

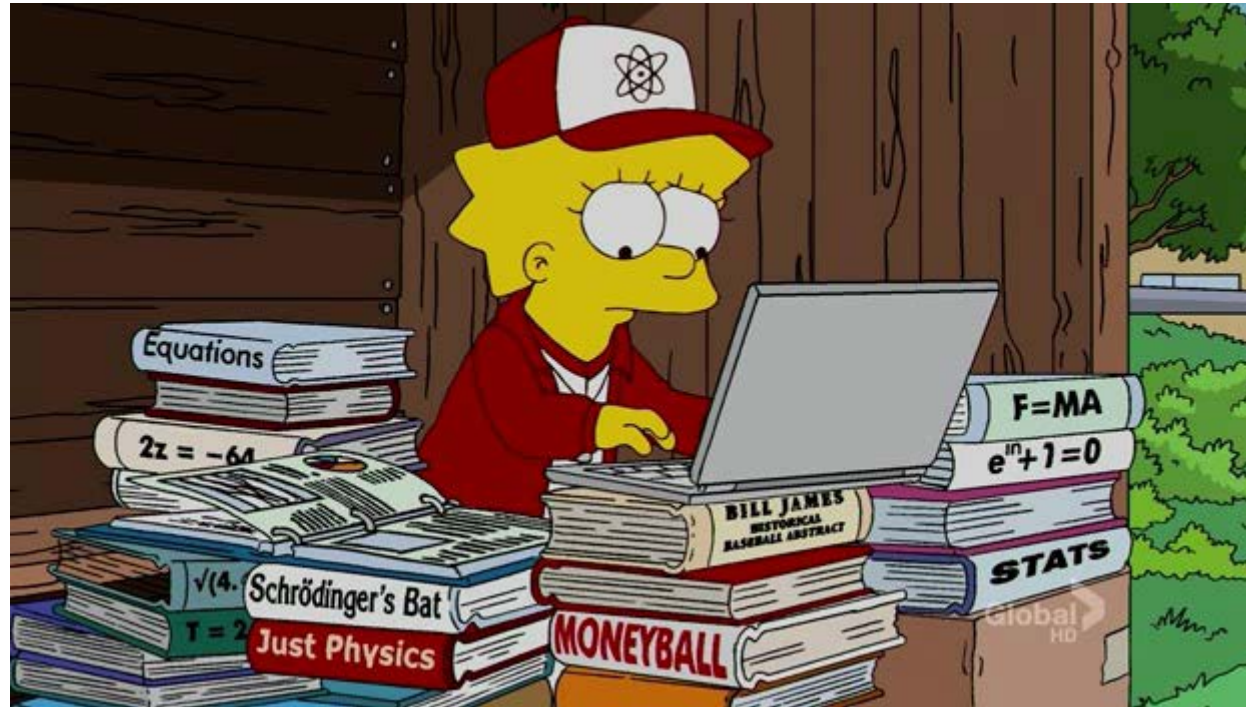
# Simple Statistics and Data Collection

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Jill Young

AFTER  
SCHOOL matters

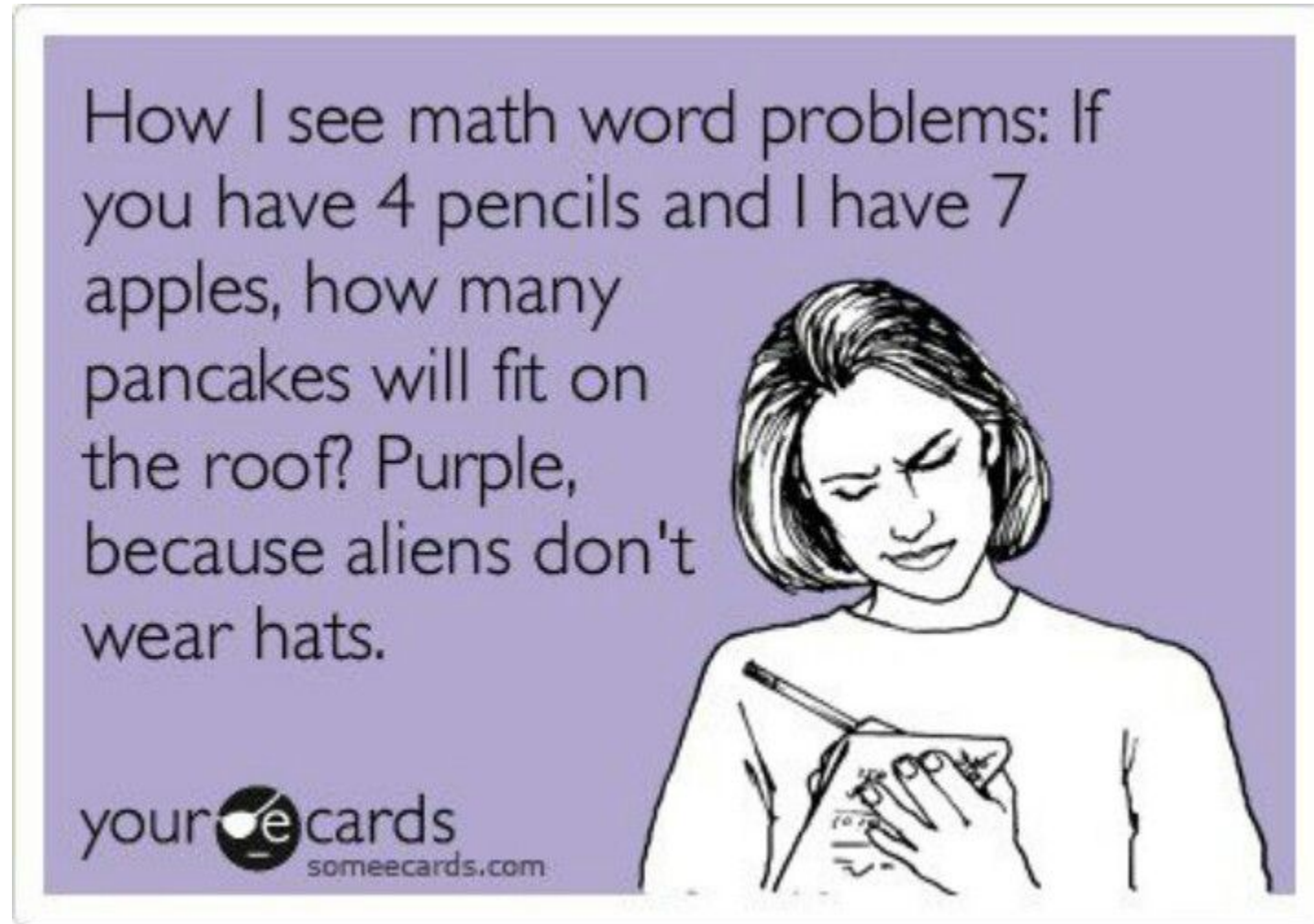
How do you feel about statistics?



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# How do you feel about statistics?



# About After School Matters

## Vision

After School Matters provides teens with opportunities to discover their potential and find their future.

