



Program Evaluation: Quantifying Outcomes

Carol Pilcher
Department of Entomology
Iowa State University
March 24, 2004

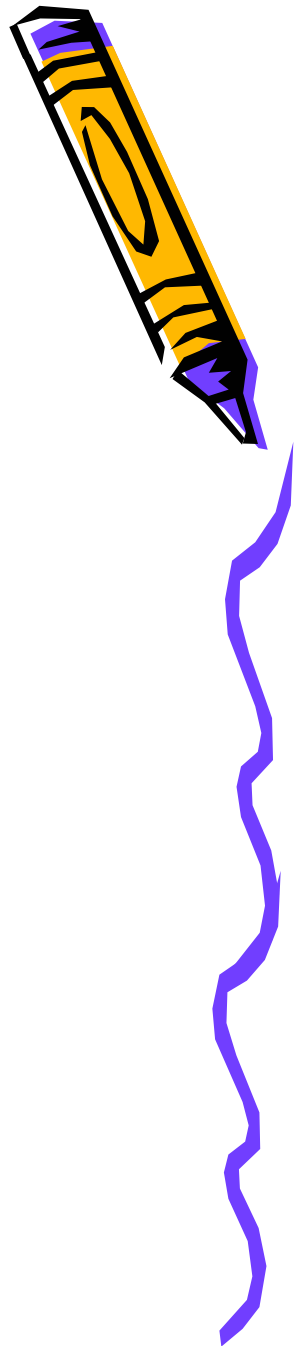
Evaluation

Determining the worth of a program



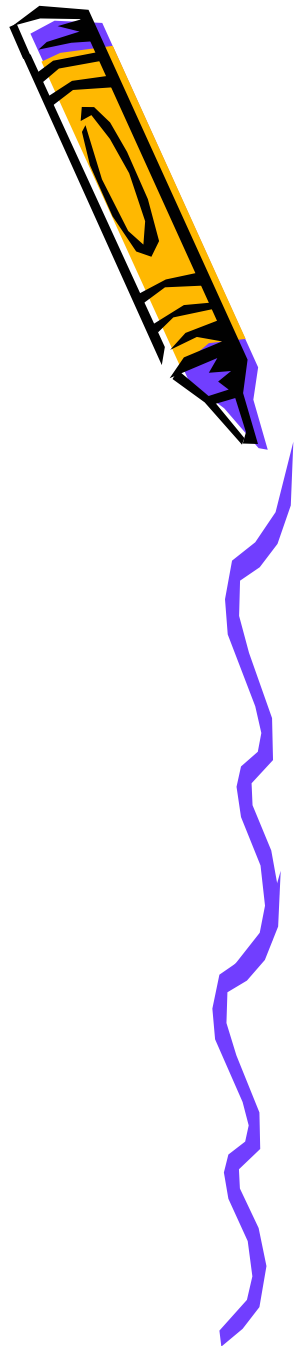
Program Evaluation: A Mandate

- Government Performance and Results Act (GPRA)
 - 1993
 - Requires strategic plans and numerical assessments
 - Requires accountability in government organizations



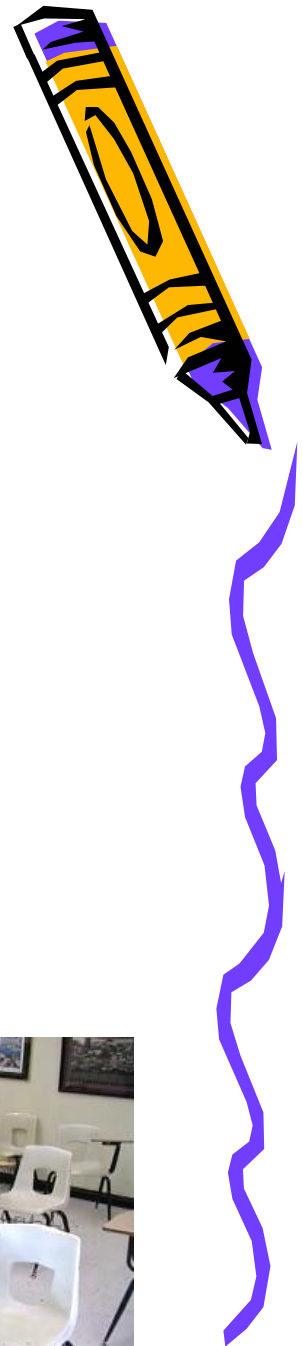
Steps Involved

- Know context
- Determine use and purpose
- Identify focus
- Design measurement tool
- Collect evidence
- Analyze and interpret data
- Report results



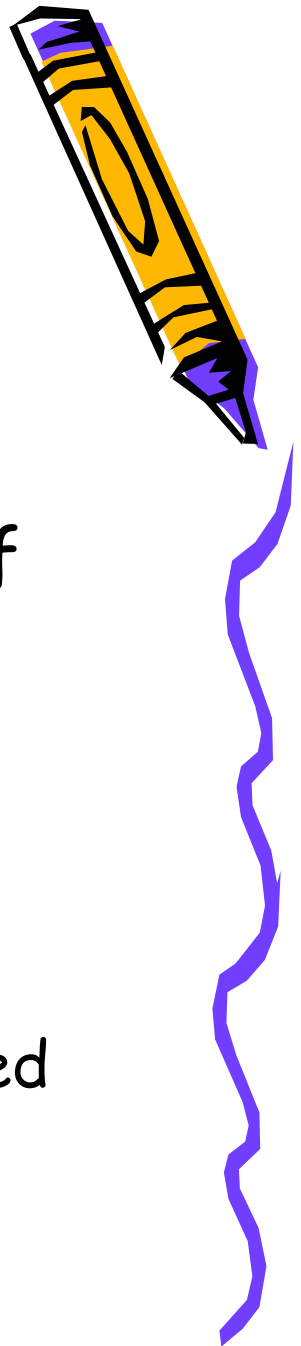
Stages of Evaluation

- Formative Evaluation
- Process Evaluation
- Impact Evaluation
- Outcome Evaluation



