Questionnaire Design

Asking Questions with a Purpose

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Introduction

Questionnaires defined

For many activities in Cooperative Extension, asking questions of program participants is the primary source of information for evaluation purposes. Questionnaires provide a means of asking questions of participants in an efficient, systematic and consistent manner.

A questionnaire is a tool for getting similar information from people that can be tabulated and discussed numerically. Specifically, *a questionnaire is a document that asks the same questions of all individuals in a sample or population.*

Note that a questionnaire is not defined by a particular mode of delivery, although it is most often associated with a paper document such as a mail survey. Questionnaires can be delivered in a variety of ways—mail, phone, Web, in-person, etc.—and may be self-administered or interviewer-administered. The information gathered from questionnaires may be quantitative or qualitative.

Questionnaires and evaluation in Extension

A questionnaire is one of many data collection methods available to Extension faculty. Other methods include direct observation, individual measurement, testing, focus groups and case studies. However, questionnaires have been a major source of information for evaluation purposes and will continue to be so into the forseeable future. Questionnaires have proved to be an efficient—and often the only—means of gathering evidence on program impact, gaining insight into program improvement and knowing more about the target audience.

In Extension, most questionnaires are self-administered (completed by program participants using written instructions and/or minimal verbal instructions). They are usually completed in person at the conclusion of a program or delivered to participants via mail after a program concludes.

Participants control the data collection process in two ways:

- They decide which questions they will answer or not answer.
- They record a written response (as opposed to an interviewer recording it) to each questionnaire item.

This publication

Developing a sound questionnaire is not quick or easy. It takes time and focused attention—typically involving forethought, peer review, several drafts and pretests before a final version emerges.

Although the process of developing a questionnaire does not fit into a step-by-step approach as neatly as other processes do, this publication attempts to present it as such—with some general guidelines to help you along the way.

The concepts and guidelines in this publication apply to all questionnaires—regardless of how they are delivered.

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The Big Picture

It is helpful to put questionnaire design in context. Questionnaire design is a small part of the overall survey process that may be used in an evaluation.

The figure below presents an overview of the survey process and includes elements of sampling, data collection, data processing and data analysis.

As part of this process, questionnaires are sometimes interchangeably referred to as survey instruments.
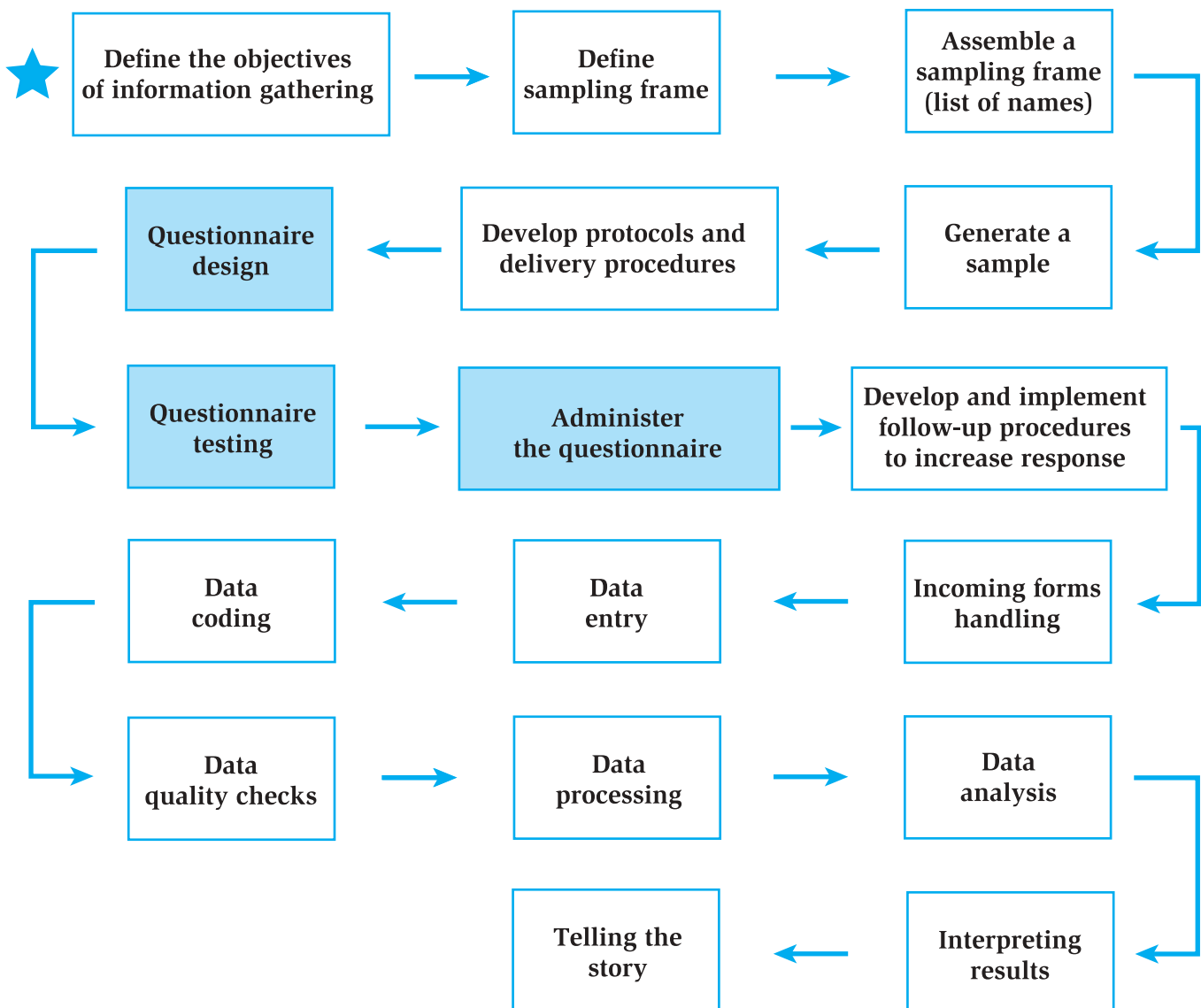
Using a Questionnaire: Pros and Cons

Like all data collection methods, questionnaires have both advantages and disadvantages.

Advantages

Questionnaires provide an efficient way to collect data. Generally, it takes less time and resources to develop and administer a questionnaire than it would to directly observe or interview participants individually. Questionnaires become even more efficient as the number of potential respondents increases.

For evaluations involving many participants (1,000 or more) a questionnaire used in conjunction with sampling is often the most practical and efficient way to collect data.

Questionnaires can be used with any of the three primary evaluation strategies: pre-post, retrospective post or post only.

Questionnaires can be administered to allow participants to provide responses confidentially or anonymously. Participants feel more secure in providing frank and complete information if they are not face to face with an interviewer or if the responses cannot easily be inked back to them.

Certain types of questionnaires (such as mail or Web) allow participants to respond at their own convenience—within a data collection period that typically last several weeks or months.

Disadvantages

Questionnaires are limited in the number and scope of questions they can ask. They cannot easily or spontaneously probe deeper into a participant's opinions or experiences on a specific topic as can an in-person interviewer. Space considerations and the risk of survey fatigue tend to limit branching opportunities (asking a more specific set of questions based on a previous response).

Questionnaires rely on the abillity of participants to clearly comprehend what is being asked of them, their willingness to answer, their willingness to consider and reflect, and their honesty and accuracy of recall in providing responses. Failure on any of these counts may result in no response or inaccurate responses.

Modes of Delivery

As mentioned earlier, questionnaires can be administered in a variety of ways:

- Postal (traditional mail)
- Phone
- Web
- E-mail
- In-person
- Mixed mode (using more than one method to deliver a questionnaire)

There are several factors to consider in deciding on a mode of delivery, including anticipated response rates, ability to follow-up or probe, speed of data collection and availability of a sampling frame.

If you need the data quickly, and most or all participants have access to the Internet, delivering a questionnaire via the Web can be an effective means of collecting data in a short period.

Be aware that the mode of delivery you select may affect questionnaire design to some extent. For example, if the questionnaire is administered by phone, it may need to have fewer and more concise response categories than those on a written questionnaire.

Mixed mode

Mixed mode delivery of questionnaires is becoming more popular as a means of increasing response rates. One form of mixed mode delivery involves sending a questionnaire to participants in multiple ways. For example, some participants may be mailed a questionnaire, whereas other participants may be administered the questionnaire by phone or sent an invitation via e-mail to complete a Web-based version of the questionnaire.

Another form of mixed mode delivery involves giving participants options in completing a questionnaire. For example, a survey packet may be mailed to program participants with instructions that allow them to complete and return the paper questionnaire or to access and complete the same questionnaire on the web.

If you use mixed mode delivery, be sure that the wording is consistent (or at least comparable) between modes so that the results from all modes can be tabulated and analyzed together in a valid and meaningful way.

Although mixed mode delivery is becoming more common, most questionnaires in Extension are still delivered to participants single mode—in person, by mail or via the Web.

Constructing a Questionnaire: A Step-By-Step Approach

Below is a step-by-step process for developing a questionnaire. The guidelines in this process are sound practices that apply to any questionnaire. The three suggested sections of a questionnaire—Steps 4, 5 and 6—should be adequate for most evaluations.

Step 1. Review and adhere to the *Starting Point Guidelines* (next section). This involves thinking about the questionnaire *before* you write questions. This is a valuable first step that will make the remainder of the process easier. Some aspects of this step are particularly critical:

- Deciding what you need or want to know

- Knowing the desired client change of your program

- Knowing the outcome indicators for your program

- Knowing the evaluation strategy you will be employing

Step 2. Review the guidelines in *Appendix A: Wording the Question* to learn about proper phrasing and how to avoid common mistakes.

