

## **Adventure Central Afterschool Program**

### **Abstract**

According to the Afterschool Alliance in 2009, demand for after-school programs is up, funding is down, and while overall after-school programs experience struggles, this need is even more pronounced in African-American communities. Adventure Central in Dayton, Ohio, is a program that is filling this gap by serving at-risk, African-American children and their families by providing nonformal educational programs outside of school hours. Adventure Central is a positive youth development partnership of 4-H, Ohio State University Extension, and Five Rivers MetroParks. Using nature, staff nurtures families in life-changing activities that strengthen values, build lasting life skills, and empower youth to explore life's possibilities. The after-school program is the primary programmatic effort for this dynamic youth education center. Evaluations with parents and long-term youth participants indicate that the program is delivering educational and social benefits as well as opportunities to do new things in a safe and supportive environment. Adventure Central uses various content (e.g., science, healthy lifestyles, literacy) and delivery methods (e.g., service-learning) along with opportunities to connect with nature as the vehicles to achieve positive youth development. The result: Participants gain strengthened values, lasting life skills, and both an eagerness and confidence to explore life's possibilities and the natural world.

### **Keywords**

After-school, Nature, Urban, Partnership, Positive youth development, Parent involvement

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## **Program of Distinction Category**

- *Leadership Development*
- *Caring Relationships, Community Spirit*
- *Diversity and Inclusive Environments*
- *Natural Resources Education*
- *Health and Fitness*

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- *Partnership and Grants*

## Sources of Funding

- Five Rivers MetroParks: \$500,000 annually
- Ohio State University Extension: \$200,000
- Various Grants & Contracts: \$100,000 annually
  - Ohio Department of Education
  - Ohio 4-H Foundation
- CYFAR funded project 2003-2008

## Knowledge and Research Base

A recent study conducted by the Afterschool Alliance (2009b) found that in these challenging economic times after-school programs are needed more than ever before. Demand for programs is up, funding is down, and while overall some after-school programs are struggling, this need is even more pronounced in African-American communities. Another report by the Afterschool Alliance (2009a) goes on to identify the potential academic, social, and emotional risks faced by those who are unsupervised after school (e.g., higher risk for substance abuse, gang involvement, teen pregnancy, and dropping out). In light of these findings it would seem that quality after-school programs are in demand and very much needed for the positive development of our youth.

Adventure Central is a trusted, community-based, positive youth development partnership of 4-H, Ohio State University Extension, and Five Rivers MetroParks. Adventure Central has been serving at-risk children and their parents since 2000 by providing educational programs outside of school hours to school-aged youth. Using nature, along with a variety of content areas and delivery methods, staff nurtures families in life-changing activities that strengthen values, build lasting life skills, and empower youth to explore life's possibilities. The after-school program is the primary programmatic effort for this dynamic youth education center. The program is guided by a framework that incorporates the features of positive developmental settings (Eccles & Gootman, 2002; National 4-H Impact Assessment, 2001), essential elements (Kress, 2006), and the six Cs – competence, confidence, character, caring, connection, and contribution (Lerner, 2006; Lerner et al., 2005). The result: Participants gain strengthened values, lasting life skills, and both an eagerness and confidence to explore life's possibilities and the natural world. Furthermore, Adventure Central serves as a demonstration plot, a model of outreach for the twenty-first century land-grant institution (Cochran, Arnett, & Ferrari, 2007; see Appendix A).

An expectation of youth enrolled in the Adventure Central after-school program is consistent attendance (four days a week throughout the school year). This intentional focus on high-intensity programming is supported by the current body of research, which indicates that youth obtain developmental benefits from consistent participation in well-run, quality youth programs (e.g., Durlak & Weissberg, 2007; Little & Harris, 2003; Hansen & Larson, 2007; Little, Wimer, & Weiss, 2008; Scott-Little, Hamann, & Jurs, 2002; Vandell et al., 2006). Through such programs, youth

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are able to meet needs for belonging, connection, independence, and mastery (Eccles & Gootman, 2002; Kress, 2006).

Operating under the belief that parents are the primary influence in a child's life, another intentional hallmark of the Adventure Central after-school program is parent and family engagement. Based on long-standing recommendations suggesting that parental involvement is key to children's academic achievement and overall healthy development (Epstein, 1991; Fan & Chen, 2001; Gettinger & Guetschow, 1998; Hara & Burke, 1998; Henderson & Mapp, 2002; Jeynes, 2005), Adventure Central incorporates recommended practices for family engagement in out-of-school time programs (Caspe, Traub, & Little, 2002; Harris & Wimer, 2004; Kakli, Krieder, Little, Buck & Coffey, 2006). A full-time staff position is dedicated to building and maintaining ongoing relationships with participants' parents and families. This is done through both informal contact (opportunities to share information or provide feedback on youth behavior) and through formal programming (family fun nights, parent orientations, and parent education classes).

