Taking Stock

A Practical Guide to Evaluating Your Own Programs

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Acknowledgments

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For many years, AAAS has worked with national and local community-based organizations to design and deliver enrichment activities for use in out-of-school science programs. Beginning in 1993, the SLIC initiative focused these efforts in three diverse U.S. cities (Chicago, IL; Rapid City, SD; and Rochester, NY). Recognizing that evaluation is essential for quality programming and continued funding, AAAS commissioned Horizon Research, Inc. to develop materials to guide community-based organizations through the evaluation of their informal science activities. However, in the course of writing the manual, it became clear that the need for a fundamental grounding in program evaluation is not limited to organizations that provide out-of-school science activities.

And so, this manual evolved into what we hope is a more broadly useful guide to program evaluation. To the extent that we have succeeded, we owe much to our reviewers, who include members of the SLIC National Planning Council and their colleagues, as well as grantmakers from national and local foundations: DeAnna Beane, Association of Science-Technology Centers; Janet Carter, Bruner Foundation; Stacey Daniels, Kauffman Foundation; Catherine Didion, Association for Women in Science; Hyman Field, National Science Foundation; Sandra Garcia, National Council of La Raza; Maritza Guzman, DeWitt Wallace-Reader's Digest Fund; Barbara Kehrer, Marin Community Foundation; Roger Mitchell, National Science Foundation; Nancy Peter, Academy of Natural Sciences; Annie Storer, American Association of Museums; Ellen Wahl, Education Development Corporation; and Faedra Weiss, Girls, Inc.

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Finally, we would like to thank Shirley Malcom, head of the AAAS Directorate for Education and Human Resources Programs, who recognized the need for this resource and provided us with the time and space to do it right.

Chapter One

WHY USE THIS MANUAL?

- ➢ Do you want information that will help improve your organization's programs?
- ➢ Are your sponsors asking about the quality and impact of the programs they fund?
- ➢ Are you applying for a grant that requires an evaluation plan?

If you answered "Yes" to any of these questions, then this manual can help. It is a practical guide to ***program evaluation*** written for community-based organizations (***CBOs***). It provides information that you can put to use now to help improve your programs.

This manual focuses on ***internal evaluation***—that is, program evaluation conducted in-house by CBO staff. We have taken this approach for one simple reason: many CBOs cannot afford to hire someone outside the organization to evaluate their programs, but they still need the kinds of information that evaluation can provide.

The information in this manual should better prepare you to design and carry out a program evaluation. And because the field of evaluation is now putting greater emphasis on ***participatory evaluation*** (a middle ground between internal and ***external evaluation)***, you will be able to apply your knowledge either within your own organization or in working with an external evaluator. This manual will also help you recognize when you might need an external evaluator and the advantages of using these services, should your CBO be able to afford them at some point.

Here are some assumptions that we made about you as we wrote this manual:

- ➢ You care about kids and communities.
- ➢ Your organization is committed to providing the best services possible.
- ➢ You have some experience running or participating in a CBO program, so you have an idea of how to get things done.
- ➢ You want to evaluate a program—*not* the people who run it or participate in it.

These shared qualities aside, we realize that CBOs come in all shapes and sizes. Some have full-time staff and annual program budgets exceeding $100,000; others spend less than $5,000 per program and rely almost entirely on volunteers. Community-based organizations also range widely in their ***goals***—from teaching new information or skills, to strengthening families, to enhancing students' educational and career options.

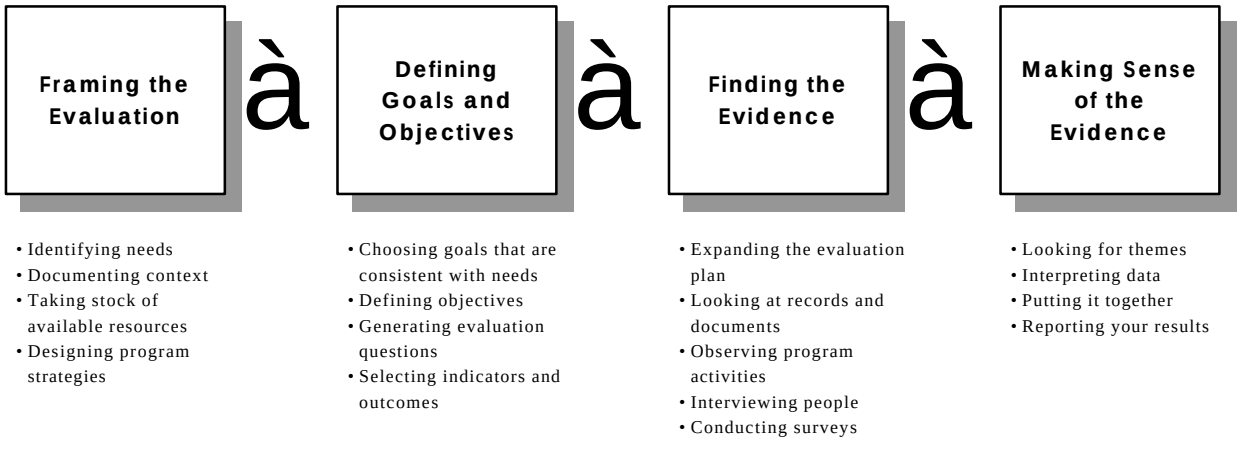
This manual is designed to help a wide variety of organizations, whatever your goals or resources.

What's In This Manual?

Chapters 2–7 include basic information on evaluation concepts and techniques. Ideally, everyone who picks up this manual will read these chapters for some background in program evaluation.

- ➢ Chapter 2 talks about what evaluation can do for your programs and describes two types of evaluation: formative and summative.
- ➢ Chapter 3 discusses the importance of documenting needs and context, and identifies some important first steps in planning your evaluation.
- ➢ In Chapter 4, we distinguish between program goals, objectives, indicators, and outcomes, and their role in evaluation.
- ➢ Chapter 5 talks about using quantitative and qualitative data to evaluate progress and impact.
- ➢ Chapter 6 describes how to collect information to evaluate your programs through document review, observations, interviews, and surveys.
- ➢ Chapter 7 provides tips for organizing, interpreting, and reporting the evaluation data that you collect.

Overview of the Evaluation Process



The remaining chapters of this manual show how to apply this information, with examples of how evaluations might differ for programs with varying levels of resources. Chapter 8 takes you through a simple evaluation of a small program in a fictional CBO. Chapter 9 describes how the same CBO enlarged the evaluation when the program was expanded. We have also included sample evaluation plans and instruments that can be adapted for use in your own programs.

The appendices include examples of three types of reports that present evaluation information:

- ➢ Appendix A is an example of a *final evaluation report* that describes the impact of the small-scale program described in Chapter 8.
- ➢ Appendix B illustrates a *proposal* for expanding the scope of this program as described in Chapter 9.
- ➢ Appendix C models an *annual progress report* that describes the formative evaluation of the multi-year program described in Chapter 9.

A Glossary of Terms is included at the end of the manual. Throughout the manual, words and terms that are shown in ***bold italics*** are defined in this glossary.

Finally, we have tried to make this manual accessible to a wide range of audiences. As an overview, it takes a relatively traditional approach to evaluation, providing information on fundamental concepts and activities and how these can be applied. However, in practice the field of evaluation is far more complex than we have described it here. Using this guide as a basic introduction, we recommend the following resources to help you expand your knowledge and understanding of program evaluation.

Assess for Success: Needs Assessment and Evaluation Guide, © 1991
Girls Incorporated
30 East 33rd Street
New York, NY 10016

Leadership Is: Evaluation with Power, © 1995
by Sandra Trice Gray
Independent Sector
1828 L Street, NW
Washington, DC 20036

Measuring Program Outcomes: A Practical Approach, © 1996
United Way of America
701 North Fairfax Street
Alexandria, VA 22314

User-Friendly Handbook for Project Evaluation: Science, Mathematics, Engineering and Technology Education
by Floraline Stevens, Frances Lawrenz, Laure Sharp
National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

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Chapter Two

WHY EVALUATE?

To evaluate something means literally to look at, and judge, its quality or value. A ***CBO*** might evaluate individual employees, its programs, or the organization as a whole. When you evaluate a person's performance, you try to find out how well she carries out her responsibilities. When you evaluate a program, you want to know how far the program went in achieving its ***goals*** and ***objectives***. And when you evaluate an organization, you ask how well it operates to achieve its larger ***organizational mission***. Evaluation involves the collection of information that helps you to make these judgments fairly.

This manual focuses exclusively on ***program evaluation***. Why is program evaluation so important?

- ➢ First, it generates information that can help you to improve your programs.
- ➢ Second, it can demonstrate to funders and others the impact of your programs.

In the past, evaluation was often used only to measure performance. Based on information gathered in a final, ***summative evaluation***, further funding decisions were made. Programs were continued or discontinued depending on the results of the evaluation.

Luckily, program staff and funders have begun to expand their view of evaluation and appreciate its potential for program improvement. Through ongoing, ***formative evaluation***, you and your sponsors can gain insight into how well your program is performing and what adjustments may be necessary to keep it on track.

More about Formative Evaluation

Formative evaluation can help you determine how your program is doing while it is in progress, or taking form. The information you collect can help you make changes in your program and correct problems before it's too late! Formative evaluation can also help you identify issues of interest that you might not have thought about when planning your program. And, it can help shape and refine your ***data collection*** activities.

Formative Evaluation
(Provides information as a program takes form)

- ➢ Monitors progress toward objectives
- ➢ Provides information to improve programs
- ➢ Helps identify issues of interest
- ➢ Helps refine data collection activities
- ➢ Helps clarify program strengths and limitations

Information from a variety of sources (such as participants, instructors, and parents) can tell you how a program is progressing. For example: Do students like the program? Are staff and participants satisfied with the activities? What changes are needed to improve the program?

The people involved with your programs should be consulted during the evaluation planning stage, and as often as your resources permit during program implementation. Let participants know that their opinions are important, and provide them with opportunities to share their views. With their input, you can improve your programs and increase the likelihood that you will achieve positive results. Even programs that have been successful for a long period of time benefit from suggestions and comments. This formative evaluation feedback can help good programs become even better.

Pinpointing Problem Areas: Getting Formative Feedback

Youth Action Today! was in the third year of providing three-day summer camps for middle school students and their high school mentors. Interest in the camp had steadily increased among sixth and seventh graders, with enrollment rising each year. But pre-registration this spring showed fewer eighth graders were signing up. Thinking fast, program staff met with several small groups of eighth graders, who had attended the camp when they were younger, to see if they knew what the problem was. Students told the staff that word was out that camp activities were "babyish" and that the camp wasn't "cool" enough for older kids. With this feedback, program staff revamped the eighth grade activities to provide more opportunities for interacting with the high school mentors. In addition, they engaged in a publicity campaign through eighth grade teachers and parents to talk about how the camp would be different this year and more appealing. Their efforts paid off as eighth grade registration increased for the day camp.

More about Summative Evaluation

Summative evaluation differs from formative evaluation in two important ways—purpose and timing. Ongoing, formative evaluation helps monitor progress as programs are occurring. Summative evaluation occurs when you are *summing* up what you have achieved. This can occur at the end of the program, or at appropriate "break points" during the implementation of an ongoing or multi-year program.

Planning for Summative Evaluation

What are you trying to achieve? What do you want your participants to know or be able to do when they have finished your program (that is, what are your ***goals*** and ***objectives***)?

How will you know whether or not you have achieved what you intended? What evidence will convince you? What evidence will convince your funder?

Summative evaluation helps you determine if you achieved what you and your sponsor set out to do. To understand what your program achieves, however, you have to know where you began. This is why it helps to collect ***baseline information*** before, or very soon after, a program begins. Baseline questions might include:

- ➢ How serious is a particular problem or need among children who will participate in your program?
- ➢ What behaviors, interests, or skills do the children have at the start of the program?

The amount of baseline information you collect will depend on your level of resources. For example, you may be limited to asking participants about their attitudes or behaviors. Or you may have the resources to gain a fuller picture by also asking parents and teachers about participants' needs, interests, and skills.

Collecting summative information allows you to find out how well the program achieved what it set out to do. Have children's skills or interest levels increased because of the program? What parts of the program appear to have contributed most (or least) to the participants' success? If you did not achieve what you intended, how do you account for this? What should you do differently next time?

Summative Evaluation (Provides information for summing up at the end of a program)	
Baseline Information Participant skills, behaviors, and attitudes *before* the program	**Summative Information** Participant skills, behaviors, and attitudes *after* the program

In this chapter, we have distinguished between formative and summative evaluation in terms of tracking progress and gauging impact. Both kinds of information are important for improving programs, for determining whether programs are successful, and for illustrating the success of programs to others.

While it is important to grasp the difference between formative and summative evaluation, it is equally important to think of these activities as part of an on-going evaluation process, not as distinct categories. Data collected while the program is in progress can be used in the summative evaluation to gauge impact. Similarly, information collected at the end of a program can be used in a formative way for designing an improved or expanded program or new programs with similar goals.

Why Evaluate?	
To generate information that can help you to improve your programs by: ➢ Monitoring progress toward program objectives ➢ Identifying issues of importance to program participants ➢ Refining data collection activities	**To demonstrate the impact of your programs to funders and other potential supporters by:** ➢ Assessing progress toward program goals ➢ Documenting the quality of your programs and describing the effects on participants ➢ Quantifying the amount of change experienced by program participants

Now that we have discussed the main reasons for doing evaluation, we can begin to explore the program design and evaluation process. The first step, identifying needs and documenting context, is described in Chapter 3.

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Chapter Three

GETTING STARTED: FRAMING THE EVALUATION
Documenting Context and Needs

- Identifying needs
- Documenting context
- Taking stock of available resources
- Designing program strategies

Evaluation planning should begin at the same time you are thinking about the design of your program. But how do you get started? What do you need to think about in the early stages of program and evaluation planning?

You start the process by clarifying what needs you are trying to address, who your audience will be, and the setting, or context, in which your program will operate.

Early Program and Evaluation Planning

- ➢ What needs are you trying to address?
- ➢ How are these needs best identified?
- ➢ Who is your targeted audience?
- ➢ What factors will influence levels of participation and program success?

Setting the Stage for Evaluation: Documenting Context and Needs

Documentation is an important piece of the evaluation puzzle. It involves describing (rather than assessing) conditions, events, or people to help gain a better understanding of the context in which a program occurs. For example, what are the socioeconomic and demographic characteristics of the community and the targeted audience? How might these factors, and others, affect how you implement your program?

Knowing the finer details of context is also crucial for program and evaluation design. For example, lack of transportation may deter students from staying after school for a tutoring program,

which in turn will influence program success. In a case like this, program planning would include working with school administrators to arrange for a later bus departure, or rescheduling sessions earlier in the day.

Initial documentation activities often focus on the identification of needs, or ***needs assessment.*** Information gathered *before* a program is planned or implemented can help staff to identify needs, identify appropriate target populations for program services, and customize their program design to meet specific needs. Collecting this kind of information can also help you justify your program to your community and to potential funders.

