. Workshops were held at Chrysalis School, Redding Library, Shasta YMCA and Barnes and Noble; at each, families received information on how to make games and how to submit them to the contest. Trainings also included an overview of the types of math games such as probability (chance). Families then made games at home and submitted them to the KIXE Crazy Cool *Cyberchase* Math Magic Game Board Contest.

Families attending Math Magic workshops also received information so they could go online to continue *Cyberchase* activities. Many parents were not familiar with *Cyberchase* and appeared to be intrigued by the segment they watched; they expressed interest in the program and how to find it on public television.

In early July, the top locally-designed games were chosen by the general public and selected judges. Each of the top winners and their families attended an awards ceremony at the Schrader Planetarium, and four “*Cyberchase* Saturdays” events at Turtle Bay Exploration Park showcased the winners and their math games. Park visitors were able to play the winning games and to participate in scavenger hunts using *Cyberchase* characters, with prizes as incentives. Park staff also played the *Cyberchase* episodes in a continuous loop in their theater to expose visitors to the program.

The *Cyberchase* Summer Challenge “was a real draw with a repeat audience and a way to showcase local talent,” observed Turtle Bay’s education manager, who also served as a judge of the math games. “The kids were very excited and proud to make the board games.” The education manager was impressed by the talent of the children who participated in developing the math games.

Project Implementation Challenges

The family and youth development director at the YMCA felt that scheduling *Cyberchase* during the school year would be easier, since the beginning of June was too busy for families; school ended in May. Another suggestion was to conduct activities in April, during the National Association for the Education of Young Children’s Week of the Young Child.

Another local challenge was the broadcast time of *Cyberchase*, at 6:30 am and 1:30 pm, making it difficult for children to follow-up on their introduction to the program.

Fundraising Tactics

In-kind support came from local sponsors such as the Redding Rancheria, Party ExtraordinAIR, Need 2 Speed, Oasis Fun Center, North State Parent, Subway, and the Redding Travelodge and included prizes and food. The Turtle Bay Exploration Park provided two family memberships as prizes and use of the facility for the gaming days. Other in-kind support was provided by Schreder Planetarium, Chrysalis Charter School, and Redding Library.

Without the grant, the KIXE Education and Outreach Coordinator said, the station would have offered similar programming, but at a lower level of intensity. With similar funding from WNET, the station would definitely continue the *Cyberchase* Summer Challenge as an annual event.

Promotion

The primary challenge KIXE encountered was in the timing of the grant. Because of May graduations and school closings, KIXE staff noted, they did not have time to prepare the community for the *Cyberchase* activities: “We needed information earlier to publicize the program but it wasn’t ready.”

Extended Learning

Children appeared to absorb mathematical ideas through the television content and the activity of designing games. “Families really enjoyed making math games together. They went home and made math games,” the KIXE contact said. Turtle Bay Exploration Park staff was impressed with the math skills children displayed in developing their math games. The director of the YMCA described a nine-year old girl who wrote a book about the game she designed. The game involved a lost duckling and the use of math facts to help the duckling find its way home.

Children were given ideas to prompt game creation at all developmental levels, for example, suggestions for matching or sequencing games of different levels of sophistication. “It was a new idea for parents to use board games to improve math skills,” the KIXE contact said. “Older students developed games and I was amazed at how they use math equations to make it fun,” said the director of the Y.

The Shasta YMCA Family and Youth Development Director regarded the *Cyberchase* Summer Challenge as a success even though it only attracted 16 participants to his location. “I was pleasantly surprised to get the interest we did with math games,” he said, “I was not familiar with *Cyberchase* before this.” He noted that families created board games which they also played at home in the evenings.

Contacts at the YMCA and Turtle Bay Exploration Park interviewed for this project both expressed enthusiasm about partnering with KIXE on future *Cyberchase* Summer Challenge programming.

Thirteen/WNET support

The materials for *Cyberchase* from Thirteen/WNET “just blew me away,” said the KIXE coordinator. Materials included tee-shirts, *Cyberchase* kits that included calculators, rulers, pencils, sharpeners, and a binder with *Cyberchase* characters.

The KIXE education outreach coordinator had limited opportunities to communicate with the other participants. However, she did receive an evaluation template by email from another *Cyberchase* Summer Challenge grantee station contact that she found useful.

Web promotion of KIXE's Crazy Cool Cyberchase Math Magic Game Board Content

Location: Tallahassee, Florida

Partners: Imagine School at Evening Rose

Venues: Imagine School at Evening Rose

Time Span of Outreach: one week camp program (four 3-hour days)

Funding: In-kind support and materials including food, calculators, pens, and notepads for campers.

Audiences Reached: 41 students (grades 2 – 5)

WFSU’s education and outreach coordinator was enthusiastic about expanding opportunities for addressing math “in a fun way” for the WFSU child audience, building on the station’s positive experiences reaching children with PBS Kids Raising Readers (a program into which science was sometimes woven). To bring math programming to a diverse body of students, the station engaged a new partner to conduct a summer math camp using *Cyberchase* content. Imagine School at Evening Rose is a charter school, described as “a real melting pot,” that draws students from a range of economic and ethnic backgrounds across the region. The school was seen as a way to get the word about WFSU’s project out to many students and families: the charter is in regular communication with some fifteen local schools. Forty-one students in grades two through five participated.

Partnerships

The mission of Imagine School at Evening Rose is to help parents and guardians educate their children by creating learning communities of achievement and hope. WFSU has reached out in the past to the two-year old school, providing PBS Teacher e-news, as well as DVDs and outreach materials, but this was the first opportunity for a formal partnership. Recent STEM programming at the school included a Science Fair using activities from *FETCH*, *Curious George*, and *Sid the Science Kid*. They were also involved with a SciGirls Summer Camp Experience and have done several teacher workshops using a variety of STEM programming, including *Cyberchase*. The school recruited students and provided education staff and space for the weeklong summer math program.

WFSU reached out to a second new partner, Sunshine Bank, that ultimately provided material support for the camp.

Project Implementation

WFSU reached out to these partners during the proposal phase of the *Cyberchase* Summer Challenge. As part of that phase, WFSU developed a letter of agreement with the Imagine School, outlining roles and responsibilities that served the project well. WFSU training for Imagine School educators covered the educational goals of *Cyberchase*, available materials,

ideas for implementing and adapting activities, and suggestions for promotion and fundraising. The Imagine School lead educator found the most valuable aspect of the training was working together with WFSU and figuring out how to manage groups of children of different ages.

