Marietta City Schools

2023–2024 District Unit Planner

Accelerated Grade 7/8 Mathematics

Unit title	Unit 5: Investigating Data & Statistical Reasoning	**MYP year**	3	**Unit duration (hrs)**	*Enter Hours* *MSGA- (5 hours per week)* *MMS- (4.5 hours per week)* *MHS- (7.5 hours per 2 weeks)*

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

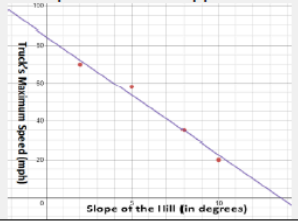
GA DoE Standards

Standards

8.FGR.6: Solve practical, linear problems involving situations using bivariate quantitative data.

Gifted Standards

Strand 2: Creative Thinking Skills
Students will develop and utilize creative thinking through a variety of products
and problem solving.
Strand 3: Higher Order Thinking and Problem Solving Skills
Students will develop and utilize critical thinking, higher order thinking, logical thinking and problem solving skills in various situations.
Strand 4: Advanced Communication and Collaboration Skills
Students will develop advanced communication and collaboration skills in
working toward a common goal with shared
accountability for the final outcome.

8.FGR.6: Solve practical, linear problems involving situations using bivariate quantitative data.				
Expectations		**Evidence of Student Learning** (not all inclusive; see Grade Level Overview for more details)		
8.FGR.6.1	Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit.	***Strategies and Methods*** • Students should discover the line of best fit as the one that comes closest to most of the data points.	***Terminology*** • The line of best fit shows the linear relationship between two variables in a data set.	***Example*** • Given a set of data points, a student creates a scatter plot (see below), approximates a line of best fit, and writes the equation for the approximated line. 
8.FGR.6.2	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts.	***Strategies and Methods*** • Students should solve practical, linear problems involving situations using bivariate quantitative data.	***Terminology*** • A linear model shows the relationship between two variables in a data set, such as lines of best fit.	
8.FGR.6.3	Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.	***Terminology*** • It is important to indicate 'predicted' to indicate this is a *probabilistic* interpretation in context, and not *deterministic*.	***Example*** • In a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.	
8.FGR.6.4	Use appropriate graphical displays from data distributions involving lines of best fit to draw informal inferences and answer the statistical investigative question posed in an unbiased statistical study.	***Fundamentals*** • Students should be given opportunities to analyze the data distribution displayed graphically to answer the statistical investigative question generated from a realistic situation.		

8.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.

Concepts/Skills to support mastery of standards

- 8.FGR.6.1- Construct a Scatter Plot
- 8.FGR.6.1- Visually fit a straight line with the closeness of data points (line of best fit)
- 8.FGR.6.2- Use an equation of a linear model
- 8.FGR.6.2- Interpret a slope and intercept
- 8.FGR.6.3- Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term)
- 8.FGR.6.4- Use the Line of Best Fit to draw inferences

Vocabulary

K12 Mathematics Glossary

Line Best Fit	Bivariate Data	Linear Model	Slope Intercept	Y-Intercept/Constant Term	Scatter Plot
Data Points	Slope/Rate of Change	Measure of center & variability	Inference	Random Sampling	Sample Population
Patterns	Predicted Population				

Notation

Key concept	Related concept(s)	Global context
Logic	Generalization, Model	Identities and Relationships

Statement of inquiry

The choices we make affect our health and well-being.

Inquiry questions

Factual— What is the line of best fit? What is a scatter-plot?

Conceptual— How can you identify the best line of fit for a graph? How can you apply the line of best fit in the real world?

Debatable- Can there only be one line of best fit?

MYP Objectives	Assessment Tasks	
*What specific MYP **objectives** will be addressed during this*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*

unit?		
Criterion B: Investigating Patterns	Students will interpret real life scenarios to enhance their understanding of patterns.	**Formative Assessment(s):** Unit 4 CFA **Summative Assessment(s):** Unit 4 Summative Assessment MYP: Topic 4 Performance Assessment Form B #1
Approaches to learning (ATL)		
Category: Social **Cluster:** Collaboration Skills **Skill Indicator:** Give and receive meaningful feedback		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
8.FGR.6.1 Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line and informally assess the model fit by judging the closeness of the data points to the line of best fit.	Exploring Relationships In this learning plan, students will collect and model real-world data. Students will graph data that could resemble a linear relationship. This will be their introduction to scatter plot data that could be modeled with a linear function.	Offer outlines and other scaffolding tools and share tips that might help students learn. The teacher will provide feedback using the feedback feature within activities and offer corrective opportunities.
8.FGR.6.1 Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit. **8.FGR.6.2** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercepts. **8.FGR.6.3** Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data.	The Slope of a Fitted Line In this learning plan, students interpret the slopes of fitted lines and create linear functions for given lines of best fit in context and identify positive and negative associations of scatter plots	The teacher will use think aloud strategies to make connections between mathematics concepts in order for the students to be able understand the meaning of the slope of lines of best fit.
8.FGR.5.7 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x,y) values, including reading these from a table or from a graph. **8.FGR.5.8** Explain the meaning of the rate of change and initial value of a linear function in	Heartbeats, Too In this learning plan, students are introduced to writing linear equations to fit data. Students will find a line of best fit for the data they collect and write an equation to describe the data.	The teacher will offer outlines and other scaffolding tools and share tips that might help students learn. The teacher will provide feedback using the feedback feature within activities and offer corrective opportunities.

terms of the situation it models and in terms of its graph or a table of values. **8.FGR.6.1** Show that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, visually fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line of best fit. **8.FGR.6.3** Explain the meaning of the predicted slope (rate of change) and the predicted intercept (constant term) of a linear model in the context of the data. **8.FGR.6.4** Use appropriate graphical displays from data distributions involving lines of best fit to draw informal inferences and answer the statistical investigative question posed in an unbiased statistical study.		

Content Resources

[6-11 Savvas Correlation to 2021 standards]

Intervention Tasks

Linear Graphs and Patterns - 8.FGR.6.1, 8.FGR.6.4

Walk the Line - 8.FGR.6.2, 8.FGR.6.3

Other Resources

- **Savvas**
- **Desmos**
- **Hands-On Math**
- [GaDOE Unit 1 Curriculum Overview]