As the product of a partnership between Five Rivers MetroParks and Ohio State University Extension, Adventure Central also places a primary focus on connecting people with nature. Working to reduce the occurrence and prevalence of nature deficit disorder, a condition produced by insufficient time in the outdoors and resulting in a wide range of behavior problems (Louv, 2005), Adventure Central provides youth with both structured and unstructured opportunities to connect with nature. Youth engage with nature through learner-directed inquiry activities and spend at least one hour each day in free play in a safe, accessible natural area. These experiences strongly influence childhood development and offer children irreplaceable opportunities for exploring and discovering, for creating and developing their personalities and identities, and for probing and testing the margins of their world (Chawla, 2007; Kellert, 2005). Furthermore, natural environments have been found to have restorative qualities that have a beneficial effect on cognitive functioning (Berman, Jonides, & Kaplan, 2008).

Finally, Adventure Central represents a model for outreach for the 21st century land-grant institution. In the words of the 2000 Kellogg Commission on the Future of State and Land-Grant Universities, it is a "conscious effort to bring the resources and expertise at our institutions to bear on the community" (p. 10). The partnership between field staff and campus-based faculty ensures we are grounded in the community through the day-to-day conduct of educational programming, while also approaching this work in a scholarly manner. Now in its 10<sup>th</sup> year of operation, the practical needs of the program have driven the applied research agenda, where scholarship leads to use of best practices and contributions to the knowledge base. While individual elements contribute to its success, Adventure Central derives its strength from the comprehensive nature of the program. Furthermore, this model of engagement can be replicated (Cochran et al., 2007).

## Needs Assessment

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The initial needs assessment process included gathering national program examples; talking with staff from both partner agencies (OSU Extension and Five Rivers MetroParks); collecting local demographics, existing data, and reports; and conducting focus groups and interviews with key stakeholders in the community (e.g. residents, community leaders, and local government officials). Data collected locally in 1998 indicated that there were not sufficient positive opportunities for youth during out-of-school hours. Over 40 representatives from the community, social service agencies, and youth-serving agencies were interviewed. When asked what children in their neighborhood needed most, these representatives consistently indicated that there were not sufficient positive after-school and summer opportunities for urban youth, that youth in the target neighborhoods were underserved, and that youth developmental needs were not being met (e.g., for developing self-esteem and having positive role models) (Modic & McNeely, 1998).

The team concluded that a program providing hands-on environmental educational experiences and sustained contact with nature, other children, and positive adult role models would capitalize on the strengths of both partner organizations and fill an unmet need in the community, while also meeting the organizational need of high level engagement with an underserved audience. The resulting products from the community needs assessment and data collection process included a mission statement, goals, and a program plan (Cochran et al., 2007). After-school and summer day camp programs were initiated as the primary programmatic thrust in 2000-2001. Over time, needs assessment has continued by surveying participants' parents and through continual interaction with youth, adding content with a focus on science, literacy, healthy lifestyles, and computer technology, as well as the primary area of nature, to serve emerging youth needs.

## **Program Goals and Objectives**

Based on the goals developed from the initial needs assessment the following goals and objectives guide the Adventure Central after-school program.

Goal #1- Youth and their families will have opportunities for positive development.

Process Objectives

1. Programming will be high duration, high frequency, and high intensity as measured by participation numbers, contact hours, and program calendar.
2. Youth will report development of positive relationships with adult program staff and volunteers.
3. Youth and parents will report that program learning activities are fun and engaging with a focus on nature, science, literacy, healthy lifestyles, and computer technology.
4. Youth will report engagement with the variety of service-learning, volunteer, and programmatic opportunities offered to them.

Outcome Objectives

1. Parents will report that their children have made gains socially and academically (e.g., social skills and completion of homework) through program participation.

- Youth will report they gained life skills (e.g., leadership, teamwork, communication, and responsibility) through program participation as reported by older youth through focus groups.

Goal #2 - Youth and their families will develop a greater connection to nature.

Outcome Objective

- Youth and their families will report improved attitudes towards their connection with nature because of program participation.