Two teachers from Imagine School ran the summer camp that was developed specifically for the *Cyberchase* Summer Challenge. *Cyberchase* activities were offered in the morning for three hours, four days a week for one week. Students were divided into two multi-age groups; each teacher worked with one group of approximately twenty students. Two teenaged helpers assisted the teachers. Each camp day comprised two *Cyberchase* episodes and corresponding activities, recess, and a snack. The hands-on, cooperative learning was in keeping with the types of activities that Imagine School supports and kept the students active and engaged during independent work.

Online activities were part of every camp day, in part because access to computers at home was limited among the student population. However, the WFSU coordinator noted that *Cyberchase* partners did not spend much time using the online resources. Time was a constant pressure, she said, “We had five days squeezed into four and only half days to get everything done.”

Implementation Challenges

Inviting rising second graders to participate was a challenge: it was difficult for them to do the math activities presented in the *Cyberchase* Summer Challenge. Several participating children received special education services and struggled with some of the math concepts and needed individual attention, which was not easily provided.

According to the WFSU outreach coordinator, Imagine School exceeded expectations, although the partnership with the Sunshine Savings Bank was not as strong as anticipated due to miscommunication about the bank’s role. However, WFSU will work with both partners again, and the education and outreach coordinator noted that that the experience “refreshed my memory that a Letter of Agreement is crucial to outline roles and responsibilities.”

Fundraising

Imagine School received approximately \$2,000 to recruit participants and host the summer math camp. The funding was adequate to support the *Cyberchase* math camp but, as the WFSU education coordinator noted, “Money is always needed. This is a moderate size city with several universities. There’s lots of opportunity for business to fund pre-kindergarten through the university, but not many do this.” The bank provided about \$150 of in-kind support, including some food for the camp and also gave the children calculators, pens, and notepads. In addition, Sunshine Bank has offered \$250 for materials and teacher stipends for the *Cyberchase* workshop scheduled for November and December, 2010.

Promotion/PR

Imagine School distributed flyers to the parents of all of their approximately 800 students inviting students to participate in the summer math camp. Additional *Cyberchase* promotion

targeted educators and the general public. WFSU sent email “blasts” to 800 educators across the state and publicized the *Cyberchase* programming in its newsletter sent to station members. Next year, program staff intends to use the logos of its *Cyberchase* partners on the weekly PBS newsletter to publicize the program to all schools in the area.

Extending Learning

An end-of-program survey suggests that the *Cyberchase* summer math program was a success. Thirty-four children completed the survey, 25 of whom (74%) indicated that they wanted to attend math camp next year. Anecdotal evidence indicated that the summer camp heightened math awareness through activities that were “fun, engaging, and exciting.” “All sorts of kids loved it and tuned into it. Those kids who love math thought the camp was just for them,” stated the Imagine School principal. Teachers also noted that the children learned math skills and gained confidence in math. One teacher said, “This is a confidence builder for students because they worked with older kids who could help them.” Adding fractions appeared to be the math skill where learning was most evident.

Noting that “It was fun and kids wanted to do more math,” the WFSU coordinator suggested that interest in the *Cyberchase* program “made the case” for programming STEM activities because “there is nothing out there like this for kids.” An evaluation template that stations can use to track project success would be useful, she said.

The teachers who conducted the *Cyberchase* math camp are now aware of the program and can draw on their experience to integrate *Cyberchase* into their classes. One teacher was so excited about *Cyberchase* that she tweeted all her friends about the program and scheduled a teacher workshop on using *Cyberchase* in their classrooms; WFSU will air the workshop in January, 2011.



Digit visits the Imagine School during the Cyberchase Summer Challenge

WFSU will continue to focus on math and science goals. And, with adequate funding, such as the *Cyberchase* grant, WFSU’s Outreach Coordinator said, the station would definitely continue to offer the *Cyberchase* Summer Challenge.

Thirteen/WNET Support

WFSU’s Education and Outreach coordinator described WNET’s support and materials as “great” and the WNET/*Cyberchase* Outreach Manager’s efforts as “the best,” adding that “Funding is always a key component.” The toolkit and DVD with clips were critical, she said, so that stations don’t have to rely on accessing the Internet. She expressed a wish that WNET keep the *Cyberchase* episodes coming and engaging. She found telephone and email the most effective way to communicate with WNET and other grantees. The WFSU Coordinator said she found having Facebook access to other stations was very useful.

WIPB

Location: Muncie, IN

Partners: Minnetrista; Motivate Our Minds (MOMs)

Venues: Minnetrista

Time Span of Outreach: Six-week camp, one-week camp, and public event

Funding: Partners provided in-kind resources, including use of the venue, staffing, and additional materials.

Audiences Reached: 60 children in summer programs; public event attended by 800 people

WIPB-TV, located at Ball State University in Muncie, IN, implemented a multi-pronged outreach plan that allowed the station to reach children in different socio-economic groups and test implementation of *Cyberchase* Summer Challenge activities in a variety of contexts. The WIPB membership and outreach manager found the *Cyberchase* activities were best received in an education-based program, versus a purely summer camp experience. The project was ultimately successful in engaging a range of students, pairing the social experience of *Cyberchase* viewing and activities with an individually experienced computer-based math program, and including all participants, along with others in the community, in a Family Fundae Ice Cream Tasting Party. WIPB developed a new partnership with Motivate Our Minds (MOMs), a local organization devoted to educating at-risk children, and plans to continue working with MOMs in the future.

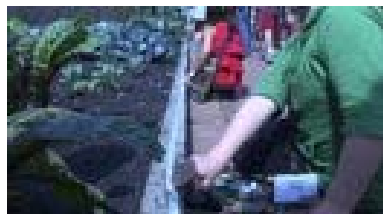
Partnerships

WIPB reached out to old and new partners. Minnetrista, a local cultural center, had previously had a positive experience hosting the *Cyberchase* exhibit in its museum space and with conducting other activities with WIPB, and was eager to build on these experiences. Minnetrista is a museum and cultural center serving the people of East Central Indiana. Minnetrista offers exhibits and programs for children, families, adults, scouts, teachers and students that focus on nature, history, gardens, and art. The 40-acre campus includes gardens, a museum facility, an historic home, Nature Area, numerous sculptures, and a portion of the White River Greenway.

Minnetrista provided the initial introduction to WIPB's new partner, Motivate Our Minds (MOMs), which offers a year round enrichment program for at-risk youth. MOMs uses the Minnetrista facility to conduct the nature component of its summer program, held in the Minnetrista garden. During the summer months, MOMs looks for alternative activities, while still offering a classroom-based experience for its students. The MOMs program had no previous experience conducting programming using public television resources.

