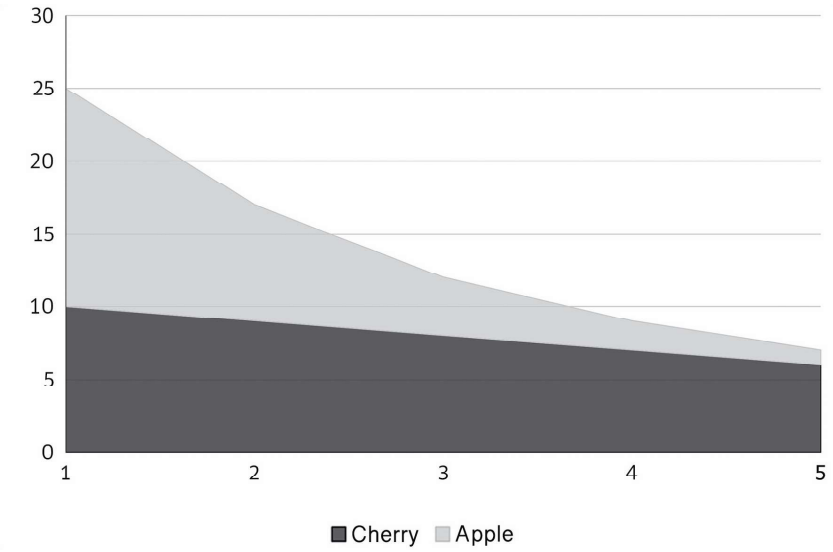
# How to Make Stacked Graphs

Choosing the right kind of graph is important for accurately representing your data.

The first type of graph we can make is a ***stacked line graph***. This type of graph is useful for looking at data where the **total** is important, as well as how the subgroups add up to the total. Let's say we're selling cherry and apple pies. This is the data we collect:

| Day | Cherry | Apple | Total |
|---|---|---|---|
| 1 | 10 | 15 | 25 |
| 2 | 9 | 8 | 17 |
| 3 | 8 | 4 | 12 |
| 4 | 7 | 2 | 9 |
| 5 | 6 | 1 | 7 |

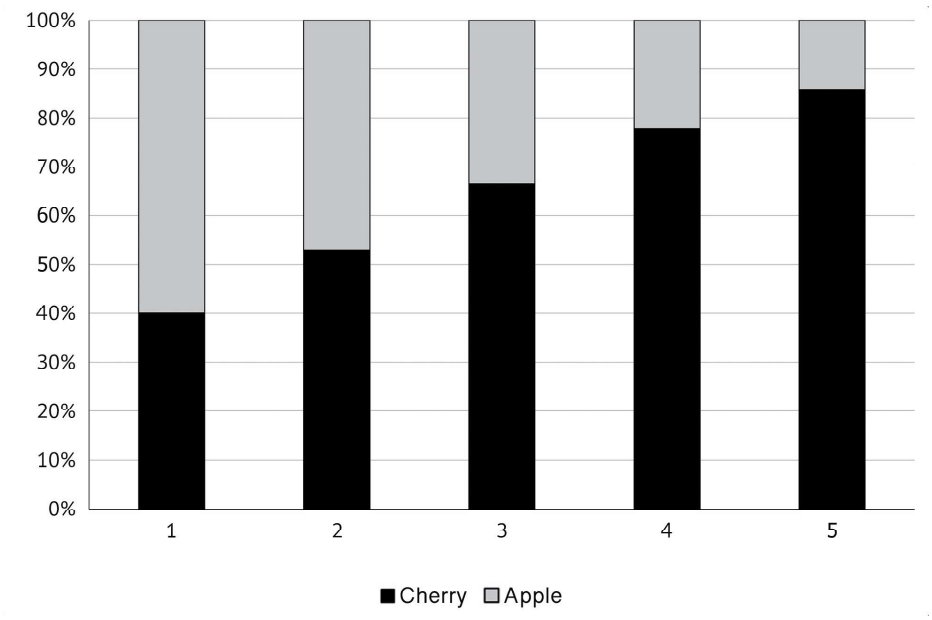



In this graph, we can see the number of cherry pies we sold by looking at the area filled in with the darker color. We can also see the number of apple pies we sold by looking at the area filled in with the lighter color. The **total number of pies** is represented by **both the areas together**.

**To make a stacked line graph:**

1. Scale your *y*-axis. To do this, find your highest data point in the total population column. Then decide how best to divide your *y*-axis to include all your data.
2. Plot the data points from the "Resistant Population" column in your data table. Connect these points with a line.
3. Color in everything below this line with pink to represent the resistant bacteria.
4. Plot the data points from the "Total Population" column in your data table. Connect these points with a line.
5. Color in everything in between the "Total Population" line you just finished and the "Resistant Population" line you graphed in step 2 with red to represent the susceptible bacteria.
6. Make a key to tell the viewer of the graph which color represents which kind of bacteria.

The second type of graph you will use today is a ***stacked percent bar graph***. This type of graph is useful for seeing the relative percent of two subgroups within a total.




In our pie example, this graph would tell us the percent of each flavor of pie that was sold each day. However, this graph doesn't tell us anything about how many pies we sold! If we look at the first graph we made, we can see that the number of cherry pies we sold actually went down over time. This graph tells us that we sold a higher percent of cherry pies each day relative to the total number of pies.

**To make a stacked percent graph:**

1. Draw a bar for each generation that goes all the way to 100%.
2. Make a mark in the bar for the percentage of resistant bacteria.
3. Color in everything below this mark with pink to represent the resistant bacteria.
4. Color in everything above this mark with red to represent the susceptible bacteria.