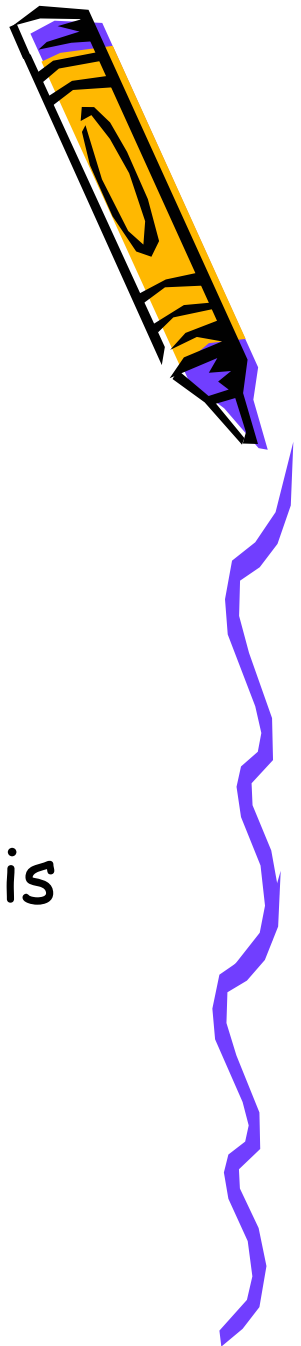
Formative Evaluation

- Purpose
 - Ensures program materials are of highest quality
- When to Conduct
 - Should be conducted when new program is being developed
 - or existing program is being modified



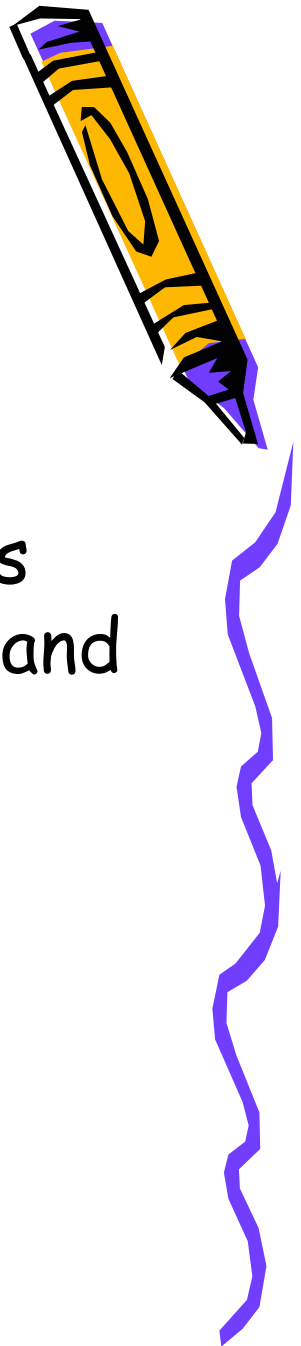
Process Evaluation

- Purpose
 - Is program reaching intended audience
- When to Conduct
 - Should begin as soon as program is put into action



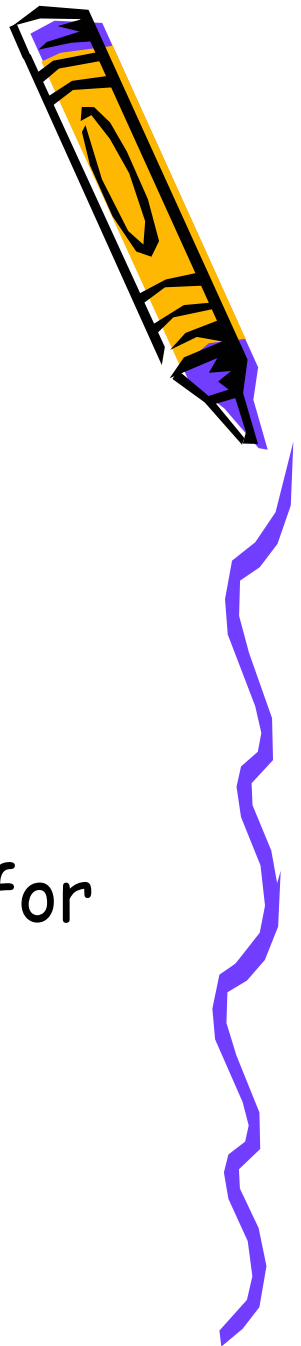
Impact Evaluation

- Purpose
 - To learn about target population's changes in knowledge, attitudes, and beliefs
- When to Conduct
 - Take baseline measurements
 - Measure after first encounter