Project Implementation

WIPB brought together its two partner organizations, Minnetrista and MOMs, for the *Cyberchase* Summer Challenge training at the beginning of the summer. As part of this orientation to the summer project, WIPB staff presented the DVD and outreach materials, reviewed the *Cyberchase* educational goals, explained how to find materials online, and offered suggestions for implementing activities. Minnetrista staff was already familiar with the program, having attended an extensive *Cyberchase* training as part of hosting the



Students conducting follow-up measurement activity in the Minnetrista garden

Cyberchase exhibit. MOMs and Minnetrista staff were then free to plan their own *Cyberchase* sessions, integrating them as appropriate into their programming. The two partners worked independently and integrated *Cyberchase* in their respective summer offerings for children.

WIPB staff checked in on the programs underway, sent a crew to videotape students at the MOMs' program, and planned and facilitated the final Family Fundae event, which was open to the community. The Family Fundae event, held by WIPB at Minnetrista, included free entrance and tickets for the children from MOMs and other low-income community groups, which ensured participation by children from across socio-economic groups in the community. In addition, *Cyberchase* give-aways were shared with students attending all of the programs.

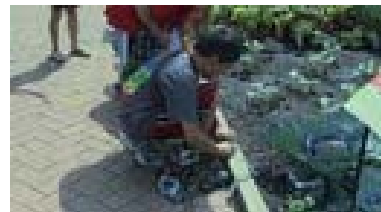
A total of 48 children from two MOMs classes participated in the *Cyberchase* Summer Challenge. Each week one class of 1st- and 2nd-graders and another of 3rd- and 4th-graders spent approximately an hour in *Cyberchase* activities. Students watched an episode early in the week, and took part in a follow-up activity based on the *Cyberchase* math content either immediately afterwards or later in the week. Follow-up activities were conducted in the Minnetrista garden, in the classroom, and in the computer lab. Students watched seven of the eight Summer Challenge episodes. For MOMs educators and students, being able to watch something that has yet to be released on network television and participating in a national project was exciting. The MOMs educator said the *Cyberchase* Summer Challenge "came with a lot of energy" and the kids received it that way too. It added variety to the week and also consistency; doing it each week was important. The MOMs educators noted that having the DVDs and playing them according to their schedule was also important.

Minnetrista staff implemented *Cyberchase* in two of their summer programs. In the first, they included *Cyberchase* programming as part of Casey's Clubhouse, a one-week long summer program attended by twelve children in grades one through three. The focus of the camp was going out and exploring, and included fishing, gardening, sewing, and visiting the historical house on site. *Cyberchase* was integrated into the theme of exploration, with the idea that the children would integrate *Cyberchase* concepts in their explorations. However, *Cyberchase* met with mixed responses from the children, who had anticipated a summer camp experience and associated *Cyberchase* with math and school. They ultimately watched three episodes. Some got over their initial ambivalence towards the show and enjoyed watching it.

Minnetrista also provided ongoing screening of *Cyberchase* Summer Challenge episodes in the Casey's Clubhouse exhibit area and used the Minnetrista website to engage at-home viewers

to participate in the *Cyberchase* Summer Challenge online. This initiative was aimed at at-home learners who were enrolled in the Casey Clubhouse program, including those who had participated in the Casey's Clubhouse camp experience in mid-July. However, none of the Casey's Clubhouse 46 summer members chose to follow up on the Summer Challenge online activities, despite reminders on a Casey's Clubhouse blog. Minnetrista's attempt to use its blog to engage at-home members in the *Cyberchase* challenge was not successful; nor was the blog successful for other activities Minnetrista tried to promote in that way.

Finally, WIPB featured *Cyberchase* activities at Minnetrista's Family Fundae Ice Cream Tasting Party, held on the Minnetrista grounds and attended by 800 people, which WIPB staff considered "super successful." There was a PBS Kids area, including a *Cyberchase* Summer Challenge area with math activities, as well as a reading area. Facilitators offered two math-based activities. These included a catapulting and measuring activity in which children adjusted catapults to change the distance traveled by the flying cats, and an ice cream making activity that followed the activity in the *Cyberchase* activity guide. WIPB provided free tickets for the ice cream activity for children from MOMs, the Boys and Girls Club, and other community programs.



Students conducting follow-up measurement activity in the Minnetrista garden

The WIPB membership and outreach manager found *Cyberchase* "so easy to work with: partners are good, curriculum is good." She felt the quality of the programming was particularly important when doing STEM programming because many educators lack confidence in teaching math. Additionally, because the station contact is not trained as an educator, the rich curriculum materials make it easier for her to promote the program. She found that the materials were good, and saw the issue as only a matter of getting partners to see its value.

Implementation Challenges

WIPB staff had a good experience with both partners. The station was, however, disappointed with the lack of at-home and online participation through Casey's Clubhouse, and wondered whether greater involvement by the station could have made a difference.

From the perspective of both the MOMs and Minnetrista educators, the greatest challenge was the limited time available for conducting *Cyberchase* programming. MOMs educators incorporated *Cyberchase* episode concepts into garden time activities whenever possible, but would have liked more time. Other challenges faced by MOMs educators included the need to adapt concepts and activities, especially those involving adding fractions, for the ages and abilities of their students. They also consistently lacked sufficient time to discuss the concepts; for example, they had about 15 minutes to do the lever and fulcrum activity.

MOMs and Minnetrista educators found the resources usable and teacher-friendly. MOMs staff felt they would have benefited from a quick tour of the activity guide, including a review of the activities and ideas. Both groups felt well supported by WIPB, and MOMs staff were pleased that WIPB videotaped students.

The Minnetrista contact said at first the grant requirements were not clear and she did not know if she had to do all of the episodes and activities. While she ultimately felt she would be interested in participating in the Summer Challenge again, she had reservations. The program did not appeal to some of the students. Marketing of Casey's Clubhouse explicitly focused on exploration rather than math, and including *Cyberchase* in the future would mean preparing students appropriately.

Fundraising Tactics

WIPB did not pursue any additional fundraising for the *Cyberchase* Summer Challenge. The budget included small grants to MOMs, Casey's Clubhouse, and Camp Minnetrista for materials, program development of the camp experiences, and signage and promotion in the Clubhouse.

Partners provided in-kind resources, including use of the venue, staffing, and additional materials. Minnetrista provided additional math-related activities during Family Fundae which were paired with *Cyberchase* activities.