There are many ways to document needs. You can attend community and church meetings to learn about the concerns of neighborhood residents. You can informally ***survey*** human services personnel to find out what needs they see in your community. And you can conduct ***interviews*** or ***focus groups*** with parents, teachers, or students in your community. Identifying and documenting the needs identified by people who live and/or work in your community helps to lay the groundwork for program and evaluation design.

Thinking Like an Evaluator

As an experienced program designer, you know what questions to consider next:

- ➢ What strategies will enable me to address the needs I've identified?
- ➢ What resources do I have to work with—including funds, personnel (paid and volunteer), and in-kind contributions of facilities and equipment?
- ➢ Given the level of resources available to me, which of the possible strategies can I implement well?

Needs Assessment and Baseline Data

There's an important connection between ***summative evaluation*** and the documentation of context and needs. When we described summative evaluation in Chapter Two, we talked about the importance of comparing ***baseline data***—information gathered prior to program implementation—with data collected at various breakpoints during, or in the final phase of, a program. Data collected for ***needs assessment*** purposes may also be used as baseline data.

Once you have collected data which adequately describes the context and needs of your target population at the beginning of your program, you can plan to collect the same kinds of descriptive information at the end of your program. One way to evaluate the effectiveness or impact of your program is then to compare baseline and summative data. What has changed as a result of your efforts?

Now, in order to design a good evaluation plan, you need to start thinking like an evaluator. In order to do that, you must translate the needs you've identified into realistic ***goals*** and ***objectives***. This is the subject of Chapter Four.

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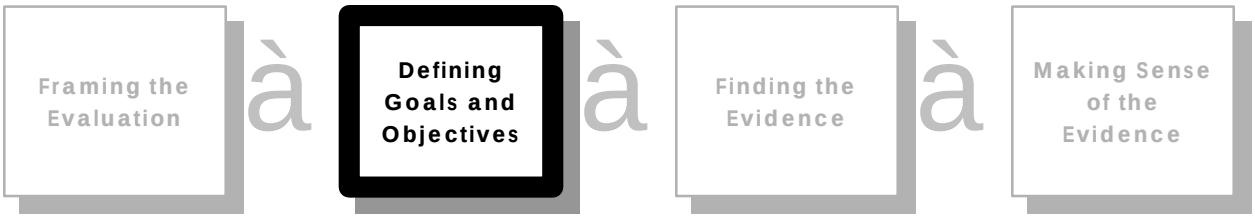
Chapter Four

WHAT ARE YOU TRYING TO DO?
Defining Goals and Objectives



- Choosing goals that are consistent with needs
- Defining objectives
- Generating evaluation questions
- Selecting indicators and outcomes

One of the most important evaluation questions you can ask is, "What do I expect to accomplish through this program?" Another way to phrase this is:

"What are my goals and objectives?"

The answer to this question will influence how you design your program *and* your evaluation.

If you were to look up the words "goal" and "objective" in the dictionary, you might find them used to define each other. But in program design and evaluation, the terms goal and objective are used for different things. A ***goal*** is what you hope to accomplish when your program is completed—it is broader than an objective. An ***objective***, on the other hand, refers to a more specific event or action that has to occur before you can achieve your goal.

Given the complexity of the problems that ***CBO*** programs typically address, it is important to be realistic about which part(s) of a long-term goal or problem you can successfully tackle through a single program.

What is Realistic? Breaking Down Goals

CBO program goals are sometimes as broad and ambitious as the organization's mission, or reason for existing. For example, your organization's mission may be to prepare the youth of your community for future employment. There are many ways that you might accomplish this mission—through educational programs, leadership development programs, or job skills programs. Community members or potential participants may have ideas about appropriate strategies. But how do you decide on a plan for a specific program? One way to identify possible

objectives is to think about your goal as a problem to be solved. As you break the problem down, you can see that there are many possible objectives that must be achieved in order to truly accomplish your goals.

For example, given that your mission is to prepare youth for future employment, you might choose to pursue the following goal:

"Prepare youth to enter science- and mathematics-related fields"

What kinds of experiences would help to prepare children for careers in these fields? Here are some ideas:

- ➢ Elementary school students need exposure to good science and mathematics enrichment activities in order to develop their interest in these subjects and to enhance what they learn in school.
- ➢ Middle school students need to spend time with role models or mentors who can advise them on appropriate ways to prepare for a specific field and provide them with some meaningful experiences in that field.
- ➢ Middle and high school students need to experience high-quality tutoring in key areas, such as Algebra and Chemistry, which are useful in many science- and mathematics-related fields.
- ➢ High school students need access to appropriate guidance services to help them identify post-secondary programs that suit their needs and interests in science and mathematics.

Being Realistic: Separating Goals from Objectives

Let's say the **goal** of your program is to reduce the school drop-out rate. This goal could be addressed in many different ways. Based on your experience and the resources available to you, you and your colleagues decide that a realistic **objective** for this program is to provide mentors for middle and high school students who are at risk of school failure.

You believe that achieving your objective (providing students with positive, one-on-one relationships with caring peers or adults) will decrease participants' tendency to engage in self-destructive behaviors, and will stimulate their interest in school—first steps toward addressing your long-term goal of reducing the drop-out rate. With your objective in mind, you design program activities that you feel will support positive mentoring relationships.

The objectives of your career preparation program will then be to provide one or more of these experiences or services to the youth you serve. It is important to remember, however, that these objectives represent just a few of the options a CBO might use to address this particular goal, and that other objectives might be equally valid. In other words, there is no finite number of "correct" objectives to meet a selected goal.

Relationship between mission, goal, and objectives

Working Out An Evaluation Plan

Now that you have identified your goals and objectives, you can begin framing ***formative evaluation*** questions in terms of progress toward your objectives and ***summative evaluation*** questions in terms of impact on your goals.

Using the example of the program to prepare youth for future employment in science- and mathematics-related fields, your objectives are (1) to provide elementary age students with high quality science and mathematics activities outside of school, (2) to develop their interest in science and mathematics, and (3) to build on the science and mathematics that these students are learning in school. What evaluation questions will help you determine if you are making progress toward these three objectives? Using a chart like the one that follows might help you visualize how the evaluation design will take shape.

Developing an Evaluation Plan

Mission: To prepare the youth of our community for future employment

Goal: To prepare youth to enter science- and mathematics-related career fields

Objectives:
a) To expose elementary students to good science and mathematics activities
b) To develop students' interest in science and mathematics
c) To enhance the science and mathematics that students learn in school

Sample Formative Questions (related to *objectives*)	Sample Summative Questions (related to *goals*)
➢ What do students think of the mathematics and science activities that we provide? ➢ How do students demonstrate genuine interest in science and mathematics? ➢ How are students using the science and mathematics they learn in school as they participate in our activities?	➢ How do students' interest in science- and mathematics-related careers compare before and after the program? ➢ What steps have students taken on their own to find out more about science- and mathematics-related careers?

You will undoubtedly come up with many evaluation questions as you try to develop a similar plan for your own programs. Some of your questions will be very specific, like "Did students appear to be interested in the nature hike?" Other questions will be more general, like the ones in the preceding box. Whatever your questions are, grouping them in terms of your goals and objectives will help you to organize your thoughts and to identify gaps in your evaluation plan.

How Will You Know When You Get There? Measuring Progress and Impact

Thinking through your evaluation questions in terms of the goals and objectives you have defined provides the foundation for your evaluation plan. The next step is equally important—deciding what kinds of evidence will convince you and your funders that your program is a success. What do you expect to see, hear, or measure if your program is successful at achieving your objectives and ultimately your goals?

In the formative evaluation stage, while a program is in progress, we look for ***intermediate indicators***—what you expect to see if you are progressing toward your objectives. In the early career preparation program described above, intermediate indicators might include:

- ➢ Parents reporting that the students talk enthusiastically about program activities while at home.
- ➢ Students asking questions that indicate they are linking science and mathematics concepts with their everyday lives.

- ➢ Science and mathematics teachers reporting that students refer to program experiences during classroom discussions.

In the summative stage of the evaluation, when the program is completed, we look for evidence of ***final program outcomes***. These are the changes you expect to see if your program has actually achieved its *goals*. Once again using the early career preparation program as the example, you might expect outcomes such as the following:

- ➢ When asked to list jobs that interest them, more students mention a science- or mathematics-related field after the program than when asked this question at the beginning of the program.
- ➢ Over the course of the program, at least half of the participants checkout library books related to science and mathematics professions.

Relationship between mission, goals, objectives, indicators and outcomes

The figure above illustrates the interrelationships between organizational mission, program goals, objectives, indicators, and outcomes. In Chapter Five, we briefly set aside our discussion of the evaluation process in order to explore in more depth the different kinds of information that can be used to define indicators and outcomes.

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Chapter Five

FINDING THE RIGHT MIX
Using Quantitative and Qualitative Data

How will you know whether you are achieving your ***objectives*** and making progress toward your ***goals***? What counts as evidence of progress and impact? Though simplifying a bit, it's convenient to think of measuring progress and impact in terms of quantitative and qualitative data.

What are Quantitative Data?

Information that is measured and expressed with numbers can provide ***quantitative data***. For example, attendance records can show the number of persons who participate over a period of time; ***surveys*** can show the percent of participants who respond to a question in a certain way. These quantitative data can be used in a variety of ways. To name just a few, they can be presented as numbers or percents, as ranges or averages, and in tables or graphs. They can also be used to compare different groups of participants—girls and boys, students of different socioeconomic or ethnic backgrounds, or students in your program with non-participants.

To illustrate different ways to present quantitative data, let's go back to the mentoring/dropout prevention program that we first described in the box on page 16. In this example, the 15 middle school students (7 girls and 8 boys) and 25 high school student participants (10 girls and 15 boys) were asked to fill out a ***questionnaire*** at the end of the school year. The following tables and graphs illustrate several ways to present the same questionnaire results.

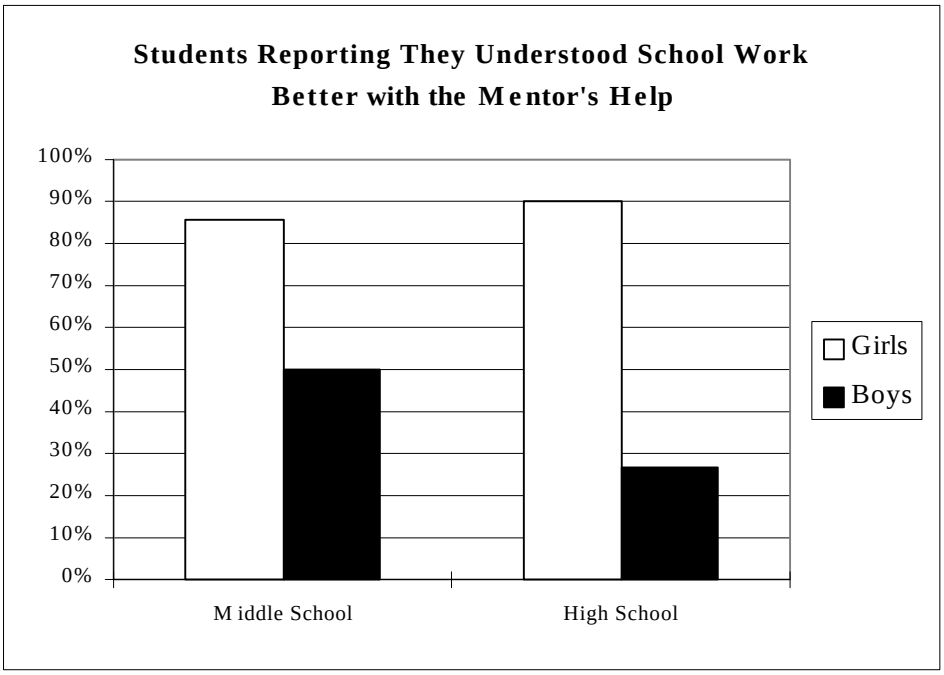
As *numbers*, combining the results for all of the program participants:

End-of-Year Survey	
Response on Questionnaire	Number responding Agree/Strongly Agree
I look forward to meetings with my mentor.	38
I think my mentor cares about me personally.	38
I understand my school work better when my mentor helps me.	23
Total Number of Participants	40

As *percentages*, separating middle school from high school:

End-of-Year Survey		
	Percentage responding Agree/Strongly Agree	
Response on Questionnaire	Middle School	High School
I look forward to meetings with my mentor.	100	92
I think my mentor cares about me personally.	87	100
I understand my school work better when my mentor helps me.	67	52
Total Number of Participants	15	25

You might also choose to present some of the information graphically to help make a point that might be difficult to see in a table. Here, the graph shows that the boys responded quite differently from the girls to one specific question:



Notice how each of these examples has highlighted a different aspect or detail in the questionnaire results. We went from looking at the results for all participants, to comparing results for middle and high school participants, and finally comparing results for boys and girls at the middle and high school levels.

What are Qualitative Data?

Evaluators also look at progress and impact in terms of ***qualitative data***, where changes are more often expressed in words rather than numbers. Qualitative data are usually collected by document review, observations, and interviews. ***Open-ended questions*** on surveys can also generate qualitative data.

Qualitative data can provide rich descriptions about program activities, context, and participants' behaviors. For example, we can assess the impact of the mentoring/dropout prevention program on students' relationships with their mentors by *describing* how well the student-mentor pairs interact before and after the program.

Example of Qualitative Data Observations of Program Activities	
Student behaviors during the *first* week of a program	**Student behaviors during the *last* week of a program**
At a "Get Acquainted" bowling party, student/mentor pairs grouped themselves into two pairs per alley. In some cases, the youths spent most of the time talking together, not mingling with the adults. In two cases, the youths left the bowling area to play video games. Several adults appeared hesitant to break into the youthful conversations; in most cases, the adults sat and conversed separately. Several of the youths bowled a game or two with their mentor, but appeared uncomfortable with the adult, and uneasy about approaching other youths who were engaged in conversations. These students seemed bored and distracted.	At a "Welcome Summer" picnic, students and mentors appeared quite comfortable with each other. Most students chose to sit near their mentors at picnic tables. All the students appeared at ease talking with their mentors, and in many cases, talking to other adults sitting nearby. No one appeared bored or hesitant to join in conversation. After eating, mixed groups of adults and students played volleyball and softball, with everyone actively participating. Interactions were relaxed and enthusiastic. Students and mentors appeared to enjoy the opportunity to be together.

Qualitative data can also be expressed in numbers. For example, interview responses can be tallied to report the number of participants who responded in a particular way. Similarly, in the example above, the observer could report the number of students in the entire group who were actively engaged in the activity.

Seeing Quantitative and Qualitative Data as Indicators and Outcomes

To further illustrate quantitative and qualitative data, let's return to the mentoring program discussed earlier. The goal of the program is to reduce the school drop-out rate. The objective is to provide positive role models and mentors for at-risk middle and high school students.