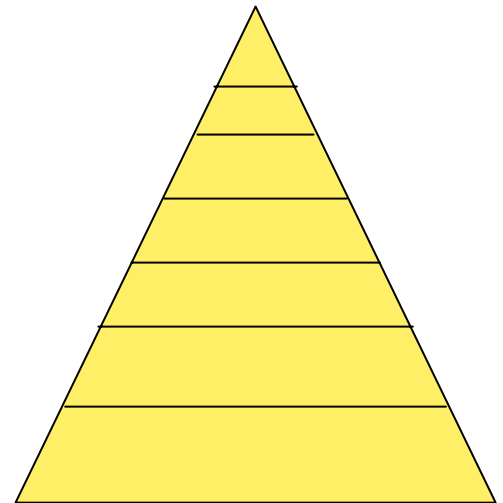
Outcome Evaluation

- Purpose
 - To measure outcome of program
- When to Conduct
 - At completion of termed project
 - When results will be meaningful for ongoing program

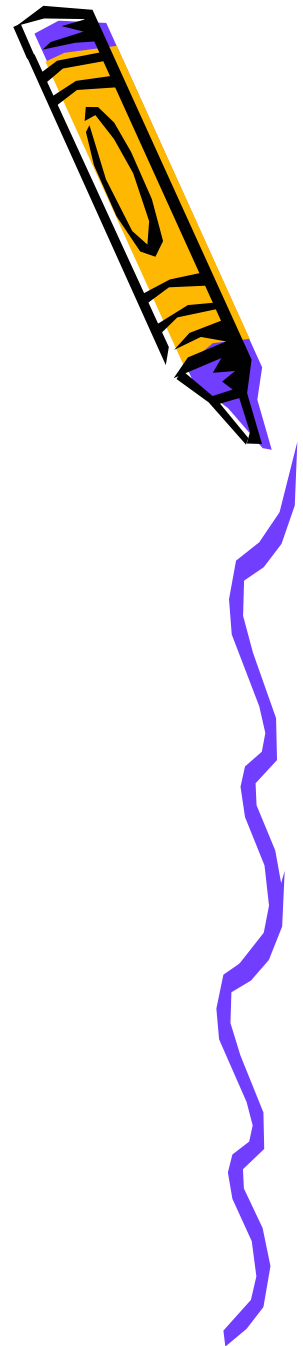
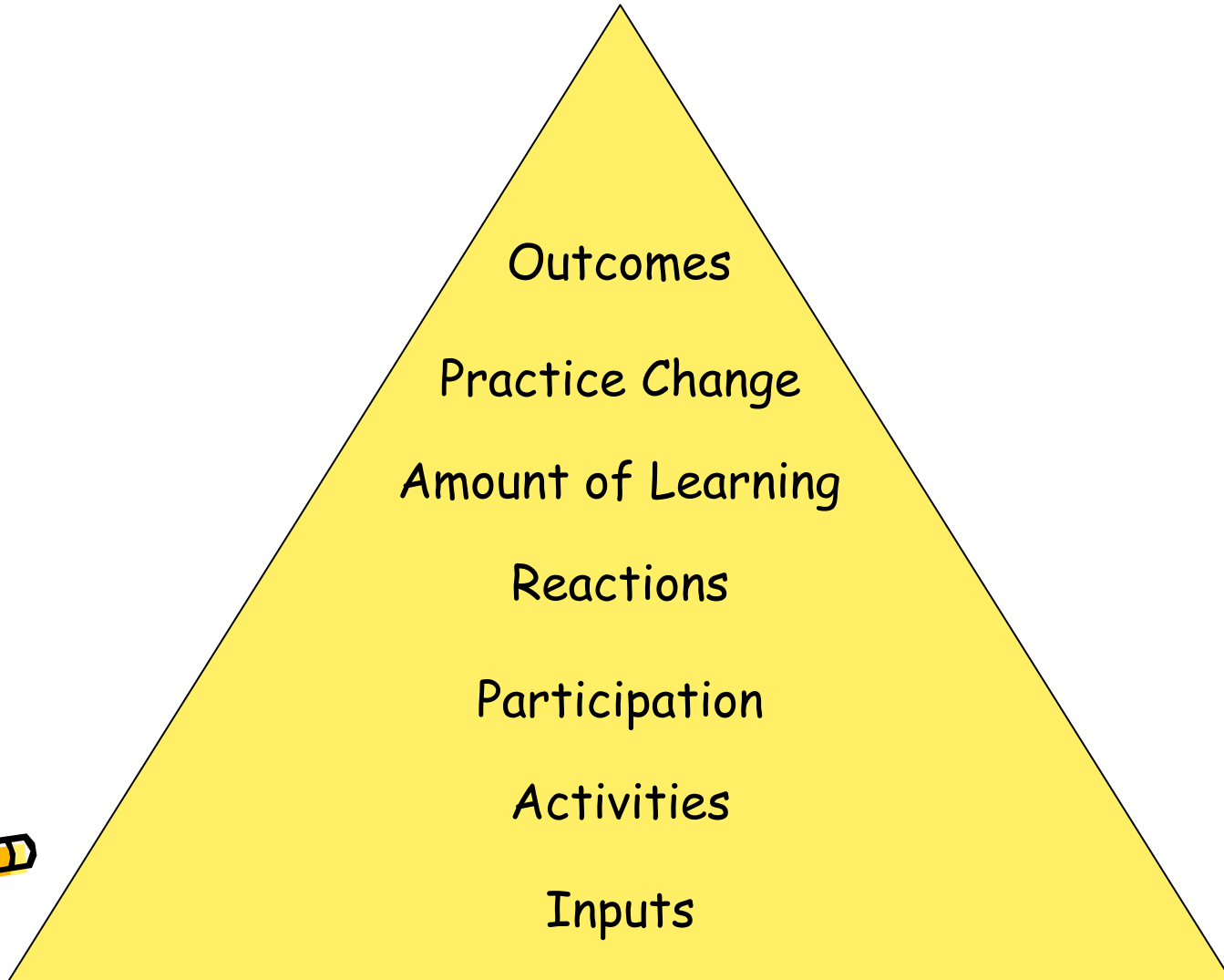