Promotion/PR

WIPB conducted several months of on-air, newspaper, and online promotion for Family Fundae. The station found the web banners and other Thirteen/WNET materials very valuable. The *Cyberchase* Summer Challenge text was included in all Family Fundae promotion, and the web banner placed on the station website. WIPB received the materials sufficiently ahead of time to conduct its promotional activities and also found the event starter guide, including the coloring pages and activities, distributed during Family Fundae, valuable.

Extending Learning

The *Cyberchase* Summer Challenge was considered important in extending learning for the children in the MOM's summer enrichment program. Students in the MOMs program use an online program for individualized math instruction; *Cyberchase* complemented this instruction already in use. The MOMs education explained, "What I loved about it was that it put math into action... The students got very involved. It was different than the individualized math." She also appreciated having the teachers guide, which contained items that could be copied and given to kids. The content explanation in the teachers guide was also helpful for planning.



Students learning about fulcrum and levers

Constrained by time, materials and the skill level of the children, the MOM's educators did a lot of innovative adaptation of the activities. Using the local garden as a site for activities, they drew loosely from the *Cyberchase* educator and activity guides. For instance, students practiced measurement skills and experimented with fulcrums and levers in the Minnetrista garden, lifting a teacher using a long plank of wood and cement block. MOMs educators praised both the math and social skills content as valuable to their students and felt the program's greatest value was that the children got to see hands-on, everyday applications of

math in a friendly environment for math—the children saw that math doesn't have to be scary or boring. The children, they reported, were very attentive.

Students also did the pop-up card and talked about making models, used the robot activity idea (but without printing out the remote), compiled a word wall using the vocabulary from *Cyberchase*, and occasionally had a chance to play *Cyberchase* activities on the computers.

The MOMs educators also praised the lessons about perseverance modeled in the program. As one noted, “One of the things that I think proved the most beneficial for students was the modeling – try, try again approach to the hands-on activities. So often, students want to quit trying when they are not able to find success in their first attempt.”

As part of Casey's Clubhouse, Minnetrista educators omitted the more explicitly math-based episodes and watched *Hackers Challenge*, *Face Off*, and *Escape from Merlin's Maze*. They did a catapult activity in conjunction with the *Escape* episode; this was the strongest pairing. They paired the *Face Off* episode with a fact finding-activity, but found the younger children had never used a calculator, and that was initially distracting. They also created an activity based on measuring the garden beds in which the children had to add together measurements using a short measuring device. They also did the Shadow activity from the guide, although the educators found it difficult to relate to the bigger picture.

No impact data was collected by either WIPB or its partners, though the WIPB Membership and Outreach Manager felt it would be valuable to conduct such evaluation as part of future summer programming and would like additional support from WNET in developing such materials.

MOMs educators used the STAR math program to do pre and post tests, but did not do any testing specifically on *Cyberchase* learning. The Minnetrista educator said that she does usually look at the learning impacts of her programs but she did not implement any formal assessment for the *Cyberchase* Summer Challenge. In this one-week program, she felt that the children left “thinking logically,” and better able to break down problems into steps. All twelve campers gained first-hand experience using a ruler or measuring tape and calculator.

Both the Minnetrista and MOMs educators found the experience valuable, and personally gained confidence in their ability to interest students in math concepts. The Minnetrista educator felt that the experience broadened her understanding of mathematics to include measurement, comparison, logic, and investigation; she would like to have a better understanding of age-appropriate math skills for their audience. Educators were surprised to find children who had no experience with calculators, and realized that children in different locations are at different ability levels.

Thirteen/WNET Support

WIPB contact felt that learning about the other projects was a valuable experience and that posting photos on Facebook was effective (although she is not herself a regular Facebook user). She lamented the lack of opportunities, in the current economic climate, to meet public television station contacts conducting outreach. She would have liked a chance to speak with partners from other projects as well.

Implementation of *Cyberchase* as part of the MOMs enrichment program was a success that both WIPB and MOMs hope to build on. Recognizing a shared mission to reach underserved students, WIPB plans to continue working with MOMs and will plan new activities this winter and for implementation either in the summer or the coming academic year. Programming may revolve either around *Cyberchase* or a reading show such as *Martha Speaks*.

WSKG

Location: Binghamton, NY

Partners: Elmira Southside Community Center

Venues: Elmira Southside Community Center, Otsiningo Park Farmers Market, Oneonta World of Learning (OWL)

Time Span of Outreach: twice a week *Cyberchase* programming for an eight-week summer program for children; multiple one-day events for families

Funding: In-kind funding from partners

Audiences Reached: 2000 children

Station Contact: Manager of Community Outreach and Education

WSKG in Binghamton, NY managed four different local events and reached 2000 children as part of its *Cyberchase* Summer Challenge initiative. The project involved developing one new partnership with a local school district and conducting an extensive marketing campaign to reach across the WSKG broadcast area, a 21-county area that is a mix of urban and rural populations.

Partnerships

The anchor of the *Cyberchase* Summer Challenge project was a summer-long partnership with the Elmira Southside Community Center. The center serves between 65 and 100 children, ages 5 – 14, every weekday during the summer months. Working with the Southside Community Center offered an opportunity to provide regular *Cyberchase* programming to a group of underserved children on a consistent basis.

In addition to the community center, WSKG expanded its summer STEM outreach activities. WSKG's summer STEM programming began two years ago through "Science in the Park," an annual outreach event offered by the station's education department that reaches about 10,000 students at each of four events. New partnerships were developed as part of this initiative. "Building and sustaining new partnerships is important," WSKG's manager of community outreach and education said. Three times a year, she presents new ideas and opportunities to the education advisory group, which is well-connected in the community and helps in referring new partners. She also goes online to research a content area to see what can be offered.

For the *Cyberchase* Summer Challenge, WSKG selected some non-traditional partnerships for one-day outreach events. These new partners included the Otsiningo Park Farmers Market in Binghamton and Oneonta World of Learning (OWL). OWL describes itself as "a children's museum in search of walls" with a philosophy of providing an "interactive and engaging environment for play and exploration." OWL travels the tri-county area and has ice cream socials and science Saturdays during the summer.

Finally, WSKG worked with the West Kortright Centre Farm Fair, an annual Labor Day event in East Meredith, and a new education partner, the Johnson City School District for additional one-day outreach events.

Each of these partners offered new opportunities for reaching the mixed urban and rural communities surrounding Binghamton. The WSKG Manager plans to work with these partners again to promote *Cyberchase* and STEM initiatives. Asked what she learned about working with community partners, she discussed the need—especially with non-traditional partners—to anticipate unforeseen challenges such as making weather-related programming changes.