Formative Evaluation: While your program is underway, how will you know that you are building mentoring relationships that are having a positive impact on students' behavior?

> The number of students who engage in weekly activities with their mentors is one possible ***quantitative, intermediate indicator***. Using this information, you might reason that steady or increased participation means that students enjoy the activities and find the new relationships rewarding.

Fewer disciplinary reports with participating students mid-way through the program might also suggest progress.

A change in students' behavior, as reported through teacher interviews, is a possible ***qualitative, intermediate indicator***. Teachers might note that participating students are less hostile and more motivated since the program began. These qualitative data might suggest a change in students' attitudes toward themselves and others in authority.

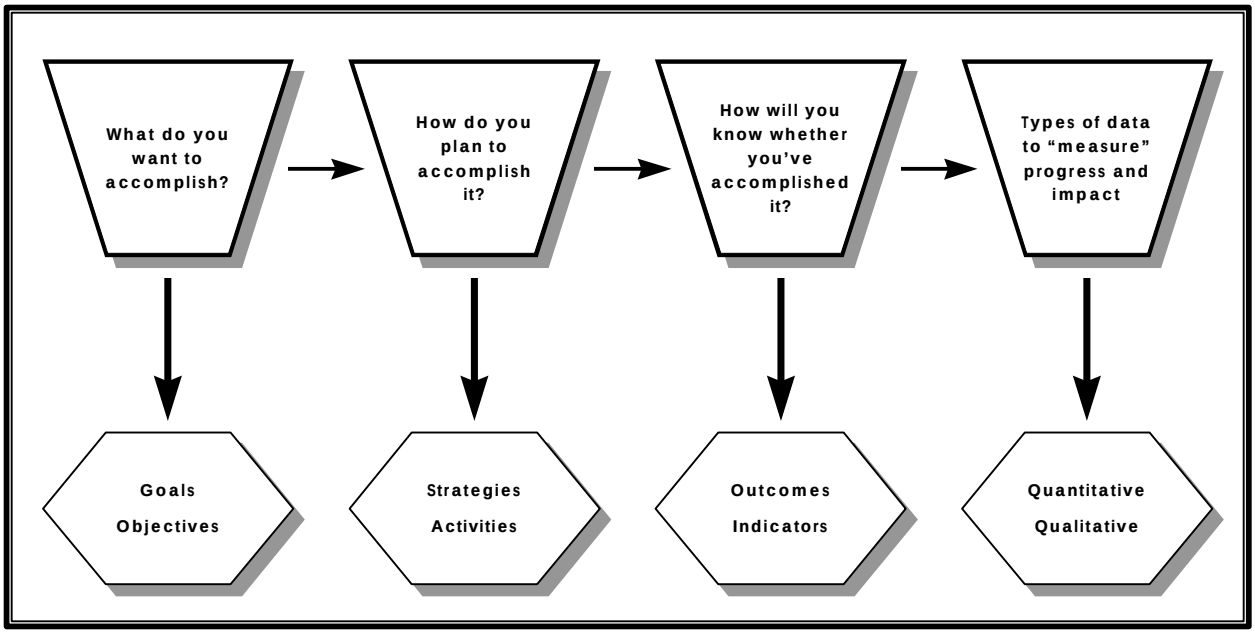
Summative evaluation: How will you know that building positive mentoring relationships has helped produce behavior conducive to students staying in school?

As baseline data, you compiled data on the number of disciplinary reports and suspensions among your participants before the program began. Your summative data—the same data for participants at the end of each year of your program—might show a leveling off or decline in these numbers. This would be a ***quantitative, final program outcome***.

Your observations or parents' and teachers' descriptions of students' behavior, both before and after the program, can provide summative qualitative data. A description of behavior in and out of school that provides evidence of more interest and motivation is a possible ***qualitative, final program outcome***.

Program to Reduce the Drop-out Rate		
	Quantitative Outcomes	**Qualitative Outcomes**
Intermediate Indicators	*Number* of students who engage in activities with mentors stays the same or increases over course of program.	*Quality* of students' interactions with others shows improvement during program.
Final Outcomes	*Number* of suspensions/discipline reports decreases among participants by program's end.	*Quality* of students' interactions in and out of school consistently improves by program's end.

The following figure summarizes where we are now in the evaluation design process. In the next chapter, we resume our discussion of the evaluation process by focusing on methods for collecting quantitative and qualitative data.



A Final Word About Quantitative and Qualitative Data

Collecting both quantitative and qualitative data in your ***formative*** and ***summative evaluation*** is important, but is not always possible. For example, many positive outcomes do not have tests or scales associated with them, so a number cannot be assigned to measure progress or success. In these cases, qualitative data may prove more useful, since they allow you to describe outcomes with words. Qualitative data can also be highly useful for clarifying what you think is important, and for discovering new issues that you might have overlooked in your initial evaluation design.

On the other hand, collecting and using qualitative data is often time-consuming and labor-intensive. As a general rule, you will want to use the measures (quantitative or qualitative) that are most feasible in terms of your skills and resources, and most convincing to you and your sponsors.

Notes

Chapter Six

FINDING THE EVIDENCE
Strategies for Data Collection

- Expanding the evaluation plan
- Looking at records and documents
- Observing program activities
- Interviewing people
- Conducting surveys

So far, you have defined ***goals*** and ***objectives*** for your program, and you have thought about the kind of evidence you need to measure progress and impact. You would like to collect some baseline data to compare with the summative data you collect at the end of the program. And you know that you want to collect both ***quantitative*** and ***qualitative data*** as evidence for your ***intermediate indicators*** and ***final program outcomes***. But how do you actually get the information that you need?

Measuring progress and impact basically means collecting and interpreting information. Before you decide how to collect this information, it is important to have a clear idea of what you are trying to learn. While it may be tempting to try and capture every facet of change occurring among youth in your program, being clear on the purpose of your evaluation can help keep ***data collection*** more manageable. For example, if you are trying to measure problem-solving abilities, your ***questionnaire*** does not need to ask students about their attitudes towards mathematics.

Be clear about what you want to find out. Sticking to these areas of interest and avoiding unnecessary data collection will keep your evaluation focused.

At this stage in designing your evaluation, think about your program activities, possible sources of information (e.g., students, parents, and teachers) about how well these activities are working, and different ways to collect information from each of these sources.

There are four basic ways to collect evaluation data: ***document review***, ***observations***, ***interviews***, and ***surveys***. Using a combination of these methods will help you to check your findings. And your evaluation will be more convincing if you can refer to more than one information source and method of data collection (such as interviewing students *and* surveying parents) to support your statements or conclusions.

What Records and Documents Can Tell You

Written documents and records can reveal things about people's behavior and about the context in which your program occurs. Such records may already exist somewhere or you may create customized records to meet your evaluation needs. In either case, records and documents can provide you with some fairly reliable information about program participants, and about the evolution of a particular issue or program over time.

Creating your own records can be a cheap and easy way to collect information and to make sure that you get the information you want about your participants and the impact of your program.

Examples of Records and Documents

Existing Records/Documents	Created Records/Documents
➢ School attendance records	➢ Program attendance sheets
➢ Report cards	➢ Participant information sheets
➢ Extracurricular activity records	➢ Library checkout lists
➢ Arrest records	➢ Participant journals or portfolios

How might a ***CBO*** use specially-created forms? Simple forms completed on the first day of the program can provide vital information about participants, including name, race or ethnicity, gender, and age. This ***demographic information*** is important to determine if the program served the intended target audience (for example, middle school girls).

An attendance sheet is another easily-created form that can help measure program success; information from these forms may indicate steady or growing participation, suggesting program popularity. A program aimed at improving attitudes toward science and mathematics might devise a form to keep track of the number of science/mathematics-related library books checked out by program participants. An increase in the number of books checked out may indicate growing interest in and appreciation for science and mathematics.

Existing records can also provide useful evaluation information. For example, school records of student participation in extracurricular activities may indicate increased motivation and interest. But be aware that you may not always get permission to look at the documents that interest you. Access may require the cooperation of people outside your organization, and getting permission can often be tricky. This is often a problem with report cards. Singling out and checking program participants' records (from the hundreds on file at a school) can also be time-consuming.

Be Creative!

You can sometimes be quite creative in using records to suit your needs. For example, researchers studying the impact of a new elementary school music program consulted the school nurse's records of "emergency" student visits before, during, and after the new program was implemented. They found that visits decreased during the program, and used this information to support their contention that students enjoyed the new program better than the previous one.

Given these obstacles, you might be able to get the same information with a more ingenious strategy. While access to report cards through the schools may be difficult to attain, it might be relatively simple to get parental permission for students to bring in their report cards, and to encourage participants to do so with small incentives such as inexpensive or donated prizes. In general, however, because accessibility varies tremendously, it is a good idea to inquire about the availability of certain records *before* you decide to rely on them in your evaluation.

Considering Different Types of Records

	Advantages	Disadvantages
Existing Records	➢ May provide good information about student behaviors	➢ May be difficult to access ➢ Require permission of others ➢ Time-consuming to match with participants
Created Records	➢ Can be customized to suit the program ➢ Simple forms require little expertise to create or use	➢ Require accurate and regular record-keeping by staff

Creating records or using existing documents can be fairly straightforward. In addition, the analysis of records may simply involve tallying the results. But records and documents provide only a piece of the evaluation picture. They are indirect measures; that is, they only *suggest* possible conclusions because they tend to be related to certain kinds of attitudes and behaviors. For example, increased attendance at CBO programs suggests that the popularity of the program is growing. However, higher attendance rates could also mean that children are using the program

to avoid doing something else that they like even less. It is always best to supplement the picture with other kinds of direct evidence. This may include letting participants tell you whether or not they like the program or observing them to see if they appear to be engaged and enjoying themselves.

Why Watch? What Observations Can Tell You

There is no substitute for taking a firsthand look at your program. Observing children engaged in activities or sitting in on staff meetings can provide useful information for answering both ***formative*** and ***summative evaluation*** questions. By observing, you also can see what is or is not working, how the program is developing, and the appropriateness of activities for participants. In short, observations can yield a wealth of information about your program.

What skills do observers need?

The most important qualities required are the ability to take in what is seen, heard, and felt in an event, and to report those impressions and details clearly in writing. Someone with good attention and writing skills is more likely to assemble a useful observation report than someone who struggles with these tasks.

As an observer, it is essential to have a clear idea of what you are looking for. Within these guidelines, however, it is also important to just *look* before you begin *looking for* something, and that means leaving behind any preconceived notions about what you think you might see. Your observation guidelines may be very general at the beginning of the program, but will narrow in focus over time as you decide what evidence is most crucial for your evaluation.

Think about your ***objectives*** and desired outcomes. What behaviors would support your claim that the program has changed students' motivation, attitudes, or skills? With observations, "actions speak louder than words." For example, while students might *say* they like science better because of a program, it is even more convincing when an observer reports that students are actually asking more or better questions about science-related topics. Similarly, it is easy for participants to say their self-esteem has increased. But seeing differences in the way a student dresses or interacts with others can support statements about the program's influence on students' self-image. Tasks that are designed to gauge changes in student's behavior or skills, and that are completed by participants during an observation session, can also provide excellent evaluation data.

Most observers write notes while they are watching, describing what participants and staff say or do during the observed event. For example, students working in a small group might talk excitedly while working out the solution to a problem. Recording their comments can provide valuable testimonial to the benefits of cooperative learning. Audiotapes, videotapes, or photographs

may prove useful in capturing the essence of observed events, providing that you have permission from participants to use these tools.

While you are observing, be attentive and open to discovering behaviors, both verbal and nonverbal, that suggest the presence or lack of student motivation. Interactions between children, between instructors and children, and between children and the materials are all available to the observer's eye.

Who Should Observe?

Activities can be observed by someone involved with the program or by someone without a role in the activity. An "outsider" gathers details during the event, while a participant-observer who is part of the process (for example, an assistant instructor) writes down observations afterwards. Outsiders can be more objective, but insiders have the advantage of really knowing the issues and the ability to provide immediate feedback. For example, program staff may wonder how students with reading difficulties are faring in the program's laboratory projects. The program director could ask teachers and assistants to pay particular attention to this issue and report on their observations at the next staff meeting.

Despite their strengths, observations alone are not sufficient evidence for convincing others that a program has caused lasting change. For instance, observations of students working with each other during a twenty-minute activity do not necessarily mean that students are more inclined to work cooperatively in general. Again, it is always important to look for several sources of evidence that support whatever changes you think have occurred in participants.

Observing With an Evaluator's Eye

Imagine you are sitting in the back of a room where ten students are taking turns reading aloud from a book about a science-related topic. The instructor takes frequent breaks to ask questions and stimulate discussion. If you are looking for indicators of student interest in science, you will consider:

- How many students are participating in the discussion? What are they saying?
- How do students look? Are they distracted or bored, or are they listening with interest?
- How much personal experience do the students bring into their responses?
- How excited do they seem about the subject? What do they say?

What's the Word on the Street? Conducting Interviews

Interviewing participants, program staff, parents, classroom teachers, and others is a great way to get information about the impact of your program. As with observations, being clear and focused about the information you want is critical. There are many questions that can be asked; the evaluator's challenge is to ask just the half dozen or so that best meet the needs of the evaluation.

It is also important to get a range of perspectives. For example, interviewing only staff members about program impact presents only one point of view and can result in a ***biased*** interpretation of program outcomes; getting students' and parents' views can give you a more complete picture of what your program did or did not accomplish.

Interviews offer a wide range of formats—they can be formal or informal, structured or unstructured, individual or in groups, in-person or by telephone. Given the limited resources that most CBOs have, structured interviews that follow a prepared set of questions may work best. An interview guide, or ***protocol***, can be quite simple. In cases where it is important to do so, a protocol is helpful in making sure that each person is asked to respond to the same questions.

If you are working with inexperienced interviewers, short, specific, and very structured interview guidelines can help ensure that you get the information you want. In addition to this ***formal interview*** format, some ***informal interviews*** may occur as well. For example, you might ask a few students what they think about an activity while you are observing the group. These spontaneous comments can yield excellent insights and information for formative and summative evaluation purposes.

Interviewing Children

Students sometimes act reserved with an adult interviewer and may require a certain amount of "probing" to get at key issues or to get a better understanding of what they mean. For example:

Interview question:
"What did you like best about the program?"
Student: *"Everything was great."*
Probe #1: *"What one thing stood out?"*
Student: *"The food was really good."*
Probe #2: *"What about with the program activities?"*
Student: *"Well, I really liked working in groups."*
Probe #3: *"How come?"*
Student: *"It just made you feel like everybody was working together, and like you weren't alone, and you could feel good about what you did in the group."*

In this example, it took three ***probes*** to find out what the student really liked best and why. This is the kind of information you want, so be prepared to follow up until you get an answer to your question.

Since interviews require people to reveal their thoughts, it is important to keep in mind a good fit between interviewer and participants. For example, having an instructor interview students about how they liked the class may not yield reliable results because children may feel the need to give a positive response. In this case, someone not associated with program delivery would be a better choice. Assuring respondents of individual confidentiality—and respecting that confidentiality—can also help ensure that people are candid with their answers.