Measuring Level of Impact

- Bennett's Hierarchy of Evidence
 - Impacts at higher levels of hierarchy demonstrate greater accountability

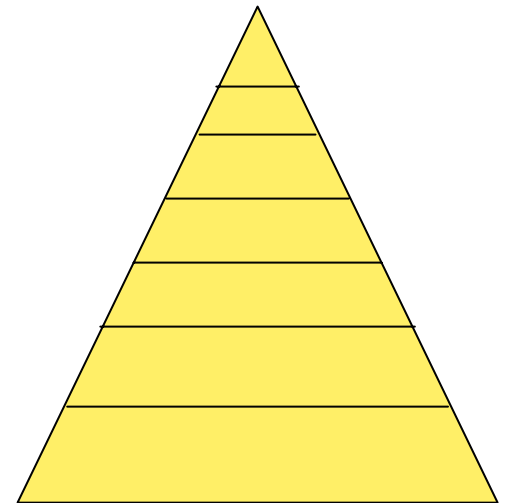
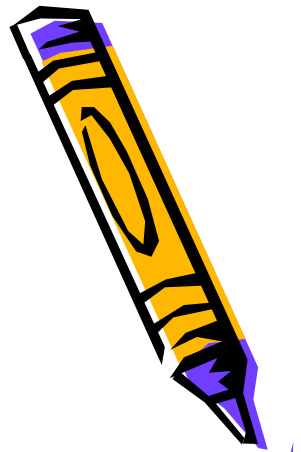


Level of Measurement



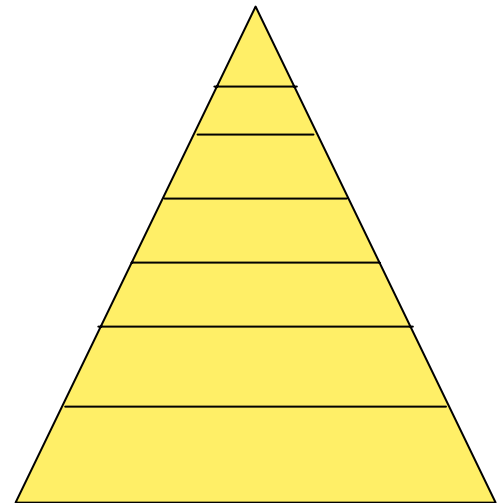
Level of Measurement

- Inputs
 - Examples:
 - Time preparing materials
 - Costs of printing/distribution



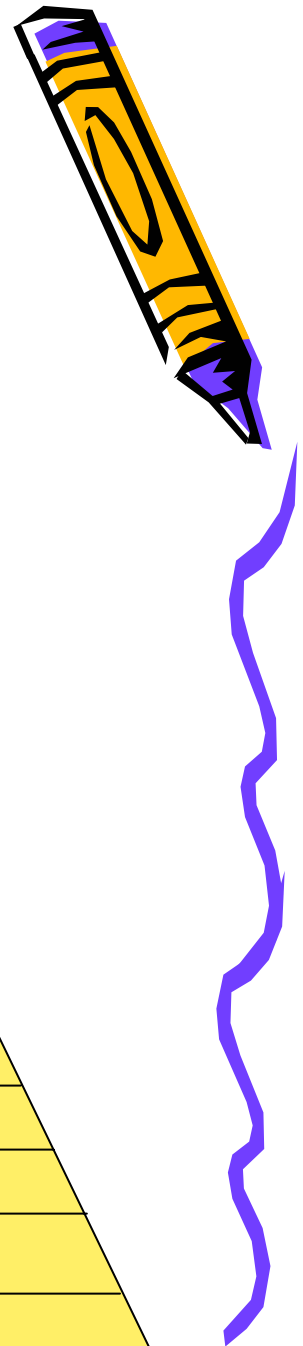
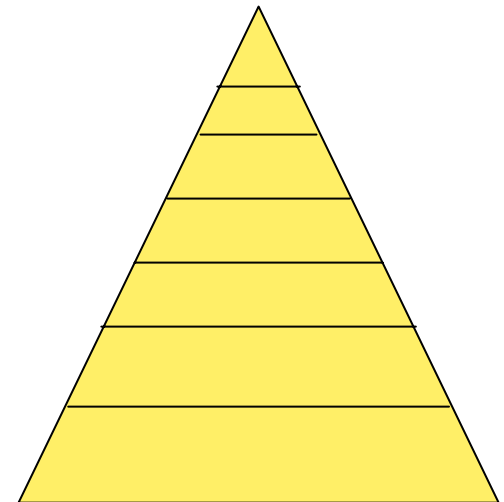
Level of Measurement