## Mission

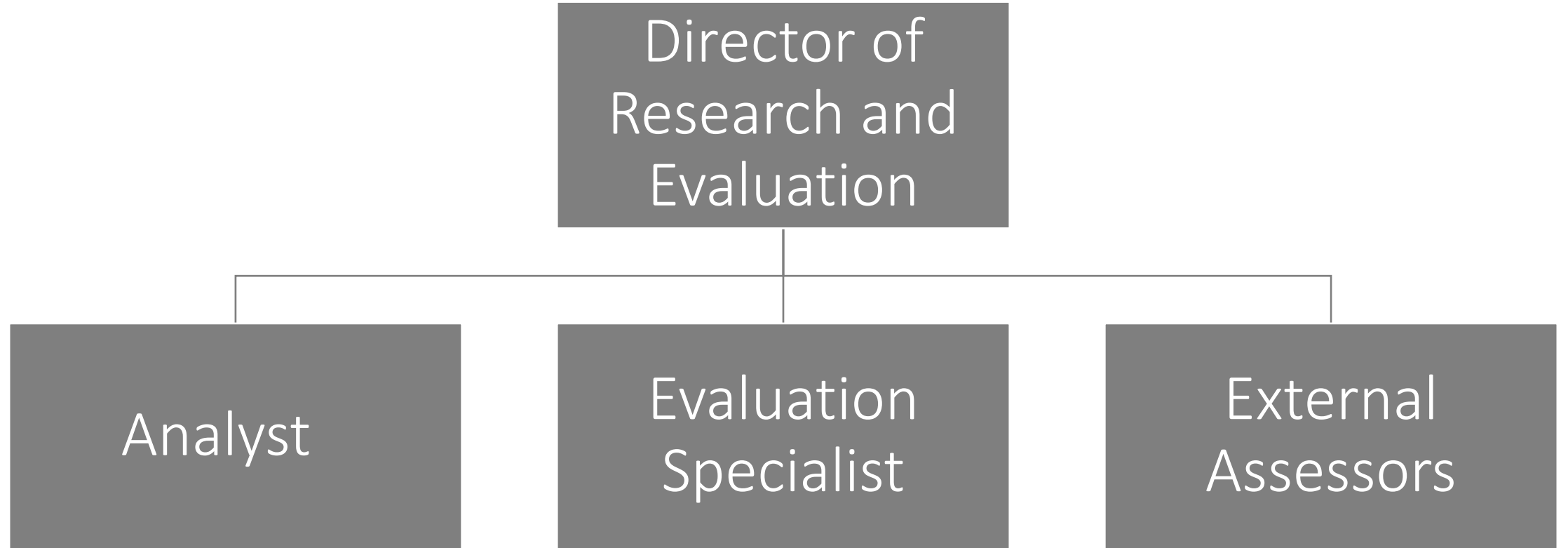
To provide Chicago public high school teens opportunities to explore and develop their talents, while gaining critical skills for work, college and beyond.





# About My Role

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- Steps
  - Identify the purpose for the data
  - Determine what data points you want to measure
  - Determine how you're going to measure those data points
  - Decide who will be collecting data and how they will be trained
  - Decide who will analyze, interpret, and report data
  - Pilot the system to make sure it works for you

# Identify the purpose

Drive evaluation efforts

Identify training needs

Decide on tools for program evaluation

Describe work to stakeholders

Identify gaps in programming

Satisfy funding requirements

Secure additional funding

Improve programs

Communicate impact

Determine criteria for request for proposal process



## Determine what data points you want to measure

Participant	Instructor	Program	Outcomes
<ul style="list-style-type: none"> <li>• Demographics</li> <li>• Contact / address</li> <li>• Emergency contact</li> <li>• School information</li> <li>• Program participation</li> </ul>	<ul style="list-style-type: none"> <li>• Demographics</li> <li>• Contact / address</li> <li>• Trainings</li> <li>• Employment background</li> </ul>	<ul style="list-style-type: none"> <li>• Schedule</li> <li>• Description</li> <li>• Classifications</li> <li>• Eligibility</li> <li>• Location</li> <li>• Affiliated staff</li> <li>• Attendance</li> <li>• Enrollment</li> <li>• Applications</li> </ul>	<ul style="list-style-type: none"> <li>• Assessments</li> <li>• Surveys</li> <li>• Quality measures</li> </ul>

