

7th Grade Accel Math: Represent, Compare, and Use Statistical Data

Before You Begin

- Look over the old [Unit 9 DCA](#) to ensure lessons are aligned to the TEKS and assessment; the old [Unit 9 Key](#) show the Priority TEKS
- The New [DCA Unit 9](#) Preview in Performance Matters (1-2 new multiselect future STAAR-like formatted questions added this year)
- [STAAR Released by year from Lead4ward](#)
(Select Math, select grade, select SE's & TEKS, select years)
- IXL skills for the unit
- [Numeracy / Fluency Resources with Visuals \(google doc\)](#)
- Misconceptions of student work in this unit
- [Unit 9 \(2020 version\)](#)
- [At-A-Glance Yearly ARRC Outline](#)

Unit 9 Rationale

Data are gathered, organized and interpreted in order to answer questions about populations from which the data comes. Inferences are made about the population with data from only a sample of the population. Having a sense of the shape, spread, and size of the data is having a big picture of the data.

8.5C Contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation. (Supporting Standard)

8.5D Use a trend line that approximates the linear relationship between bivariate sets of data to make predictions. (Priority Standard)

8.11A Construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data. (Priority Standard)

- Construct a scatterplot
- Use the observed data in a scatterplot to address the questions of association such as linear, non-linear, and no association between bivariate data

8.11B Determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points. (Supporting Standard)

- Determine the mean absolute deviation using a data set of no more than 10 data points
- Use the mean absolute deviation as a measure of the average distance data are from the mean

8.11C Simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected. (Not Tested)

After this unit of study, students should be able to clearly explain their answers to the following questions:

- What conclusions can we draw from collection and interpretation of data?
- How do people use data to influence others?

- How do attributes of a set of data impact decisions?
- How do sampling methods affect the evaluation of survey results?

Academic Vocabulary : [Interactive FULL glossary](#)

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> • bivariate data • mean absolute deviation | <ul style="list-style-type: none"> • scatterplot • positive correlation • trendline | <ul style="list-style-type: none"> • mean • outlier • random sample |
|---|--|--|

Differentiation (through  lens of) Vocabulary:

Introducing and Scaffolding

→ example: [Adobe PDF](#), [Word doc](#), [Google doc](#)

Connecting and Extending

- ❖ bivariate data: [Adobe PDF](#), [Word doc](#), [Google doc](#)
- ❖ trend line: [Adobe PDF](#), [Word doc](#), [Google doc](#)

Suggested Learning Plan (13 days)

Priority Standards

Vertical Alignment

Day(s)	<p>TEKS <small>District-Identified Priority Standard in Blue</small> <small>Focus of Lesson in Bold</small></p> <p>Learning Targets <small>(Taxonomy)</small></p>	<p>Description, Learning Experience, and Student Evidence</p>
1 - 2	<p>TEKS: 8.11A, 8.5C</p> <p><u>Learning Goal Targets:</u> I can represent data on a scatterplot. (8.11-Comprehension) I can describe whether there is a linear, non-linear, or no association between the data represented on a scatter-plot. (8.5(C), 8.11(A)-Comprehension)</p>	<p>Description: Students will look at different representations of scatterplots and identify if there is a relationship shown at all; if there is a relationship shown, students will further identify what type of relationship the graph suggests. Students will go on to look at the variables to determine if the relationship they see makes sense with the variables being graphed.</p> <p>Learning Experience: Unit 9 - Scatterplots Introduction Slide Deck (district resource) and</p>