- Activities
 - Examples
 - Number of meetings



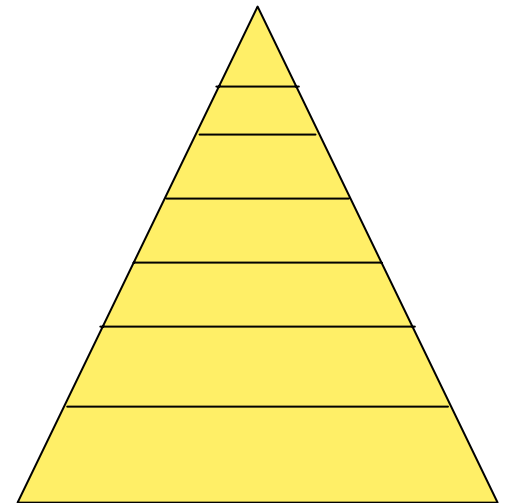
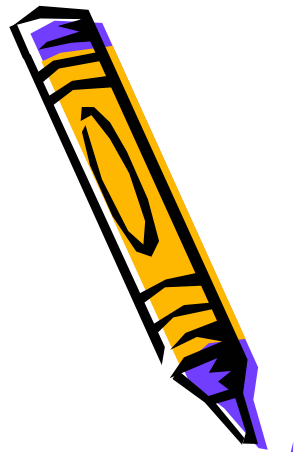
Level of Measurement

- Participation
 - Examples
 - Attendance at meetings



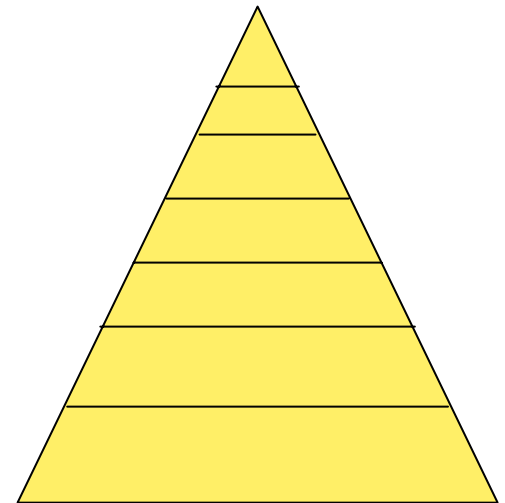
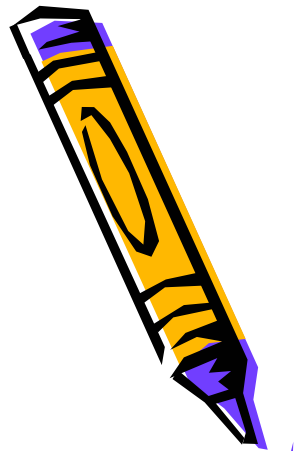
Level of Measurement

- Reactions
 - Example
 - Reactions about course materials
 - Reactions about program



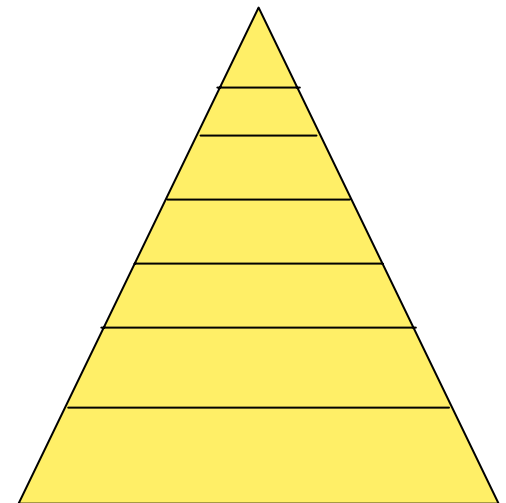
Level of Measurement

- Amount of Learning
 - Example
 - Knowledge about School IPM Program
 - How much was learned
 - Pretest -post-test



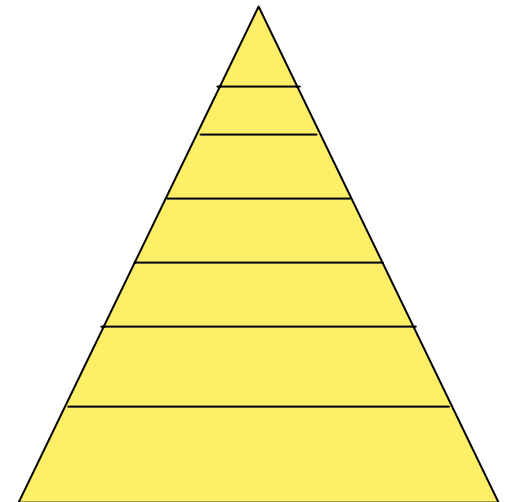
Level of Measurement

- Practice Change/Program Impacts
 - Economic, Environmental, Health
 - Examples
 - Adopt School IPM practices



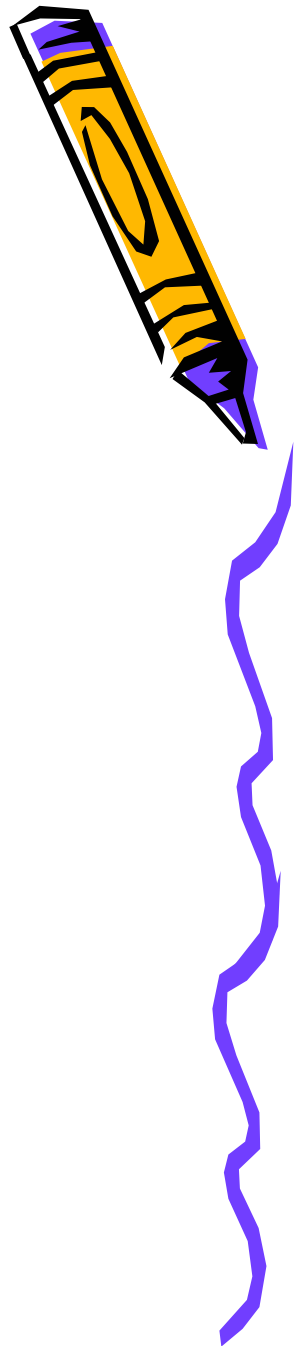
Level of Measurement

- Outcomes/Program Impacts
 - Economic, Environmental, Health
 - Example
 - Successful adoption of School IPM in entire district or state