Step 3. Review the guidelines in *Appendix B: Types of Questions* to learn about the different question structures available. The types of analysis that need to be done (and the level of data they require—nominal, ordinal, interval) dictate the structure of questions. Frequencies and percentages are available with any question structure.

Step 4. Write a set of draft questions for the *program impact section* of the questionnaire (page 11).

Step 5. Write a set of draft questions for the *program improvement section* of the questionnaire (page 14).

Step 6. Write a set of draft questions for the *demographic section* of the questionnaire (page 15).

Step 7. Review the three sections to again ensure that the questions adhere to the guidelines specified in *Appendix A: Wording the Question.*

Step 8. Review the three sections to again ensure that the questions adhere to the guidelines specified in *Appendix B: Types of Questions.*

Step 9. Review the questionnaire format and modify it to adhere to the guidelines specified in *Appendix D: Formatting the Questionnaire.*

Step 10. Have a colleague review the questionnaire. Make any modifications.

Step 11. Pretest the questionnaire with staff, friends or clients. Make final modifications.

Starting Point Guidelines

The *starting point* in constructing a questionnaire is to know what kind of evidence is needed to meet the purpose of the study and how the information will be used. Before you actually start developing questions, review and follow these guidelines:

- **Make a list of what you want to know.** What do you really want to find out? What do you want to be able to say or demonstrate? What are your outcome indicators? How can the questionnaire be used to measure these?

- **From the beginning, think through what you will actually do with each piece of information.** This affects how questions are structured.

  A good example is whether to ask for a participant's age using categories or to ask for a specific age. If frequencies and percentages are sufficient for your evaluation purposes, then using age categories is sufficient. On the other hand, if you need a mean (average) age for evaluation purposes or want to run regression to demonstrate a relationship between age and another variable, then it is better to ask for a specific age or year of birth than to use categories.

  In general, if you need or want to run analysis beyond frequencies and percentages, you should be familiar with the concept of "levels of data"—that is, whether data are nominal, ordinal or interval. Each statistical analysis procedure requires a *specific* level of data.

- **Keep in mind the type(s) of client change your program aims to achieve.** Is it knowledge gain, skills acquisition, behavior change or something else? This will help you focus on the type of questions to ask. Types of client change are discussed in greater detail in the next section.

- **Know the outcome indicators you specified as part of your outcome plan.** As part of the program development (planning) process, you may have listed some specific indicators of program success or outcome attainment. If so, think about how items on a questionnaire might be used as your outcome indicators. For example, one outcome indicator of a successful food safety program might be for participants to always wash raw fruits and vegetables before eating them. Asking participants about that on a questionnaire can serve as the outcome indicator.

- Know the **type of evaluation strategy** you will be using (pre-post, retrospective post or post-only) and whether your post measure will be at the conclusion of the event (immediate post) or some period of time after the event concludes (longer-term post). To some extent, this will determine the types of questions you ask in the program impact section of the questionnaire.

- It is important to know **the target audience**. In writing questions, look through the participants' eyes:

  > Will they understand the question?
  > Will the question be seen as reasonable?
  > Will the question infringe on the participant's privacy?
  > Will participants be willing and able to tell you what you want to know?

- **Keep the information you are collecting as short and directed as possible.** Include a question only if it relates directly to the purpose of the study. Do not ask questions you do not plan to use. Eliminate "nice to know" items.

- **Questionnaires used for an evaluation typically have three sections: program impact, program improvement and attribute information.**

The program impact section includes questions that measure client change or other types of impact. It may also include questions related to customer satisfaction

The program improvement section typically asks participants what they liked about the program, what they disliked and what suggestions they have for improvement.

The attribute information or participant background section asks about the participants themselves (who they are, how much of something they have, etc.). A profile of participants can be built with this information.

Each of these sections will be covered in greater detail.

In summary, be selective, be realistic and **keep it simple**. Know what information is needed, why it is wanted and how you will use it. The information you obtain is only as good as the questions you ask. So take great care in asking the right questions and structuring them appropriately!

Developing the Program Impact Section

(1st Section of a Questionnaire)

The program impact section of the questionnaire is used to collect information for demonstrating the impact of your program. This relates to "client change" or "evidence of impact."

Extension *outcome* programs should address one or more levels of client change. They are defined below, each with example questions. Think about the level(s) of client change your program will address.

Learning—knowledge: *What participants know; learned information; accepted advice; how well they understand or comprehend something.*

Questions that measure knowledge gain ask what participants know, are aware of or understand. There are two approaches to measuring knowledge.

The first approach is *preferred* because it demonstrates impact more strongly. It involves developing what essentially looks and functions like a traditional test of knowledge in a school setting. Response categories using this approach include true/false, multiple choice and fill in the correct response. There are right and wrong answers associated with each question. Some examples include:

The most effective weight loss program includes exercise. (True or False)

Broccoli is particularly good for:
> *a) your muscles*
> *b) your eyes*
> *c) your metabolism*
> *d) your bones and teeth*

The ideal refrigerator temperature is _____.

The second approach is weaker, relying on self-perception and makes the most sense for a retrospective post evaluation strategy. Participants are not tested on actual knowledge. Instead, participants express what they perceive to be their own level of understanding before and after the program (with any increase being an indicator of knowledge gain).

Specifically, at the end of the program, participants are asked about their level of understanding related to the topics covered, before vs. after the program. An example:

Please circle the number (using the scale below) for each statement that best describes your *level of knowledge* before and then after the Regional Cotton Conference.

1 = Very Low   2 = Low   3 = Moderate   4 = High   5 = Very High

Statements	Before	After
What is your level of knowledge pertaining to *White Weed and Standard Weed Control in Conventional Cotton?*	1 2 3 4 5	1 2 3 4 5
What is your level of knowledge pertaining to *The Cotton Market Outlook?*	1 2 3 4 5	1 2 3 4 5
What is your level of understanding pertaining to *New Technology and Value of Bt cotton varieties in North-Central Texas?*	1 2 3 4 5	1 2 3 4 5

Learning—skills: *An individual's mental and physical abilities to use new and/or alternative processes.* Skills acquisition can be measured with a questionnaire, but it is challenging, indirect and relies on the participant's self-perception. For example:

I learned enough at this workshop to successfully scout for the Pecan Nut Casebearer in my own orchard.

☐ *Strongly agree*　　　☐ *Agree*　　　☐ *Uncertain*　　　☐ *Disagree*　　　☐ *Strongly disagree*

I am confident that I can apply the knowledge and tools I gained today to develop my own budget.

☐ *Strongly agree*　　　☐ *Agree*　　　☐ *Uncertain*　　　☐ *Disagree*　　　☐ *Strongly disagree*

Skills acquisition is more accurately measured through observation or an assessment of a participant actually demonstrating a skill. The measure might be dichotomous (such as success/fail) or a skill level on a scale.

Remember, a participant can learn a skill but never use it. If the goal of your program is solely to teach a skill, then measure for that, not for behavior change.

Learning—attitudes/beliefs: *How participants feel about something; what participants think is true; an opinion, preference or perspective.*

Beliefs are judgments of what people think is true or false, what they think exists or does not exist. The questions may seek perceptions of past, present or future reality. This type of question is often used in needs assessments.

In your opinion, does positive self-esteem among adolescents prevent drug abuse?

Do you think that lower beef prices would increase beef consumption?

Attitude questions ask people to indicate what they value or whether they have a positive or negative feeling about a subject. Words typically used in attitude questions include: prefer/not prefer, desirable/undesirable, favor/oppose, should/should not, satisfactory/unsatisfactory.

Do you favor or oppose controlled calving for your operation?

Do you agree or disagree that eating beef causes heart disease?

Application—behavior change: *Sustained change in a participant's actions or usual mode of operation.*

Behavior typically changes after knowledge is gained or a skill acquired and, in light of being equipped, a new mode of operation is deemed as necessary or desirable. Questions dealing with behavior change ask people about what they have done in the past, what they are doing now or what they plan to do in the future. For example:

Before this Extension event, did you treat your cotton for bollworms?

As a result of this Extension event, do you plan to treat your cotton for bollworms?

As a result of this Extension event, have you developed a budget?

Two points are important to remember in asking about behavior change. First, phrase the question such that, to the greatest extent possible, Extension education is specified as the potential cause of behavior change. A program participant may change behavior, but it may or may not be because of the Extension program. One or more intervening factors, such as reading an article in a trade publication or getting advice from a neighbor, may have played a role in convincing the participant to actually change.

To help control for this, preface the question with something similar to "As a result of the Extension-sponsored event, did you change . . ." or make it clear in the questionnaire instructions that you are asking about what happened as a result of the Extension program. The probability

of intervening factors causing behavior change (rather than Extension) will be higher for some events than others.

Second, behavior change is often not immediate. It takes time. Therefore, it may be preferable in terms of measuring impact to ask about behavior change months after the conclusion of a program (longer term post) to give participants time to adopt the desired behavior. The exception may be a program delivered over the course of several months. By the end of the program, some behavior change may be possible and expected.

If you administer an evaluation as the program concludes and behavior change is not expected at that point, asking about *intent* or *plans to change* is an option. The results will be more meaningful and favorable compared to asking about actual behavior change at that time but not as strong as providing evidence of actual behavior change later.

Application—best practice: *When a participant decides that a new practice is preferred over the current practice and adopts the new.*

The wording of questions for best practices is similar to those for behavior change. The same issues (controlling for intervening factors and allowing time for adoption to occur) apply as well. Examples:

As a result of the Extension event, have you added wildlife as a component of your ranch operation?

As a result of the Extension event, have you adopted IPM as part of your operation?

As a result of the Extension workshop, which of the following practices (if any) have you implemented to help control sedimentation from your operation? (select all that apply).

