

## MATH CONTENT STANDARD LEVEL 4: DATA ANALYSIS AND PROBABILITY

Adult learners will develop and apply data analysis and probability to solve a variety of real-life problems and to determine if the results are reasonable.

| Benchmarks<br>On exit of this level,<br>learner is able to:  | Applications<br>Examples of how/where learners will<br>use this skill:   | I do it well<br>enough | I want to work<br>on it | I don't need to<br>work on this<br>now |
|--|--|------------------------|-------------------------|--|
| 4.8.1<br>Express probabilities<br>as fractions, decimals,<br>or percentages<br>between 0 and 1.                      | <ul style="list-style-type: none"> <li>• Understand that 0 probability means an event will not occur and that 1 means an event will occur.</li> <li>• Understand predictions of events, such as horseracing and football games.</li> <li>• Calculate a batting average or a bowling average</li> <li>• Know the meaning of predictions for weather, games of chance, etc.</li> </ul> |                        |                         |  |
| 4.8.2<br>Compute<br>probabilities of<br>events from simple<br>experiments with<br>equally likely<br>outcomes         | <ul style="list-style-type: none"> <li>• Predict the results from the toss of dice, flipping of coins, or the spin of spinners.</li> <li>• List all possibilities and find the fraction that meets given conditions of the above.</li> </ul>   |                        |                         |  |
| 4.8.3<br>Represent and<br>interpret data.  | <ul style="list-style-type: none"> <li>• Understand when to use circle graphs, stem and leaf plots, histograms, and box-and-whisker plots to show the data.</li> <li>• Create scatter plots and use an estimated line of best fit to answer questions about the data.</li> </ul>   |                        |                         |  |
| 4.8.4<br>Calculate and<br>interpret relative<br>frequencies<br>and cumulative<br>frequencies for given<br>data sets. | <ul style="list-style-type: none"> <li>• Organize information.</li> <li>• Make predictions in advertising campaigns and marketing of products.</li> <li>• Explain market trends.</li> <li>• Predict election results.</li> </ul>   |                        |                         |  |
| 4.8.5<br>Understand the<br>relationship of<br>probability to relative<br>frequencies                                 | <ul style="list-style-type: none"> <li>• Compute relative frequencies from a table of experimental results for a repeated event.</li> <li>• Answer questions about the result of an experiment using relationship of probability to relative frequency</li> <li>• Use probability as a predictor of common events, such as: games won to national championship</li> </ul>            |                        |                         |  |