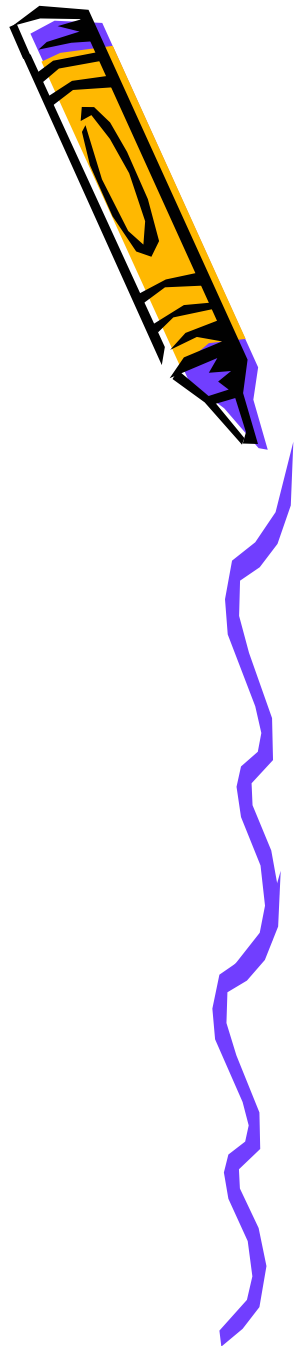
Steps Involved

- Know context
- Determine use and purpose
- Identify focus
- Design measurement tool
- Collect evidence
- Analyze and interpret data
- Report results



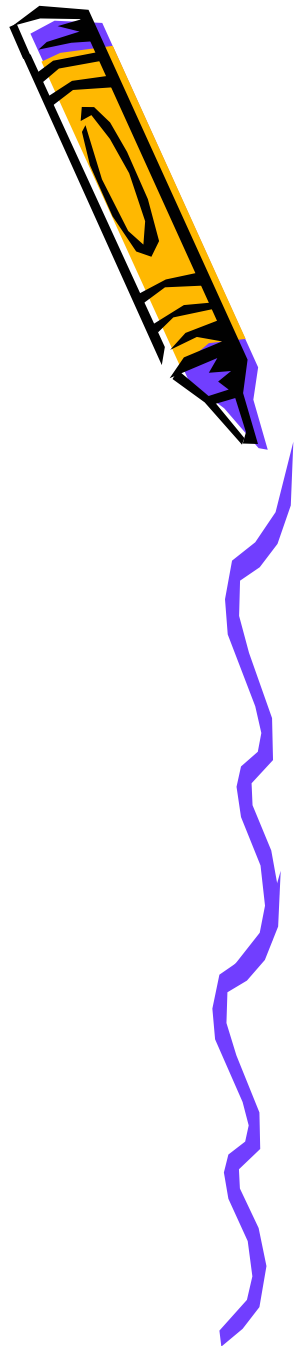
Data Collection Methods

- Existing records
- Observations
- Focus groups
- End of meeting questionnaires
- Mailed questionnaires
- Telephone surveys
- Face to face interviews



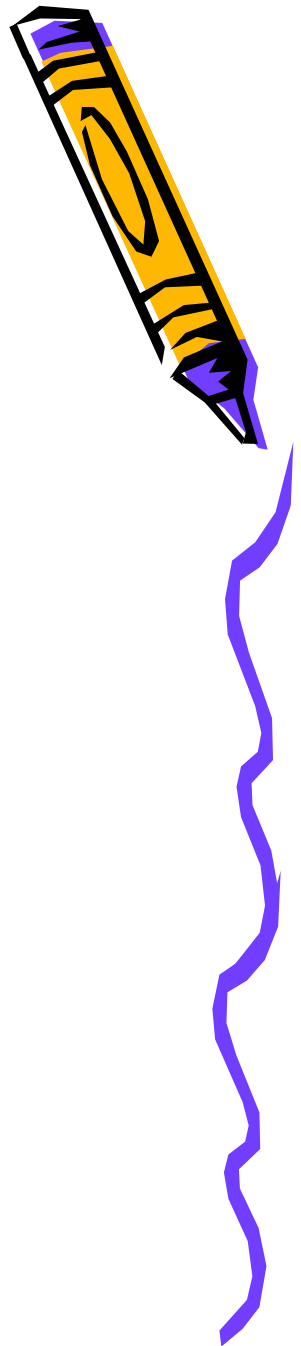
Tips for Questionnaires

- Make sure instrument looks professional
 - Illustration on cover of survey instrument
 - Handwritten signature on cover letter