Erosion and sediment controls

☐ *Temporary seeding*
☐ *Permanent seeding*
☐ *Mulching*

Structural control measures

☐ *Earth dikes*
☐ *Silt fences*
☐ *Sediment traps*
☐ *Sediment basins*

Storm water management controls

☐ *Retention ponds*
☐ *Detention ponds*
☐ *Infiltration*
☐ *Vegetated swells and natural depressions*

Application—new technology: *When a participant adopts new technology as a result of an Extension program*

The wording of questions for new technology is similar to those for behavior change. The same issues (controlling for intervening factors and allowing time for adoption to occur) apply as well. Examples:

As a result of the Extension event, did you plant new transgenic corn this year?

As a result of the Extension event, have you started using yield monitors in your operation?

Summary of client change

Remember: The evidence you collect to demonstrate impact should match the program's goals for client change. For example, if the program was designed strictly to increase knowledge, then ask questions that measure knowledge gain; do not ask about behavior change.

The timing of data collection is also important. For the application-based client changes (behavior change, adoption of best practices, adoption of new technology), do not collect data until you can reasonably expect the client change to have occurred. On the other hand, asking about intentions or planned changes is an option if you conduct an immediate post-event evaluation.

Developing the Program Improvement Section

(2ⁿᵈ Section of a Questionnaire)

It is beneficial to devote a section of your questionnaire to program improvement to elicit what participants liked about the program, what they disliked and what suggestions they have for improvement. The goal is to use the information from this section to modify the next program and, as a result, experience greater impact and higher participant satisfaction. Program improvement questions can address any aspect of an event, including impact, satisfaction, content, delivery, logistics and future direction.

Typically, program improvement questions are structured as free-form open-ends such as:

*What did you like **most** about this workshop?*

*What did you like **least** about this workshop?*

How can we improve this workshop in the future?

What can we do differently to make this workshop better in the future?

What topics would you like the newsletter to address more often?

Is there anything else you want to us to know about your experience with this event?

Program improvement questions can be closed-ended as well, such as this customer satisfaction question used as part of an output program:

*Overall, how **satisfied** are you with this event?*
☐ *Not at all*
☐ *Slightly*
☐ *Somewhat*
☐ *Mostly*
☐ *Completely*

Developing the Demographic Section

(3rd Section of a Questionnaire)

In addition to questions about program impact and improvement, questionnaires typically ask about the participants themselves—what they are and what they have. Also called "demographics" or "participant background information," attributes are a person's personal characteristics such as age, education, occupation, ethnicity, income, etc.

Knowing the attributes of program participants is important for several reasons:

- **It tells you who you're reaching.**
  Who participated in your program? Attribute information will tell you. If the program has more than one primary focus, you might ask why they participated.

  A question about how participants heard about the program can help future marketing efforts. Of course, the response categories should correspond to how the program was actually marketed, along with avenues common to any event (such as word of mouth).

- **It tells you to what extent you're reaching the program's target audience.**
  Not everyone who attends your program is part of the target audience. Asking one or more questions to determine if a participant is part of the target audience will help you gauge the effectiveness of your marketing efforts.

  The information can help you adjust the marketing of the program or measure the program's impact more precisely. For example, you may not want to include participants outside the target audience in the calculations about impact.

- **It allows you to examine differences among groups.**
  First, you can analyze how the program is performing across various groups—has program impact been uniform, or are there differences between groups? For example, you might discover that the program has been more successful with younger participants than with older participants. Program changes to address group differences can be made if desired or required. Second, differences between groups on interests, perceptions, intentions, etc., can be uncovered, enabling more effective planning of future programs.

To minimize both survey burden and intrusion on personal lives, you should collect only relevant, useful and actionable attribute information. If it's simply "nice to know" information or you don't have plans to use it, *don't ask for it.*

General Guidelines

- Put attribute questions in one section at the end of the questionnaire.

- Include a short introduction to the section explaining how the information will (or will not) be used. Examples:

  If anonymous (no names or other individual identifiers on the form):
  Please tell us about yourself. Remember, your responses are anonymous and cannot be traced back to you. All information collected in this section will be reported in summary form and used for program improvement purposes only.

  If confidential (ID allows responses to be traced to individuals but not easily):
  Please tell us about yourself. Any information you provide will be held in strict confidence, reported in summary form and used for program improvement purposes only.

- Sometimes it is desirable to use response categories from other sources for comparison purposes (such as census data or previous surveys).

Specific Guidelines

The following are specific guidelines for approaching common attribute questions.

Gender/sex

Some people wonder how to word a question about whether a respondent is female or male: Should it be *gender* or *sex*? Although *gender* may be viewed culturally as more sensitive and is commonly used today, *sex* is actually the more precise term and is the wording used by the Census Bureau.

To avoid the issue altogether, consider adopting this generic wording:

You are . . .
- ☐ *Female*
- ☐ *Male*

Another consideration is the order of response categories. Traditionally, for maximum readability, response categories for sex were ordered to match what one was accustomed to hearing in everyday life. In the past, that has meant hearing "male" first and "female" second. However, this societal norm has dissipated over time. Generally, for sensitive questions, consider arranging the categories in *alphabetical order* (as above) to eliminate any implied importance of categories associated with order.

Race/ethnicity

Knowing respondents' racial and ethnic identity can be important in looking at program impact; however, asking about it can be a sensitive and delicate matter. Remember, Hispanic origin is classified as an ethnicity (not race) by the Census Bureau so, typically, you will ask for race/ethnicity, not just race.

To avoid any issues in this area, consider adopting the following generic wording used by the Census Bureau:

How would you describe yourself? (select one or more)
- ☐ *Black/African American (Non-Hispanic)*
- ☐ *Hispanic*
- ☐ *White (Non-Hispanic)*
- ☐ *Other*

Of course, *Asian, Native American* and any other races/ethnicities can be separated from *Other* and given their own response categories (see below).

How would you describe yourself? (select one or more)
- ☐ *Asian/Asian American/Pacific Islander*
- ☐ *Black/African American (Non-Hispanic)*
- ☐ *Hispanic*
- ☐ *Native American*
- ☐ *White (Non-Hispanic)*
- ☐ *Other*

Note that the categories are arranged in alphabetical order to eliminate any implied importance associated with ordering. The exception is *Other*, which is traditionally (and logically) placed at the end.

Also note that instructions such as *select one only* or *circle one* have been replaced with *select one or more.* Today, many respondents want to identify themselves as belonging to two or more races and/or ethnicities.

A different approach is to ask about Hispanic origin separately from race, as done by the Census Bureau and on the 2004-2005 Texas 4-H Member Enrollment Form:

Are you of Hispanic ethnicity?
- ☐ *Yes*
- ☐ *No*

What is your racial group(s)? (Select all that apply)
- ☐ *Asian/Asian American/Pacific Islander*
- ☐ *Black/African American*
- ☐ *Native American*
- ☐ *White*
- ☐ *Other*

Age

Some participants are reluctant to reveal their exact age. Reluctance often translates into a refusal to answer the question or giving an incorrect age—both adversely affect data analysis.

If you do *not* need an exact age for statistical analysis or programming planning purposes, use

age categories, as program participants are more likely to give their correct age if falls within a category. For example:

What is your age?

☐ *Under 25*
☐ *25-34*
☐ *35-44*
☐ *45-54*
☐ *55-64*
☐ *65-74*
☐ *75-84*
☐ *85 and over*

These eight categories work well if you have many program participants with a wide distribution of ages. Having eight categories, compared to fewer categories, has at least two advantages. First, there are many ways to equitably collapse categories—using all eight or the six "in the middle." Second, mean and median calculations using categorical data become more precise as the number of categories increase.

Another suggestion that might encourage more accurate and complete reporting of age is to include a category higher than most program participants you expect to attend—the theory being that more participants on the higher end will provide a correct age category if they do not have to select the highest (oldest) age category.

That said, select the age categories that make the most sense given your particular program needs. The categories should be equitable and have a logical basis.

Sometimes a specific age is needed for statistical analysis, precise trending or programming purposes. If so, asking "What is your age?" is the preferable (softer) phrasing compared to "How old are you?" Example:

What is your age? _____ years

Alternatively, you can ask for year born, although your age calculation will be off by one year for some respondents, depending on what month of the year you tabulate your survey data.

Do **not** ask for the month and/or year of birth unless it is absolutely necessary. Doing so will mean a lot of computation work for you to do later and a significant number of refusals to answer.

Income

People are especially sensitive about revealing income. Therefore, keep two things in mind as you develop income questions:

First, never ask for a specific dollar amount. Instead, *always* use broad income ranges as your response categories. They should be precise enough to be useful to you yet broad enough that most respondents will feel comfortable enough to provide a correct answer.

Second, phrase the income questions precisely. Exactly what do you want to know? Annual income? Monthly income? Net? Gross? Taxable? Take-home? Of the respondent only? Of the entire household?

Who is included in household income? Respondent plus spouse (if married)? Unmarried partners? Roommates? Teenage children with jobs?

Asking for the gross income of the respondent or household is probably the least problematic in terms of recall and accuracy. Most people can recall their current salary (gross income, before taxes and other deductions), although those in sales or who own businesses will have more difficulty in providing a single "annual" figure.

Which of the following best describes your annual gross <u>household</u> income in 2004 (before taxes and deductions)? Please include just yourself and other head of household, if applicable.

Education

For consistency, ask for highest level of education *obtained*. Otherwise, respondents may select an education level that they are working on and plan to complete.

