



The Statistical Process

Dr. Bethany Noblitt, Northern Kentucky University

- 1 The Kentucky Academic Standards place an emphasis on developing statistical literacy in students,
- 2 which involves understanding and working with variability through a structured statistical process. This
- 3 process has four essential components, each building upon the previous one.
- 4 The first component is formulating a statistical question, which is a question that anticipates variability
- 5 and leads to meaningful data collection, analysis, and interpretation.
- 6 Instead of asking, *'What is my favorite fruit?'*—which has just one answer—we ask, *'What is our class's*
- 7 *favorite fruit?'* to gather varied responses.
- 8 Once a statistical question is posed, the next step is to collect relevant data.
- 9 When collecting data, students can gather either categorical or numerical data. Categorical Data is
- 10 non-numerical data such as favorite colors or methods of transportation to school. Numerical Data
- 11 involves quantities such as plant heights measured in inches or counting the number of jumping jacks
- 12 in 30 seconds.
- 13 With the data collected, the focus shifts to analysis. Students can organize the data they have collected
- 14 into graphs or charts in order to analyze the data and look for patterns. In the primary grades, students
- 15 use tally charts, bar graphs and picture graphs. In the intermediate grades, the complexity of the data
- 16 displays increases and expands to include dot plots.
- 17 Finally, students interpret the results of their data to explain their findings, consider limitations,
- 18 implications, revisions, and new questions to investigate.



19 Engaging in the statistical process, as outlined by the Kentucky Academic Standards, is one meaningful
20 way in which teachers can provide students with opportunities to make mathematical connections to the
21 world around them. This not only enhances students' understanding of statistics but also equips them
22 with critical thinking skills that are essential for navigating and interpreting information in their daily
23 lives.