

MP4c-Statistics and Probability

Content Area: **Math**
Course(s): **Math 8 Algebra 1 Honors**
Time Period: **Marking Period 4**
Length: **MP4**
Status: **Published**

Technology Connection

8.1.8.DA.1 Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.DA.4 Transform data to remove errors and improve the accuracy of the data for analysis

Essential Questions

- How are statistics and probability used in the real world?

Big Ideas

- Summarize, represent, and interpret data on a single count or measurement variable.
- Summarize, represent, and interpret data on two categorical and quantitative variables.

Diversity Integration

Objective: analyze statistics on poverty and hunger from various providers of data that measure progress toward the MDGs, and accurately scale the figures from worldwide data down to the classroom population.

Description of Activity: This lesson focuses on diversity and the disparity among groups. The class is posed the question: If the world were composed of a hundred people, what would it look like? Students are given a breakdown of percentages of people living in different parts of the world. The students then determine how to represent the figures accurately using the number of students present. After this introduction, students perform the same calculations using statistics for numbers and percentages of people living on less than \$1 a day, percentages of people with access to clean water, prevalence of undernourishment, and prevalence of child malnutrition. After tabulating the figures, students will be able to visualize these factors using the students in the classroom.

Enduring Understandings

Interpreting Categorical & Quantitative Data

S.ID.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

S.ID.3 Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).

S.ID.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Lessons 0-1, 1-8, 2-4, 3-4, 4-5, 5-4, 6-4, 7-5, 8-8, 9-3, 10-5, 11-1, 12-4
2. Reason abstractly and quantitatively. Lessons 1-3, 2-1, 3-3, 4-1, 5-1, 6-5, 7-2, 8-5, 9-1, 10-3, 11-8, 12-2
3. Construct viable arguments and critique the reasoning of others. Lessons 1-3, 2-5, 3-5, 4-2, 5-5, 6-1, 7-4, 9-2, 10-4, 11-2, 12-1
4. Model with mathematics. Lessons 1-1, 2-9, 3-2, 4-5, 5-1, 6-4, 7-6, 8-7, 9-7, 10-4, 11-7, 12-5
5. Use appropriate tools strategically. Lessons 1-7, 2-4, 3-2, 4-4, 5-6, 6-1, 7-5, 8-2, 9-6, 10-6, 11-8, 12-3
6. Attend to precision. Lessons 1-3, 2-8, 3-4, 4-2, 5-2, 6-6, 7-4, 8-9, 9-5, 10-1, 11-6, 12-2
7. Look for and make use of structure. Lessons 1-2, 2-5, 3-6, 4-1, 5-5, 6-3, 7-7, 8-6, 9-6, 10-2, 11-2, 12-8
8. Look for and express regularity in repeated reasoning. Lessons 1-4, 2-7, 3-1, 4-1, 5-4, 6-1, 7-1, 8-4, 9-3, 10-2, 11-5, 12-6