Project Implementation

An unanticipated opportunity arose early in the project implementation. WSKG staff was invited to spend the last day of school in the Johnson City School District to do *Cyberchase* STEM activities with approximately 300 first graders. WSKG facilitated the “Fun in First” event and gave every child and teacher a *Cyberchase* activity book, and hosted the *100’s Game* and *Bianca’s Body Math* and activities based on a Curious George lesson plan.

The scheduled Summer Challenge activities included reaching out to farm groups as well as educational and community organizations. WSKG implemented both an ongoing *Cyberchase* Summer Challenge program and several one-day events across the southern tier of NY state.

The Southside Community Center offered an opportunity for ongoing *Cyberchase* activities. Eighty-five different children, in groups of eight to ten, participated in the *Cyberchase* summer program over an eight-week period. Educators at the Southside Community Center participated in a *Cyberchase* training with WSKG staff and conducted *Cyberchase* activities, including screening episodes from the DVD, and hands-on activities from the activity guides, twice a week. The station supplied all the materials and the Southside Community Center contributed staff and space. At the Community Center, activities such as Lifting with Levers and Bianca’s Body Mass were featured. The center also had computers available and children were able to access online *Cyberchase* content. The project was augmented with additional WSKG math and science education resources. The community center staff had continuous contact with the WSKG Manager.

One-day events took place at a variety of partner venues throughout the region. WSKG went to the Otsiningo Farmers Market in Binghamton, NY where it hosted two activities (fruit and veggie measuring and Bianca’s Body Math) and offered *Cyberchase* take-home goodies. They hosted another *Cyberchase* activity booth during a one-day OWL event that consisted of the Lifting with Levers, and Fruit and Veggie Measuring activities. The station augmented these activities with kid-friendly microscopes and various specimens to investigate and a build-a-slide activity. Everyone received take-home *Cyberchase* goods.

Finally, at the end of the summer, WSKG was invited to participate in West Kortright Centre Farm Fair held Labor Day, attended by approximately 5,000 people. They conducted *Cyberchase* activities and disseminated *Cyberchase* information at the event.

The WSKG manager estimated that it took 40 days to plan, recruit partners and implement the *Cyberchase* Summer Challenge.

Implementation Challenges

Given the large-scale venues originally proposed, the outreach manager anticipated approximately 200 children would attend the *Cyberchase* activities, but a smaller number attended. For example, 50 to 75 children per week “dropped in” at the Elmira Southside Community Center, many fewer than expected.

The director of the Southside Community Center said the activity book was great and directed a staff member online to get other *Cyberchase* materials. The children loved the coloring sheets, the director said, “We made copies and gave them out to kids.” The WSKG manager’s observations of children at the Southside Community Center suggested that children in grades K – 2 loved the show, but the math activities were somewhat difficult for them. Activities were appropriate for children in fourth grade and above, but those children appeared to find the show a little young for them.

The WSKG manager noted that the station promoted the *Cyberchase* online activities but was not able to use them in its programming because of the outdoor venues.

The WSKG Manager plans to continue the *Cyberchase* Summer Challenge in future years: “We will incorporate it into our act,” she said. Staff members are developing the activity using fulcrum and levels and experimenting with new ideas and tools. In the future, the station will try to reach other geographic areas with similar partner types.

Fundraising

The station found the stipend highly valuable in opening a new area of focus. Given the 21-county area the station serves, travel costs were significant. The stipend also supported staff time and time spent customizing parent tips: “Every little bit helps and catapulted [the program] further,” Explained the WSKG manager. Approximately \$1700 of additional funding from WSKG’s budget for STEM initiatives and from the Corning Foundation was used for the project. No additional fundraising was conducted; monies available through the *Cyberchase* Summer Challenge grant and in the existing STEM budget were sufficient to complete the planned activities.

Promotion/PR

No promotion was done specifically for the *Cyberchase* activities at the Southside Community Center or for the outreach at community events. The WSKG manager was interviewed by a public relations person to help advertise in local markets, but there was not enough lead time to get a good story.

Extended Learning

Data collected by WSKG at the one-day outreach events included a count of attendees. Anecdotal evidence collected by WSKG staff suggests that STEM activities were new to many parents. “Parents were timid in science and math, so this really opened their eyes and increased their awareness of PBS resources in math and science,” the WSKG manager observed. The WSKG staff also noted the high level of children’s motivation, enthusiasm, and engagement with the *Cyberchase* activities. The *Cyberchase* activities at the farmers’

market fit in with the existing events. Participants appeared to be very enthusiastic about *Cyberchase* and the math activities, according to WSKG staff.

The executive director of the Elmira Southside Community Center saw improvement in math skills and in children's interest in doing math activities. The Southside Community Center is eager to participate in another *Cyberchase* Summer Challenge.

The WSKG manager said that, "The STEM (math) focus helps you to think outside the box," and explained that she found the *Cyberchase* activities easy to do with simple materials, with the exception of buying child-friendly scales. In conclusion, she noted that most of the initial goals were fulfilled, and she was happy with the results, saying, "Elmira Southside Community Center embraced the project with the STEM activities and their enthusiasm was great!"

The WSKG manager proposed that WNET develop a feedback form that children and parents could complete in order to determine some measurable outcomes. The feedback form could be part of the toolkit, she said. A template that partner organizations could use to record attendance at events and other impacts would also be useful.

Thirteen/WNET Support

The WSKG manager found WNET "amazing" to work with and found the support and *Cyberchase* materials valuable. WSKG staff found Thirteen/WNET's event toolkit very helpful in planning and marketing the *Cyberchase* Summer Challenge.

The manager liked hearing about other stations' plans and experiences and is interested in participating in *Cyberchase* in the future. She noted that during the initial conference call, she was surprised by the diversity of projects and would have liked an opportunity to learn more about how others shaped their programs, challenges they met, and things they learned.

WTVI

Location: Charlotte, North Carolina
Partners: Dixon Academy, Belmont Boys & Girls Club, Ernst & Young
Venues: Dixon Academy, Belmont Boys & Girls Club
Time Span of Outreach: four- and eight-week long educational programs
Funding: In-kind funding from partners
Audiences Reached: 62 children
Station Contact: Director of Education and Community Engagement

WTVI leveraged long-standing partnerships to engage students at two sites in the Charlotte, NC community in four- and eight-week long *Cyberchase* Summer Challenge activities. Each week, children were engaged in 90-minute *Cyberchase* sessions that included screening *Cyberchase* episodes, hands-on activities, and making real world connections to math content. Challenges included developing programming effective with the wide age range of participating children—ages 4 to 11—at one of the sites.