## Target Audience

-Central City over 50,000

The population of the West Dayton community is 94% African American with a median annual income of just over \$22,000 with over 34% living below the poverty line. The actual enrollment for the Adventure Central after-school program reaches youth with this demographic profile. Typically 140 school-age youth with 99% identifying themselves as African American and 80% qualifying for free or reduced-price meals participate. Ninety percent of participants are in grades 1 through 7.

## Type of Program

School-Aged Child Care Education Program – Educational program offered to youth outside of school hours, incorporating 4-H curricula.

## Delivery Methods

Adventure Central's after-school program uses a variety of delivery methods to achieve its goals, including youth-selected activities, leader-directed activities, and parent/family engagement. From September through May programming is offered Monday-Thursday from 1:30 p.m. to 6:30 p.m. Youth voice and choice is a priority of the program and to this end each day from 1:30 to 4:30 p.m. youth have a choice about the activities they wish to participate in, including homework assistance, outdoor play and games, computer lab, or indoor games and activities. At 4:30 p.m. youth are divided into five groups taking into account age, grade, and maturity level (approximately age 6-7, 7-8, 8-9, 9-11, 12 and up). First, they eat a meal together. Then from 5:00-6:30 p.m. youth work in their groups through structured leader-directed learning activities according to the monthly theme, objectives, and tactics. All program efforts attempt to take advantage of the outdoor environment in the 60-acre Wesleyan MetroPark where Adventure Central is housed, with a goal of youth being outside at least one hour each day. Parents are engaged informally but intentionally as they pick up their youth each day and special activities are planned at least quarterly either at the facility or at a partner site to continue to build relationships and support between program staff and parents in the attempt to close the gap between school, home, and after school.

The program team includes 13 staff from OSU Extension, Five Rivers MetroParks, Notre Dame Mission Volunteers AmeriCorps, and the University of Dayton Semester Of Service AmeriCorps. Four park and maintenance personnel complete the staff.

## Curricula and Educational Materials

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The Adventure Central program plan is developed annually and serves as a curriculum guiding the program for the upcoming academic year. The program plan includes monthly themes, objectives, tactics, and recommended curricula as well as resources for specific topics. From the program plan, group leaders develop lesson plans for each day and week with approval of program leadership prior to implementation (see Appendix B and C for examples). Leader-directed curriculum from 4-H such as *Acres of Adventures*, *Go Plants*, and *Jr. Master Gardener*, or other hands-on, experiential groups such as *Project's WET*, *WILD*, and *Learning Tree* are the primary sources for the program. Most activities come from one of these research-based curriculums and all activities adhere to the 4-H philosophy of hands on "learning by doing." Sections for parent engagement special events, service learning and staff development efforts are included as part of the program plan and integrated into the after school plans. Episodic, teen, and college service learners make up a large contingent of the Adventure Central volunteer corps and to this end a *How-to guide for Supporting Episodic Volunteers* was created to help organize and support similar efforts at Adventure Central but can also be used by other organizations utilizing volunteers. The guide as well as the aforementioned program plan can be accessed at:

[http://www.metroparks.org/Parks/WesleyanAdventure/AC\\_pubs.aspx](http://www.metroparks.org/Parks/WesleyanAdventure/AC_pubs.aspx) .

## Teamwork and Collaboration

Adventure Central is a complex and dynamic partnership between The Ohio State University Extension, 4-H, and Five Rivers MetroParks. These organizations provide the facility, operating budget, and base personnel to conduct the Adventure Central after-school program. State program specialists through OSU Extension have also been utilized in program design and evaluation.

A partnership with Notre Dame Mission Volunteers AmeriCorps has led to three full-time staff members on 11-month terms. The University of Dayton has been a tremendous local partner with collaborations leading to over 260 service learners contributing 12,700 service hours since 2003, one to two Semester of Service AmeriCorps members providing full-time service each semester, as well as an Ohio Campus Compact AmeriCorps VISTA that was co-housed between the University of Dayton and Adventure Central for five years and charged with conducting an after-school program at Fairview Elementary. Adventure Central also works with the Ohio Department of Education to provide meals to youth in the program and local partners like Montgomery County Public Health, Five Rivers MetroParks Ranger Division, and the Montgomery County Expanded Food and Nutrition Education Program (EFNEP) for educational health and safety programs.

## Program Evaluation

### a. Methods

Adventure Central has conducted multiple evaluations (see Appendix D for a comprehensive list). Two evaluations are particularly relevant to the after-school program and will be described here in more detail.