Determine how you're going to measure those data points

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Registration

Surveys

Interviews

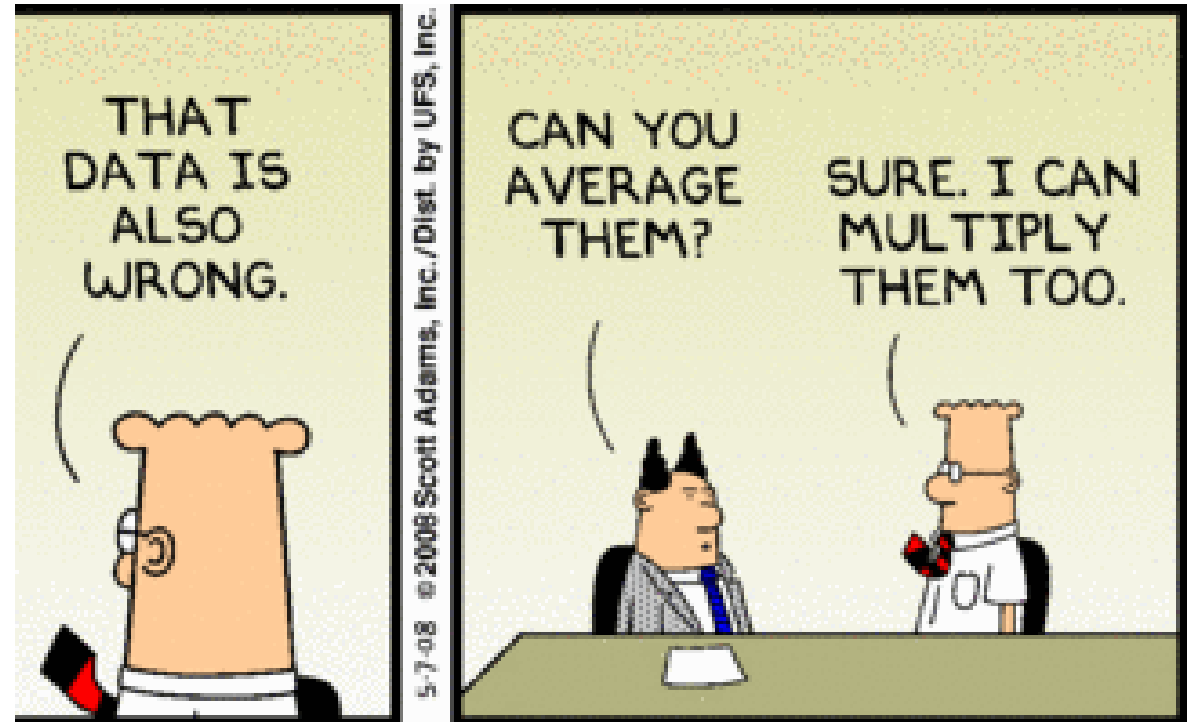
Document  
Reviews

Focus groups

Observations

## Choose data collectors and analyst

- Decide who will be collecting data and how they will be trained
- Decide who will analyze, interpret, and report data



Pilot the process to make sure it works for you

- Ensures people understand how to collect and record data
- Can determine adequacy of data collected
- Ways to pilot



# Example: College and Career Readiness Assessment

After School Matters Logout

**CAREER READINESS ASSESSMENT** Delete Save Return


**Sarah Clark**

**Participant Information**


Participant Name Clark, Sarah

**Assessment Information**

Assessment Instance First Assessment

Assessment Date 10/24/2011 

**Activity**

Digital Video [1560142] 


**Fundamental**


Appearance/Hygiene  Y  N


Timeliness  Y  N


Oratory/Speaking  Y  N

**Work Ethic / Character**


Attitude Below Standard/Expectation 


Accountability/Integrity Meets Standard/Expectation 


Self Control Exceeds Standard/Expectation 


Ambition/Initiative 

**Problem Solving**


Supervision 


Procedure/Rule Following 


Problem Solving Approach 


Information Management 

**Interpersonal**


Verbal Communication 

Active Listening 

Feedback 

Teamwork >= 2 people 

**Computer**

Computer Literacy 

# METHODS OF DATA COLLECTION

## Purposes, advantages, and challenges

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- Overview of methods
  - Registration
  - Surveys/checklists
  - Interviews
  - Document reviews
  - Observations
  - Focus groups

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Can capture a good deal of information at once</li></ul>	<ul style="list-style-type: none"><li>• Self-reported data</li><li>• Long registration forms may deter participants or potential providers</li></ul>

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Collect a lot of information at once</li><li>• Good for descriptive information</li><li>• Can cover many topics</li><li>• Inexpensive to administer and analyze</li><li>• Reduces evaluator bias since everyone is asked the same questions</li><li>• Might make respondents more comfortable with sharing information</li></ul>	<ul style="list-style-type: none"><li>• Self-report data can contain biases</li><li>• Long surveys may decrease response rates</li><li>• Responses will provide a general picture, but not depth on a given topic</li></ul>



Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Permit face-to-face contact with respondents</li><li>• Provide opportunity to explore topics in depth</li><li>• Allow interviewer to explain or help clarify questions, increasing the likelihood of useful responses</li></ul>	<ul style="list-style-type: none"><li>• Interviewer can influence the responses</li><li>• Interviewee may distort information through recall error, selective perceptions, desire to please interviewer</li><li>• Interviewer clarifications can result in inconsistencies</li><li>• Volume of information very large; may be difficult to record and reduce data</li><li>• Time consuming and expensive</li><li>• Interviewee may find interview intrusive</li></ul>

