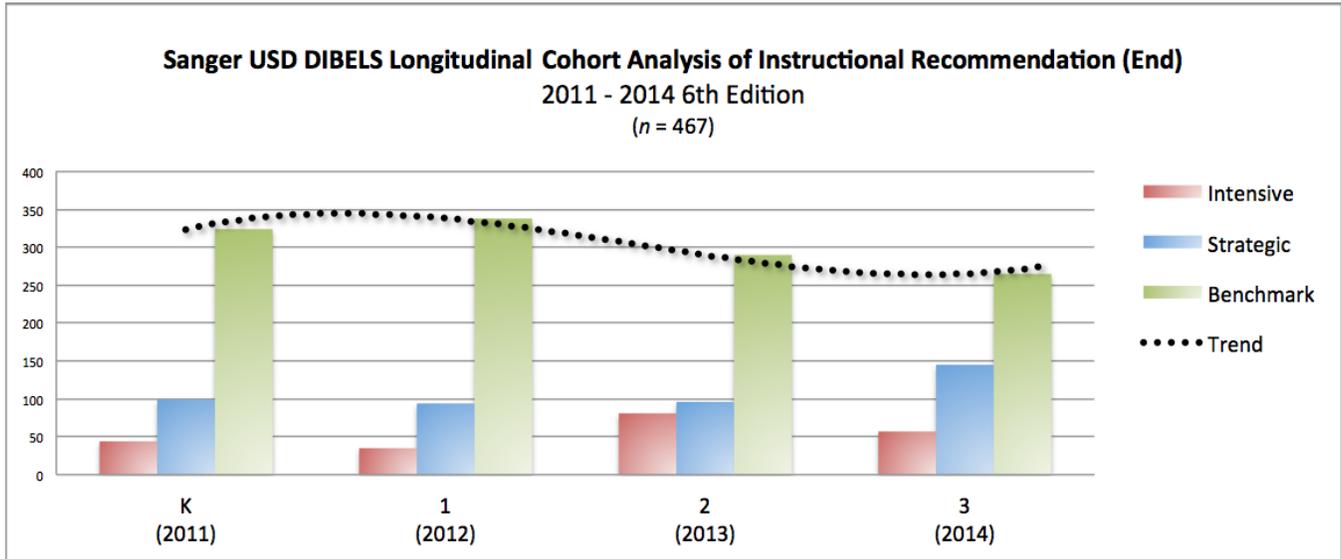# Using Charts to Present Data

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As the Sanger Design Team's "data guy," I wanted to become familiar with the state of early literacy in our district. I looked at DIBELS because it is used in Sanger Unified to assess early literacy skills. I was interested in emerging trends, so I put together a graph that compares the year-by-year performance of the same sample of K-3 students.

A longitudinal cohort analysis examines observations of the same sample over several years. Following this definition, I constructed a graph, which compares the distribution of Instructional Recommendations among the same 467 students over a four-year period. Our Data Director, Jose Silva, saw this graph and thought I should share my process with the rest of the SCALE Up community. This is not so much a tutorial as much as a guide, since— although we are working towards a common goal—each district is different.

Behind the scenes

The chart is driven by data in a spreadsheet. The data must have a unique identifier, a common indicator, and it must not have missing values.

	A	B	C	D	E
1	Student_ID	Instr_Rec_K_End	Instr_Rec_1st_End	Instr_Rec_2nd_End	Instr_Rec_3rd_End
2	201794	Benchmark	Strategic	Strategic	Strategic
3	200782	Strategic	Strategic	Intensive	Intensive
4	201796	Benchmark	Benchmark	Benchmark	Benchmark
5	202519	Intensive	Strategic	Benchmark	Benchmark
6	202179	Benchmark	Strategic	Intensive	Strategic
7	202507	Benchmark	Benchmark	Benchmark	Benchmark
8	200997	Benchmark	Benchmark	Benchmark	Strategic
9	202402	Strategic	Benchmark	Benchmark	Benchmark
10	203557	Benchmark	Benchmark	Strategic	Strategic

Unique identifier

A data set must have a unique identifier or *key* in order to maintain linkages between fields and tables. In our case this would be student ID numbers.

Common indicator

A common indicator is a must for any comparison analysis in order to avoid comparing "apples and oranges." In this case, I used Instructional Recommendation, as it is used in all grades from K-6. Oral Reading Fluency (ORF), for example, is not assessed during Kindergarten.

Complete data set

Missing values can skew the data. To avoid this, I excluded students with missing DIBELS data between 2011 and 2014.

Data sources

You may export data from your LMS or download directly from the source. Whichever method you choose, make sure the data set is in Excel or delimited format (comma-separated, tab-separated, etc.).

Skills and Tools

In addition to focus and determination, you will need skills in the following:

Delimited Formats

Delimited formats are data formats in which fields and records are separated by selected characters such as comma, semi-colon or tab. Assessment data very often come in one of these formats.

Learning Management System (LMS)

You should be familiar with creating and exporting custom reports from your LMS in order to tailor the report output to your data needs. If your LMS cannot generate customize reports, you can always customize the output data in Excel.

Excel

Pivot tables are used to quickly summarize and organize large amounts of data. Spending a few minutes to build an Excel pivot table can save hours of tedious work. Charts are not just pretty pictures; they are excellent tools that allow us to glean information from data in ways that looking at numbers simply cannot. Advanced Excel formulas and functions such as COUNTIF and VLOOKUP will allow you to manipulate a large data set without taking up a lot of your precious time.