Response categories may be relatively few or numerous, depending on your particular information needs:

Example 1:

- ☐ *Some high school (or less)*
- ☐ *High school degree or GED*
- ☐ *Associate or technical school degree*
- ☐ *4-year college degree*
- ☐ *Graduate or professional degree*

Example 2:

- ☐ *Some grade school (1-8)*
- ☐ *Some high school (9-12)*
- ☐ *High school degree or GED*
- ☐ *Some college or technical school*
- ☐ *Associate or technical degree*
- ☐ *Bachelor's degree*
- ☐ *Master's degree*
- ☐ *Ph.D.*
- ☐ *Professional degree (MD, DVM, JD, ED)*

Where do you live?

Here are some generic response categories to consider:

- ☐ *Farm or ranch*
- ☐ *Rural area, not a farm or ranch*
- ☐ *Town of under 5,000 people*
- ☐ *Town or city of between 5,000 and 25,000 people*
- ☐ *Town or city of between 25,000 and 100,000 people*
- ☐ *Town or city of between 100,000 and 250,000 people*
- ☐ *Town or city of more than 250,000 people*

Appendices

Appendix A: Wording the Questions

Question wording should strike a balance between two competing goals: collecting information in sufficient detail to answer the study questions vs. simplicity for maximum understandability and reliability. In writing questions, consider three things: the target audience for whom the questionnaire is being designed, the purpose of the questionnaire and the placement of the questions in relation to each other.

Some general guidelines include:

- **Use simple wording**.
  Adapt the wording to the vocabulary and reading skills of people who will be asked for information, but don't talk down to them. Do any words have double meanings, or are any words confusing?

- **Be specific.**
  A question about older youth should specify what age or grade is considered as "older." A question such as "How many times has your 4-H club met?" does not provide a time frame as a basis for responding (such as, since its inception, in the past 2 years, past 6 months, etc.). Even the question "How many times did your 4-H club meet last year?" should be more specific. Does "last year" mean 2004, or the past 12 months, or a fiscal year such as September through August?

- **Avoid using abbreviations, jargon or foreign phrases.**
  Will the respondents understand what is meant by such terms as client change, learning experiences, outcome programs, pre-post or other technical terms that professionals commonly use as short-cuts?

- **Use clear wording.**
  Words such as "regularly" and "occasionally" mean different things to different people. Avoid such words if possible or at least provide a definition or example of what is meant by it. Other examples of vague terms include: majority [more than half of what?], often [daily, twice weekly, weekly?], governmental [city, county, state, federal?], older people [how old?].

- **Include all necessary information.**
  In some cases, the respondents may not know enough to adequately answer the question. For example: Do you agree or disagree with the county's new environmental policy? Respondents may not know what the policy is or whether it is the most recent one. Provide a statement summarizing distinguishing points of the policy.

- **Avoid questions that may be too precise.**
  Few people can recall exactly how many times they ate out last year or visited a particular Web site in the past 6 months. To help the respondents formulate an answer, use logical response categories, such as 0-5, 6-10, 11-15, etc.

  Other information, however, such as the number of irrigated acres or head of cattle owned, are likely to be known by most respondents. Knowing the target audience and having experience with previous questionnaires will help you decide whether a particular piece of information requested is too precise.

- **Phrase any personal or potentially incriminating questions in less objectionable ways.**
  Some participants may object to questions about income level, drug use or eating habits. One way to elicit such information is to ask participants to select from among broad categories [income less than $20,000, $20,000 to $29,999, $30,000 to $39,999, $40,000 and over, etc.] instead of specifying precise information. Also, a series of questions may be used to soften or overcome the objectionable nature of certain information.

- **Avoid questions that are too demanding and time consuming.**
  Examples are: Rank the following 15 items in order of their importance to you.

  A better approach is to ask participants to select their top five items from the list of 15 and rank those only. This will reduce the survey burden on the respondent while producing more meaningful results for you.

Exhaustive

- **Use exhaustive, mutually exclusive categories.**

  For questions that ask for one answer ("select one only"), response categories need to be exhaustive **and** mutually exclusive.

Exhaustive means that all possible response categories are listed. A question with age categories provides a simple example:

Which category includes your age?

☐ *25-34*
☐ *35-44*
☐ *45-54*
☐ *55-64*

The list above is not exhaustive, as there are no accurate response categories for participants under age 25 or over age 64. Adding categories to cover the low and high ends makes the list exhaustive.

Which category includes your age?

☐ *Under 25*
☐ *25-34*
☐ *35-44*
☐ *45-54*
☐ *55-64*
☐ *65 or over*

If the list of potential response categories is long (more than 12, for instance) think about a final category called "other" or a partially closed structure with an "other, please specify" option. Or, if you want participants' preference in just a few categories of interest to you, consider this question wording:

Of the five vegetables listed below, which one tastes best to you?

☐ *Broccoli*
☐ *Carrots*
☐ *Corn*
☐ *Potatoes*
☐ *Spinach*

Mutually exclusive

Mutually exclusive means that the categories do not overlap. Unless a question specifically allows for multiple responses, make sure that only one answer is possible. Using the age example:

Which category includes your age?

☐ *Under 25*
☐ *25-35*
☐ *35-45*
☐ *45-55*
☐ *55-65*
☐ *65 or over*

Here, participants age 35, 45, 55 or 65 have two response categories to choose from.

Another example:

How did you first hear about this Extension workshop? (select one only)

☐ *at my Extension office*
☐ *at another Extension event*
☐ *at work*
☐ *newspaper*
☐ *on the web*
☐ *someone told me about it*

If a participant heard about the workshop from a friend at work, more than one answer is possible. Even the distinction between *newspaper* and *on the Web* may be unclear for a participant who first learned about the event in an online version of the newspaper.

This question asked about sources but offered location categories as well—creating the potential for overlapping responses. Questions about sources and locations should be separated—each with an exhaustive set of response categories.

- **Avoid making assumptions.**
  A question such as "Do you prepare beef when you have friends in to eat?" makes an assumption—that the respondent has friends in to eat. Write two questions instead. Use the first question to establish the situation, followed by the question of concern. For example: "Do you ever have friends in to eat?" Yes/No [If yes, "Have you ever prepared beef for them?"]

- **Avoid double questions.**
  Having two questions written together does not allow for the participant to respond in favor of

one part or the other. For example: "Did the poultry production seminar help you to identify ways to improve sanitation and increase the nutrition of your cage bird operation?" The answer may be "yes" on the first point but "no" on the second point or visa versa. Ask about sanitation and nutrition separately.

Other double questions may be unduly ambiguous. For example: "Do you favor legalization of marijuana for use in private homes but not in public places?" Respondents have no way to say whether they favor both places, oppose both places, oppose home but favor public use or oppose legalization as a concept in general. Ask about legalization of marijuana in the home and in public places separately.

- **Avoid bias in questions.**

  Such questions influence people to respond in a way that does not accurately reflect their position. A question can be biased in several ways: It can imply that the respondent should be engaged in a particular behavior; it can give unequal response categories or responses that are loaded in one direction; and it can use words with strong positive or negative emotional appeal, such as bureaucratic, boss, equality, etc.

Some examples of biased questions are shown here:

1. *How would you rate the housing in which you live?*
   - ☐ *Fair*
   - ☐ *Good*
   - ☐ *Excellent*

   No negative options, such as "poor," are provided.

2. *More farmers in Greater County are using Superb than any other variety of wheat. Do you use Superb?*
   - ☐ *Yes*
   - ☐ *No*

   This question suggests that the respondent should be using Superb.

3. *Do you agree that funding for Extension in your county should be increased?*
   - ☐ *No*
   - ☐ *Yes*

   This is an unbalanced and leading question. A better wording:

4. *Do you agree or disagree that Extension funding should be increased? (Circle one)*
   - ☐ *Strongly agree*
   - ☐ *Agree*
   - ☐ *Disagree*
   - ☐ *Strongly disagree*

Poor logic	Poor spacing	Better
☐ *1,000 acres*	☐ *10 acres*	☐ *0 acres*
☐ *999-500 acres*	☐ *1-9 acres*	☐ *1-200 acres*
☐ *499-100 acres*	☐ *10-99 acres*	☐ *201-400 acres*
☐ *99-10 acres*	☐ *100-499 acres*	☐ *401-600 acres*
☐ *9-1 acres*	☐ *500-999 acres*	☐ *601-800 acres*
☐ *0 acres*	☐ *1,000 acres*	☐ *801-1000 acres*
		☐ *Over 1,000 acres*

- **Make the response categories clear and logical.**
  Too often the answers are confusing, not in logical order or improperly spaced on the page. For example:

  For questions that ask about quantities, try to create response categories with the same amount within each category and such that you expect there to be a roughly even distribution of responses across all categories. In other words, try to avoid all responses falling into just one category.

- **Use complete sentences.**
  Trying to keep sentences simple and concise may result in questions being too cryptic and misunderstood. Check for any incomplete sentences.

- **Make sure that changing a question is acceptable to the survey sponsor.**
  A questionnaire may already be written and available to you. Perhaps your survey is sponsored by another organization or a specialist has already developed a questionnaire as part of an evaluation plan for a program. Sometimes questions (even flawed ones) are retained year after year in order to replicate a previous survey and compare results. It is recommended that you inquire with survey sponsors or program leaders to determine if changing questions on an existing questionnaire is acceptable.

- **Make sure the question requires an answer.**
  Ensure that anyone completing a questionnaire has an opportunity to answer each question asked of them.

  Problem:
  1. If you purchased certified wheat seed last year, did you plant it?

  ☐ *Yes*
  ☐ *No*

  It is impossible to distinguish those who did not purchase certified wheat seed ("does not apply") from true missing (those who purchased certified wheat seed but refused to answer).

  Better:
  1. If you purchased certified wheat seed last year, did you plant it?

  ☐ *Yes*
  ☐ *No*
  ☐ *Did not purchase certified wheat seed last year*

  Best:
  1. Did you purchase certified wheat seed last year?