Evaluation of parental perceptions of family involvement and youth outcomes for Adventure Central programs (Ferrari et al., 2006) includes the following:

- 1) A survey completed by parents that included questions on educational support practices, barriers to participation, parents interest in education and family focused activities, climate and support from Adventure Central, and perception of youth outcomes.
- 2) Focus groups with parents were conducted with questions designed to elicit parents' thoughts regarding their own and their child's experience at Adventure Central and their suggestions regarding future family programming.

Evaluation of youth outcomes of long-term participation in Adventure Central programs (Ferrari, Lekies, & Arnett, 2009) includes the following:

- 1) Focus groups with participants age 12-16 who had participated three or more years to learn about the outcomes of long-term participation. Questions addressed how teens' participation has been helpful to them, attitudes and skills they have acquired, opportunities afforded to them, and their insight into program features that have captured their interest and engaged them in sustained participation.

#### **b. Process Evaluation**

Parent feedback was obtained at the outset of a new Children, Youth, and Families at Risk (CYFAR) initiative focused around parent and family engagement targeted to Adventure Central after-school parents (Ferrari et al., 2006). Feedback through surveys and focus groups helped program staff determine the types of activities parents would prefer and participate in and the level of support they felt their child received at Adventure Central. Feedback from this evaluation has been utilized to refine program design and implementation. Specific areas implemented include time of activities (evening, during or after regular programming), type of activities (entire family and focused on fun), and inclusion of parent voice and engagement (participation in survey and focus group, on-going opportunities for feedback).

In a study on long-term participation (Ferrari et al., 2009), youth provided feedback on the types of opportunities that they felt had the greatest impact on their continued participation in programming as well as their growth and development. Implementation of features shared by youth included sustained and enhanced opportunities for older youth to provide service, participate in work-based learning, and take on increasing levels of responsibility for programming, specifically with the overnight camp experience. Youth also indicated that existing programming philosophy was reaching the desired outcomes, especially in regards to youth connecting with nature. Therefore, the program took action to make sure to build from the efforts currently underway for stability and consistency while seeking new enhancements that add value to the core program.

Program staff members have devoted considerable attention to continually assess the environmental factors related to successful after-school outcomes and make adjustments as appropriate. The long-term participation study as well as previous research at Adventure Central has documented the existence of positive youth-staff relationships (Paisley & Ferrari, 2005), a sense of belonging (Ferrari et al., 2006; 4-H National Headquarters, USDA accepted this manuscript as a *Program of Distinction* following a peer review. *Programs of Distinction* are high quality youth development programs within Cooperative Extension in communities across the United States and Territories. Published in February 2010.



Ferrari & Turner, 2006), and mastery of skills (Ferrari, Arnett, & Cochran, 2008), demonstrating that the essential elements are present to facilitate outcomes of learning and development.

Staff members review program records on an on-going basis to determine frequency, duration, and intensity of programming as measured by attendance records and curriculum plans. The Adventure Central after-school program has maintained a consistent level of youth participation from 2001 to 2010 (see Appendix E). Participation numbers are assessed weekly by supervisors to determine optimal enrollment, group distribution and program quality. Other process evaluation occurs in weekly team meetings and developmental needs are addressed through staff development sessions. Program satisfaction is assessed periodically through end-of-program evaluation. Recently, a systematic effort to include observation of learning activities was undertaken to ensure the high quality learning environment is sustained (Krogel, Ferrari, & Arnett, 2011).

### **c. Outcome Evaluation**

In a long-term participation study it was found that youth participants of three or more years in the Adventure Central after-school program experienced a wide range of opportunities throughout their years of participation (Ferrari et al., 2009). They spoke positively of their experiences, of the ways they had grown personally, and of their relationships with peers and staff. They learned new skills (e.g., teamwork, public speaking, work readiness that helped them as they were growing up and also recognized the ways in which their participation could benefit them in the future. Youth felt these skills were helping them in other settings and they were able to articulate how skills learned at Adventure Central has helped them at home and school. The youth were able to articulate clearly not only how they benefited from their participation, but also what specific program aspects were meaningful to them. The study shows that Adventure Central has affected participants' lives in positive ways, such as having new opportunities they wouldn't have had otherwise.

Through long-term participation, youth reported changing attitudes about nature, in particular being more comfortable in nature and having greater respect for trees and habitat. They attributed these changes to the regular and direct experience with nature through the program, their work and volunteer experiences, having fun outside, and overcoming their fears about the natural world (Ferrari et al., 2009).