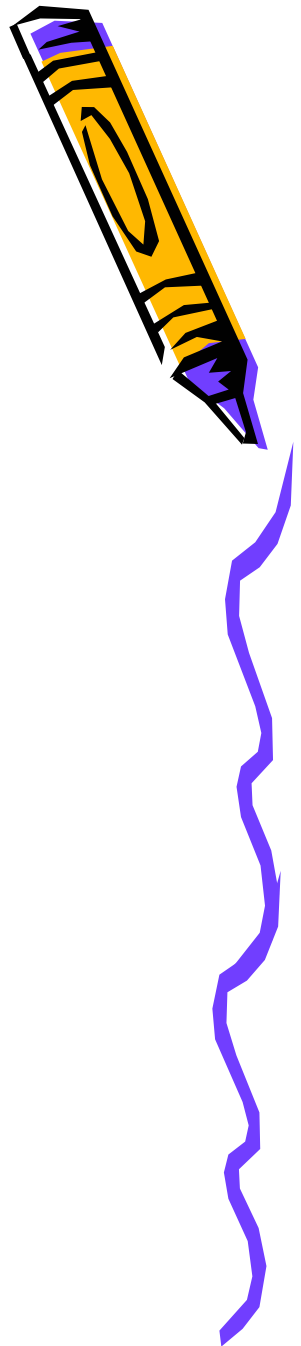
Tips for Questionnaires

- Put demographic questions at end of survey
 - Age, gender, income, etc.



Tips for Questionnaires

- Scales
 - Try to make scales consistent
 - Likert Scales
 - Try to have at least five categories
 - Must have positive and negative items of equal value
 - SD, D, U, A, SA



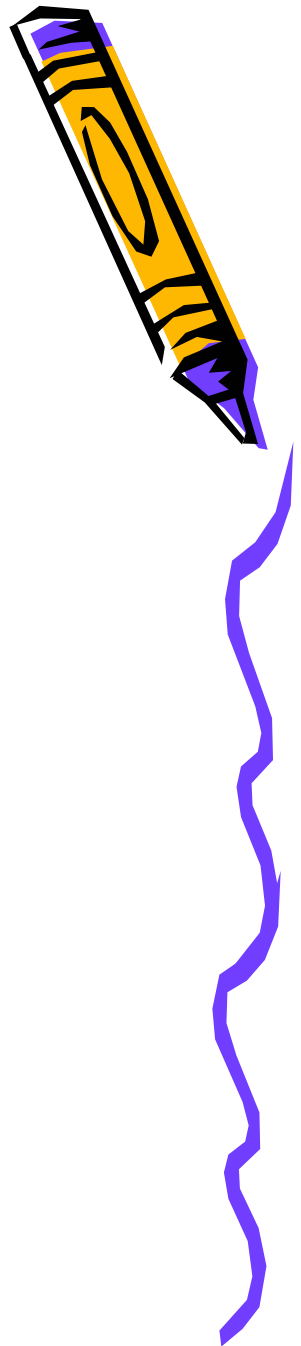
Tips for Questionnaires

- Make sure question is asking only one item
 - As a result of this program, will you thoroughly clean grain storage units prior to beginning new crop grain and avoid putting new crop grain atop old crop grain?
 - As a result of today's training, will you use a wind meter, reduce sprayer pressure or increase nozzle size to reduce drift?



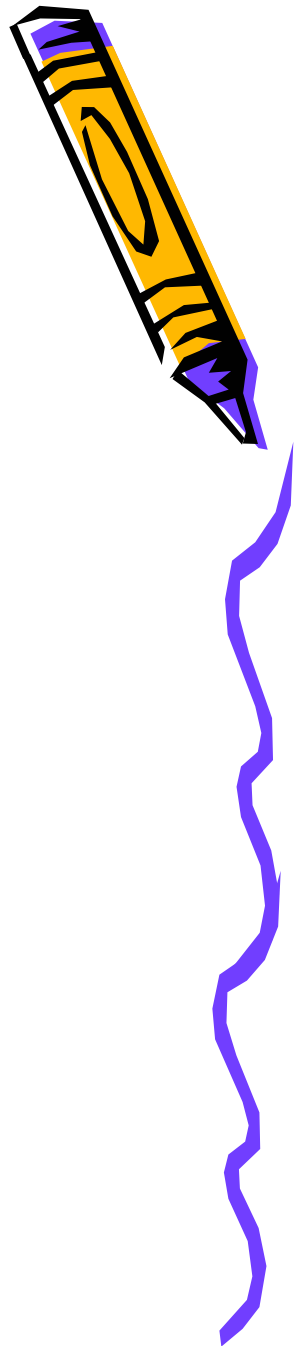
Tips for Questionnaires

- Shorten, shorten, shorten



Institutional Review Board

- 1946-1949
 - Nuremberg Code
- 1964
 - Declaration of Helsinki
- 1974
 - National Research Act
- 2001 Code of Federal Regulations
 - 45 CFR 46



