

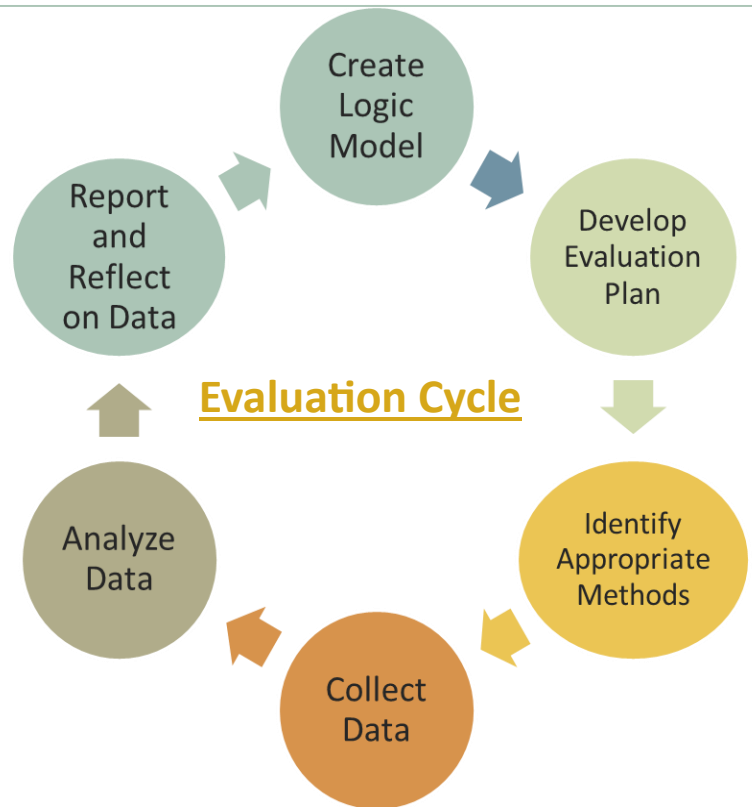
# The Basics of Evaluation

Evaluation is the **systematic** collection and analysis of information about an intervention to improve its effectiveness and make decisions.

Evaluation can help to secure and maintain funding, assess the effectiveness of a program, and ensure that programming leads to desired results.

Evaluation should be:

- **ACTION ORIENTED:** Learn how a program is doing and what may need to be done differently to achieve desired outcomes.
- **PARTICIPATORY:** Involvement of front-line program staff and sometimes even participants is key to making sense of the data.
- **UTILIZED:** Think early in the process about what will be done with evaluation data.



## TYPES OF DATA

**Process data** describe the services and the activities implemented by a program.

- *Example: 25 participants successfully completed the program; 10 staff received training in evaluation*

**Outcome data** explain the impact or results of a program. Common areas for the assessment of change include perceptions or beliefs, knowledge and behaviors. To determine change, assessments are often completed prior or at the start of programming, and then again after programming.

- *Example: 56% of youth reported a decrease in marijuana use from pre- to post-test.*

**Primary data** are data collected by an evaluation through new and ongoing active efforts.

- *Example: A survey performed by your program.*

**Secondary data** are existing, already available data that can be obtained from an external source.

- *Example: Data on DUIs collected by the state.*

### Quantitative vs. Qualitative Data

	Answers the questions...	Described in...	Example	Methods of Collection
<b>Quantitative data</b>	How many? How	Numbers	30% of high school	Surveys
<b>Qualitative data</b>	Why or why not? What does it mean?	Words	One student reported that, "alcohol is easy to get from older friends"	Focus groups, key informant interviews, open ended survey questions

# UNDERSTANDING YOUR DATA

## Basic Quantitative Analysis

**Mean/Average:** The sum of a set of numbers/values/scores divided by the number of values

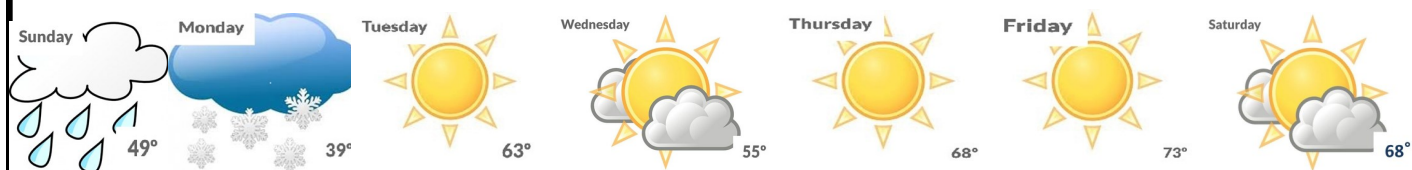
*Example: For the week below, the mean temperature is 59°.*

**Median:** The middle number/value/score

*Example: For the week below, the median temperature is 63°.*

**Mode:** The most frequently occurring number/value/score

*Example: For the week below, the mode temperature is 68° as it occurs on Thursday and Saturday.*



## More Complex Quantitative Analysis: The t-test

A paired samples *t*-test analysis (the type of *t*-test most commonly used for PEP) examines differences between mean scores on pre- and post-tests to determine whether any observed differences are statistically meaningful. In other words, are any noted changes in participant attitudes, knowledge, or behaviors from pre- to post-test due to real change rather than chance? Conducting a *t*-test provides a *t*-value and a *p*-value; these numbers both serve to tell you whether the observed change is significant. For this purpose, we will focus on the *p*-value.

***p*-value:** A *p*-value is the calculation of the probability that a **real** difference exists in how participants responded on the post-test as compared to the pre-test. A significance level (often .05) is chosen before conducting any analysis. A *p*-value that is less than the pre-determined significance level (e.g., .05 or  $p < .05$ ) is considered “statistically significant.” When  $p < .05$ , there is less than a 5% chance that changes are due to chance alone; this is considered “statistically significant.” A *p*-value greater than .05 signifies that any change may be attributable to chance and not to program efforts.

**Example:** A program wants to assess change in student perceptions of risk about substance abuse after exposure to a brief presentation. Student attendees participate in pre- and post-surveys in which they rate their level of agreement for several survey items on a five point agreement scale, where 1 indicates very low perceived risk and 5 indicates very high perceived risk. The example on the right displays the pre- and post-test item means for one of these survey items, with a clear increase from pre- to post-test. The *t*-test results also

indicate a statistically significant change, with a *p*-value of less than .05. Therefore, student perception of risk related to substance abuse and driving increased significantly following the intervention.