Interviewers should be objective, non-threatening, knowledgeable about the program, and be able to communicate and listen well.

Group interviews, or ***focus groups***, are a good way to talk to more people in a shorter amount of time. It takes a skilled interviewer to keep the group on track, however, and to make sure that everyone gets involved in the discussion. Restricting a group to 8–10 people is a good idea, as is limiting the people in your group to those who have similar experiences—such as teachers only or students only.

To capture the important points that emerge from an interview, interviewers usually take notes and/or tape record (if the person or group is willing). In either case, it's important to try to get the exact words people use about key points. These ***direct quotes*** can provide powerful data about program impact. Summaries of what people say are also useful for illustrating program impact in evaluation reports.

Interviewing people can be time-consuming and labor-intensive, but the rich detail that comes from interviews can make it all worthwhile. Interviews can provide in-depth information about behaviors, attitudes, values, knowledge, and skills—before, during, and after a program. Interviews can also help clarify and expand what you learn through document review and direct observations. And because interviews can provide such rich data, it is possible to get enough detailed information about a program by interviewing a ***sample*** or subset of participants, instead of *all* participants.

Tips for Interviewing

- Make the interview setting as friendly and as comfortable as possible.
- Use your own words to sound more natural and conversational, even as you use an interview guide with set questions.
- Be patient. Allow people to think and answer in their own time.
- Try not to give verbal or facial clues to people's responses. By doing so, you might lead their answer or make them think they said something wrong.
- At the end of the interview, give people a chance to add miscellaneous comments or ask you any questions they might have.

Making Numbers Count: Conducting Surveys

A survey is a method of collecting information—by mail, by phone, or in person. Surveying involves a series of steps, including selecting a sample, collecting the information, and following up with non-respondents. A questionnaire is the instrument (written questions) used to collect information as part of a survey.

Responses to multiple-choice items on questionnaires can be tallied to provide numbers and percentages that are powerful quantitative evaluation data. While people can be surveyed by mail or phone, community-based organizations might more frequently choose to have participants complete a written questionnaire in person during program events. With a captive audience, you will likely get a better ***response rate***, which can yield more accurate information about the group as a whole.

Questionnaires can be especially useful in evaluation if the same set of questions is asked at the beginning of a program (for ***baseline information***) and again at the end of the program (to measure impact).

For programs with a large number of participants, surveying a sample of the group may be more cost-effective than surveying everyone in the program. However, you need to be careful to choose a sample that is representative of the entire group. For example, if attendance at a particular event is low, then surveying only those participants who come to the event may lead to biased results. Everyone who attended may have thoroughly enjoyed the activity, while the rest of the people who were invited chose not to attend because the activity did not seem very interesting or worthwhile. Talking to non-participants will help you to more accurately evaluate your program activities.

Surveys can include several kinds of questions. ***Closed-ended questions*** resemble items on a multiple-choice test; they provide a selection of possible answers from which to choose. People who complete the questionnaire are asked to select the answer that best matches their beliefs or feelings. In the following questionnaire, items 1 and 4 are examples of closed-ended questions. Question 1 gives the participant five options for describing his or her reaction to the program. Question 4 provides the participant with several options each for describing their gender, grade level, and race/ethnicity. Notice that the answers to question 4 provide important contextual or demographic information about the participants.

Open-ended questions, on the other hand, provide no answer categories. Rather, they allow participants to respond to a question in their own words. For example, question 3 asks participants to write out specific suggestions for future programs. Notice that question 3 is carefully worded to discourage a simple "yes" or "no" answer.

Family Science and Math Nights

[Excerpt from Participant Survey]

Please discuss these questions within your family and mark answers agreed upon by the family.

1. Using the following scale, how would you rate the activities you experienced this evening on the whole? *(Circle one response.)*

   1 = Really Boring
   2 = Boring
   3 = No Opinion
   4 = Fun
   5 = A Lot of Fun

2. How many *Science and Math Nights* have you attended? _____

3. What suggestions do you have for making future *Science and Math Nights* better?

4. Which word or phrase in each column best describes you?

Gender	Grade Level	Race
____ Girl	____ 1st–5th grade	____ African American
	____ 6th–8th grade	____ Hispanic
____ Boy	____ 9th–12th grade	____ White
		____ Native American
		____ Asian/Pacific Islander
		____ Other _____

Developing good surveys requires a certain level of expertise that some community-based organizations may lack. This does not mean that using questionnaires in your evaluation is out of reach. Here are some tips you can use to develop a questionnaire or adapt one that someone else has created for a similar purpose.

Tips for Developing Questionnaires
Wording Matters!

How you word your questions can influence the response you get. Be precise in your language to help the respondent understand what information you are requesting. For example, an open-ended question that asks participants how many *Science and Math Nights* they have attended might yield a variety of responses such as, "a lot," "four," "can't remember," or "most of them." In this case, to help jog memories and get more accurate information, it might be better to provide the dates of the sessions and the major activity that occurred, and ask respondents to check which ones they attended.

With questionnaire items, it's also important to avoid leading the respondent in a particular direction with your questions or answer categories. For example, a closed-ended item with mostly positive answer choices ("Okay," "Fun," "Great") does not give participants suitable options for expressing a negative opinion.

- ➢ Keep your questionnaire short, ideally no more than a page or two. Remember, someone will have to tally or read and analyze all of those responses.
- ➢ Keep it simple, with short questions and clear answer categories.
- ➢ Make it easy to use—participants will be more likely to complete it.
- ➢ Make it anonymous, and participants will probably be more honest.
- ➢ Use language appropriate for the audience. The younger the student, the simpler the questions and answer categories need to be.

A Final Word about Data Collection

There are always tradeoffs to consider when selecting data collection methods for your evaluation. Some tradeoffs involve time and the level of effort needed to collect and analyze certain kinds of data. For example, conducting individual interviews takes longer than interviewing a group of people all at once, but potentially sensitive questions should not be asked in a group setting. Interviews in general require more staff time than having participants fill out a survey. On the analysis side, counting closed-ended responses to a question generally takes less time than reading the same number of open-ended responses and drawing out the major themes to be summarized.

Another tradeoff involves using program staff to conduct evaluation activities as opposed to hiring someone from outside of your organization. Hiring an external evaluator obviously involves some expenditure—which you are trying to avoid by using this manual! However, there are at least two good reasons to consider using an external evaluator. First, participants are not always comfortable saying critical things about a program to the people who are directly involved

in it. And second, funders often perceive external evaluators as more impartial and objective about programs than are the people who run them. You may be able to deal with these issues by finding a staff member who is not directly involved in your program to interview program participants or recruiting volunteers who have some experience doing interviews and observations.

Additional Pointers for Data Collection

- ➢ Set aside 5–10 percent of staff time for evaluation activities and 5–10 percent of the program budget for additional evaluation expenses.
- ➢ Be realistic and stay focused on the information needed to answer your specific evaluation questions.
- ➢ Look for volunteers with any additional expertise you need.

Now that you have collected all this information, what are you going to do with it? Interpreting and reporting your data is the subject of Chapter 7.

Notes

Chapter Seven

MAKING SENSE OF THE EVIDENCE
Interpreting and Reporting Your Data

One thing is for certain—all of the formative and summative data that you collect can quickly add up, even for a small program. What does it all tell you? How can you use it to judge your programs? How can you present it to your board, your funders, the community, and others who might have a stake in your efforts?

Looking for Themes

As part of the documentation and ***formative evaluation***, you will have accumulated some important information that can help you make sense of things. Reviewing the data periodically as it accumulates has several advantages: it helps you to begin to identify themes; it makes the analysis process less intimidating than if you wait until all of the data have been collected; and most importantly, it enables you to use the results to improve your program.

Your first step in ***data analysis*** will be to look for recurring themes. As you review data from documents, observations, interviews, and surveys, some ideas will occur more often than others. Learning to recognize these patterns, and the relevancy of this information as it emerges in each of these formats, is crucial to your evaluation. These key themes are what you must capture in your evaluation report.

What is the most important thing to remember when interpreting and reporting your data? The ***intermediate indicators*** and ***final program outcomes*** that you defined at the beginning of your program! Framing your thinking and your results in terms of these can help you to understand and present your data clearly.

Be Flexible

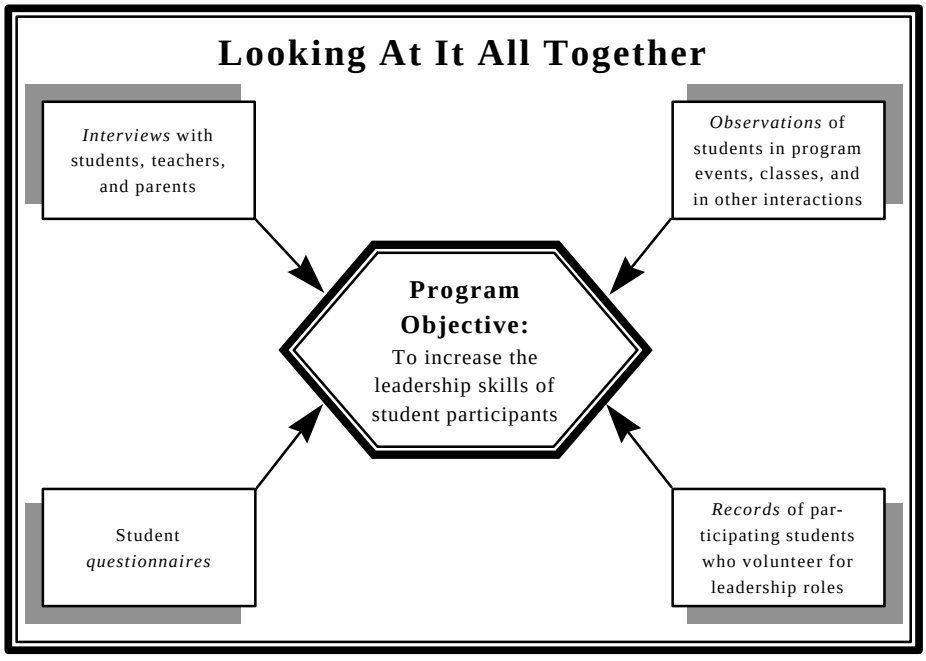
In your review of formative data, you may discover key issues other than the ones you originally thought to look at when you designed your evaluation. It is important to be flexible enough to explore these unexpected issues, within the limits of your resources. Be sure to note new ideas, different patterns or themes, and questions that need further investigation. Interview or observation guides and surveys can be adjusted over time in response to what you learn through the review and interpretation of your formative data.

Learning As You Go

During the summer camps for middle school students and their mentors, Youth Action Today! found that parental support and involvement was particularly strong this year. Unlike previous years, program staff actually had the luxury of selecting volunteers from a pool of over twenty parents who agreed to help. The staff originally planned to survey all parents as part of their evaluation. However, when they noticed the increase in parental support this year, they changed their evaluation plan to include interviews. The staff decided to conduct interviews with a ***sample*** of parents to get more in-depth information on what prompted their involvement in the program this year.

Putting It Together

Once you have taken the trouble to collect data from a variety of sources (students, staff, parents, or others), it is important to look at all of these perspectives together to get a full picture of your program. The various pieces of the evaluation (formative and summative) and each ***data collection*** activity ***(document review, observations, interviews,*** and ***surveys)*** all add up to tell you about the quality and success of your program. Looking at all of this evidence together and considering it in terms of your ***objectives*** will enable you to say with some accuracy whether or not your program achieved what you intended.



The amount of time that you can devote to this process will depend on the level of resources your ***CBO*** has. For example, a small CBO may just do a quick review of interview notes to get the main points; a CBO with extensive resources and staff might do a more in-depth analysis—summarizing each interview in writing, developing charts that compare the responses of different groups of people, and writing up common themes that emerge from the interviews.

Working With What You've Got … Again

In some cases, interpreting the data you collect may require some additional expertise. For example, science or mathematics content may play a central role in some program activities; having knowledge in these areas may help with the analysis of student misconceptions about certain topics.

In a case like this, you might want to discuss your observations or share observation notes with someone who has this expertise and can help shed light on your descriptions of student questions or discussions. (Better yet, have these persons do the observations.) In a larger CBO, there may be individuals on staff who can help. If you do not have this expertise on staff, you might look to your CBO's board members or volunteers who may bring these skills to your organization.

Telling the Story: How to Report Your Evaluation Results

Interpreting your evaluation data for in-house use can be done informally, but making it available and useful to others requires a more polished product. Formal evaluation reports can provide information to your board members, the community, and your funders about the program's progress and success. Portions of these reports can also be a valuable public relations tool. When distributed to newspapers or other media, this information can increase community awareness and support for your organization's programs.

Here are several things you will want to include in your evaluation report:

- ➢ The objectives of your program and your targeted audience
- ➢ What data you collected for your evaluation and how it was collected
- ➢ The evaluation results in terms of program ***goals*** and ***objectives***
- ➢ Plan for using the evaluation to improve the program

In addition to these pieces, you will want to include a description of the context in which your program occurs. This might consist of a brief summary of ***needs assessment*** data, the demographic and socioeconomic characteristics of the community and your program participants, and documentation of the level of impact (such as the number of young people served compared to the number of youth in the community). Your report should also highlight tactics you used to attract your targeted audience, as well as other strategies to ensure that your program was well-implemented.

Presenting your data simply and concisely can help your audience get a clear and accurate picture of your program. For example, it is unlikely that you would include long excerpts from interviews in your report (although these might be included in an appendix). Instead, pick a few powerful, short quotes that really make your point and sprinkle them throughout your summary or analysis of other data. Another strategy is to include a brief description of a particularly effective program activity.

Tips for Telling Your Program's Story

- ➢ Know your audience—a report for a funder will look different from an in-house summary.
- ➢ Leave the jargon at home—be straightforward and clearly state your major findings.
- ➢ Blend the presentation of ***quantitative*** and ***qualitative data***. Quotes from relevant persons interspersed with tables and graphs illustrating quantitative data (numbers or percents) make the report more readable and strengthen your summary of the data.
- ➢ Be honest—your report will be considerably more credible if you note both the strengths and weaknesses of your program.

Blending your qualitative data, such as quotes from interviews or descriptions from observations, with your quantitative data from surveys is a useful way to report your evaluation results. Simple charts, tables, and graphs that show how many students participated, or what percent demonstrated changes after the program, can help illustrate the impact of your program. Take a look at Appendix A for an example of a full evaluation report that uses these strategies.

Notes

Notes

Chapter Eight

APPLYING THIS MANUAL
How One CBO Did It

In earlier chapters, we discussed the various pieces that make up ***program evaluation***. Now we are going to pull it all together in a way that lets you see how a ***CBO*** might choose to evaluate a program and what an evaluation looks like—from start to finish. The organization and program are small, and as a result, so is the evaluation. Below is a snapshot of our fictional CBO and program to help you compare it to your own in terms of staff, budget, and other resources.

