

## 4.1: Why It Matters- Nonlinear Models

### Why learn about nonlinear relationships and how they are modeled?

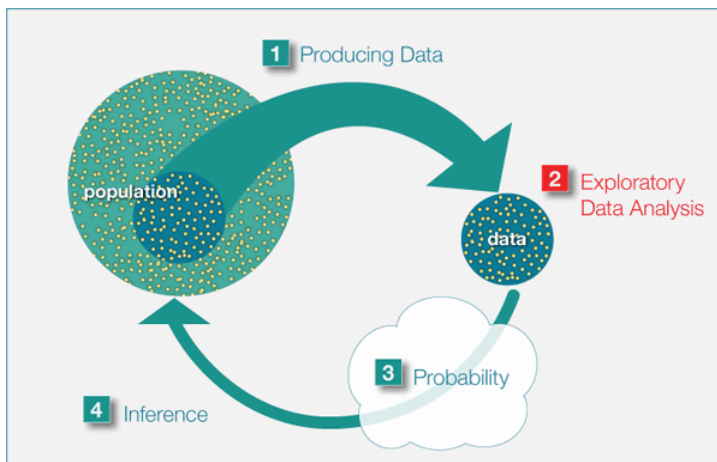
Before we begin *Nonlinear Models*, let's see how the new ideas in this module relate to what we learned in the previous modules, *Types of Statistical Studies and Producing Data*, *Summarizing Data Graphically and Numerically*, and *Examining Relationships: Quantitative Data*.

Recall the Big Picture:

We begin a statistical investigation with a research question. The investigation proceeds with the following steps:

- Produce Data: Determine what to measure, then collect the data. ← **Types of Statistical Studies and Producing Data**
- Explore the Data: Analyze and summarize the data. ← **Summarizing Data Graphically and Numerically, Examining Relationships: Quantitative Data, Nonlinear Models**
- Draw a Conclusion: Use the data, probability and statistical inference to draw a conclusion about the population.

*Types of Statistical Studies and Producing Data* focused on methods for collecting reliable data. *Summarizing Data Graphically and Numerically* focused on summarizing and analyzing data for a quantitative variable. *Examining Relationships: Quantitative Data* focused on linear relationships between two quantitative variables. In *Nonlinear Models*, we focus on nonlinear relationships between two quantitative variables. In the Big Picture of Statistics, the material in this module is still part of exploratory data analysis.



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