Partnerships

WTVI worked with three past partners on the 2010 *Cyberchase* Summer Challenge: the Dixon Academy, Belmont Boys & Girls Club, and the local office of a national *Cyberchase* sponsor, Ernst & Young. These partners offered two sites for extending the *Cyberchase* experience with different communities of children, facilitated in one case by corporate volunteers and in another by the WTVI Director of Education and Community Engagement.

Dixon Academy is a child care and early education center which offers a summer school program and has partnered with WTVI since 1994. Dixon Academy is a Ready to Learn site.

Local Ernst and Young volunteers previously provided *Cyberchase* tutoring at the Boys and Girls Club during the seven-week summer volunteer program in 2009. This was the second year that Ernst & Young volunteers had worked with the Boys & Girls Club and earlier challenges related to familiarity with the target audience and knowledge of the *Cyberchase* material had been overcome.

WTVI looks forward to continuing to work with all of these partners.

Project Implementation and Challenges

The *Cyberchase* Summer Challenge was coordinated by WTVI's Director of Education. The WTVI director provided an orientation to the Summer Challenge for staff at the Boys and Girls Club and Dixon Academy, including tips on how to engage and work with children and inspire them to approach math with confidence. For the Dixon Academy educators, this orientation built on a previously received *Cyberchase* overview conducted as part of a Ready

to Learn workshop. The Ernst and Young volunteer tutors had all received web-based training offered by the national office in conducting *Cyberchase* activities with children. At both sites children watched *Cyberchase* episodes and conducted hands-on activities. In most cases, there was not sufficient time to do the computer activities.

WTVI provided the *Cyberchase* DVD, print materials, and give-aways to Ernst and Young volunteer tutors for use in the program. Ernst and Young volunteers then coordinated the programming at the Belmont Boys and Girls Club. Approximately 18 students from the Boys and Girls Club, ranging in age from eight to eleven, took part in the eight-week *Cyberchase* activities. Ernst and Young volunteer tutors spent two hours on site for the activities each week. A popular activity was running a store with Snelfu Snafu activity money from *Cyberchase* so children could learn about computation and handling money. "I thought math was for nerds, but I love it!" one student exclaimed. Another said, "I can't wait for school to start." The children enjoyed their time with the Ernst and Young volunteers and the volunteers, in turn, found the experience positive and look forward to working with WTVI and the Boys and Girls Club children again in the future.

Due to enthusiastic word-of-mouth and interest, the number of children participating in the program grew to a total of 44 attendees at the final celebration. Held at the Boys and Girls Club, Ernst and Young volunteers set up multiple stations for conducting activities, such as making cookies, playing hopscotch, and doing estimations. Children had an opportunity to view videos of themselves created earlier by visiting WTVI production staff. Children also had access to computers and visited PBS Kids and *Cyberchase* sites online.

The WTVI Director of Education conducted the weekly *Cyberchase* program with the children at Dixon Academy because the teacher originally engaged to conduct the activities was no longer available. The WTVI Director conducted 90-minute *Cyberchase* sessions once a week for four weeks. Sixteen students, ages four through eleven, participated. Math activities were adjusted to accommodate the younger children and games employed for working with the multi-age groups. Dixon Academy students also attended a culminating celebration held at their center.

Both programs held culminating events at their sites. WTVI production staff visited both sites and captured video of children engaged in *Cyberchase* activities. These videos were featured at the final events held at the two venues. In addition, the Dixon Academy culminating event included auctioning off *Cyberchase* items.

Fundraising

The national Ernst and Young company teamed up with PBS to sponsor *Cyberchase*, supporting local office volunteers' in-kind donations of time. The local Charlotte office volunteered to help implement *Cyberchase* at the Boys and Girls Club. WTVI had additional *Cyberchase* materials for games and activities from previous outreach efforts. No additional fundraising for the project was conducted.

Promotion/PR

A minimal amount of time was spent promoting the *Cyberchase* Summer Challenge; participant recruitment was conducted through the Boys and Girls Club and Dixon Academy.

WTVI indicated it would benefit from additional information about how other stations conducted promotion and publicity.

Extended Learning

Program goals included highlighting the ways in which math can be both practical and fun, thus improving children's attitudes towards math as well as their math skills. No formal data collection was conducted to assess outcomes, although anecdotal evidence suggests that children enjoyed the program and some improved their math skills.

Children were reluctant at first but warmed up to the math activities and explored math concepts on their own. As they watched the *Cyberchase* episodes, observers could hear children's audible "aha" moments when they understood the math. The WTVI Director of Education described the activities as "real life and authentic so children can relate to them in their everyday lives." Activities such as the Robot Retriever and estimation practice were especially popular.

Observations by the Ernst and Young volunteers suggest that children showed progress from the beginning to end of the *Cyberchase* learning experiences: "Some kids talked about earlier lessons and what they learned," noted a volunteer. The Ernst and Young volunteers said they enjoyed participating and reported that it heightened their own math skills. They worked as teams and helped to organize and prepare to implement *Cyberchase*.

Thirteen/WNET Support

WTVI staff found the support of the WNET/*Cyberchase* outreach manager valuable. Emails and calls with WNET were the most beneficial. Uploading photos on Facebook was challenging for WTVI staff, and several noted assistance from WNET.

SUMMARY AND CONCLUSION

SUMMARY: *CYBERCHASE* SUMMER CHALLENGE EXPERIENCES

Stations and partners were enthusiastic about the *Cyberchase* Summer Challenge. In some cases, the *Cyberchase* Summer Challenge introduced local partners, including librarians, educators, and social service providers to math education that is fun and accessible and offered an opportunity to expand their summer offerings to include math activities. Many stations and partners expressed interest in continuing their work with *Cyberchase* and participating in the Summer Challenge in the future, if possible. In some, but not all cases, stations indicated that the grant funding was essential to the success, or at least the scale, of the project conducted.

Project Implementation

The conception and roll-out of the *Cyberchase* Summer Challenge included approaches aimed at broad dissemination in some cases and in-depth educational experiences for a more limited group of learners in others. Thus activities focused to various degrees on getting the word out across geographical areas and socio-economic groups about *Cyberchase*, conveying the idea that math is fun and accessible to all, and providing a means for children to keep up their math learning over the summer months.

