7th Grade - Unit 5: Statistics and Probability

Content Area: **Mathematics**
Course(s): **Math 6, Generic Course**
Time Period: **Generic Time Period**
Length: **33 days**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

MA.7.SP	Statistics and Probability
MA.7.SP.A	Use random sampling to draw inferences about a population.
MA.7.SP.A.1	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
MA.7.SP.A.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.
MA.7.SP.B	Draw informal comparative inferences about two populations.
MA.7.SP.B.3	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.
MA.7.SP.B.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
MA.7.SP.C	Investigate chance processes and develop, use, and evaluate probability models.
MA.7.SP.C.5	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
MA.7.SP.C.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
MA.7.SP.C.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
MA.7.SP.C.7a	Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
MA.7.SP.C.7b	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
MA.7.SP.C.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
MA.7.SP.C.8a	Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
MA.7.SP.C.8b	Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.

MA.7.SP.C.8c Design and use a simulation to generate frequencies for compound events.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How do you explain real-world problems using statistics?
- How do you interpret data from statistical representations?
- How do you predict future probabilities based on data?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- Measures of central tendency can be used to interpret data (mean, median, mode).
- Statistics can be represented in a variety of ways: box and whisker plot, and dot plot.
- Theoretical probability can be computed to predict the probability of future events.

Content

Students will be able to:

- Indentify a random sample and write a survery question.
- Estimate population size using proportions
- Use data from random samples to draw inferences about populations
- Compare data about two population by using measures of center and measures of variability.
- Find the probability and the complement of an event.
- Find experimental probability and use simulation.
- Make and use sample spaces and use the counting principal.
- Find the probability of independent and dependent events.
- Design and use simulation to estimate the probability of compound events.

Vocabulary List:

- interquartile range
- mean asbolute deviation
- population
- random sample
- sample
- variability
- complement
- compound event
- counting principle
- dependent event
- event

- experimental probability
- independent event
- outcome
- sample space
- simulation
- theoretical probability
- trial

Assessments

Resources

- Pearson textbook and online resources
- Teacher made flip-charts
- Web-based activities (mathplayground.com) (coolmath.com)
- Teacher made worksheets/assessments
- mad minutes
- NJCTL.org (PMI math)
- Pizzazz series of worksheets