Trash for Cash

Youth and Communities Alive! (YACA) is a small community-based organization located in an inner-city housing project. With a total operating budget of $50,000-$100,000 a year, YACA's individual program budgets range from $500 to $10,000. Programs typically target low-income African American and Latino youth and are funded by churches and community organizations. Program activities often take place at nearby locations such as the housing project's TV lounge and the playgrounds scattered throughout the community. Program staff at YACA include a part-time director, some paid and volunteer assistants, and volunteer program coordinators.

YACA's director, Mrs. Alvarez, recently received funding from a local church for a program designed to address two concerns expressed by community members at local meetings—cleaning up the neighborhood and providing constructive activities for youth to serve as an alternative to the street. The program was called "Trash for Cash."

Trash for Cash (TFC) included a number of activities. Most TFC sessions began with a brief lesson taught by Mrs. Alvarez and a volunteer on the importance of recycling or other environmental topics. Over the course of the school year, seven guest speakers from the community made presentations about conservation, waste management, water quality, recycling, and other related issues. Subsequent sessions with program staff reviewed what students had learned in these presentations, and how the information applied to their own lives.

In addition to these lessons, participating youth were given a central role in all of the clean-up and recycling activities. In doing this, YACA staff hoped to develop a sense of neighborhood pride and ownership among the youth. Students organized a weekly community collection of trash and recyclable cans and bottles, and encouraged recycling in their homes. They also kept track of the pounds of recyclables collected, using mathematics skills to weigh and record amounts and measure progress toward their 1,000-pound goal. Students also kept accounting records of incoming money for exchanged recyclables, and outgoing expenses for trash bags, refreshments, and other minor outlays.

Reaching the 1,000-pound goal in recyclable materials entitled participants who attended at least half of the clean-up sessions to a free ticket to an NBA basketball game. The TFC program budget of $2,000 covered staff time for Mrs. Alvarez, supplies, a small honorarium paid to each guest speaker, and the cost of the NBA tickets.

Trash for Cash

Target Audience:	High school students
Main Strategy:	Weekly after-school sessions
No. of Participants:	25
Duration:	One academic year
Cost:	$2,000

Framing the Evaluation

Creating a program to match community needs was the first step for YACA. To do that, Mrs. Alvarez first considered the priorities identified by community members, and the population most targeted for these needs.

Needs Assessment	
Identified Needs:	➢ Constructive youth activities
	➢ Cleaner community environment
Target Population:	➢ High school students

Mrs. Alvarez also consulted her board of directors—a broad spectrum of community representatives, including school and agency staff, parents, and two students. Board discussions about community needs, as well as youth's needs and prospects for the future, helped focus program ***goals*** and ***objectives***. As a result of this dialogue, Mrs. Alvarez added an academic enrichment component to the program which included everyday applications of science and mathematics, and an expanded view of what science is and what scientists do.

Defining Goals and Objectives

YACA pinpointed the major goal and several objectives for the Trash for Cash program.

Goal: Improve youths' future options in the community and in school

Objectives:

1. To develop a sense of ownership and pride in the community among participating youths
2. To expand students' awareness of science and mathematics applications in everyday life
3. To clean up the neighborhood

Recognizing the limitations of her staff and resources, Mrs. Alvarez was determined to keep the evaluation focused. This meant asking formative and summative questions that were specifically designed to provide information on the stated objectives.

Evaluation Questions Matched to Program Objectives

Objectives	Formative Questions	Summative Questions
1. To develop students' sense of ownership and pride in the community	➢ What did YACA do to promote the program and attract students to participate? ➢ To what extent do students show interest in the activities and take initiative for recycling efforts?	➢ What changes have occurred in students' attitudes and level of interest in the community? ➢ To what extent do students exhibit knowledge of the importance of community involvement?
2. To expand students' awareness of science and mathematics applications in everyday life	➢ In after-school TFC sessions, how do students exhibit an understanding of the relevancy of the topics presented? ➢ What connections do students make between discussion topics and their own experiences?	➢ To what extent do students exhibit an understanding of the importance of recycling and other science-related topics, and the relevancy of these issues to themselves and the community?
3. To clean up the neighborhood	➢ How is the neighborhood appearance changing as students progress toward their clean-up goal?	➢ How do neighborhood areas targeted for clean-up compare before and after the program?

Finding the Evidence

What information would help YACA to answer these questions? Again reflecting back to her level of resources, Mrs. Alvarez thought about her options. In making decisions about ***data collection***, she considered not only her available resources, but also what evidence was adequate for determining if the program achieved its objectives.

➢ **Documentation of program strategies to reach target audience.** To demonstrate that YACA tried to reach a broad spectrum of students, program staff developed and documented outreach strategies used to recruit participants, including school visits, and discussions with students, teachers, parents, and agency staff.

Participant information sheets also gathered information about the age, gender, and race/ethnicity of participants.

- ➢ **Attendance sheets.** Mrs. Alvarez considered this essential to determine if the program was meeting attendance goals. If attendance dropped off, this might signal the need for changes in the program or in program logistics. Similarly, attendance sheets could tell staff if particular groups of students (for example, girls or boys) were attending less often so that staff could adapt program strategies accordingly.
- ➢ **Student journals *or* student interviews *or* student questionnaires.** Any one of these might help tell Mrs. Alvarez if students liked the program. She decided against interviews because they were too labor-intensive. For the same reason, she decided not to do student journals. She settled on a **short questionnaire** at the end of the program with four questions that asked students what they liked best and least about the program, what they had learned, and how they would rate the program.
- ➢ **Observations of after-school sessions.** Mrs. Alvarez thought it was important to try to document changes in student attitudes toward science and their awareness of the relevancy of science. To do this, she recruited two members of her board with teaching experience to observe and report on sessions at the beginning and at the end of the program.
- ➢ **Tallying the recyclables.** This was essential for knowing whether or not students were progressing toward their 1,000 pound goal, and presumably, whether or not the neighborhood was getting cleaned up.
- ➢ **Before and after pictures of designated "ugly" spots in the community.** Mrs. Alvarez liked this idea a lot, thinking that "a picture is worth a thousand words." She could go out with the students on the first and last day of the after-school sessions to take the pictures. It seemed like a good way to get participants involved first hand, and a quick and easy way to collect data, too.

Interpreting and Reporting the Data

In the end, Mrs. Alvarez was pleased with her simple evaluation. While it did not give her a lot of information about the program directly from the students, the attendance records kept her informed about their level of participation. For example, when attendance slipped in the fall, she asked some of the participants if there was a problem with the program. Discovering that TFC sessions conflicted with some students' tutoring sessions, she adjusted the schedule. With this change in logistics, the program was able to meet its goal for weekly attendance.

Observations by board members revealed some changes in students' level of interest and participation in discussions, with more students actively participating at the end of the program than in earlier observations. In addition, students' comments seemed to demonstrate a greater awareness of the relevancy of science. For example, observers noted that many of the participants voluntarily made connections between the discussion topic and their own personal experiences.

Student questionnaires provided evidence that supported observations. Students reported that they liked working together to improve the neighborhood, had learned about the importance of recycling, and had gained an expanded view of what science is and how it relates to their lives.

Tallying recyclables kept students involved in the process as they watched the group move toward their 1,000-pound goal, and also gave them a chance to use mathematics skills. According to Mrs. Alvarez, the pictures she and her students took were the best part of the evaluation, providing "hard" evidence that the neighborhood was cleaner.

There is one thing that Mrs. Alvarez would have changed in her evaluation design—she would have recruited volunteers to help her tally the survey results. Four questions per questionnaire didn't seem like much, but given all of her other responsibilities, tallying the responses from 25 participants was too much to do. She still thought the survey was important—it was her only source of data that came directly from the students and that provided information on how the program had affected them. In hindsight, she would have lined up several board members as volunteers to assist.

The evaluation of Trash for Cash showed that the program had a positive impact on participating students and the community. With churches emphasizing community involvement and schools highlighting environmental awareness, Mrs. Alvarez was reluctant to say that her program was the sole cause of these changes. However, the evidence collected in the evaluation demonstrated that Trash for Cash had successfully met its objectives and it is likely that the program contributed to the positive outcomes.

How can Mrs. Alvarez best present the evaluation results to showcase the program's success to her board and her funders? Take a look at a final evaluation report for Trash for Cash in Appendix A.

Sample Data Collection Instruments for Trash for Cash

- Participant Information Sheet
- Attendance Sheet
- Student Questionnaire
- Tally Sheet for Recyclables

Participant Information Sheet

Participant Name	Age	Male/ Female	Race/Ethnicity

Attendance Sheet

Date	Participant Name*	Present (√)	Absent (√)

* Once names have been recorded, multiple copies of the attendance sheet can be made to use at each session.

Student Questionnaire

1. How did you like the program? *(Circle one.)*

   4 = Great! 3 = Good 2 = Boring 1 = Really Boring!

2. What did you like ***best*** about the program?

3. What did you like ***least*** about the program?

4. What was the most important thing you learned in the program?

Thanks for Filling This Out!

Tally Sheet for Recyclables

Date	Weight of Cans	Weight of Bottles	Amount Received Today	Total-to-Date Received for Recyclables

Notes

Chapter Nine

APPLYING THIS MANUAL IN A BIGGER WAY
Expanding the Evaluation Design

In Chapter Eight, we saw how one ***CBO*** designed an effective evaluation matched to the limited resources and staff available for the program. How might Mrs. Alvarez plan an evaluation for a larger program with more resources? This chapter looks at what she might do differently in her evaluation of an expanded Trash for Cash Program. Below is a description of the new program run by our fictional CBO, Youth and Communities Alive! (YACA). See Appendix B for YACA's proposal to expand the program.

More Trash for Cash

After seeing the positive results in the neighborhood's appearance and observing an increased interest among youth in community improvement, Mrs. Alvarez wrote a proposal to expand the program (see Appendix B). The More Trash for Cash (MTFC) program increased the number of youth served and lasted two years. Youth and Communities Alive! received a total of $20,000 over two years from the United Way and a local foundation for the More Trash for Cash program.

More Trash for Cash included several new features. Mrs. Alvarez increased the amount of science instruction in the after-school sessions. Each session began with hands-on activities that engaged students in thoughtful investigations into various environmental topics. Two high school science teachers were recruited to teach some sessions, as was a professor from a nearby university. With a larger program budget, Alvarez was able to pay the instructors a stipend. In addition, she lined up more guest speakers and arranged for two field trips each year.

The expanded program included a new group of 20 middle school students and 25 high school students each year. Five high school students who had participated in the original program came back as program assistants in the first year; during the second year, five new high school students were recruited to fill these positions. The older students took on leadership roles, including mentoring the new students and helping Mrs. Alvarez and two volunteers with program coordination. Each of the student assistants was paid a small stipend for their work. Mrs. Alvarez also hired a program assistant to work 8 hours a week.

Program activities were similar to the original Trash for Cash—during year one, students selected new "ugly" spots for clean-up. Students were given their choice of incentives for reaching a new goal of 1,500 pounds of recyclables each year—NBA basketball game tickets, a ride on a local paddle-wheel river boat, or tickets to a performance by an inner city youth theater group. In addition, during the second year of the program, greater emphasis was placed on community awareness and involvement. Several of the high school students made presentations at community meetings and talked to local businesses about recycling and MTFC's efforts.

More Trash for Cash

Target Audience:	Middle and high school students
Main Strategy:	Weekly after-school sessions
No. of Participants: (each year)	20 middle school students, 25 high school students, and 5 "veteran" high school students
Duration:	Two academic years
Cost:	$20,000

Framing the Evaluation

Mrs. Alvarez was ahead of the game here. From the original Trash for Cash program, she had identified both the needs and the targeted population. However, with the new program, she decided to add middle school students to her target audience.

Needs Assessment	
Identified Needs:	➢ Constructive youth activities ➢ Cleaner community environment
Target Population:	➢ Middle and high school students

Defining Goals and Objectives

The More Trash for Cash program sought to address the same ***goal*** as the original program—to improve youths' options in the community and in school. Mrs. Alvarez also wanted to keep the same focus on building a sense of ownership in the community and on the clean-up efforts. However, she wanted to expand the academic enrichment component to emphasize skills and knowledge in science. In addition, she added a fourth objective related to community involvement to increase the likelihood that the program would be sustained. With these changes, the ***objectives*** for the More Trash for Cash program looked like this:

1. To develop a sense of ownership and pride in the community among participating youth
2. To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life
3. To clean up the neighborhood
4. To increase community awareness and involvement in clean-up efforts

Mrs. Alvarez used her evaluation design from the original program as a basis for the More Trash for Cash evaluation. For the new program objectives, she developed a set of evaluation questions that would provide both formative and summative information.

Expanding the Evaluation Design	
Expanded Objectives	**Evaluation Questions**
To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life	➢ What opportunities are students given to increase their knowledge and skills in science? ➢ How effective are hands-on activities in engaging students? ➢ How do students demonstrate greater understanding of scientific topics and issues, and the relevancy of these topics? ➢ What changes occur in students' skills (observing, measuring, recording, hypothesizing, drawing conclusions) over the course of the program?
To increase community awareness and involvement in clean-up efforts	➢ What strategies are used to increase awareness? ➢ How aware are parents and community members of clean-up efforts? ➢ How do parents, businesses, and community members support clean-up efforts? ➢ What evidence suggests that clean-up efforts will persist beyond the program?

The next step for Mrs. Alvarez was to define ***intermediate indicators*** and ***final program outcomes***. What would she accept as proof that the program was of high quality and that the objectives had been achieved, and how could these outcomes be stated explicitly?

Indicators and Outcomes for the More Trash for Cash Program

Objectives

1. **To develop a sense of ownership and pride in the community among participating youth**
2. **To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life**
3. **To clean up the neighborhood**
4. **To increase community awareness and involvement in clean-up efforts**

Intermediate Indicators	➢ Number of students who attend after-school sessions and collect trash stays the same or increases over course of program. (Obj. 1) ➢ Students demonstrate greater leadership in activities during the year: take initiative in organizing/doing activities. (Obj. 1) ➢ Number of students who actively participate in discussions, link science with personal experiences increases during the year. (Obj. 2) ➢ Students exhibit greater understanding of science-related topics by asking more high level questions; demonstrate improvements in skills through hands-on science activities. (Obj. 2) ➢ Pounds of recyclables collected increases during school year. (Obj. 3) ➢ Amount of trash in designated "ugly" spots in the community decreases during the year. (Obj. 3) ➢ Community expresses awareness of clean-up at neighborhood meetings; number of businesses that actively support recycling increases. (Obj. 4)
Final Outcomes	➢ Seventy-five percent of the students attend at least half of the weekly sessions. (Obj. 1) ➢ At least three-quarters of the students express awareness of the importance of community involvement. (Obj. 1) ➢ At least three-quarters of the students express an understanding of the relevancy of science, and demonstrate improved skills and attitudes toward science. (Obj. 2) ➢ At least 1,500 pounds of recyclables are collected by end of each school year. (Obj. 3) ➢ Neighborhood "ugly" spots are cleaned up by end of each year. (Obj. 3) ➢ Community actively supports clean-up; number of businesses involved in recycling increases by 50 percent by end of program. (Obj. 4)

Finding the Evidence

Mrs. Alvarez wanted to get a better feel for the ***data collection*** activities to make sure that her strategies would yield information about the chosen indicators and outcomes and that she was being realistic in her plans. It was one thing to list everything they would do to collect information; it would be more difficult to pin down when these activities would occur and how often. Mrs. Alvarez again wanted to be sure to collect both ***qualitative*** and ***quantitative data***. She also knew that she would need this information each year of the program to provide data about each group of student participants.