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Readily available</li><li>• Provide good context</li><li>• Inexpensive</li><li>• Unobtrusive</li><li>• Useful for determining value, interest, positions, political climate, public attitudes</li><li>• May bring up issues not noticed through other means</li></ul>	<ul style="list-style-type: none"><li>• May be incomplete</li><li>• May be inaccurate or of questionable authenticity</li><li>• Locating suitable documents may pose challenges</li><li>• Analysis may be time consuming and access may be difficult</li></ul>

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Provide direct information about behavior of individuals and groups</li><li>• Permit evaluator to enter into and understand situation/context</li><li>• Exist in natural setting</li><li>• See what actually happens, not what people say happens</li><li>• Doesn't rely on people being willing to share information</li></ul>	<ul style="list-style-type: none"><li>• Expensive and time consuming</li><li>• May affect behavior of participants</li><li>• Observer may not be objective</li><li>• Observed behaviors may not be typical</li><li>• Does not explain why people do what they do</li></ul>

Advantages	Disadvantages
<ul style="list-style-type: none"><li>• Quick and relatively easy to set up</li><li>• Group dynamics can provide useful information that individual data collection does not provide</li><li>• Is useful in gaining insight into a topic that may be more difficult to gather information through other data collection methods</li></ul>	<ul style="list-style-type: none"><li>• Susceptible to facilitator bias</li><li>• Discussion can be dominated or sidetracked by a few individuals</li><li>• Data analysis is time consuming and needs to be well planned in advance</li><li>• The information is not representative of other groups</li></ul>