As part of an evaluation of parental perceptions of family involvement and youth outcomes, the vast majority of parents ( $n=64$ ) indicated that their child experienced a variety of educational and social benefits due to their participation in the program (see Appendix F). More than two-thirds agreed or strongly agreed that their child improved since coming to Adventure Central. Improvements in social skills and school performance were mentioned most often (Ferrari et al., 2006).

## **Communication to Stakeholders**

Annual program highlights on Adventure Central and the after-school program are compiled and distributed through the <http://ohioline.osu.edu> website. Since 2000,

over 40 scholarly presentations have been presented regarding Adventure Central and the after-school program. Six journal articles have been written and shared on the national level. Two of the program evaluations are included in the Harvard Family Research Project's Out-of-School Time Database (<http://www.hfrp.org/out-of-school-time/ost-database-bibliography/database>). Three Master's theses and one Ph.D. dissertation have also been conducted at Adventure Central related to the after-school program. A webpage on Adventure Central includes information on the program and also includes links to scholarly efforts and can be accessed at: <http://www.metroparks.org/ac>. A bi-monthly newsletter is distributed to parents and local stakeholders and summaries of program evaluation are included.

## Evidence of Sustainability

The Adventure Central after-school program is one of the core programs operated by Adventure Central and was the primary reason for the program's creation. The partnership began with a 10-year agreement in 1998 between Five Rivers MetroParks, Ohio State University Extension and 4-H, and it was emphatically renewed in 2007 through 2016, thus providing base operating funds for that timeframe. The program has consistently brought in \$100,000 or more annually from external funds over the past 10 years. The program staff has grown from five staff originally to 13 team members currently. Annually, over 120 volunteers contribute at least 12,000 hours of service to the Adventure Central. Program participation numbers have remained relatively consistent over the 10 years of programming (see Appendix E).

## Replicability

While Adventure Central is a complex partnership that derives its strength from being facility based and managed, many aspects of the program have been replicated and efforts to develop guides and plans aid others in replication efforts. Since 2006, components of the Adventure Central after-school program have been replicated as part of an outreach program at Fairview Elementary School. Fairview Elementary is a Dayton Public School Neighborhood School Center and Adventure Central was sought out as a local partner to provide after school services by both the University of Dayton, who is guiding the community process and the school administration. The program was led by a Campus Compact AmeriCorps VISTA under the training and direction of Adventure Central professionals. The program reached over 20 youth during each year of operation. The Adventure Central Program Plan and *How-to Guide for Supporting Episodic Volunteers* are two examples of resources that are written with practical application and program replication in mind.

Adventure Central was created to be a model program and has had a number of professionals from other countries (Taiwan, Ireland, Armenia, Georgia, and Uzbekistan) and states (West Virginia and Indiana) visit to observe and learn about the methods and process utilized at Adventure Central. The curriculum was also used for teaching 62 4-H professionals and after-school community partners who attended a statewide in-service training in spring 2005. Participants reported that these sessions were highly successful in providing both the concepts and the

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confidence needed to go back to their communities and use the concepts/activities with youth. Programs initiated from this training are still being implemented today. Adventure Central also has been recognized as a leader in helping to reconnect youth and nature. Through the after-school program youth have daily high quality experiences with the natural world and this model is gaining attention. Nate Arnett, Director, was one of 30 professionals selected in 2009 by National 4-H to participate in a think tank on reconnecting youth and nature. Collaborations with Dayton Public School Neighborhood School Centers have led to improved environments on the school grounds and better utilization of their grounds for instruction and exploration. A recent initiative of Promising Practices in Urban 4-H Science will highlight Adventure Central efforts in six associated areas of 4-H Science to be shared on the national level.

### **Rationale and Importance of Program**

Adventure Central is an outstanding example of a facility-based, Extension-managed after school program, but the value extends far beyond. As stated in an article on Adventure Central serving as a demonstration plot for urban youth development (Cochran et al., 2007) the success of Adventure Central can be judged not only by its success in the local community, but by its ability to influence the practice of youth development programs on a larger scale. Through developing a program model (see Appendix A), applying lessons learned, disseminating scholarly work, and educating current and future youth development professionals, we are building capacity in Ohio and on the national level.