Children targeted for the project participated in anywhere from a single, one-hour *Cyberchase* experience comprising the screening of an episode, a hands-on activity and/or reading of a math book, and visit with Digit, to multiple experiences over one or more weeks of the summer that involved several *Cyberchase* episodes and activities. *Cyberchase* Summer Challenge events included screenings, math book readings, hands-on activities drawn from *Cyberchase* activity guides, and pairings with math programs such as Star Math and with locally designed math activities, such as creating math board games.

Several grantees also conducted a culminating activity, either at the station or a local venue, where targeted audiences and potentially others could experience *Cyberchase*. These events included additional *Cyberchase* activities such as making ice cream, an appearance by Digit, local add-ons such as station tours, and electric safety demonstrations.

As appropriate to these different projects, the involvement of public television outreach staff varied in the day-to-day implementation of *Cyberchase* Summer Challenge activities from providing educational, publicity, and support partners with materials and training, to conducting *Cyberchase* activities with target audiences.

Stations unanimously praised the support of the WNET *Cyberchase* outreach manager whom they found both accessible and helpful. The financial support, activity guides, and branded materials from *Cyberchase* were all considered essential to the success of the outreach projects.

Grantees generally found the initial conference call and opportunity to learn about other projects valuable. While most praised the idea of a shared online space and sharing photos, they were mixed about the choice of Facebook as a vehicle for *Cyberchase* communication. Not all grantees were familiar with Facebook, or how to upload materials to it; others had concerns about privacy and were not comfortable using their personal Facebook sites for professional purposes.

Implementation challenges varied. Challenges associated with partners included last-minute partner unavailability and issues of partner staffing. For some stations, working with new types of and multiple partners required refreshing and honing communication skills, developing partnership materials that outlined roles and responsibilities, and/or learning and working with multi-department organizations.

Several stations also mentioned issues with the project's timing, concerning the awarding of the *Cyberchase* grants, the start of the summer broadcasts, and the publication of print and online materials. These issues were challenging to a number of projects, particularly those not on the east coast. The most common frustrations cited were the lack of a sufficiently long planning period from the point of receiving notification of the funding to program implementation to allow additional partner-building and fundraising activities, and an inability to coordinate locally planned Summer Challenge activities with broadcast and/or summer season materials. Several station contacts noted that the local school year ends in May and summer programs start in June in their areas, while east coast school calendars run about a month later. Another station coordinator felt that additional lead time would have permitted a more extensive promotion effort and thus greater participation in the project.

Partnerships

The eight public television stations developed successful programs with a variety of old and new partners, including corporate volunteers who served as local and national sponsors of *Cyberchase*; community centers and organizations offering summer enrichment programs and summer camps; cultural centers, libraries, museums, and planetariums; as well as a farmer's market, farm fair, savings bank, and a local utility.

In general, existing partners are valued because they bring knowledge of *Cyberchase* and/or the station, an eagerness to participate, and a working knowledge of partnering. New partners offer new inroads into the communities in terms of accessing new funding streams and reaching broader audiences. Grantees often looked to a mix of new and old partners in developing Summer Challenge projects.

Fundraising

Fundraising activities varied greatly. Some stations designed projects that were entirely achievable with the grant monies received, sometimes drawing on station operating funds specifically budgeted for summer or for STEM programming. To some extent all stations relied on in-kind support from sponsors and/or partners, which might minimally include space, the use of DVDs and projectors, or other screening equipment. Partner staff efforts also varied, from library staff who conducted local publicity campaigns for events to

volunteer interns who participated weekly in *Cyberchase* training and implementation over six or seven weeks of the summer.

Promotion/PR

All grantees conducted on-air and web promotion of the Summer Challenge; however, this promotion was often separate from the outreach project. Grantees found the banners, flyers, and other promotional materials available on Thirteen/WNET's FTP site very valuable. Several noted they were easy to tailor to local needs.

Extending Learning

Going into the *Cyberchase* Summer Challenge program, most stations focused on using *Cyberchase* as a way to convey the notion that math is fun and giving children an opportunity to sustain their math learning during the summer

In general, stations and their partners were enthusiastic about the *Cyberchase* materials and noted that they lent themselves to real-world applications and were easy to integrate into ongoing educational programming. Stations and their partners consistently noted children's enthusiasm and interest in viewing the series.

Several partners, however, noted the need to simplify concepts and activities for younger children and for students working below grade level. Several had to shorten activities in order to fit into summer camp and school schedules. A few stations noted their greatest frustration was a lack of time or staffing to extend the number of activities they were able to offer.

The online activities were not an important component of most projects, although several stations at least introduced students to the online offerings. Additional activities were suggested for at-home use, but for those who did review these activities, there was a sense that many of the hands-on activities required more parental support than was achievable.

A few station contacts or their partners developed surveys or other methods to assess changes in attitudes towards math and/or satisfaction with the program or activities. In cases where stations relied on multiple partners for implementation, they developed questionnaires for use by partners. Several station coordinators noted an interest in evaluating outcomes but lacked evaluation expertise and requested that an evaluation template or training on developing appropriate survey questions be part of future initiatives.

Recommendations

- Advance the *Cyberchase* Summer Challenge grant cycle calendar to allow stations greater lead time to develop partners and conduct fundraising and promotion activities.
- Advance the *Cyberchase* production and broadcast schedule to fit better with communities where schools close in May.
- Continue opportunities that enable stations to share *Cyberchase* outreach plans, implementation challenges, and materials developed. Offer opportunities for structured journaling and/or moderated discussion in these areas. Investigate alternative, non-proprietary social media and/or collaborative workspaces.

- Include modifications of *Cyberchase* activities to accommodate different age groups and skill levels as well as time available for activities.
- Include an evaluation template, including survey question items, as part of the *Cyberchase* tool kit and/or provide training and support for developing local assessment tools.

BEST PRACTICES

The goal of this evaluation study was to identify practices that could contribute to sustainable summer programming. The following practices have been culled from the case studies collected during the evaluation. Fundamentally, no station contact felt that the outreach initiatives, as implemented, could have been conducted without the WNET support. In addition to the financial support, the *Cyberchase* give-aways, printed versions of the *Cyberchase* activity books and guides, pencils, tattoos, and other materials were also important in the projects' success. Every site relied on the DVD of the *Cyberchase* Summer Challenge season in its programming.