  ☐ *Yes (go to question 2)*
  ☐ *No (go to question 3)*

  2. Did you plant the certified wheat seed you purchased last year?

  ☐ *Yes*
  ☐ *No*

Questions come in a variety of forms. Some questions have answers that fall along an implied continuum (rating scales). Others have answers in no particular order (lists). Some questions have multiple choice options (select all that apply). Others ask respondents to select one answer only or provide relevant response categories but allow respondents to add another answer. Some questions ask respondents to write in a number. Others allow the respondent to answer freely without restriction.

Question types are defined by the way respondents are asked to provide an answer. Generally, questions fall into one of three categories: closed-ended, partially closed-ended or open-ended. Each has certain advantages and disadvantages.

Close-ended questions have response categories (possible answers) provided and ask respondents to select either one answer or multiple answers from what is given. These questions have greater uniformity in responses but require that you know and include all relevant responses.

Generally, a question that asks for a *single* response must provide a list of responses that are **exhaustive** (include all possible answers) and **mutually exclusive** (no overlap; that is, a response should appear to belong to just one answer from the list of all possible answers). An exception to the "exhaustive" rule is the case of measuring knowledge gain in which some of your questions may be structured as multiple choice (with one correct answer).

Partially close-ended questions have the same attributes as a closed-ended question but provide an open-ended response category such as *Other, please specify* or *Something else*. This protects against leaving out an important answer or other unanticipated responses.

Open-ended questions ask respondents to provide their own answers to the question. These are fill-in-the-blank responses. No response categories are provided. Some are somewhat structured (such as *What is your age? ___*), where a number within a reasonable range is expected. Others are more free-form (such as *What did you like most about this event?*). They allow respondents to express their own thoughts and comments but require more work of both the respondent and the person doing the analysis.

Further explanation and more detailed examples that fall under each type of question are provided in the next section.

Close-Ended Questions

One-choice answers (Select *one* only)

This type of closed-ended question provides a list of answers and asks respondents to select the *one* answer they think is best (most accurate).

- **Two-option response:** This is the simplest question format, having just two response categories. These include: Yes-No, Agree-Disagree, True-False, Favor-Oppose. For example:

Currently, do you raise stocker cattle?

　☐ *Yes*
　☐ *No*

Depending on the purpose of the information, this may be the most appropriate format. It is often used as the first question in a series on the same topic. However, using a rating scale or a ranking, when appropriate, offers more information than the two-option response.

- **One best answer:** This type of question can be used to solicit information or to test knowledge. It is appropriate when all relevant answer choices are known and can be listed. Respondents are provided with the list of answers and asked to check or circle the choice they feel is the best. Responses are independent of one another, instead of being gradations along a continuum. An example follows:

What does the word "nutrition" mean to you? [Select one only]

　☐ *Getting enough vitamins*
　☐ *The food I eat and how my body uses it*
　☐ *Having to eat foods I don't like*
　☐ *Having good health*

- **Rating scale:** Rating scales are commonly used to measure attitudes, perceptions, values and behavior changes. Respondents are asked to provide a single choice at the most appropriate point on a scale. Here is an example:

How <u>effective</u> was the workshop in making you aware of new markets in which to sell your cattle?

Not at all	Slightly	Somewhat	Quite	Extremely
1	2	3	4	5

Rating scales are among the most common types of question used in Extension questionnaires, but they should be developed with forethought and care. Because of their importance, rating scales are presented in greater detail in Appendix C.

Items in a series: When a series of questions use the same response categories, it is possible to present the response categories in tabular form. Identify the answer choices with a horizontal bracket on top as in the example below.

How often do you eat the following meats? (Select one number for each meat)

	Never	Less than once/week	1-3 times a week	4-6 times a week	Daily
A. Beef	1	2	3	4	5
B. Lamb	1	2	3	4	5
C. Pork	1	2	3	4	5
D. Poultry	1	2	3	4	5
E. Fish	1	2	3	4	5

- **Paired comparisons:** Respondents are asked to compare one item to another, usually expressed in terms of "either/or" or one item "versus [vs] another.

In comparing beef to other meats, which does your family use more often? [Choose one from each comparison, circling the number on that line.]

　1 *Beef* 　OR 　2 *Poultry*
　3 *Beef* 　OR 　4 *Lamb*
　5 *Beef* 　OR 　6 *Pork*
　7 *Beef* 　OR 　8 *Wild game (venison, etc.)*

- **Matching:** Respondents are asked to match responses to a list of items.

Match each food to the proper food group by putting the correct lower case letter in the blank. For example: A. __d__ WHOLE-WHEAT BREAD

A.____ Whole-wheat bread	a. Meat and meat products
B.____ Nectarine	b. Milk and milk products
C.____ Ham	c. Fruits and vegetables
D.____ Yogurt	d. Breads and cereals
E.____ Pumpkin	e. Sweets
F.____ Oatmeal	

Close-Ended Questions with Multiple-Choice Answers

Check all that apply: This common response format is actually a series of yes/no questions. It is a fast, easy way to obtain such information, and it also saves space. There is a risk, however, that the respondent will not consider each item, so don't make the list too long. Here are two examples. The first example does not put any restrictions on the respondent. The second example asks for up to three responses as a way to prioritize topics.

How do you currently market your cattle? [Circle all that apply.]

> *A. Local auction barn*
> *B. Local meat packer*
> *C. Terminal market*
> *D. Hedging*
> *E. Direct sales contract (selling forward)*
> *F. Livestock dealer*

*What information would you most prefer be covered in the next Extension workshop? (Select up to **three** from the list below)*

> ☐ *Cow health*
> ☐ *Calf diseases*
> ☐ *Internal parasites*
> ☐ *Brucellosis*
> ☐ *Grubs or ticks*
> ☐ *Reproductive diseases*

Some have suggested structuring a "check all that apply" question as a series of yes/no questions to encourage a response to each item.

How do you currently market your cattle? [Please indicate "yes" or "no" for each of the following.]

> ☐ *Yes* ☐ *No Local auction barn*
> ☐ *Yes* ☐ *No Local meat packer*
> ☐ *Yes* ☐ *No Terminal market*
> ☐ *Yes* ☐ *No Hedging*
> ☐ *Yes* ☐ *No Direct sales contract*
> ☐ *Yes* ☐ *No Livestock dealer*

- **Lists:** A list provides a series of answers. Respondents may choose one or more answers, depending on the instructions. Answers are not ranked, however.
  From the list provided, select the TWO adjectives that best describe you. (Place the letter of the alphabet on the lines provided.

  > *1. _____*   *a. Ambitious*
  > *2. _____*   *b. Happy*
  >   *c. Idealistic*
  >   *d. Outgoing*

- **Ranking:** Rank ordering is a multiple-choice option. Respondents are given various responses and asked to rank them in order of importance or to indicate a "top three." See the examples below.

  What would you like to know more about? Select three responses from the list and rank them in order of 1, 2, 3.

  > *1. _____*   *a. What to eat to look better*
  > *2. _____*   *b. How food affects me*
  > *3. _____*   *c. Weight control*
  >   *d. Health foods*
  >   *e. Physical conditioning through diet*
  >   *f. Vitamins*

  What would you like to know more about? Select up to four responses from the right hand column and rank them in order of first, second, third, fourth choice.

  > *1. ____ first choice*   *a. What to eat to look better*
  > *2. ____ second choice*
  > *3. ____ third choice*   *b. How food affects me*
  > *4. ____ fourth choice*   *c. Weight control*
  >   *d. Health foods*
  >   *e. Physical conditioning through diet*
  >   *f. Vitamins*
  >   *g. Reading labels to find the fat content*
  >   *h. Saving costs in food buying*

Partially Closed-Ended Questions

- **Other, please specify:** This type of question offers the respondent a choice of answers plus an open-ended response category such as "Other (please specify)." This protects you against leaving out an important answer choice. It also means that you will have narrative text to analyze, so think about what you will do with these responses. Examples:

Which of these community recreational facilities to you use the most? (select one only)

 ☐ *Parks*
 ☐ *Tennis courts*
 ☐ *Swimming pools*
 ☐ *Other (Please specify)_____*
  _____

What do you consider the main responsibilities of your county 4-H agent? (select all that apply)

 ☐ *Work with people who request help*
 ☐ *Work with 4-H members*
 ☐ *Work with volunteer 4-H leaders*
 ☐ *Plan and organize county youth events*
 ☐ *Organize and expand new 4-H clubs*
 ☐ *Other (Please specify) _____*
  _____

For youth audiences, less stale phrases such as "Here's something you didn't list:" or "Something else:" may be more appealing than "Other (Please specify)."

Always review the responses you get for this type of question before entering any data. On occasion, a respondent will write in a response that actually corresponds to an existing predefined response category. In that case, simply mark the correct response category and unmark the "Other (Please specify)" category. Also, reviewing responses first will help guide your efforts to categorize them.

Open-Ended Questions

Fill in the blank: An open-ended format is often the easiest way to ask a question, but the responses are not easy to analyze. Answers are likely to vary and generally must be categorized and summarized to be useful. The computer or data entry person cannot "magically" tabulate open-ended questions, so think about how you will analyze the responses. Here are some other important points to consider:

- They are most often used to stimulate free thought, solicit creative suggestions (example 1) or recall information learned (example 2).

- They can be used as a probing question to elicit more detail. (example 3)

- They are useful when respondents are asked to supply a specific answer and a large array of responses is possible (example 3) or when all possible answers are not known.

- It is often used at the end of a questionnaire to ask respondents for any additional comments they might have (example 4).

- When asking for a numeric response, include the unit which is to be used (example 5).