# Example: Youth Program Quality Assessment

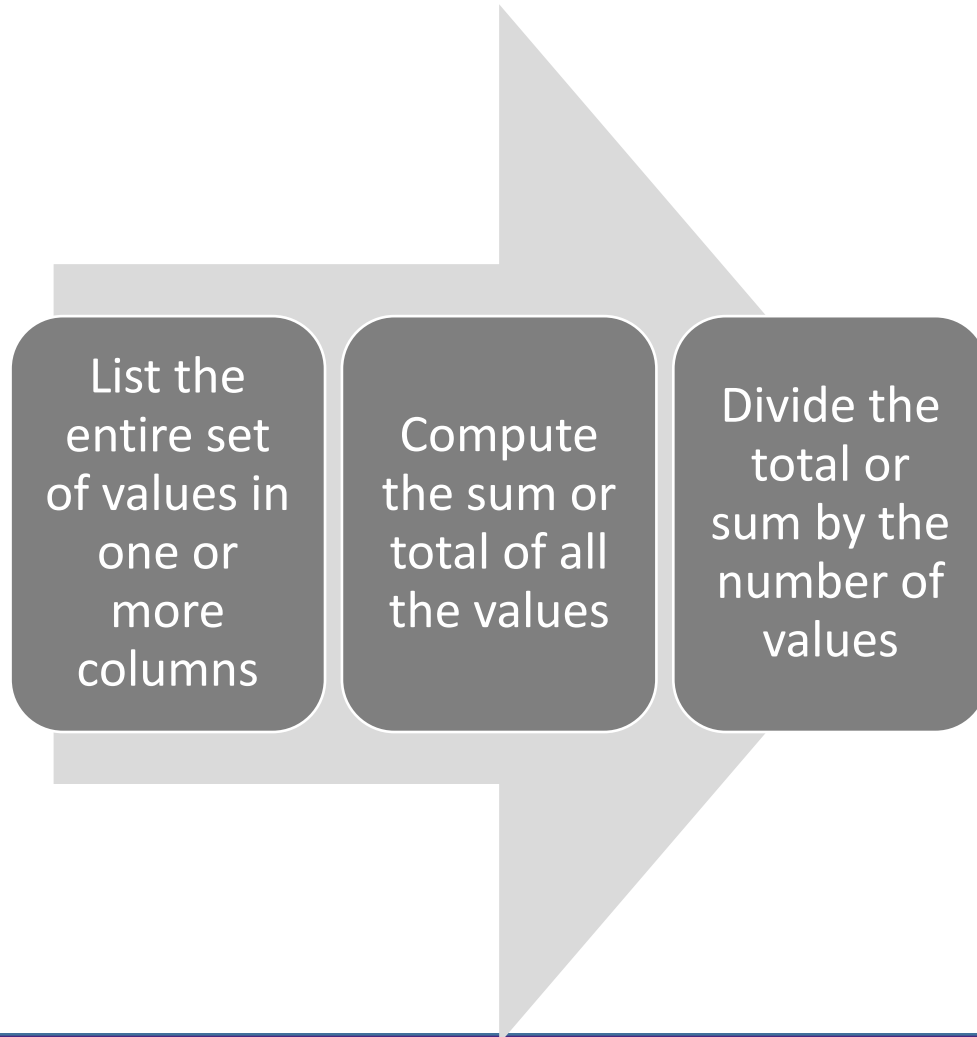


# SIMPLE STATISTICS

## What they are and when to use them

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- Descriptive statistics
  - Mean
  - Median
  - Mode
  - Range
- Common tools
