Marietta City Schools

2025–2026 District Unit Planner

Statistical Reasoning

Unit title	Unit 1: Statistical Modeling	**Unit duration (hours)**	15-18 hours

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): ***What will students learn?***

GA DoE Standards

Standards

SR.MM.1 Apply mathematics to real-life situations; model real-life phenomena using mathematics.

- SR.MM.1.1 Explain contextual, mathematical problems using a mathematical model.
- SR.MM.1.2 Create mathematical models to explain phenomena that exist in the natural sciences, social sciences, liberal arts, fine and performing arts, and/or the humanities.
- SR.MM.1.3 Using abstract and quantitative reasoning, make decisions about information and data from a real-life situation.
- SR.MM.1.4 Use various mathematical representations and structures with this information to represent and solve real-life problems.

Concepts/Skills to support mastery of standards

- Graphical representations of real-world data and applications.
- Abstract and quantitative reasoning.
- Mathematical representations of data.

Vocabulary

- Statistics
- Individuals
- Categorical variables

- quantitative variables
- distribution
- frequency table
- relative frequency table
- bar charts
- pie charts
- dotplot
- stemplot
- histogram
- shape
- center
- variability
- symmetric
- skewed left or right
- median
- mean
- range
- standard deviation
- interquartile range
- first quartile

· third quartile

· resistant

· boxplots and 5 number summary

outliers/outlier formula

Notation

Essential Questions

- Can we distinguish statistical questions from nonstatistical questions?
- How do we visually represent data?
- Can we create interrogative or investigative questions?
- Can you identify the population (subjects) to be studied?
- Can you iIdentify the data (values of a variable) to be collected?
- How do we develop an intuitive understanding of the expected variation in the data?
- How can we draw conclusions based on the data analysis?
- How can we compare distributions of categorical data?
- How can we identify any “deceptive” data?
- How can we compare distributions of quantitative data?
- How can we choose an appropriate measure of center to answer the statistical question?
- How do we interpret results in the context of the investigative question?

Assessment Tasks

List of common formative and summative assessments.

Formative Assessment(s): Learning Tasks and Skills Checks, checkpoint quizzes, classwork assignments

Summative Assessment(s): Unit 1 Summative Assessment

Learning Experiences		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation** All information included by PLC in the differentiation box is the responsibility and ownership of the local school to review and approve per Board Policy IKB.
SR.MP.1 Make sense of problems and persevere in solving them. • SR.MP.2 Reason abstractly and quantitatively. • SR.MP.6 Attend to precision. SR.MM.1 Apply mathematics to real-life situations; model real-life phenomena using mathematics. SR.MM.1.1 Explain contextual, mathematical problems using a mathematical model. SR.MM.1.2 Create mathematical models to explain phenomena that exist in the natural sciences, social sciences, liberal arts, fine and performing arts, and/or the humanities. SR.MM.1.3 Using abstract and quantitative reasoning, make decisions about information and data from a real-life situation. SR.MM.1.4 Use various mathematical representations and structures with this information to represent and solve real-life problems.	Finches Task	Establish mathematics goals to focus learning. ● Supporting the Learning: Focus students' attention on the structure or essential features of mathematical ideas that appear regardless of the representation or concept. ● Supporting the Learning: Make explicit connections between current and prior lessons regarding number lines and the addition and subtraction of integers. Implement tasks that promote reasoning and problem solving. • Extending the Learning: Make a game to practice the skills and concepts experienced today. Make a list of materials you will need. Think about the rules for the game. Be prepared to explain to your teacher how the game works. Use and connect mathematical representations. • Supporting the Learning: Provide copies of notes, and graph paper to align numbers, and utilize color coding to organize information to connect mathematical representations. Facilitate meaningful mathematical discourse. ● Language Supports: Provide multiple opportunities for structured peer interactions or conversations (pairs or triads) to negotiate meaning using charts, graphic organizers, a word bank and/or sentence frames. ● Language

SR.DSR.2: Formulate statistical investigative questions of interest to students that can be answered with data. SR.DSR.2.1 Formulate statistical investigative questions about a population using SR.MP Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals. • SR.MP.1 Make sense of problems and persevere in solving them. • SR.MP.2 Reason abstractly and quantitatively. • SR.MP.6 Attend to precision.		Supports: Explicitly model and teach etiquette when conducting mathematical debates and how to justify answers. ● Language Supports: Utilize Mathematical Language Routines to support students in formulating their explanations.

Content Resources

Stapplet - constructing visual representations

Stats Medic Lessons, Statistics and Probability Applications Textbook 4th edition

DOE resources

Teacher created resources