1. *What do you think should be done to improve the Family and Consumer Sciences program in this county?*

2. *Name the five basic food groups.*

3. *Please say how you intend to use the information you gained during the workshop.*

4. *We are interested in knowing any other comments you might have concerning the 4-H program and your role as 4-H leader. Please write in the space below any thoughts you'd like to share with us.*

5. *Please list the number of acres, if any, of temporary pasture you planted in 2004. Indicate "0" if you did not plant any for a particular category.*

   A. ____ *Acres of wheat*
   B. ____ *Acres of oat*
   C. ____ *Acres of rye grass*
   D. ____ *Acres of clover*
   E. ____ *Acres of summer annuals*
   F. ____ *Acres of other (Please specify):*
   _____

Appendix C: Rating Scales

There are many decisions to make concerning rating scales, including whether scales should be bipolar or unipolar, what should be the number and order of points, whether to have a midpoint, what the number of points to label should be and how to label them. Also, you must ensure that the scale used matches the wording of the question (what's being asked for) and your requirements for statistical analysis. Let's look at each issue separately:

Bipolar vs. unipolar

Scales can be categorized as bipolar or unipolar. *Bipolar* scales have a middle point with amounts that increase in both ways as you move toward the ends. *Unipolar* scales start with the absence of something and increase toward all of something. Overall, five-point unipolar scales tend to differentiate better than five-point bipolar scales (see discussion on *Agreement vs. how much*).

Number of points/statistical analysis

Most scales have three to seven points. In Extension, five-point scales tend to be the most popular and can sufficiently differentiate responses for most evaluation purposes.

Scales with limited labeling (such as on the endpoints only) are easier to extend beyond five points. For example:

Please rate your skill level in regard to identifying pests in your vegetable garden.

Novice									Expert
1	2	3	4	5	6	7	8	9	10

In terms of statistical analysis, generally the greater the number of points on the scale, the greater the spread in responses received. Typically this leads to greater accuracy in statistical analysis.

The challenge with having numerous points without labels is interpretation—both on part of the respondent and the researcher (see discussion on **Labels**).

For bipolar scales, another decision is whether to provide an even or odd number of response options. An odd number of categories provide a middle or neutral position for selection. An even number of cat-

egories forces the respondent to take a side. This is appropriate when you want to know in what direction the people in the middle are leaning.

Order of points ("order effects")

Starting with either positive or negative (high or low) response options appears to have little impact on responses. However, for unipolar scales, it seems more logical to start with the absence of something (on the left) and work progressively higher from there (toward the right).

It also matters little whether Yes or No is listed first. But you must be consistent throughout the questionnaire.

Labels

Generally, it's better to label every point on a scale so that all respondents have a common reference point. For example:

Not at all	Slightly	Somewhat	Quite	Extremely
1	2	3	4	5

. . . is better than . . .

Not at all				Extremely
1	2	3	4	5

Without labels, it's not clear what 2, 3 and 4 represent on the scale. Respondents must take time to interpret the scale—increasing survey burden while decreasing reliability. Two respondents who would otherwise select the same point with a fully labeled scale may select different numbers on the partially labeled scale.

Agreement vs. how much

Consider the following statement:

I received good service at the hospital.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

This seems to be a clear statement that anyone can answer in a straightforward manner. But consider if your quality of service was "somewhat good" or "good in some ways but poor in other ways." Responses of "agree" and "disagree" do not sufficiently reflect the totality of your thought

about quality of service. Some respondents may mark "agree" while some may mark "disagree." Still others may mark "neutral" in order to be in the middle even though they are not actually neutral. Or, a respondent may mark "disagree" or "strongly disagree" because they felt the service was not just good, it was "excellent!"

The ambiguity in the middle of the scale is again apparent in the following effectiveness scale:

How effective or ineffective was the workshop in . . . .?

| *Very ineffective* | *Ineffective* | *Uncertain* | *Effective* | *Very effective* |

For respondents who assessed the workshop as "somewhat" effective, which response category do they mark? Again, they are forced to select one of the three categories in the middle, none of which really fit. Other phrases in the middle such as "Neutral" or "Neither effective nor ineffective" don't seem to solve the dilemma. The problem is the nature of the scale; it is bipolar; that is, it has a middle point with amounts that increase in both ways as you move toward the ends.

The same problem with measuring effectiveness occurs with an agreement scale. Consider this example:

The workshop was effective at . . .

| *Strongly disagree* | *Disagree* | *Neutral* | *Agree* | *Strongly Agree* |

Again, if the workshop was somewhat effective, which response option works best? The most accurate response is not obvious.

What works better is a unipolar scale, which starts with the absence of something and increases toward all of something. Here are some examples:

Overall, how effective was the workshop in . . . ?
Not at all   Slightly   Somewhat   Quite   Extremely

Overall, how satisfied are you with the workshop?
Not at all   Slightly   Somewhat   Mostly   Completely

Note that if a respondent assessed the workshop as "somewhat" effective in this particular area or is "somewhat" satisfied; there is an obvious response category to select.

In sum, the agreement scale seeks to discern how effective (or valuable, practical, etc.) various aspects of the program were to participants. But it's an indirect way to get there. Asking the question in the "how..." format gets to the heart of the matter directly and lends itself to a scale that works better.

Examples

Below are examples of scales for measuring difference aspects of a program. Some measures (such as effectiveness, satisfaction, etc.) have unipolar (uni) and bipolar (bi) versions. Where there are two versions, participants will most likely find the unipolar easier to use.

Effectiveness (uni)	**Effectiveness (uni)**	**Effectiveness (bi)**
Extremely effective	Completely effective	Very effective
Quite effective	Mostly effective	Effective
Somewhat effective	Moderately effective	Neither effective nor ineffective
Slightly effective	Not very effective	Ineffective
Not at all effective	Not at all effective	Very ineffective

Satisfaction (uni)	**Satisfaction (uni)**	**Satisfaction (bi)**
Completely satisfied	Extremely satisfied	Very satisfied
Mostly satisfied	Quite satisfied	Satisfied
Somewhat satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied
Slightly satisfied	Slightly satisfied	Dissatisfied
Not at all satisfied	Not at all satisfied	Very dissatisfied

**Agreement
(5 pt. bi + undecided)**
Strongly agree
Tend to agree
No preference
Tend to disagree
Strongly disagree
Undecided

Importance (uni)
Extremely important
Quite important
Somewhat important
Slightly important
Not at all important

Comparative (bi)
The best
Better than most
Average
Worse than most
The worst

Performance (uni)
Exceptional (or Outstanding)
Very good
Good
Fair
Poor

Expectations - Quantity (bi)
Much more than expected
More than expected
As expected
Less than expected
Much less than expected

Frequency (uni)
All the time
Most of the time
Some of the time
Seldom
Never

Three Point Scales
Too little
OK as is
Too much

**Agreement
(7 pt. bi + undecided)**
Strongly agree
Agree
Tend to agree
No preference
Tend to disagree
Disagree
Strongly disagree
Undecided

Importance (4-point uni)
Very important
Important
Somewhat important
Not important

Behavior (bi)
Definitely
Probably
Might or might not
Probably not
Definitely not

Performance (uni)
Excellent
Good
Fair
Poor
Very poor

Expectations - Performance (bi)
Much better than expected
Better than expected
As expected
Worse than expected
Much worse than expected

Frequency (uni)
Always
Often
Sometimes
Rarely
Never

Too short
About right
Too long

**Agreement
(5 pt. bi without undecided)**
Strongly agree
Agree
Neither agree nor disagree
Disagree
Strongly disagree

Importance (bi)
Very important
Somewhat important
No opinion
Somewhat unimportant
Very unimportant

Requirements (uni)
Exceeded
Met
Nearly met
Missed

Performance (uni)
Excellent
Good
Fair
Poor

Frequency (uni)
At least once a week
A few times per month
At least once a month
Less than once a month
Never

No
Maybe
Yes

Appendix D: Formatting the Questionnaire

Once the questions have been developed, a series of decisions must be made about the questionnaire format: its appearance, length and order of questions. The questionnaire should be pleasing to the eye, easy to complete and logical in flow.

The following guidelines are offered to help format the questionnaire.

- Place a survey title at the top of the questionnaire and format it so that it stands out (such as using a larger, bold font). Keep it descriptive but simple. Most titles mention some combination of location, target audience and/or type of survey. Examples include:

Fort Bend County New Landowner Survey

Healthy Harvest Course Assessment

Survey of Texas Hunters

Trans-Pecos Beef Producer Survey

IPM School Coordinators Needs Assessment

- For visual appeal and easy identification of the program, include a **program or organization logo** at the top of the survey, near the title of the survey.

- Just below the title, provide an **introduction** that includes what the questionnaire's purpose is, who is conducting it, how the information will be used and whether confidentiality will be maintained. For mailed questionnaires, reinforce important points made in the cover letter.

- Make the **first questions** nonprovocative, interesting and easy to answer. They should be clearly related and useful to the topic of the questionnaire. Avoid open-ended questions or long lists of answer choices.

- Try to place the **more important questions** at the beginning—if they logically fit— because some respondents experience "survey fatigue" and fail to complete the entire survey.

- **Order** the questions to achieve continuity and a natural flow. Try to keep all questions on one subject together in sections. In each section, put the general questions first, followed by more specific questions. For example, if you want to find out about a person's knowledge of insurance, start with questions about types of insurance and purposes of the different types, followed by questions about the costs of these various types.

- If possible, use the **same type** of question/responses throughout a particular train of thought. It disrupts the attention span to have a multiple choice question following a yes/no question, then an open-ended question.

- Place **demographic questions** (age, sex, race/ethnicity, etc.) at the end of the questionnaire.

- Use **quality printing** and an **easy-to-read typeface.** Leave enough open space so the questionnaire does not feel crowded and is easy to read.