  - Excel
  - Tableau



When should you use the mean?

- No extreme scores are present
- Data are not categorical

List the values in order, either from highest to lowest or lowest to highest

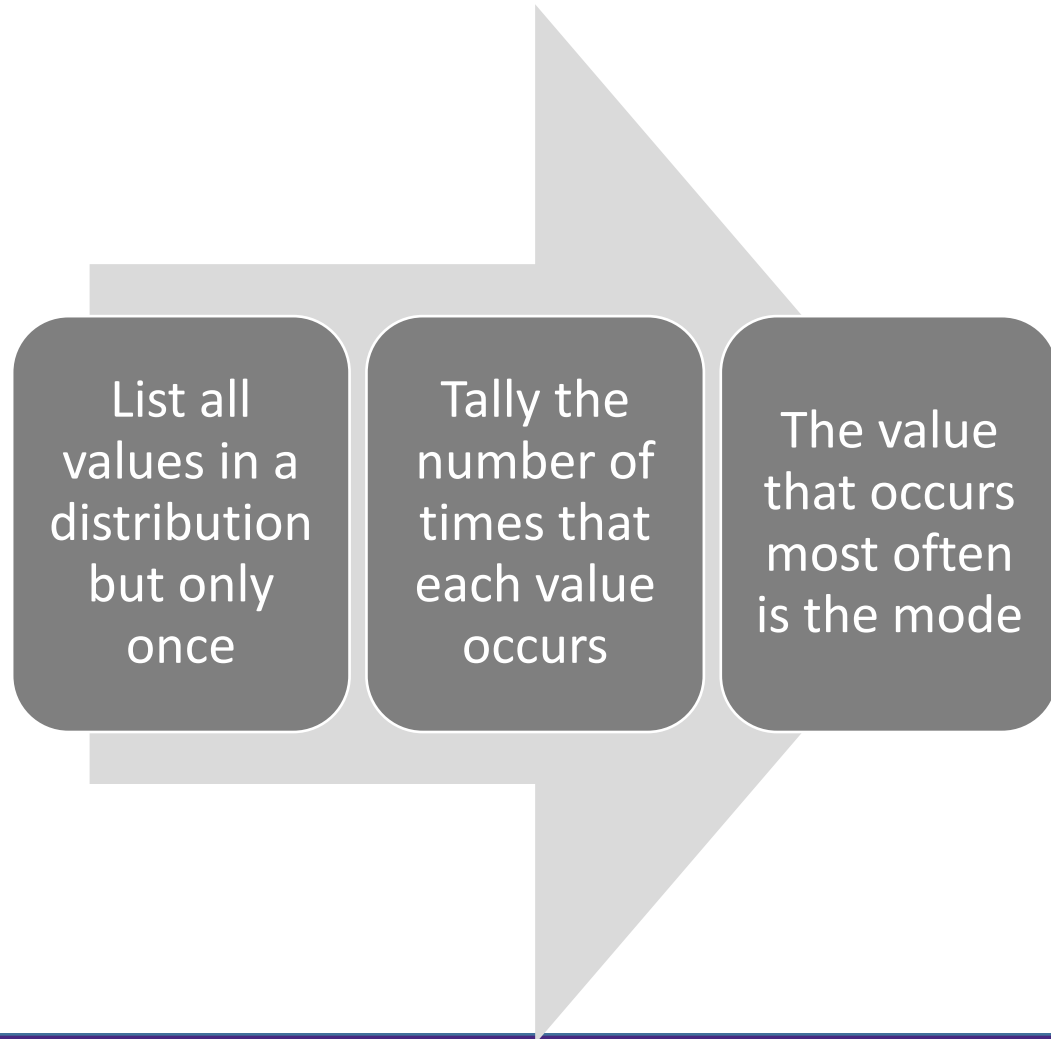
Find the middle most score – that's the median