The practices suggested below do not offer a standard approach. Rather, the evaluators recognize that the communities served by public television stations differ in terms of clientele, broadcast scope, audience socio-economic and cultural backgrounds and rural or urban characteristics, and the availability of local resources for informal education opportunities, among other variables. Furthermore, different outreach plans—broad dissemination versus in-depth instruction—reflect different priorities, ranging from broad program promotion to targeted learning for a specific group. The following suggestions include best practices related to each of these approaches, and then offer suggestions applicable across outreach plans.

Broad Outreach

The summer tour model offers a means for outreach across a large area with multiple one-off events. Explore new partnerships and venues such as farmers markets and health fairs, as well as familiar ones, such as libraries.

For covering a large geographic area and for rural areas, the summer tour may serve to stretch resources and reach a broad array of learners. This approach can be conducted in familiar venues such as libraries, expanding familiar reading programming to introduce math and other content, or in new types of venues, where community members are aggregating, such as farmer's markets, and health fairs. Similar events conducted at multiple sites focus resources on expanding a station's outreach network and require greater effort in building partnerships and communication, while minimizing implementation planning. This was successfully employed in two projects, one reaching twenty unique sites over a 260 mile radius, and another reaching a smaller number of venues, but covering the 21-county broadcast area.

Ongoing Engagement

Utilize the serial nature of the television program to create opportunities for extending programming with a single audience

Working in-depth with a limited number of partners over an extended period creates opportunities for greater engagement in children’s television materials for children, implementation partners, and/or venue staff. Children gain long-term exposure to the property and benefit from consistent ongoing programming for greater learning. Program partners also gain greater familiarity and commitment to the property.

Implement a community-wide competition, with a tiered process including learning, activity and judging as a means of developing repeat visitors.

Planning and Promotion

Begin planning, fundraising and promotion early.

Commitment to conducting summer programming and availability of resources and materials needs to begin early – such as late winter to accommodate early school closing schedules.

Begin reaching out to new partners and conducting promotional activities early.

Leverage partner relationships to reach their constituencies.

Tap into ongoing children’s summer programs or local events such as farmers’ markets which conduct their own marketing and/or recruitment. Rely on partners to conduct outreach and promotion for local events, reaching out to their membership and local venues and methods for publicity, whether it is signage within a library or community center, newspaper or online promotion.

Develop evaluation instruments to understand program impacts, whether they concern changes in attitudes, such as increasing the appeal of math, or content learning, such as specific math concepts or skills.

Reasonable outcomes may include content learning and/or attitudinal change. The development and use of pre/post surveys or satisfaction measures are valuable for articulating reasonable impacts and helping stations and partners understand the effectiveness of their work. Evaluation data can be used to make program improvements, validate a job well done, and strengthen funding requests for future programming.

Partnerships

Identify structured summer programs with an educational focus for implementation of ongoing educational experiences.

Structured summer programs with an educational focus offer an ideal program for infusing children’s television programming. Participating children arrive with the expectation of doing “academic” work, in contrast to camp environments. Because these programs continue for a period of time, they provide children with ongoing exposure to materials, and allow students to gain confidence over time. The social nature of television viewing and activities

complements individualized computer-based math instruction and brings diversity to the summer program day.

Identify informal learning institutions and after-school programs rather than formal summer education programs where scheduling may be less flexible.

Informal learning institutions and after-school programs offer greater flexibility in programming than formal education programs, whose more rigid calendars made it difficult for them to adapt to television production and roll-out of schedules of broadcast and online offerings.

Identify under-resourced programs where involvement in national projects and access to resources is appreciated and generates excitement.

Programs serving low-income families are often strapped for resources, and public television incentives, DVDs, educator guides and incentives are particularly appreciated. The opportunity to participate in a national program offers additional caché for groups who may not often have such opportunities.

Prepare a partner toolkit that provides relevant background information and materials for communicating roles and responsibilities.

Partner toolkits or agreement letters can help clarify expectations for all parties. These can include background materials relating to the children's television property and the local station, as well as detailed information describing partnership roles and responsibilities, descriptive materials detailing the ideal outreach event, and/or plans for promotion and outreach. This offers an efficient means of communicating a consistent set of information to multiple partners who would be carrying out similar roles. Such documents offer a reference point which can be revisited later in the collaboration and minimize miscommunication.

Explore partnerships with organizations with shared missions and complementary resources.

Partners with access to very different types of resources, such as corporate volunteers and summer program serving low-income students, can be effectively matched for effective outreach. For instance, leveraging corporate volunteers to provide on-site contact with the target audience frees outreach staff to conduct additional promotional and outreach activities.

Build on existing partners to experiment with new content and programming.

Building on and expanding successful partnerships offers an effective strategy for introducing new types of programming. Because existing partners already have established relations of trust, they may be more open to trying new or different content-related projects. This was successfully used by a number of station coordinators who reached out to partners that had previously participated in reading-related activities and were excited to implement math activities.

Explore inter-departmental collaboration to increase funding.

Outreach activities can be strengthened by bringing together staff and resources from education, marketing and/or corporate and membership offices. For instance, corporate support offices can help identify local corporate sponsors who could serve as tutors or provide in-kind and financial support for community-based outreach activities. Education staff can provide training or assistance in adapting activities for local needs. Marketing staff can assist with publicity.

Implementation

Be aware of audience needs; review materials beforehand and adapt concepts and activities to the learner. Offer suggestions for modifying activities in accordance with audience skill levels.

Partners and content providers were most successful when they reviewed episodes and tested activities prior to their use with students. Adapt activities for students' skill levels by simplifying concepts as necessary, as well as modifying activities for the amount of time and the resources available for the activity. Include activities which involve a take-home product (such as the pop-up cards), which are tend to be popular among students.

Schedule at least an hour for a Cyberchase session, including both an episode screening and an activity. Introduce key concepts before screening episodes and follow-up with discussion afterwards. Look for ways to extend learning in the context of the venue or program.

A minimum of one hour was needed for viewing a 30-minute episode and conducting a follow-up activity in a classroom setting. Students can be divided into small groups for activities. Introduce key concepts prior to screening and follow-up with discussion afterwards. Help students make connections between episode content and activities. For shorter periods, explore use of 10 or 15 minute segments from the program episodes. Use local environments and materials to develop additional follow-up activities reinforcing program content as well as making connections between program content and children's everyday lives.

Exploit culminating events for reaching a larger audience or testing new partnerships.

Several sites hosted successful culminating events for ongoing participants which simultaneously opened up these events to a broader community. Culminating events offered a way to celebrate program participation, share experiences (e.g., math games), and to provide special activities such as ice cream making and character visits. These events can also provide an opportunity to begin building new partner relationships, by engaging partners in a limited engagement.