> In planning the data collection activities, Mrs. Alvarez immediately fell into the "starting big" trap. She thought about conducting student ***focus groups*** twice each month to see how students liked the program. She thought monthly student ***questionnaires*** could also help gauge interest in the program, as well as impact. Survey forms could be short and simple and provide regular feedback to staff. Even so, she realized, it would be a lot to read and tally every month. And someone would have to facilitate student discussion groups and report the information.
>
> Mrs. Alvarez knew she had to cut back. Instead of the frequent questionnaires and focus groups, she decided to ask instructors to set aside 10–15 minutes of class time every other month to let students talk about the program. The class could be separated into several smaller groups to allow better participation. Students would talk about the program among themselves; one student would be designated as the recorder to report the major themes from each group in writing. The high school program assistants could help facilitate the group discussions.
>
> Mrs. Alvarez liked this strategy because it avoided the issue of students telling instructors what they did or didn't like, and enabled them to talk about their progress or where they needed help. Rotating the role of recorder each month would provide students with an additional opportunity for participation and leadership. To help focus their discussions, Mrs. Alvarez would develop a guide for them to write down their responses.

For each of her outcomes, Mrs. Alvarez went through this process. How can we collect the information? Who will do it? What will it involve? How can it be streamlined to reduce the burden on both staff and participants?

In thinking about all of this, Alvarez realized that each data collection activity involved not only collecting the data, but also preliminary and follow-up work as well. For example:

- ➢ She would have to develop questionnaires, distribute them, make sure they were completed and returned, and tally the results.
- ➢ Volunteers who did ***observations*** would need a simple guide to tell them what to look for.

➢ Student discussion groups would need a guide as well.

All of this quickly added up to a lot of work—an added incentive to streamline data collection activities. After some hard thinking, Alvarez came up with a data collection plan that she thought was manageable, but one that would also provide useful formative information and convincing summative data.

Refining the Data Collection Plan

Data Collection Activity	Schedule
Before and after photographs of neighborhood	At beginning and at end of each year of the program
Attendance records	Weekly
Tally of recyclables	Weekly
Observations of after-school sessions; informal interviews with staff and students as part of observations	Once per semester
Student group discussions	Twice per semester
Participant survey	At the end of each year of the program
Documentation of student presentations to businesses and community groups; observations of community meetings	As they occur
Community survey (optional)	At the end of the second year of the program

Mrs. Alvarez planned to look at community awareness at neighborhood meetings as one way to gauge the impact of student presentations on recycling. If awareness was high, she would try to support her observations with a survey of community members at the end of the second year of the program.

At this point, Mrs. Alvarez realized she had a lot of pieces of paper floating around with different ideas for the evaluation. All of these had helped her to plan the evaluation, but now she wanted to see it all together—objectives, evaluation questions, indicators, outcomes, and data collection activities. What she came up with helped her to see the big picture, and to make sure she was answering the right questions. She thought of it as her evaluation road map.

The Road Map: More Trash for Cash Evaluation Design			
Objectives	**Evaluation Questions**	**Intermediate Indicators**	**Final Outcomes**
1. To develop a sense of ownership and pride in the community among participating youth	a) What did YACA do to promote the program and attract students to participate? b) To what extent do students show interest in the activities and take initiative for recycling efforts? c) What changes have occurred in students' attitudes and level of interest in the community? d) To what extent do students exhibit knowledge of the importance of community involvement?	➢ Number of students who attend after-school sessions and collect trash stays the same or increases over course of program. ➢ In observations, students demonstrate greater leadership in activities during the year—take initiative in organizing/doing activities.	➢ Seventy-five percent of the students attend at least half of the weekly sessions. ➢ On surveys, at least three-quarters of the students express awareness of the importance of community involvement.
2. To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life	a) What opportunities are students given to increase their knowledge and skills in science? b) How effective are hands-on activities in engaging students? c) To what extent do students demonstrate greater understanding of scientific topics and issues, and the relevancy of these topics? d) What changes occur in students' skills (observing, measuring, recording, hypothesizing, drawing conclusions) over the course of the program? e) What connections do students make between discussion topics and their own experiences?	➢ Number of students who actively participate in discussions, link science with personal experiences increases during the year. ➢ In group discussions and observations, students exhibit greater understanding of science-related topics by asking more high level questions; demonstrate improvements in skills through hands-on science activities.	➢ On surveys, at least three-quarters of the students express an understanding of the relevancy of science. ➢ In observations, at least three quarters of students demonstrate improved skills and attitudes toward science.

The Road Map: More Trash for Cash Evaluation Design			
Objectives	**Evaluation Questions**	**Intermediate Indicators**	**Final Outcomes**
3. To clean up the neighborhood	a) How is the neighborhood appearance changing as students progress toward their clean-up goal? b) How do neighborhood areas targeted for clean-up compare before and after the program?	➢ Weekly tallies show that pounds of recyclables collected increases during school year. ➢ Informal interviews with students reveal amount of trash in designated "ugly" spots decreases during the year.	➢ Goal of 1,500 pounds reached; one hundred percent of the students achieve goal of free tickets. ➢ Before and after photographs of neighborhood show differences.
4. To increase community awareness and involvement in clean-up efforts	a) What strategies are used to increase awareness? b) How aware are parents and community members of clean-up efforts? c) To what extent do parents, businesses, and community members support clean-up efforts? d) What evidence suggests that clean-up efforts will persist beyond the program?	➢ In informal interviews and observations at community meetings, parents and others express awareness of program. ➢ Number of businesses that actively support recycling increases.	➢ On community survey, at least 50 percent of community members express awareness of and support for recycling. ➢ Number of businesses involved in recycling increases by 50 percent by end of program.

Interpreting and Reporting the Data

How did the evaluation turn out? Let's take a look at the information gathered, how it was interpreted to measure progress and impact, and what changes program staff made to improve the program, based on the evaluation data.

Objective 1

To develop a sense of ownership and pride in the community among participating youth

Mrs. Alvarez considered the level of student participation each week as one indicator of program success. During the first year, weekly attendance records revealed that participation decreased from September to October. Student discussion groups held in October were a timely way to get some information about what students liked and disliked about the program, and their suggestions for improvement.

Mrs. Alvarez learned from the students who were still attending that the absentees had tutoring activities scheduled on Thursdays. Once she changed the collection day to Wednesdays, attendance improved. Forms filled out in student discussion groups in December, February, and April indicated that participants liked the program more and more as the year progressed—they expressed excitement about getting closer to their 1,500-pound goal and about the neighborhood's "new look."

Student surveys at the end of each program year gave participants an opportunity to talk about how the program had affected them. One question ("What did you like best about the program?") elicited comments relating to the positive experiences provided by the program. Over half the participants said that cleaning up their neighborhood had made them "feel good." Students also liked being part of a group and working together toward a common goal. Some said this was the first time they had ever "been a leader." When asked about the most important thing they learned, students wrote about the value of working together to accomplish something. Finally, students liked the recognition they received which made them feel important, and in the words of one student, feeling "like I have something I can give to the community."

Objective 2

To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life

Mrs. Alvarez learned from student discussion groups that some of the participants were having difficulty with hands-on activities that required mathematics skills. To remedy this, she decided to

have students work in teams of three, and mixed students with higher and lower mathematics skills. Data from student discussion groups revealed that this solution helped many of the students improve their skills.

Observations by Mrs. Alvarez and a community volunteer once a semester also provided opportunities for observing student interest and skills, and for talking informally with participants. In her observation notes, Mrs. Alvarez repeatedly cited examples of students observing, measuring, recording, and drawing conclusions, and of students helping one another with these tasks. Alvarez also noted in her observations changes in students who appeared to be "mathematics-shy" at the beginning of the year, but who now participated fully in the activities. Other students' enthusiasm and participation had remained steady.

At least once a month, instructors took some class time to discuss with students what they were learning about the environment, including the sources of pollution and the challenges involved in recycling. Students noted that although they understood most of the scientific concepts discussed in after-school sessions, a few of the speakers had "talked over their head." This was useful information for lining up future speakers and making sure they were briefed on speaking at a level that was appropriate for an adolescent audience.

Classroom discussions became more lively during the year as students took more interest in the program and the topics discussed by guest speakers. Data from student discussion groups supported observations of high levels of student interest in science-related topics, and an increase in the number of students who related topics to their personal experiences. Finally, on questionnaires almost two-thirds of the students said that the science activities were their favorite program activity; slightly more than two-thirds said that the most important thing they had learned was that, working together, their actions could make a difference in the community.

Objective 3

To clean up the neighborhood

Each year of the program, five areas in the neighborhood were identified for clean-up. Mrs. Alvarez decided that taking photographs of these targeted sites at the beginning of the school year would provide good baseline data for the summative evaluation. Both years, the before and after pictures showed that a great deal of progress had been made toward cleaning up the neighborhood.

Weekly tally sheets recorded by students and checked by instructors kept participants and staff aware of how the program was progressing toward its goal of 1,500 pounds of recyclables. Year-end results revealed that this goal was achieved each year, and tickets for the community events were awarded to all of the students.

Objective 4

To increase community awareness and involvement in clean-up efforts

YACA documented its MTFC community outreach strategies, including the number of presentations made by students to community groups and businesses. Observations of neighborhood meetings and informal interviews with parents and community members at these meetings revealed that people noticed some changes in the way the community looked, even though some were unaware of the MTFC program.

Based on the high level of awareness demonstrated by persons attending community meetings during the first year of the program, Mrs. Alvarez decided to go ahead with the survey of community members. Students conducted a door-to-door survey in March of the second year of the program. Using a guide designed by Mrs. Alvarez, 25 student teams surveyed six households each for a total of 150 community members. Two volunteers helped tally the results. The surveys revealed that the majority of community members surveyed had noticed the change in community appearance and would be willing to participate in a recycling program.

Telling the More Trash for Cash Story: Presenting the Evaluation Results

The evaluation of More Trash for Cash showed that the program had a positive impact on the neighborhood, the participating students, and the community. A progress report for the first year of More Trash for Cash can be found in Appendix C.

Sample Data Collection Instruments for More Trash for Cash

- Student Group Discussion Guide
- Session Observation Guide
- Survey for Community Members

(See Chapter Eight for the following instruments)

- Participant Information Sheet
- Attendance Sheet
- Student Questionnaire
- Tally Sheet for Recyclables

Student Group Discussion Guide

Please talk about the following questions and decide as a group on the most appropriate answer. The group "recorder" should write in your responses.

1. How do you like the More Trash for Cash Program? (Circle one.)

   4 = Great! 3 = Good 2 = Boring 1 = Really Boring!

2. What do you like best about the program?

3. What is the most important thing you have learned in the program so far?

4. What suggestions do you have for making the program better?

Thanks for Filling This Out!

Session Observation Guide

1. Are students:
   interested?
   enthusiastic?
   bored?
   distracted?

2. What kinds of questions do students ask?

3. Do students demonstrate an understanding of the topics?

4. How do students work together?

Survey for Community Members

1. a) Have you noticed any changes in how the community looks?

____Yes ____No

b) If yes, what has been the most noticeable difference?

2. a) Would you be willing to help save recyclables for a community recycling program?

____Yes ____No

b) How would you be willing to help? Check all that apply.

___Will save bottles and cans
___Will help with clean-up efforts
___Will volunteer for program sessions
___Will make presentations
___Other (please explain):

3. Have you heard about a program called "More Trash for Cash"? If yes, what can you tell me about it? (If they haven't heard about the program, you can describe it to them.)

Thanks for Filling This Out!

Notes

Notes

Appendix A

FINAL EVALUATION REPORT

FINAL EVALUATION REPORT

"Trash For Cash" Final Report
Written by Maria Alvarez
Director of Youth and Communities Alive!

Submitted to the Central United Methodist Church

"The Trash for Cash program really helped me come out of myself. I didn't know I could be a leader, but now I know I can."
16-year-old female participant

Youth and Communities Alive! (YACA) is a small community-based organization dedicated to serving low-income minority youth. Last year, YACA received $2,000 from the Central United Methodist Church to run the Trash for Cash (TFC) program. The program targeted high school students and lasted one academic year. TFC had three main objectives:

1. To develop a sense of ownership and pride in the community among participating youths
2. To expand students' awareness of science and mathematics applications in everyday life
3. To clean up the neighborhood

We wanted to reach a broad spectrum of students, especially those who might not participate in an after-school program. To recruit participants, we made presentations in the schools, and met with students, teachers, parents, and agency staff to get referrals. We wanted to try to get both African American and Latino youth from the neighborhood. In all we had 14 girls and 11 boys. Thirteen were African American, 8 were Latino, and 4 were white.

A total of 25 high school students participated in the TFC program, which included weekly collection of trash in the community during after-school sessions. Students collected recyclables and kept track of the number of pounds of recyclables that they turned in for cash at the local recycling center. Their goal was 1,000 pounds of recyclables, which would make them eligible for tickets to an NBA game.

Most TFC sessions began with a brief lesson about the importance of recycling or other environmental topics. Over the course of the school year, seven guest speakers from the community visited and made presentations about recycling, waste management for the city, water treatment,

and other related issues.

We had two questions that we wanted the evaluation to answer:

- ➢ What changes have occurred in the students' interest in the community and their awareness of the relevancy of science and mathematics?
- ➢ To what extent did the program result in a cleaner neighborhood?

Keeping track of attendance helped us determine student interest in program activities. Student attendance at our weekly after-school sessions was generally high throughout the year, especially after the meeting day was changed to enable those with a conflict to come. We were pleased that the average weekly attendance was 18 students. By the end of the school year, all 25 students had participated in at least half of the weekly sessions. Three students had participated in every weekly session throughout the entire school year! Their continued participation in the program indicated to us that students were interested in the program's activities.

The brief lessons that started most TFC sessions focused on environmental topics and seemed to interest most of the students. Some said that this was the first time they really understood why recycling was important to the community and not just a hassle. In addition to learning about science-related topics, students used practical mathematical skills to tally and weigh the recyclables they collected. By the end of the year, students who had had difficulty with these tasks were actively participating in the activities.

At the end of the TFC program, we asked students to fill out questionnaires telling us what they liked best and what they had learned. From the responses on this survey, we think the program had a positive effect on the students. Three-quarters of the students wrote that they learned you could work together to accomplish a goal. Some students mentioned that they learned to use new skills. Almost half said they had learned how science plays a part in everyday life.