- Be consistent in **ordering response categories** throughout the questionnaire. For example, if you begin with:

  ☐ *Yes*
  ☐ *No*

  then don't switch later to:

  ☐ *No*
  ☐ *Yes*

- Keep the entire question and its response categories on the **same page**. Don't force respondents to turn a page in the middle of a question or between the question and its response categories.

- Ensure that the questions are distinguishable from the instructions and answers. This might be accomplished in two ways. First, have enough space (such as a half or full blank line) between the question and answers. Second, display the instructions or questions in boldface or italics. For example:

  (spacing only)
  Are you interested in receiving additional information on safe food handling practices?

  ☐ *Yes*
  ☐ *No*

(boldface and spacing)
Are you interested in receiving additional information on safe food handling practices?

☐ *Yes*
☐ *No*

- **Number** your questions. This is useful in at least three ways. First, it helps respondents distinguish one question from another. Second, any skip patterns you plan to incorporate must reference question numbers (for example: "If "no," go to question 4). Third, having question numbers facilitates data analysis, as it provides an easy way to link variables in a raw data set to questions on the form.

- If possible, arrange the answer choices in a **vertical flow**. This way, the respondent moves easily down the page, instead of from side to side. Example
Instead of horizontally:

☐ *Excellent*   ☐ *Good*   ☐ *Fair*   ☐ *Poor*

Format vertically:
☐ *Excellent*
☐ *Good*
☐ *Fair*
☐ *Poor*

- **Give directions on how to answer.** Place the directions in parentheses immediately after the question. It is better to repeat directions too often than not enough. Specific instructions may include: (Select one only.) (Select all that apply.) (Please fill in the blank.) (Enter whole numbers.) (Please do not use decimals or fractions.)

- Use **transitional statements** to build continuity. Transitional statements are used to signal the start of a new topic or section, to begin new pages and to break up the monotony of a long series of questions.
Example transitional statements:
Next we would like to ask you several questions about the community organizations you belong to.

Another important purpose of this survey is to learn how you feel about the work of service organizations in your community.

Finally, we would like to ask a few questions about you to help us in interpreting the results.

- It may be useful to make sure that the respondent is referring to the same program and defining it similarly. A **validation item** at the beginning of the questionnaire identifies the program and sets the stage for the questions to follow, such as:

Thank you for attending the Trans-Pecos New Landowner Conference—Extension's 1-day workshop held last month to educate new landowners about property right issues.

- As an **overriding goal,** make the questionnaire as short as possible while still collecting information in sufficient detail to answer the study questions. Generally, as a questionnaire becomes longer, a respondent is more likely to "satisfice"—that is, just get through the survey by marking responses haphazardly, without giving thoughtful consideration to each question and response categories, thus degrading the quality of data.

Three evaluation strategies are commonly used in Extension: pre-post, retrospective post and post-only.

The pre-post strategy involves administering a questionnaire (pretest) before a program starts and then administering another questionnaire (posttest) after the program concludes. Typically, the posttest will have the same questions as the pretest, with an option to include additional questions related to program improvement and customer satisfaction. Participant attribute questions can be placed on either the pretest or posttest. An identifier can be employed to link pretest and posttest forms by individual. Then, responses to each question (pre vs. post) are compared to determine program impact. Questions that measure knowledge are well suited for this type of analysis.

The retrospective post (or post-pre) strategy involves administering a questionnaire at the conclusion of a program (similar to a post-only) but allows the respondents to answer questions for both before and after the program. In a sense, it's similar to the pre-post strategy except that the pretest is taken at the same time as the posttest.

The post-only strategy involves administering a questionnaire (posttest) after a program concludes. It does not collect "pre-program" measures from participants but still aims to measure program impact. It is considered the weakest of the three strategies because no pretest (baseline) data is collected to help measure change—but is still better than nothing.

Examples

In the following pages an example questionnaire is presented for each of the three evaluation strategies. A summary page follows each questionnaire. The summary highlights the strengths and weaknesses of the questionnaire in terms of the design principles covered in this publication.

Lone Star County

Rangeland/Rescue Management Program

Pre Measurement

Your input is very valuable to Lone Star County. Please take a brief moment of your time to help us gain an understanding of where your knowledge level is on the subject of rangeland/rescue management. Thank you!

Please answer the following questions by circling the most appropriate answer.

1. **There are both vegetation and soil indicators of rangeland health.**

   True or False

2. **Energy capture, water cycling, nutrient turnover and vegetation dynamics are ecological processes that determine rangeland health.**

   True or False

3. **The paths that water can take on rangeland are:**

   (a) runoff
   (b) deep percolation
   (c) evaporation
   (d) transpiration
   (e) all of the above

4. **The ecological processes that help determine rangeland health are:** *(circle one)*

   (a) water cycles
   (b) nutrient turnover
   (c) energy capture and flow
   (d) vegetation dynamics
   (e) all of the above

5. **The categories of risk that have to be managed on rangeland are:** *(circle one)*

   (a) climatic
   (b) financial
   (c) biological
   (d) political

   (e) all of the above

6. **In Texas, private farms and ranches account for 84 percent of the state. This amounts to how many acres?**

   (a) 144,000
   (b) 32 million
   (c) 144 million
   (d) 73 million

7. **What is the primary motivating factor driving the market for rural lands in Texas?**

   (a) livestock prices
   (b) price speculation
   (c) wildlife associated recreation
   (d) vacation properties

8. **The two most common private water well contaminants are:**

   (a) gasoline and oil
   (b) nitrate and gasoline
   (c) bacteria and oil
   (d) nitrate and bacteria

9. **The U.S. EPA has set a maximum contaminant level (MCL) for nitrates for public water suppliers for drinking water at:**

   (a) 12 ppm
   (b) 15 ppm
   (c) 20 ppm
   (d) 10 ppm

10. **Water is essential to life and is required for body temperature regulation, digestion, metabolism, excretion, lubrication of joints and conducting sound and sight.**

    True or False

Other questions

What are you hoping to gain from participating in this program?

Describe the problems you are having associated with water.

How many acres do you farm or ranch?

_____ Total acres

Do you hold a private or commercial pesticide applicator's license? Please check the most appropriate response.

___ Yes   ____ No   ____Not applicable

Lone Star County

Rangeland/Rescue Management Program

Post Measurement

Your input is very valuable to Lone Star County. Please take a brief moment of your time to help us make our programs more effective for you. Thank you!

Please answer the following questions by circling the most appropriate answer.

1. **There are both vegetation and soil indicators of rangeland health.**

   True or False

2. **Energy capture, water cycling, nutrient turnover and vegetation dynamics are ecological processes that determine rangeland health.**

   True or False

3. **The paths that water can take on rangeland are:**

   (a) runoff
   (b) deep percolation
   (c) evaporation
   (d) transpiration
   (e) all of the above

4. **The ecological processes that help determine rangeland health are:** *(circle one)*

   (a) water cycles
   (b) nutrient turnover
   (c) energy capture and flow
   (d) vegetation dynamics
   (e) all of the above

5. **The categories of risk that have to be managed on rangeland are:** *(circle one)*

   (a) climatic
   (b) financial
   (c) biological
   (d) political
   (e) all of the above

6. **In Texas, private farms and ranches account for 84 percent of the state. This amounts to how many acres?**

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9. **The U.S. EPA has set a maximum contaminant level (MCL) for nitrates for public water suppliers for drinking water at:**

   (a) 12 ppm
   (b) 15 ppm
   (c) 20 ppm
   (d) 10 ppm

10. **Water is essential to life and is required for body temperature regulation, digestion, metabolism, excretion, lubrication of joints and conducting sound and sight.**

    True or False

11. For each of the topics covered in the program, in the LEFT column, circle the ONE number that best reflects you BEFORE your participation in this program. Then, in the RIGHT column, circle the ONE number that best reflects you AFTER this program.

LEVEL OF UNDERSTANDING

Poor	Fair	Good	Excellent
1	2	3	4

Statements	*Before* Program				*After* Program			
General drought management	1	2	3	4	1	2	3	4
Rangeland recovery strategies	1	2	3	4	1	2	3	4
Decisions on destocking	1	2	3	4	1	2	3	4
Monitoring my rangeland	1	2	3	4	1	2	3	4
Identifying noxious plants	1	2	3	4	1	2	3	4
Controlling noxious plants	1	2	3	4	1	2	3	4
Alternative rangeland production decisions	1	2	3	4	1	2	3	4
Wildlife management techniques	1	2	3	4	1	2	3	4
Watershed management practices	1	2	3	4	1	2	3	4

12. Please rate today's event in the following areas:

Statements	Not at all	Slightly	Somewhat	Quite	Extremely
How <u>timely</u> was the subject matter for you?					
How <u>effective</u> were the speakers?					
How <u>practical</u> was the information for your cattle operation.					
Overall, how <u>educational</u> was this program.					

13. From this program, which practice(s) will you take home and implement?

14. What other beef cattle topics would you like further information about?

*****Thanks so much for your time!!!*****

Questionnaire Summary

Program: Lone Star County – Rangeland / Rescue Management Program

Strategy: Pre-post

Overview:
- "Knowledge gain" was the client change associated with this program, so pre-post is an appropriate evaluation strategy.
- Because it was a pre-post strategy, two questionnaires were used.
- The pretest included 10 knowledge questions—some true/false; others multiple choice—plus a few demographic questions.
- The posttest contained the same 10 knowledge questions plus additional questions dealing with level of understanding and program improvement.
- Question 11 on the posttest is actually a retrospective post item.

Strengths:
- A survey title and instructions were included.
- The questions were numbered and stood out in bold.
- There was spacing between questions and between the question and response categories.
- Most of the response categories were arranged vertically.
- A unipolar scale was used instead of an agreement scale (question 12 on posttest).
- There was plenty of space for open-ended responses (questions 13 and 14 on posttest)

Weaknesses:
- No logo was used.
- Some questions are "double-barreled," which is usually not acceptable but workable for a knowledge question that has a correct answer.

