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# On-Demand Training: Polygon Maps Transcript

# INTRO

Welcome to the Polygon Maps video. This video covers how to use Tableau Desktop to create polygon maps – custom shaded boundaries using coordinate data – and how to bring in other types of data for analysis on a polygon map.

You can download the companion workbook or follow along in your own copy of Tableau. The companion workbook contains two data sources you will need in addition to Superstore.

## FILLED MAPS

Tableau's filled map feature creates polygon maps quickly and easily. Tableau will automatically identify specific geographic fields such as country and city, and generate the latitude and longitude coordinates for those fields. This means that for common geographic data, the dataset does not have to contain latitude and longitude in order to be mapped.

Let's create a new sheet and see what this looks like. We simply double click on the geographic field of interest. This defaults to a symbol map.

If we add a measure, like profit, to color, Tableau automatically makes it a filled map. However, when we switch and put a dimension, say Region, on color we have a symbol map again. We can force this to a filled map by changing the mark type or Show Me.

This will color each state according to which region it belongs to. We'll call this sheet Region Map.

## CUSTOM POLYGON MAPS

What if the analysis we want to do requires non-standard geographic areas that Tableau doesn't automatically generate? To map those areas, we need coordinate data within our data source. Our example today will re-create state boundaries from scratch, using the State Polygon data source.

## REQUIRED DATA FOR POLYGON MAPS

Let's look at the underlying values in this data source to see what fields are required to create a polygon map. I like to think of it like a series of connect-the-dot drawings where each custom area is a drawing. The data set has to contain specific information for Tableau to know what lines to draw and where.

Latitude and Longitude are the coordinates of each point in the polygon, or each dot in the connect-the-dot

- The point order field tells Tableau which dots to connect and in what order, like the numbers on a connect-the-dot
- The polygon ID field will identify each individual enclosed area, letting Tableau know which points make up each drawing
  - These enclosed areas can roll up to a larger area, such as State. For example, Michigan is made up of two non-adjacent areas so each of them would have a different polygon ID, but we want to reference all the parts collectively as Michigan.

## BUILDING A POLYGON MAP

Now that we know what the data looks like we can start building that map.

- The first step is to plot the latitude and longitude coordinates from that data source – NOT the generated fields Tableau automatically offers, but the fields from our data set.
- Next, we'll disaggregate the data so each point is plotted individually
- Then, change the mark type to be a polygon. This looks terrible because we haven't yet told Tableau how to draw each polygon,
- So we'll place the polygon ID on the level of detail shelf to break up each set of points into individual polygons.
- And by placing the point order field on the path shelf, we now have each outline drawn correctly.

We don't see individual areas (states) because they're all the same color, so we'll place State onto the color shelf.

Now we can see each state – let's add borders to make this easier to see, and we'll call this State Map.

## ANALYSIS WITH CUSTOM POLYGON MAPS

Let's take the concept of custom shaded boundaries a step further by combining polygon data with other types of data to do analysis on the polygon map.

We'll right click on our data source Polygons and Sales Data and go to Edit Data Source. We can see that we have two tables available. The Polygon table contains similar data to the last data source – the connect-the-dot information for drawing our boundaries. The Orders table contains sales data about each of these areas.

Let's bring out Orders and verify the join – we want an inner join on State. For more information on Joins, check out the Connecting to Data videos.

We'll go to worksheet, and now we see data from both tables.

Now we're ready to build a polygon map and add in the sales data.

- First step – double click to plot the latitude and longitude coordinates from the data source – note, not the generated fields in italics.
- We also want to drag Point Order from Measures to Dimensions. This is a key point – like disaggregating the data in the previous example, this forces Tableau to treat each Point Order as a discrete number, instead of values to be aggregated (as a Measure would be)
- Change the mark type to be a polygon.
- Bring polygon number to level of detail – this separates which coordinates belong to which area.
- Put point order on the path shelf – this tells Tableau which order to connect the dots
- Place State on level of detail – this groups the polygon numbers into their states. Here we can click on Color and add borders to make it easier to see.
- Now that we have our map, let's see how each state is doing for sales by dragging sales to color.

That's all there is to it. We've seen how to use the built in filled map features in Tableau, what the requirements are to

create a custom polygon map, and how to bring in additional data onto a custom map.

## CONCLUSION

Thank you for watching the Polygon Maps training video. We invite you to continue with the On Demand Training videos to learn more about using Tableau Desktop