What Students Said They Liked Best About the Trash for Cash Program

Response on Questionnaire	Percentage
Getting recognition	48
Working together	40
Making a contribution to the community	28
Achieving their goal and getting free NBA tickets	28
Total number of participants	25

Many students said they especially liked getting recognition from the community for their efforts—it made them feel important. In the words of one student, "I feel like I have something I can give to the community." Students also liked working together and helping to improve the

community. Over half the participants said that cleaning up their neighborhood made them feel good.

To see if we had an impact on the community, we took pictures of five areas in the neighborhood at the beginning of the school year and again in the spring. These pictures were posted on the wall of the YACA center for staff, participants, and community members to see, and to help raise awareness about the program.

The photographs taken after the program showed that the places where our students worked were much cleaner than before. The students were very excited when the community paper, *The Central City Weekly,* published our before and after pictures of the Adams Street playground. This publicity brought the students a great deal of pride in what they were doing.

In May, we achieved our goal of collecting 1,000 pounds of recyclables. We were very pleased that all of our students were eligible for free tickets to the NBA game (because they all attended at least half of the weekly TFC sessions). We had our basketball night on May 25 and everyone had a lot of fun. We used money collected from recycling for a pizza party before going to the game.

We believe that our program accomplished what it set out to do—to clean up the neighborhood, increase students' community involvement, and expand their awareness of the relevancy of science and mathematics. As one student said, "TFC has been a great thing for me and for this neighborhood."

Trash for Cash Program
Final Budget

Budget Item	Budget	Spent
Salary for Maria Alvarez	$ 825	$ 925
Tickets to NBA Game ($30 x 25 participants)	800	750
Supplies*	250	150
Honoraria for guest speakers ($25 x 7 speakers)	125	175
TOTAL	$2,000	$2,000

*Note that some supplies, snacks, and a pizza party were paid for with the money earned from recycling. This enabled YACA to pay honoraria to 7 guest speakers rather than the 5 originally budgeted for.

Appendix B

PROPOSAL FOR EXPANDING A PROGRAM

PROPOSAL FOR EXPANDING A PROGRAM

"More Trash For Cash" Program Proposal
Written by Maria Alvarez
Director of Youth and Communities Alive!
Submitted to the Central City United Way and the Tri-Cities Community Foundation

Youth and Communities Alive! (YACA) is a small community-based organization dedicated to serving low-income minority youth. Last year, YACA received a $2,000 grant from the Central United Methodist Church for a new program called "Trash for Cash" (TFC). In its first year, TFC had a great deal of success in achieving its objectives of cleaning up the neighborhood, developing students' sense of pride in the community, and increasing their awareness of the relevancy of science and math. In the words of one participant:

> *"The Trash for Cash program really helped me come out of myself. I didn't know I could be a leader, but now I know I can."*
> **16-year-old female participant**

We very much hope to build on our successes and continue TFC. However, based on our experience last year, we believe the program would have a much greater impact on our community if program activities were expanded to include more science instruction, more guest speakers, and field trips. We also see the importance of including middle school students in this program and continuing to include high school students to serve as positive role models for the younger children. We are applying to new sponsors because the Central United Methodist Church does not have funds available for an expanded program.

Trash for Cash: A Success Story

Trash for Cash (TFC) targeted high school students and lasted one academic year. The program had three main objectives:

1. To develop a sense of ownership and pride in the community among participating youths
2. To expand students' awareness of science and mathematics applications in everyday life
3. To clean up the neighborhood

We wanted to reach a broad spectrum of students, especially those who might not usually participate in an after-school program. To recruit participants, we made presentations in the schools,

and met with students, teachers, parents, and agency staff to get referrals. We wanted to try to get both African American and Latino youth from the neighborhood. In all we had 14 girls and 11 boys. Thirteen were African American, 8 were Latino, and 4 were white.

Most TFC sessions began with a brief lesson about the reasons for recycling and conservation. Seven guest speakers made presentations about various topics related to the environment. In addition, students were given primary responsibility for organizing weekly community clean-ups and keeping track of the recyclables collected. Achieving the 1,000-pound goal set for the year entitled students to tickets to an NBA game.

To see if TFC achieved its objectives, we looked at students' level of interest and participation in program activities, and their awareness of the relevancy of science in their own lives. Attendance sheets, observations, and student surveys helped us get this information. We also looked at changes in the community "ugly" spots chosen for our clean-up efforts, using before and after photographs and weekly tallies of recyclables.

We achieved our attendance goal of 75 percent of the participants attending at least one-half of the weekly sessions. Observations by board members revealed changes in students' level of interest and participation in discussions, with more students actively participating at the end of the program than in earlier observations. In addition, students' comments seemed to demonstrate a greater awareness of the relevancy of science. For example, observers noted that many of the participants voluntarily made connections between the discussion topic and their own personal experiences. Student questionnaires provided evidence that supported observations. Students reported that they liked working together to improve the neighborhood, had learned about the importance of recycling, and had gained an expanded view of what science is and how it relates to their lives. Some students said this was the first time they really understood why recycling was important.

Students successfully met their goal of 1,000 pounds of recyclables, and all received tickets to an NBA game. The photographs we took at the end of the year offered real proof that our program made a difference—the areas were much cleaner, and the students could see the results of their work.

Building on Success: "More Trash for Cash"

We propose to build on the TFC success story by continuing and improving the program based on what we learned last year. The expanded two-year program is called "More Trash for Cash." We plan to put more emphasis on academic achievement, with higher quality science experiences to a larger number and wider range of students than the original TFC program. We will continue to develop the students' sense of pride and ownership in the community through weekly after-school community clean-up efforts, and in the process, improve the appearance of the neighborhood. In addition, we hope to increase community awareness of environmental issues and recycling. We plan to involve parents in clean-up efforts and drum up support for recycling among neighborhood businesses and community members. High school students will make presentations about "More Trash for Cash" and recycling at various community meetings. Our success in the area of public awareness will have a lasting impact on this community.

Each year of the program, we will work toward collecting at least 1,500 pounds in recyclables. When this goal is reached, participants who have attended at least half of the weekly sessions will be eligible to receive their choice of tickets to an NBA basketball game, a ride on a paddle-wheel river boat, or tickets to a performance by the Central Youth Theater.

The "More Trash for Cash" program will include improved science instruction by enlisting the help of science educators. A real understanding of environmental issues will be gained through meaningful hands-on science activities. Joyce Edwards, a biology teacher from Franklin High School, and Park Central Middle School teacher, Ed Masterson, have each agreed to provide bi-weekly environmental science activities during the school year.

In addition, Dr. Andrea Tybola, an environmental science professor at Western State College, has agreed to offer her expertise to "More Trash for Cash." She will work with the two teachers to coordinate the science lessons offered throughout the year. Dr. Tybola also has extensive contacts in the environmental community, and will help us to bring in high quality guest speakers including a colleague from Western State's Civil Engineering Department who will speak to the students about waste water treatment, and a colleague with the park service who will discuss the effects of pollution on the city's parks. Dr. Tybola's influence will also help us coordinate meaningful field trips to sites including the city's waste water treatment plant and the Orange Island Biological Research Park. These environmental education experiences will be invaluable to our students and will prepare them to share their knowledge with other community members.

"More Trash for Cash" will also build leadership skills among high school students. A small cadre of participants from last year's TLC program will return to serve as program assistants for "More Trash for Cash." These five students will assist instructors as necessary and will help younger students with science activities. During the program's second year, high school participants from year one will be selected to fill these roles. Each year, we expect to work with 30 high school students (including the five program assistants). The older students will serve as positive role models for the 20 middle school students that we expect will participate each year in "More Trash for Cash."

Monitoring Progress and Evaluating Impact

In order to keep the program on track and to learn about the impact of "More Trash for Cash," we have designed an evaluation that will provide both formative and summative data. The following questions will guide the evaluation:

- ➢ What changes occur in students' interest in community involvement, their awareness of real life applications of science and mathematics, and their knowledge and skills in science?
- ➢ To what extent did the program result in a cleaner neighborhood?
- ➢ To what extent is the community aware and supportive of clean-up efforts?

Like last year, we will monitor attendance at the weekly sessions of "More Trash for Cash." We will also continue to tally the amount of recyclables collected, and take before and after pictures

of selected neighborhood areas targeted for clean-up. All participants will be asked to fill out a brief survey at the end of the program to answer questions about what they liked best and what was the most important thing they learned during the program.

In addition to these activities, we will set aside 15 minutes twice each semester for the students to discuss in small groups what they think about the program. Students will record the major issues that come up in these discussions; we will use this information for formative evaluation purposes and make changes to the program as necessary. Observations of program activities and informal interviews with participants once per semester will enrich our understanding of the impact of the program on the participants.

We plan to document the impact of "More Trash for Cash" on the community by attending meetings of various community organizations, keeping track of the number of businesses actively involved in recycling, and possibly conducting a community survey at the end of the second year of the program.

Conclusion

"More Trash for Cash" will offer quality weekly science experiences for our neighborhood's middle and high school students—exciting, constructive activities that provide an alternative to the many negative influences in this neighborhood. The YACA staff feel confident that we will be successful at implementing this expanded program. We have been running enrichment programs for the children in our community for the past ten years. More specifically, we have already had success at running the "Trash for Cash Program" and we learned from that experience. We know what works and what doesn't work, and we know what our community needs. The "More Trash for Cash" program proposed here will expand on the ideas that we have already seen work with students in this community. The students will benefit immensely from this program, learning science and mathematics skills that will help them throughout their lives, and teaching them the importance of protecting the environment and recycling. In addition, this program will enable the participants to share their positive experiences and their environmental knowledge with others, to the benefit of the entire community.

More Trash for Cash Program
Proposed Year One Budget

Budget Item	Estimated Cost
Salaries Program Director: $1,500 Part-Time Program Assistant: $750 High School Students: 5 @ $200 each	$ 3,250
Awards: Tickets to Community Events ($30 x 50 participants)	1,500
Stipends for Instructors Teachers: 2 @ $500 each College Professor @ $1,000	2,000
Field Trips (3)*	1,500
Supplies*	1,000
Honoraria for guest speakers ($50 x 15 speakers)	750
TOTAL	$10,000

* Note that we expect funds received for recyclables collected by students during the program will cover additional expenses related to field trips and supplies.

Appendix C

ANNUAL PROGRESS REPORT

ANNUAL PROGRESS REPORT

"More Trash For Cash" Year One Report
Written by Maria Alvarez
Director of Youth and Communities Alive!
Submitted to the Central City United Way and the Tri-Cities Community Foundation

"I never liked science in school. The More Trash for Cash program showed me how fun science really is. Plus we got to go to neat places that I had never seen before. Now I plan to study hard and be a biologist when I grow up."
12-year-old male participant

"I've always been kind of shy, I guess. Who would have thought I could be a leader? But with the More Trash for Cash group I have made presentations to the PTA and the Ministers' Alliance. It's fun and it's a good cause, because we are making the neighborhood better."
17-year-old female participant

Youth and Communities Alive! (YACA) is a small community-based organization dedicated to serving low-income minority youth. YACA received $7,000 from the Central City United Way and $3,000 from the Tri-Cities Community Foundation for the first year of the "More Trash for Cash" (MTFC) program. The program is expected to continue at the same funding level for another year. This report summarizes changes made to the program based on formative evaluation data, and describes the impact of the program evident after year one.

MTFC Program Activities

A total of 30 high school students and 20 middle school students participated in the MTFC program this past year. Participants included 28 girls and 22 boys; 32 were African American, 12 were Latino, and 6 were white.

Each MTFC session began with hands-on activities that engaged students in thoughtful investigations into various environmental topics. High school and middle school students participated in different (but usually related) activities appropriate for their grade levels, although on several occasions, we mixed the two levels. Activities were planned and presented by our science instruction team comprised of high school teacher Joyce Edwards and middle school teacher Ed Masterson, and coordinated by Western State College faculty member, Dr. Andrea Tybola. Activities included weekly collection of trash in the community during after-school sessions. Students collected recyclables and kept track of the number of pounds of recyclables that they

turned in at a community recycling center. A goal of 1,500 pounds of recyclables was set for the year.

In addition to these weekly activities, twice each month guest speakers talked to our students about topics ranging from backyard bird feeders to global warming. All together, 15 community speakers visited during MTFC sessions. Most presentations were brief and tied in with hands-on activities in order to keep interest levels high.

Two field trips were held this year. In September, we visited the waste water treatment plant in East Bay. In late April, we hiked through the Orange Island Biological Research Park where Dr. Evan Felden explained various environmental studies underway and the children participated in water sampling and testing activities.

After achieving our goal of collecting 1,500 pounds of recyclables, we allowed the children to select the community event that they wanted to attend. This year's MTFC culminated with these exciting events, when each of our 50 participants attended either the NBA basketball game, the Central Youth Theater dance performance, or took a ride on the River Queen paddle wheel boat.

The Evaluation Design

MTFC has four main objectives that are addressed in the evaluation design:

1. To develop a sense of ownership and pride in the community among participating youth
2. To develop students' science skills and knowledge, and their awareness of science and mathematics applications in everyday life
3. To clean up the neighborhood
4. To increase community awareness and involvement in clean-up efforts

The evaluation activities for the year were guided by three major questions.

- ➢ What changes occur in students' interest in community involvement, their awareness of real life applications of science and mathematics, and their knowledge and skills in science?
- ➢ To what extent did the program result in a cleaner neighborhood?
- ➢ To what extent is the community aware and supportive of clean-up efforts?

We answered the first question by keeping track of attendance, providing participants with opportunities to talk about the program several times during the year, and with a year-end questionnaire. Observations of program activities were conducted several times during the year. To monitor our progress in cleaning up the neighborhood, we took before and after photographs at several neighborhood sites and kept a weekly tally of the amount of recyclables collected by the participants. To gauge community support for the MTFC clean-up, program staff attended

meetings of neighborhood organizations, conducted informal interviews with parents and other community members, and documented the number of presentations made by our students to community groups and the number of businesses actively recycling.

Changes in the Community

We took photographs of several sites in the neighborhood at the beginning of the school year. These were places that needed our children! All of these photographs showed a great deal of trash. For example, the 2nd Street bridge overpass was piled four feet high in one corner with miscellaneous trash including hubcaps, newspapers, and even a refrigerator door. The Jackson Reservoir photo showed Styrofoam cups washed up on the shore and lots of soda cans.

Our students went out in the neighborhood and cleaned it up. Each week, we would divide up into five clean-up crews and get out there and pick up trash! We averaged forty trash bags full of non-recyclable trash cleaned up from our community each week. We kept recyclables separate so that we could tally them and take them to the recycling center. Our MTFC students picked up an average of 62 pounds of recyclables every week. The week after New Year's, we collected a record 157 pounds of recyclables!