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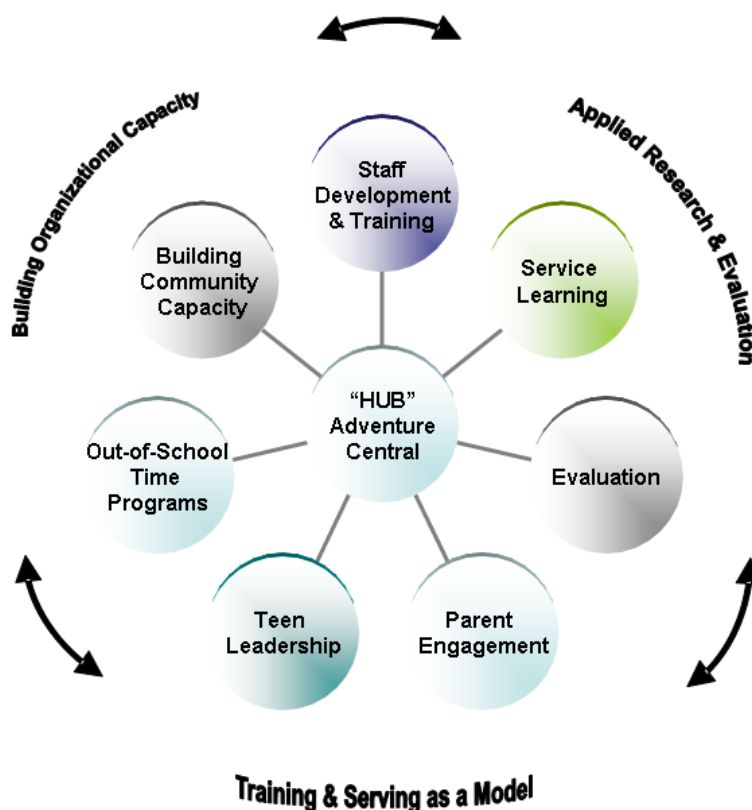
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## Appendix A Adventure Central Model

Figure A1.  
Model of Adventure Central illustrating the relationship of programs and activities



The model depicted in Figure A1 contains a central “hub” and spokes that represent the various aspects of the high quality, relevant program developed to meet local needs. This hub is physically situated in an urban community. The first circle around the hub represents the activities that comprise the day-to-day work at Adventure Central, illustrating the comprehensive nature of the program. . Because Adventure Central is part of a land-grant university, with the mission to develop and disseminate new and practical knowledge to improve the quality of life, those in program leadership positions conceive of its role as one that includes both outreach to meet local needs and using the experience within the local community to inform scholarly work. The outer circle illustrates this scholarly work in terms of discovery, integration, application, and teaching. Situated into this model within the “Out of School Time” activity circle, the Adventure Central afterschool program derives much of its success from this comprehensive structure (from Cochran et al., 2007).

4-H National Headquarters, USDA accepted this manuscript as a *Program of Distinction* following a peer review. *Programs of Distinction* are high quality youth development programs within Cooperative Extension in communities across the United States and Territories. Published in February 2010.



## Appendix B Sample Monthly Program Plan

### AFTERSCHOOL - OCTOBER 2010



Theme: Scientific Inventions Station

Objectives: Participants will be able to...

- Use the scientific method and their own creative skills to design and develop interactive, hands-on science experiments that will demonstrate their understanding of a specific area of science, and how science is a part of our everyday lives.
- Gain a better understanding of how to be a more effective team member by participating in teamwork focused activities
- Prepare to display their interactive experiments/projects at the science expo which will also be a parent engagement event

Tactics (*Yellow, Blue, Pink, & Maroon groups only*)

- Complete 30 minutes of programming outside each day
- Complete at least 1 literacy and/or math focused activities per week
- Complete at least 2 discovery hikes or creek explorations/month
- Complete 1 inquiry-based learning activity/ week
- Complete at least 1 Teamwork focused workforce prep activity /month
- Entire group collaborate to decide, design, & create one interactive, hands-on project/experiment to display at the Science Expo

Turquoise Group Tactics

- Complete 30 minutes of programming outside each day
- Complete 1 inquiry-based learning activities or projects/week
- Complete 1 Teamwork focused workforce prep activity/week
- Complete 1 "Adventure Activity" (challenging large group activity)/week
- Plan and complete 1 service-learning project/outing per month
- Group will divide into 3-4 sub-groups to decide, design, and create an interactive, hands-on, project/experiment to display at the Science Expo

Resources:

- *Science Experiments You Can Eat*, Vicki Cobb
- *175 Amazing Nature Experiments*,
- *Dirt Cheap Science*, Esther Weiner
- *Creepy Crawlies and the Scientific Method*,
- *Acres of Adventure*, 4H Curriculum
- *Fishy Science*, 4H Curriculum
- *Incredible Egg*, 4H Curriculum
- *Science Discovery Series: Lesson Plans for Grades 4-7*
- *50 Terrific Science Experiments Grades 5-8*
- *Science: Inquiry & Investigation*
- *Bottle Biology: An Idea Book for Exploring the World Through Soda Bottles & Other Recyclable Materials*
- [http://k6educators.about.com/od/sciencelessonplans/Science Lesson Plans Activities and Ideas.htm](http://k6educators.about.com/od/sciencelessonplans/Science_Lesson_Plans_Activities_and_Ideas.htm)
- <http://school.discoveryeducation.com/sciencefaircentral/>
- Great site with step by step instructions on how to compile a science fair project
- <http://polke.episd.org/ScienceFairGuide.pdf>
- Another great "how to" guide: [www.davis.k12.ut.us/staff/jlindsay/sciencefair.html](http://www.davis.k12.ut.us/staff/jlindsay/sciencefair.html)
- COSI activities: <http://www.cosi.org/educators/activities/>
- Inquiry-focused field investigations: <http://www.fishwildlife.org/pdfs/Field%20Investigations%20FINAL.pdf>



Ideas for Group Activities/Projects:

- Review the scientific method with the participants in the group
- Encourage participants to invent their own project that follows the scientific method
- Encourage participants to use technology as a part of the project (i.e. microscopes)
- Use charts and graphs to record and compare data

## Appendix C Sample Lesson Plan

Monday's	Tuesday's	Wednesday's	Thursday
<i>4:30-5:00 Dinner</i>	<i>4:30-5:00 Dinner</i>	<i>4:30-5:00 Dinner</i>	<i>4:30-5:00 Dinner</i>
<i>5:00-5:30</i> <b>Science Fair Expo (SFE)</b> Introduce challenge Brainstorm hypothesis and invention	<i>5:00-5:30</i> <b>SFE</b> Continue brainstorming hypothesis	<i>5:00-5:30</i> <b>SFE</b> Finalize hypothesis. Divide group in 3 subgroups: Report, Board, and Invention	<i>5:00-5:30</i> <b>SFE</b> Continue working in subgroups Invention group: begin drafting and designing
<i>5:30-6:00</i> <b>Rainbow hike</b> <i>(make sure participants each gather at least one leaf)</i>	<i>5:30-6:00</i> <b>SFE Continued</b> Discussion on what group would like to invent. Have each partici- pant draw a draft of their idea.	<i>5:30-6:00</i> <b>SFE Continued</b> Each group begin working on their specific area	<i>5:30-6:00</i> <b>SFE Continued</b> Entire group compile a list of materials needed to construct their invention
<i>6:00-6:30</i> <b>Leaf Prints</b>	<i>6:00-6:30</i> <b>Jelly Roll</b>	<i>6:00-6:30</i> <b>Outdoor Reading</b> <i>Each participant will grab a book or two to take outside and read under the trees</i>	<i>6:00-6:30</i> <b>S.O.S.</b>
Review Questions: (At least 3) 1. What recyclable items could make music? 2. How can we construct our invention? 3. How is communication important when brainstorming?			Date Lesson Rec'd:  P.A. Initials:

### Appendix D Summary of Program Evaluations

<b>Evaluation</b>	<b>Type</b>	<b>Method</b>	<b>Areas Assessed</b>	<b>Documentation of Results</b>
Youth participation	Process	Record review	Duration and frequency of attendance	Annual reports
Program content and delivery	Process	Record review	Types of activities and delivery methods used	Program planning records & staff meeting notes
Program satisfaction	Process	Parent survey and focus groups	Preferred methods of family engagement and youth programming	Ferrari et al., 2006
Program satisfaction	Process	End-of-program surveys	Attitudes	Annual reports
Key features of positive youth development	Process	Observations, youth survey, & focus groups	Staff-youth relationships	Ferrari et al., 2002 Paisley & Ferrari, 2005 Ferrari & Turner, 2006 Ferrari, Lekies, & Arnett, 2009
Youth participation	Process	Focus groups with teens	Motivation for participation and retention	Ferrari & Turner, 2006
Program implementation	Process	Interviews with program partners	Successes and challenges with program implementation	Ferrari, Arnett, & Cochran, 2007
Program quality	Process	Observations & youth surveys	Conducive learning environment, content, & youth engagement	Krogel, Ferrari, & Arnett, 2011
Youth outcomes	Outcome	Parent survey	Parent perceptions of youth outcomes	Ferrari et al., 2006
Youth outcomes: skill development	Outcome	Youth self-assessment, adult assessment, & comparison of pre- and post	Development of skills in the areas of thinking, communication, initiative, teamwork, leadership, and professionalism	Ferrari, Arnett, & Cochran, 2007
Youth outcomes: knowledge, attitudes, skills, and behaviors	Outcome	Focus groups with teens with 3+ years of participation	Benefits of long-term participation	Ferrari, Lekies, & Arnett, 2009