Skills for Success

*In order to improve **Skills for Success**, please tell us about your experience with the series. Do not write your name on this form so that your responses are anonymous. Thank you!*

1. Overall, how would you rate this course?

☐ Excellent
☐ Good
☐ Fair
☐ Poor

2. Overall, how <u>effective</u> was this course in equipping you with new skills that you will use in the coming years?

☐ Not at all
☐ Slightly
☐ Somewhat
☐ Quite
☐ Extremely

3. Overall, how <u>effective</u> was this course in giving you more confidence in yourself?

☐ Not at all
☐ Slightly
☐ Somewhat
☐ Quite
☐ Extremely

4. Overall, how <u>effective</u> was this course in giving you more confidence in the workplace?

☐ Not at all
☐ Slightly
☐ Somewhat
☐ Quite
☐ Extremely

5. Are you currently employed in a paying job?

☐ Yes→If "yes," are you better equipped to <u>excel</u> in your current workplace as a result of this course?

    ☐ Yes
    ☐ No

☐ No→If "no," are you better equipped to <u>get</u> a job as a result of this course?

    ☐ Yes
    ☐ No

6. Which part of the course was most useful to you?

7. Which part of the course was least useful to you?

8. What could be added to the course to make it better?

9. **For each statement listed below, in the left column, circle the number that best reflects you <u>before</u> the *Skills for Success* series. Then, in the right column, circle the number that best reflects you <u>after</u> the *Skills for Success* series.**

If you did not attend a particular session, skip the statements under it and proceed to the next session.

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

Statement	<u>Before</u> Course					<u>After</u> Course				
Session 1: First Impressions										
I dress appropriately in order to make a good first impression.	1	2	3	4	5	1	2	3	4	5
I practice good grooming habits in order to make a good first impression.	1	2	3	4	5	1	2	3	4	5
My body language makes a good first impression.	1	2	3	4	5	1	2	3	4	5
Session 2: Best Foot Forward										
I am confident in my communication skills.	1	2	3	4	5	1	2	3	4	5
I am confident in my interviewing skills.	1	2	3	4	5	1	2	3	4	5
I prepare a resume as part of my employment search.	1	2	3	4	5	1	2	3	4	5
I research a job as part of my employment search.	1	2	3	4	5	1	2	3	4	5
Session 3: Proactive vs. Reactive										
I resolve conflicts in a positive manner.	1	2	3	4	5	1	2	3	4	5
Session 4: Winning Relationships										
I respect others.	1	2	3	4	5	1	2	3	4	5
I set boundaries for myself that I expect others to respect.	1	2	3	4	5	1	2	3	4	5
I respect other people's boundaries.	1	2	3	4	5	1	2	3	4	5
Session 5: Eating with Style										
I use proper table etiquette.	1	2	3	4	5	1	2	3	4	5
I eat each food type properly.	1	2	3	4	5	1	2	3	4	5
I use appropriate table conversation.	1	2	3	4	5	1	2	3	4	5

Questionnaire Summary

Program: Skills for Success

Strategy: Retrospective post

Overview: • "Skills acquisition" and "behavior change" were the client changes associated with this program.

• A retrospective post strategy was used to measure program impact.

• This questionnaire was administered one time only, at the conclusion of the program.

• The questionnaire included general program effectiveness questions, program improvement questions and an extensive program impact question (#9) that asked about frequency of skills/behaviors before vs. after the program.

Strengths: • The survey title, Extension logo and instructions were included.

• Respondent anonymity was mentioned.

• The questions were numbered and stand out in bold.

• Spacing is left between questions, and between the question and response categories.

• The response categories were arranged vertically.

• "Effective" is underlined in questions 2-4 to emphasize what was being measured.

• Directional arrows help guide the respondents through branching (question 5).

• All points on a five-point scale were labeled (question 9).

• The increments of frequency seem to be roughly equal (question 9).

• The statements were arranged by session to aid recall (question 9).

Weaknesses: • None apparent.

Texas Cooperative Extension

Participant Survey

New Landowners Conference

Your views on the quality and effectiveness of Extension programs are extremely important. Please take a few minutes to tell us about your experience with this conference. Your answers to the following questions will help us better meet your needs in the future. Thank you!

1. Overall, how _satisfied_ were you with the conference?
☐ Not at all   ☐ Slightly   ☐ Somewhat   ☐ Mostly   ☐ Completely

If not "completely satisfied," please tell us what we could have done better in order for you to have been "completely satisfied."

2. How _satisfied_ were you with the following aspects of the conference . . .

	Not at all	Slightly	Somewhat	Mostly	Completely
Quality of course materials	☐	☐	☐	☐	☐
Location of the activity	☐	☐	☐	☐	☐
Length of the activity	☐	☐	☐	☐	☐
Information being _accurate_	☐	☐	☐	☐	☐
Information being _new_ to you	☐	☐	☐	☐	☐
Information being _easy to understand_	☐	☐	☐	☐	☐
Range of topics covered	☐	☐	☐	☐	☐
Completeness of information given on each topic	☐	☐	☐	☐	☐
Timeliness of Information (received in time to be useful)	☐	☐	☐	☐	☐
Helpfulness of the information in decisions about your own situation	☐	☐	☐	☐	☐
Knowledge level of presenters on the subject	☐	☐	☐	☐	☐
Overall value compared to the $20 registration	☐	☐	☐	☐	☐

3. Would you recommend this course to other new landowners in the area?
☐ Yes
☐ No

4. For each of the following topics covered at the conference, please tell us how <u>useful</u> the information was <u>in relation to your future plans</u>.

	Not at all	Slightly	Somewhat	Mostly	Completely
Agricultural Land Appraisal					
How to qualify for ag and wildlife exemptions	☐	☐	☐	☐	☐
How land values change with what an owner does with the property	☐	☐	☐	☐	☐
Ways to increase your property value	☐	☐	☐	☐	☐
Soils and Forages					
Soil variations and how it affects crops/rangeland sites	☐	☐	☐	☐	☐
Forages that do well in the area	☐	☐	☐	☐	☐
Rangeland Capabilities					
How to manage brush	☐	☐	☐	☐	☐
Identify species and their usefulness in your operations	☐	☐	☐	☐	☐
Using forage to support wildlife	☐	☐	☐	☐	☐
Livestock					
Types of livestock production suitable for small acreage property	☐	☐	☐	☐	☐
Co-op or lease opportunities with neighbors	☐	☐	☐	☐	☐
Sheep/goat options	☐	☐	☐	☐	☐
How to market livestock	☐	☐	☐	☐	☐
Fruits, Nuts and Grapes					
Varieties of fruits and nuts that do well in the area	☐	☐	☐	☐	☐
Varieties of grapes that do well in the area	☐	☐	☐	☐	☐
Pierces's and other grape diseases	☐	☐	☐	☐	☐

5. Please tell us how you have used the information gained at the conference or your plans do to so in the future.

6. Which topic(s) covered by the conference, if any, would you have liked discussed in greater detail?

7. What topic(s), if any, did you have a particular interest in but was not covered by the conference?

Please provide the following information about yourself. The information you provide will be combined with all others, reported in summary form only and used strictly for improving future events.

The following questions assume you have just one property in the area. If you have more than one property in the area, please respond for the property you had the greatest interest in applying the conference information to. Thank you.

8. How many acres is your property? _____ acres

9. How many years you have owned the property? _____ (enter "0" if less than one year)

10. Currently, is your permanent residence (homestead) on this property?
☐ Yes
☐ No→*If "no," do you plan to make it your permanent residence in the next 3 years?*
  ☐ Yes
  ☐ No
  ☐ Not sure

11. What is your age?
☐ Under 30   ☐ 50-59
☐ 30-39   ☐ 60-69
☐ 40-49   ☐ 70 +

12. At the time of the conference, did you have any of the following operations on your property and, if so, were they designed to produce income?

Operation	On your property	Designed for income
Livestock	☐ Yes ☐ No	☐ Yes ☐ No
Forage	☐ Yes ☐ No	☐ Yes ☐ No
Crops	☐ Yes ☐ No	☐ Yes ☐ No
Wildlife or Hunting	☐ Yes ☐ No	☐ Yes ☐ No

13. Currently do you have an ag exemption from the assessor's office? ☐ Yes ☐ No

If "no," are you interested in obtaining an ag exemption? ☐ Yes ☐ No

14. Currently do you have a wildlife exemption from the assessor's office? ☐ Yes ☐ No

If "no," are you interested in obtaining an wildlife exemption? ☐ Yes ☐ No

Questionnaire Summary

Thank you!

Program: New Landowner Conference

Strategy: Post-only

Overview:
- This appears to be an output program (as opposed to outcome), as it does not measure client change. Rather, participant satisfaction and usefulness of the information is the primary focus of inquiry. This is a post-only measure, administered at the conclusion of the program. The questionnaire included sections for satisfaction, program improvement and participant background information.

Strengths:
- The survey title and instructions were included.
- The questions were numbered and stand out in bold.
- There was spacing between questions and between the question and response categories.
- Major sections flow together logically.
- It explains how the demographic information will be used.
- Individual satisfaction questions can be related to overall satisfaction.
- The scales are unipolar (questions 1, 2 and 4).
- The topics were arranged logically on question 4.
- Instructions are given for question 9.
- There is branching in question 10.
- Question 12 asks for yes/no on each item instead of a typical "Mark all that apply".
- Underlines helped with emphasis but were not overused.

Weaknesses:
- No logo was included.
- Most response categories were arranged horizontally. This is acceptable if it is done to fit all critical questions within a required space (such as a single sheet, front and back).

Revision