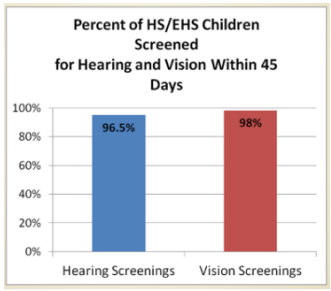
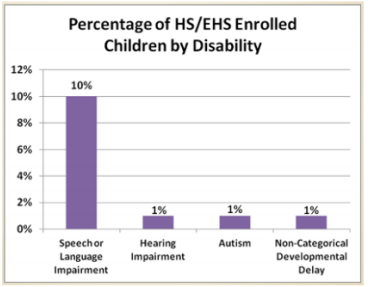
Data Analysis Techniques

The data analysis is a process that involves the review, manipulation, and organization of data. It's goal is to identify useful information that will inform decision-making and planning. There are many different types of data, and many methods for analyzing it.

Techniques	Examples of Techniques Used to Analyze Information About Children With Disabilities
Aggregate When you aggregate data, you total data from different sources to get the big picture. For example, teachers aggregate child outcomes data to get an overall picture of their classes. A center director looks at aggregated data from all of the classrooms in one center. Numbers from all centers are totaled to provide program-wide data. Aggregated data can inform program-wide changes in policies and procedures. This big picture view of data is especially useful in sharing information with such audiences as your governing body/Tribal Council and Policy Council. Aggregated data is also appropriate for your annual report to the public. In the Program Information Report (PIR), you submit aggregated data about your grantee to the Office of Head Start (OHS). OHS then aggregates this data to compile an overall view of Head Start in relation to a number of key indicators.	 *This chart indicates that 96.5 percent of the children were screened for hearing and 98 percent were screened for vision within 45 days*
Disaggregate Disaggregating allows you to take different pieces of data and obtain more details. There are many ways to disaggregate data. In this activity, we disaggregated by type of disability. We could disaggregate by program options, which include center-based, home-based, and family child care. We also could have disaggregated the data by the local education agency (LEA) and the appropriate Part C agency or receiving school. Other ways to disaggregate include gender and home language. How do you know	

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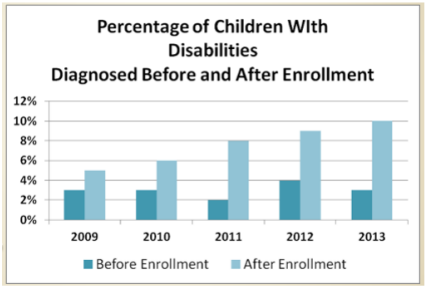
which options to choose? First, know your questions. A Migrant and Seasonal Head Start program, for example, may want to disaggregate child outcomes data about the number of returning children versus the number of newly enrolled children. This can also be done by length of time children spend in the program. When you disaggregate data, you can dig deeper and deeper. Disaggregate program-wide data by site, site data by classroom, and classroom data by child. You can disaggregate five-year data by year, yearly data by month, and monthly data by week. Each time, you get a more magnified view of one piece of data.	*Ten percent of the children have a speech or language impairment. For hearing impairment, autism, or non-categorical language delay, an equal number of children, one percent, have that type of disability.*
Compare When you compare data, you are looking for differences that pinpoint an opportunity or a problem. You can compare results to a target goal, such as Head Start Program Performance Standards requirements. You can compare Classroom Assessment Scoring System (CLASS®) results with Head Start thresholds, or child outcomes data to national norms. Comparing data over time helps identify trends. This can help you make predictions about the future. Using baseline data, you can track progress towards goals over time. Comparing data from different sources also can provide insights. For example, comparing completion rates of referrals for the various service providers with which your agency works would help you answer the question, "Are referrals and follow-ups completed more frequently with particular community agencies?" In conducting a community assessment, you frequently compare internal data from various sources with external data. Internal data sources may include family enrollment data or data on parent satisfaction with service providers. External data may be gathered from a number of sources, ranging from the U.S. Census data to local public schools.	 *The percentage of children who were diagnosed after enrollment has steadily increased between 2009 and 2013, from five to 10 percent. The number of children diagnosed before enrollment has fluctuated between two and four percent over this time period.*

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Averages: Mean, Median, Mode, Range Calculating the mean, median, mode, and range for a series of numbers can aid in your data analysis. The mean is not always a good representation of the center of the data. An outlier (a very high or very low value) can distort the average. For instance, the average income for a community would be skewed if there were even just a few millionaires. Median gives you a number that is more representative of the middle. Your income is likely to be closer to the median income in your community than to the average income if your neighbors are millionaires.	
Mean Mean is the average of a group of numbers. To calculate the mean, divide the total by the number of data points. In this case, 990 divided by 11 equals 90.	Elapsed time between identification of suspected disability and completion of IEP Child / Length of time in days AB 80 CD 120 EF 60 GH 120 IJ 30 KL 70 MN 102 OP 158 QR 45 ST 85 UV 120 **Total 990** **Mean: 990 ÷ 11 = 90**
Median The median is the middle point in the data. Put a series of numbers in order from lowest to highest and determine the middle value. This is the median. In this example, there are 11 items so the sixth item is the middle or median. If you have an even number of items, the median is calculated by adding the two middle items and dividing by two. It's easy to find the median by counting off from both sides of the data points. However, there is a formula that can be used as well. This is especially useful if you have a lot of data points. Calculate by adding up the number of data points, plus one, divided by two. In this case, there are 11 data points: 11 plus one equals 12; 12 divided by two equals six; and so the sixth number is the median.	Elapsed time between identification of suspected disability and completion of IEP 30 45 60 70 80 **85** 102 120 120 120 158

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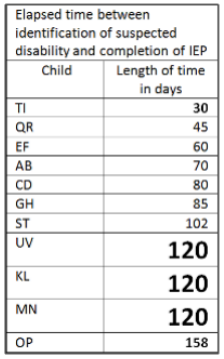
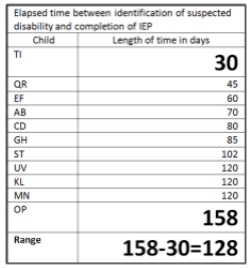
Mode The mode is the number repeated the most frequently. In this case, the number 120 appears three times, so it is the mode.	
Range Range is the difference between the lowest and highest values. The data in this table has been arranged from lowest to highest rather than being displayed in alphabetical order. To determine the range, subtract the lowest number from the highest number. In this case, subtract 30 from 158 to show a range of 128 days. The numbers 30 and 158, the two extremes, are also important to look at. The shortest length of time might provoke you to ask how your program was able to complete the Individual Education Plan (IEP) so quickly in this case and whether there are lessons learned you can apply in other situations. You would also want to learn why one IEP took 158 days to accomplish and consider what could have been done to move the process along more quickly.	

Elapsed time between identification of suspected disability and completion of IEP

Child	Length of time in days
TI	30
QR	45
EF	60
AB	70
CD	80
GH	85
ST	102
UV	120
KL	120
MN	120
OP	158

Elapsed time between identification of suspected disability and completion of IEP

Child	Length of time in days
TI	30
QR	45
EF	60
AB	70
CD	80
GH	85
ST	102
UV	120
KL	120
MN	120
OP	158
Range	158-30=128