		<p>Teacher Video (district resource) Unit 9 - Scatterplots Introduction Notes PDF (district resource) Scatterplot Foldable (district resource)</p> <p>Evidence of Learning: Concept Connections (cadre resource)</p>
3 - 6	<p>TEKS: 8.5D, 8.5C, 8.11A</p> <p><u>Learning Goal Targets:</u> I can use a trend line on a scatterplot to make predictions. (8.5D-Analysis) I can represent data on a scatterplot. (8.11-Comprehension) I can describe whether there is a linear, non-linear, or no association between the data represented on a scatter-plot. (8.5(C), 8.11(A)-Comprehension)</p>	<p>Description: Students will learn how to draw in a line of best fit in a scatterplot and use that line of best fit to make predictions about the data and relationships shown.</p> <p>Learning Experience: Unit 9 - Scatterplot and Lines of Best Fit Slide Deck (district resource) and Teacher Video Unit 9 - Scatterplots and Lines of Best Fit PDF Notes (district resource)</p> <p>Evidence of Learning: Fact or Fib (ppt.) (cadre resource) Fact or Fib (Follow-up Activity) (cadre resource) Always, Sometimes, Never (ppt.) (cadre resource) Always, Sometimes, Never (Resources & Follow-up) (cadre resource)</p>
7-9	<p>TEKS: 8.11B</p> <p><u>Learning Goal Targets:</u> I can find the mean of a set of numbers, then use it to find the mean absolute deviation. (8.11B-Comprehension)</p> <p><u>Foundational Targets:</u> I can compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads. (7.12A-Analysis) I can summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution. (6.12C-Analysis)</p>	<p>Description: Students will learn to calculate the mean absolute deviation of a set of data. Students should start with a visual representation of what a mean absolute deviation is (dot plot) while they are learning to calculate. Students should also be able to describe what the mean absolute deviation means about a set of data.</p> <p>Learning Experience: Unit 9 - Mean Absolute Deviation Slide Deck (district resource) and teacher video (district resource) Mean Absolute Deviation PDF Notes (district resource)</p> <p>Evidence of Learning: Mean Absolute Deviation Practice (district resource)</p>
10	<p>TEKS: 8.11C</p>	<p>Description:</p>

	<p><u>Learning Goal Targets:</u> I can think of ways to pick random samples from a larger group of data. (8.11C-Comprehension)</p> <p><u>Foundational Targets:</u> I can compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations.(7.12C-Analysis)</p>	<p>Learning Experience:</p> <p>Evidence of Learning:</p>
11-12	<p>TEKS: 8.11A, 8.5C, 8.5D, 8.11B</p> <p><u>Learning Goal Targets:</u> I can use a trend line on a scatterplot to make predictions. (8.5D-Analysis) I can represent data on a scatterplot. (8.11-Comprehension) I can describe whether there is a linear, non-linear, or no association between the data represented on a scatter-plot. (8.5(C), 8.11(A)-Comprehension) I can find the mean of a set of numbers, then use it to find the mean absolute deviation. (8.11B-Comprehension)</p> <p><u>Foundational Targets:</u> I can compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads. (7.12A-Analysis) I can summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution. (6.12C-Analysis)</p>	<p>Description: Mixed practice and Review of all concepts - activities should be selected based on the needs of your classes</p> <p>Learning Experience:</p> <p>Evidence of Learning:</p>
13	<p>TEKS: 8.5C, 8.5D, 8.11A, 8.11B, 8.11C</p> <p>District Common Assessment (DCA) DCA Unit 9 (Preview) 00-RRISD-21-22-07MATH-ACCEL-Represent Compare and Use Statistical Data (Test#: 2449877)</p>	<p>Evidence of Learning:</p> <p>Performance Assessment</p>

Suggested Unit Plan

Day(s)	Guidelines	Description	Lessons and Activities Teacher Notes
--------	------------	-------------	---

2 days		8.5C 8.5D	Fact or Fib (ppt.) Fact or Fib (Follow-up Activity)
2 days		8.11A 8.11C	Concept Connections
2 days		8.5C 8.5D 8.11A 8.11B	Always, Sometimes, Never (ppt) Always, Sometimes, Never (Resources & Follow-up)

Adopted (McGraw-Hill) Resources

Adopted Instructional Materials: Represent, Compare, and Use Statistical Data

Unit 9 Hands-On Lab 1-a: Construct Scatter Plots (pgs. 623 - 624) [8.5C, 8.11A]

Unit 9 Lesson 1: Scatter-plots and Association (pgs. 625 - 634) [8.5C, 8.11A]

Unit 9 Hands-On Lab 2-a: Model Trend Lines (pgs. 635 - 636) [8.5D, 8.11A]

Geometer's Sketchpad Activity - Lines of Fit [8.5D]

Geometer's Sketchpad Activity - Old Shoe: Fitting a Line to a Scatter Plot [8.5D]

Unit 9 Lesson 2: Use Trend Lines to Make Predictions (pgs. 637 - 644) [8.5D, 8.11A]

Unit 9 Hands-On Lab 2-b: Linear and Nonlinear Association (pgs. 645 - 648) [8.5C, 8.11A]

Unit 9 Lesson 4: Mean Absolute Deviation (pgs. 661 - 668) [8.11B]

Unit 9 Lesson 6: Random Samples (pgs. 677 - 684) [8.11C]