If there's an even number of values, the median is the average between the two middle numbers

## When should you use the median?

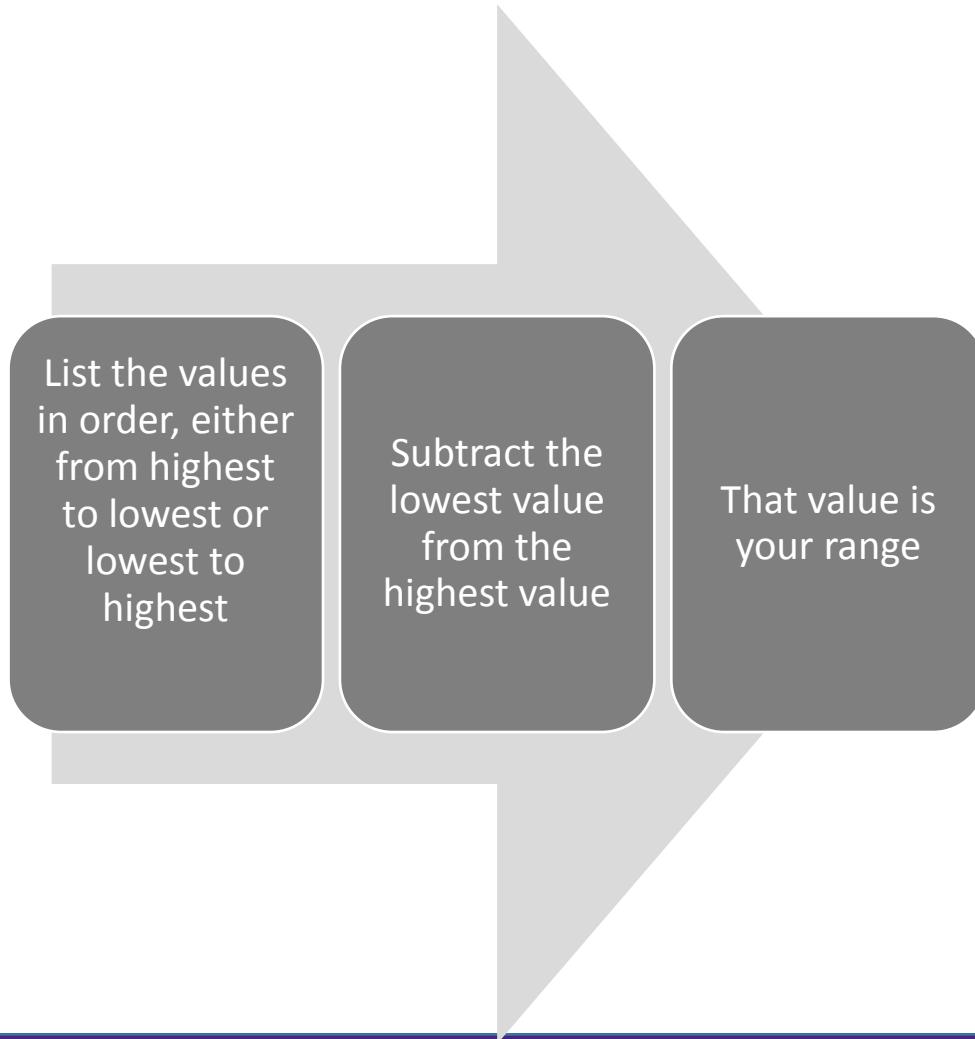
- Extreme scores are present and would distort the average
- Example: social and economic indicators, such as income





When should you use the mode?

- Data are categorical in nature
- Categories are mutually exclusive
- Example: political affiliation



When should you use the range?

- Good to report with mean if you have extreme scores

Excel

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## Resources

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- *Naked Statistics: Stripping the Dread from the Data* by Charles Wheelan
- *Discovering Statistics using IBM SPSS Statistics* by Andy Field
- *Statistics for People Who (Think They) Hate Statistics* by Neil J. Salkind
- W.K. Kellogg Foundation (<https://www.wkkf.org/>)

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