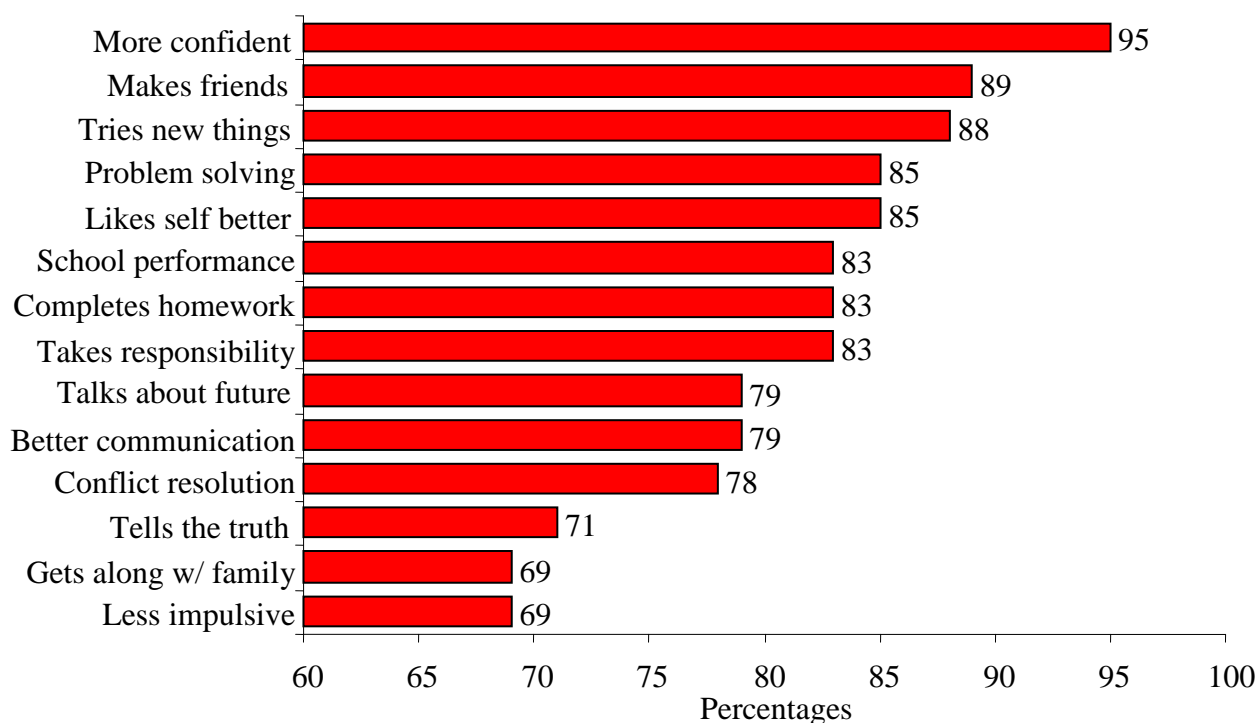
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**Appendix E**  
**Adventure Central Participation Data (2001-2010)**

<b>Table E1</b>			
<b>Adventure Central After-School Participation Data by Year</b>			
<b>Year</b>	<b>Total Youth Participants</b>	<b>Average Daily Attendance</b>	<b>Total Contact Hours for Program</b>
2001	100	N/A	N/A
2002	120	60	13,800
2003	105	60	15,500
2004	115	75	20,000
2005	133	85	18,000
2006	150	90	32,000
2007	155	93	31,500
2008	153	91	32,300
2009	133	77	24,805
2010	117	77	24,000

## Appendix F Parent Perceptions of Child Outcomes

Figure F1.  
Parents' perceptions of child outcomes since attending Adventure Central



*Note.* Combines “agree” and “strongly agree” responses  
(Ferrari et al., 2006)