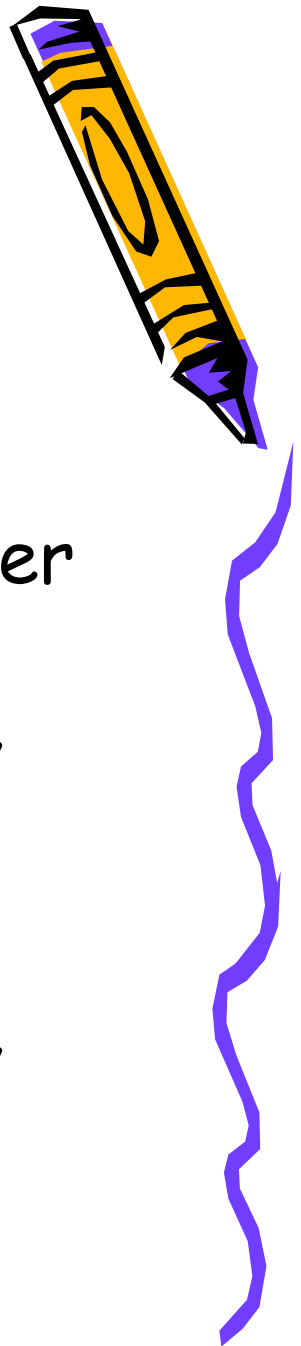
Institutional Review Board

- IRB or Human Subjects
- “The proposed research design of a University faculty, staff, or student must be reviewed by the IRB. The Iowa State University IRB is charged with reviewing plans that protect your participants. The IRB ensures that human subjects do not bear any inappropriate risk and have properly consented to their involvement.”



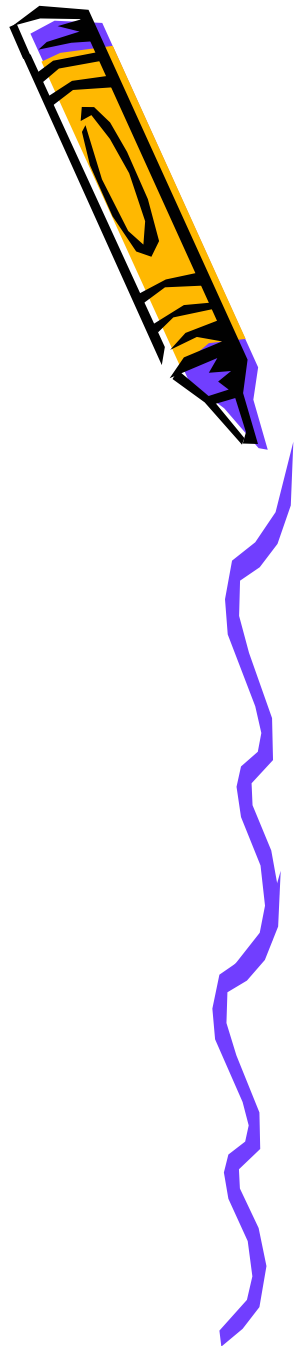
Collecting Data

- Sallant and Dillman (1994)
 - Personalized, advance notice letter (optional)
 - Personalized cover letter, survey instrument, return envelope
 - Follow-up postcard
 - Personalized cover letter, survey instrument, return envelope



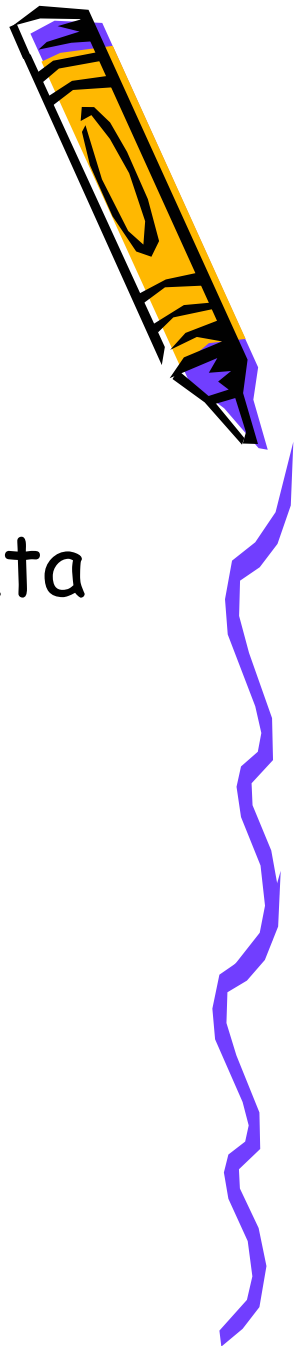
Steps Involved

- Know context
- Determine use and purpose
- Identify focus
- Design measurement tool
- Collect evidence
- Analyze and interpret data
- Report results



Analyzing Data

- Develop a plan
- Analysis depends on level of data
 - Nominal, ordinal, interval
 - Description, correlation, comparisons
- SPSS
 - Statistical software package



Reporting Results

- Description and analysis
- Interpretation
- Judgment
- Recommendations



Sources of Information

- Evaluation
 - Bennett CF. March/April 1975. Up the Hierarchy. *Journal of Extension* 13(1) 7-12.
 - Patton MQ. 1997. *Utilization-Focused Evaluation*. 3rd ed. Thousand Oaks, CA: Sage Publications. 430 p.
 - Rossi PH. And Freeman, HE. 1993. *Evaluation: A Systematic Approach*. 5th ed. Newbury Park, CA: Sage Publications. 488 p.
 - Seevers B., Graham D., Gamon J., Conklin K. 1997. *Education through Cooperative Extension*. Albany, NY: Delmar Publishers. 288 p.
- Collecting Data
 - Salant P. and Dillman DA. 1994. *How to Conduct Your Own Survey*. New York, NY: John Wiley & Sons, Inc. 232 p.
- Analyzing Data
 - Sproull, NL. 1995. *Handbook of Research Methods: A Guide for Practitioners and Students in the Social Sciences*. 2nd ed. Metuchen, NJ: The Scarecrow Press, Inc. 430 p.