We believe that MTFC is having a positive impact on this community. Many people see our clean-up crews out working and congratulate the children on their efforts. Our "after" photos show how good our neighborhood can look with just a little muscle power. We posted all the before and after photos on the wall of the YACA center for staff, participants, and community members to see, and to help raise awareness about the program. The *Community Weekly* ran a story about the MTFC students and included before and after photos. The children really got a boost from this publicity.

Our high school students made five presentations to different community groups and businesses. Our observations at community meetings show that people are starting to notice that the neighborhood looks better. However, at this point, adult members of the community are not themselves participating in the clean-up efforts.

Changes in Students

Our evaluation information shows that MTFC has had a great effect on the students that participate. Attendance has been high, although what weekly participation in MTFC sessions dropped between September and October. During a student discussion group in October, we learned that our scheduled Thursday sessions conflicted with other extracurricular activities—particularly for the high school students. We changed our meeting time to Wednesday afternoons and found that attendance improved.

After we changed the meeting time, student attendance at weekly after-school sessions remained generally high through the rest of the academic year. We averaged 37 attendees per weekly session, with even higher attendance (42 on average) on days with guest speakers. In fact, some participants brought siblings and friends to MTFC sessions, so there were often even more children

involved than the numbers indicated in this report (we did not include the unregistered attendees in our evaluation). We encouraged this, because the more children participating in the neighborhood clean-ups, the better.

The continued high level of participation in the program indicated to us that the students were interested in our activities. At the end of the school year, 48 of the 50 registered participants had stayed with the program and each had participated in at least half of the weekly sessions. Twenty-two students attended at least 23 of the 27 weekly MTFC sessions.

We think the program had a positive effect on the students. When asked what they had learned, two-thirds of the students wrote that they learned you could work together to accomplish a goal. Others mentioned that they saw science "in action," learned to use new skills, learned interesting things from guest speakers, and became more aware of their neighborhood's trash problem. Ninety percent of the students rated the MTFC program as "Great!" Said one student:

> *"I couldn't believe that we would clean up Bailey Avenue one week and then I went by there the next day and there was already more garbage on the street. I just couldn't believe it. I tell everybody I'm with not to litter."*
>
> **12-year-old female participant**

What Students Said Was the Most Important Thing They Learned from the More Trash for Cash Program	
Response on Questionnaire	Percentage of Responses
Learned that working together, you can make a difference	69
Learned or improved math/science skills	54
Learned interesting things from speakers	48
Became more aware of the neighborhood's trash problem	29
Total number of participants responding	48

Observations of MTFC sessions in October and May showed that participating children made great strides in developing skills used for scientific investigation. Early in the school year, only a few of the students were actively involved in observing, measuring, recording, and drawing conclusions. By the end of the year, the majority were contributing to these efforts.

Early in the year, we learned from student discussion groups that many of the younger children were frustrated with some of the tasks that required mathematics skills. The program staff discussed these problems and we decided to have the students work together in teams. Each team included students with different levels of mathematics skills and at least one high school student

assistant. This solved the problem, as evidenced by student comments later in the school year. Said one participant:

> *"I didn't know how to multiply big numbers before. But Janeesha helped me learn how. Now I help our team do our tally every week because I know I'm going to go to that basketball game!"*
>
> **11-year-old male participant**

By the end of the school year, most of the students seemed quite confident in their ability to do these everyday mathematical tasks; those who had been "math-shy" at the beginning now actively participated. Middle school students seemed especially intrigued by the activities focusing on weight and volume. Said one participant:

> *"I couldn't understand at first how we could collect a whole bag full of plastic milk jugs and it only weighed two pounds! A whole bag that I could hardly carry by myself!! And then Charles showed off because his little bag of aluminum cans weighed 2.2 pounds! It took a while to understand that!"*
>
> **11-year-old female participant**

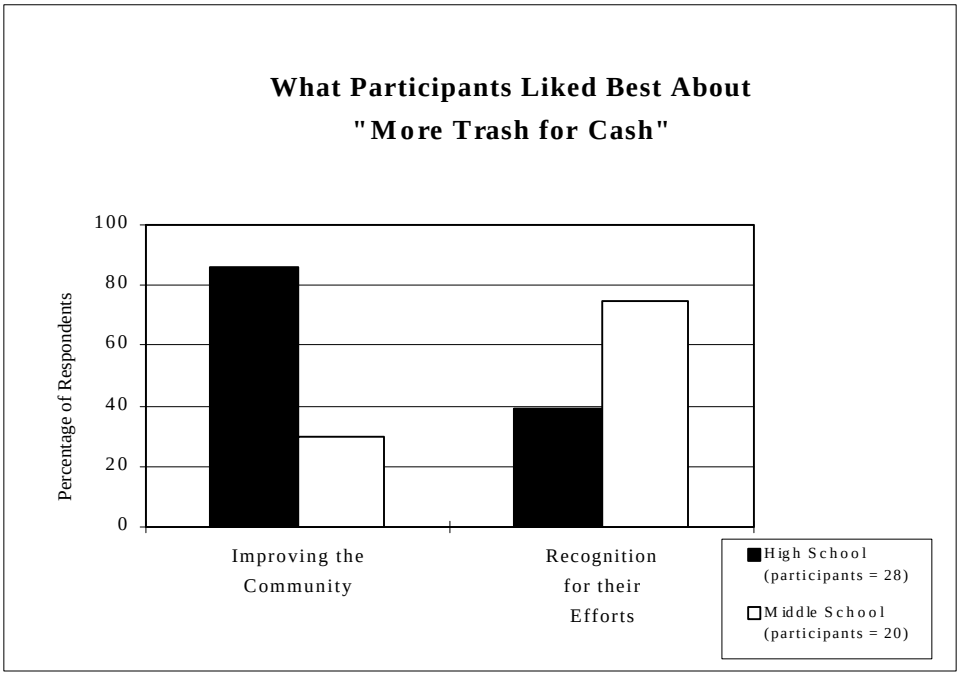
On several occasions, we mixed middle and high school students in work groups. It was a good way for the students to help each other with hands-on science activities. We found that mixing the groups enhanced everyone's experience. The younger children loved working with the big kids, and the high school students enjoyed the excitement of the younger ones. According to one high school student:

> *"I didn't really want to deal with the little kids at first. But I actually found that they were cool to work with and really funny."*
>
> **15-year-old female participant**

The MTFC hands-on science activities that kicked off each weekly session were a great hit with all the students. For most of these children, MTFC was their first brush with "real" science—the first time they saw that science really mattered in their daily lives. The guest speakers and field trips complemented and reinforced the concepts we investigated in the activities. On the questionnaire at the end of the school year, 50 percent of the students said that they liked the field trips best of all the program activities.

We feel that the participants gained a real understanding of the importance of recycling and the human impact on the environment. During observations and informal student interviews, students frequently commented on various environmental issues that they were newly aware of, and discussed different ways that they could personally help clean up the planet.

When asked what they liked best about the program, most high school students mentioned the satisfaction they gained from improving their community and "making a difference." In contrast, a majority of the younger participants enjoyed the recognition that they gained from the program—the NBA tickets, the newspaper story, and having their efforts displayed at the YACA Center.



Where Do We Go From Here?

We believe that the MTFC program is making progress toward our objectives—to develop students' interest in community involvement, their awareness of real life applications of science and math, and their knowledge and skills in science; to clean up the neighborhood; and to increase community awareness about clean-up efforts. We plan to continue weekly neighborhood clean-up efforts. We know from surveys and informal interviews that the students are enjoying the clean-up activities, the hands-on science activities, and the field trips and guest speakers. We plan to do similar MTFC activities next year.

One area that was not as successful as we had hoped was getting the community actively involved. We are going to work harder to make the community aware of environmental issues, recycling, and the efforts of the MTFC students. During a student discussion group this past May, several high school students commented that they really wanted to make others in the community more aware of MTFC efforts. These students have an action plan for getting the word out. They will work together to put on more presentations for community groups to spread the word about MTFC and drum up more support for the program. We think these activities will also enhance our students' leadership abilities as they take an active role in talking to adults in the community about the importance of environmental action.

Many of our students have been "spreading the word" about recycling with their families and friends, but we want to organize more family activities to get parents truly involved. We hope to schedule some community clean-up days on weekends and post flyers so that community members know they are welcome to join in.

To gauge community awareness and support for MTFC efforts, we plan to conduct a door-to-door neighborhood survey during the second year of the program. We plan to ask community members if they have noticed changes in the neighborhood, if they would like to participate in the clean-up, and if they have heard of MTFC.

We think expanding awareness of MTFC in our community will have a huge impact on this neighborhood. The students will gain self-confidence from making presentations and being leaders in these activities, community members will become more aware of environmental issues, and the neighborhood itself will be improved if more people participate in recycling and clean-up activities. We hope that by spreading the word throughout the community, the MTFC program will have a lasting impact on this neighborhood.

More Trash for Cash Program
Year One Budget

Budget Item	Budget	Spent
Salaries Program Director: $1,500 Part-time Program Assistant: $750 High School Students: 5 @ $200	$ 3,250	$ 3,250
Awards: Tickets to Community Events	1,500	1,250
Stipends for Instructors Teachers: 2 @ $500 each College Professor @ $1,000	2,000	2,000
Field Trips (3)*	1,500	1,500
Supplies*	1,000	1,250
Honoraria for guest speakers ($50 x 15 speakers)	750	750
TOTAL	$10,000	$10,000

* Note that some supplies and additional field trip expenses were paid for with funds received for recyclables collected by students during the program.

GLOSSARY OF TERMS

Evaluators do not always agree about how to use evaluation terms. This can lead to some confusion when you are first exploring the field. Some terms, like questionnaire and sample, are very specific and therefore are used consistently from one evaluator to another. Other terms, like formative and summative evaluation, can vary in subtle ways. We have simplified our use of these terms in order to give you an easy introduction to the key concepts of evaluation.

You will undoubtedly come across other definitions or uses of some terms when you read other sources and talk to other evaluators. For the time being, however, here is a summary of how we have used key evaluation terms in this manual.

baseline information Documentation of people, conditions, or events before a program begins. Provides evaluator with data to compare to information collected during and at the end of a program to gauge impact.

biased Influenced in a particular direction. Evaluation data may be biased if it presents only a single point of view, as opposed to a variety of perspectives (e.g., participants, staff, community members). Similarly, asking only the most active participants to rate a program may bias the results and prevents you from learning why less active participants choose not to take part in program activities.

CBO Community-based organization. This manual is written primarily for CBOs that offer science and mathematics programs for young people.

closed-ended question Survey questions that provide respondents with a selection of possible answers (agree/disagree/no opinion; yes/no/don't know) and ask them to select the answer that best matches their beliefs or feelings. Responses can be tallied to provide quantitative data.

data analysis The systematic examination and interpretation of information gathered through various data collection strategies, including document review, observations, interviews, and surveys. For most CBO program evaluations, data analysis is best focused around program objectives, intermediate indicators, and final outcomes.

data collection The accumulation of information for evaluation through document review, observations, interviews, surveys, or other strategies.

demographic information Descriptive data that includes race/ethnicity, gender, age, grade level, socioeconomic status,

and similar kinds of information. Can help in the analysis of program impact on different groups of participants, and in proving that you reached the audience your program targeted.

direct quote Words, sentences or paragraphs taken directly from a person or group, through observations, interviews, or surveys. These excerpts use the respondent's exact words as opposed to paraphrasing or summarizing.

document review The examination of records or documents that reveal information about the context in which a program occurs, about people's behavior, and about other conditions or events. Evaluators can make use of existing records (e.g., report cards) or develop forms especially for the evaluation (e.g., participant journals, attendance sheets).

external evaluation Activities undertaken by a person or group outside the organization to determine the success of a program.

final program outcome Changes you expect to see, hear, or measure which can tell you if your program achieves the goals for which it was designed.

focus group An interview conducted with a small group of people. We find that focus groups often work best when participation is limited to 8–10 people. A focus group enables the evaluator to get in-depth information from a group of people in a short amount of time.

formal interview A conversation in which the evaluator obtains information from a respondent or group of respondents by asking a set of specific questions.

formative evaluation Data collection activities and analysis that occur over the course of program implementation. A process used to determine whether or not a program is working: What progress is being made toward program objectives? How do we use feedback information to improve the program, refine data collection activities, and identify problems or issues of importance that were not evident before a program began?

goal The end—what CBOs hope programs will accomplish in the long-run.

informal interview A spontaneous conversation between evaluator and respondent. The interviewer uses no guidelines or protocol; questions are guided by the context of the situation.

intermediate indicator The kinds of progress you expect to see if your program is moving toward achieving its objectives.

internal evaluation An examination of program activities conducted in-house by CBO staff.

interview A conversation in which the evaluator obtains information from a respondent or group of respondents. Interviews can be formal or informal; structured, semi-structured, or unstructured; individual or in focus groups; in person or by telephone.

needs assessment Information collected before a program is planned or implemented to help staff identify needs and target audiences, and to develop appropriate strategies. Sometimes referred to as front-end evaluation.

objective A means to achieving a goal; what CBOs hope their program will achieve.

observation In-person, firsthand examination of program participants and activities.

open-ended question Survey and interview questions that allow people to respond in their own words. No answer categories are provided on the questionnaire or in the interview protocol. Questions are worded to discourage simple "yes" or "no" answers.

organizational mission The reason why a CBO exists. Program goals are often closely related to an organization's mission.

participatory evaluation The involvement of program staff in the design and implementation of an evaluation conducted by a person or group external to the organization.

probe Follow-up questions asked during an interview to help get at key issues and clarify what the respondent means. Probes may be included in the interview guide or protocol to help obtain the information needed for the evaluation.

program evaluation Data collection and analysis which enables program staff to improve program activities while they are in progress and to measure the degree to which a program ultimately achieves its goals.

protocol A set of questions used as a guide for conducting observations or interviews to help ensure that the appropriate information is collected from each respondent.

qualitative data Information typically gathered through document review, observations, and interviews. Often expressed in words as opposed to numbers, although some qualitative data may lend itself to tallying and numerical presentation.

quantitative data Information measured and expressed with numbers, typically gathered though surveys. Can be presented in a variety of ways, including numbers or percents, ranges or averages, tables, and graphs.

questionnaire The written instrument used to collect information as part of a survey. Can include closed- and open-ended questions, and questions that obtain demographic information about the respondent.

response rate The number of people who respond to a questionnaire, as compared with the number of people who received the questionnaire. Evaluators often follow-up with non-respondents to raise the response rate and obtain more accurate results.

sample A subset (of people, documents, or things) that is similar in characteristics to the larger group from which it is selected. In evaluating large programs, CBOs might interview a sample of participants or review a sample of meeting notes instead of interviewing all participants or reading all meeting minutes.

summative evaluation Data collection activities and analysis which help determine how successful a program has been at achieving its goals. These activities generally occur toward the end of a program, or at appropriate breakpoints in multi-year or ongoing programs.

survey A method of collecting information by mail, phone, or in person. Surveys involve a series of steps including selecting a sample, collecting information, following up with non-respondents, then organizing and analyzing data.

INDEX OF KEY CONCEPTS