

**Unit 9: Statistics**  
**Geometry**  
8 Class Meetings  
Revised May 2023

**Essential Questions**

- How can we display data graphically so that we can analyze trends and make decisions?

**Enduring Understandings with Unit Goals**

**EU 1:** Data can be organized into different types of graphs so that trends can be seen.

- Create graphs from data and describe the distributions.

**EU 2:** Probability helps to predict long term events over time.

- Determine probability of given events.  
Calculate probability of events without replacement.

**Standards**

**Common Core State Standards:**

- **HSS.ID.A.1:** Represent data with plots on the real number line (dot plots, histograms, and box plots).
- **HSS.ID.A.3:** Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
- **HSS.IC.B.3:** Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

**ISAAC Vision of the Graduate Competencies**

**Competency 1:** Write effectively for a variety of purposes.

**Competency 2:** Speak to diverse audiences in an accountable manner.

**Competency 3:** Develop the behaviors needed to interact and contribute with others on a team.

**Competency 4:** Analyze and solve problems independently and collaboratively.

**Competency 5:** Be responsible, creative, and empathetic members of the community.

## Unit 9: Statistics

### Geometry

8 Class Meetings

Revised May 2023

#### Unit Content Overview

##### 1. Describing Data

- Mean, Median, Mode
- Range, IQR, Q1, Q3
- Minimum, Maximum

##### 2. Stem and Leaf Plots

- Creating stem and leaf plots from raw data
- Increasing and Decreasing
- Interpret data (summary stats)

##### 3. Dot Plot

- Creating a dot plot from a frequency table
- Interpret data (summary stats)

##### 4. Histogram

- Describing parts of a histogram (bins etc.)
- Creating a histogram from a dot plot
- Interpret data (summary stats)
- Find the median

##### 5. Boxplots

- Creating a boxplot from raw data
- Summary statistics
- IQR and fences
- Outliers
- Interpret data (summary stats)

##### 6. Contingency Tables

- Reading a contingency table
- Analyzing a contingency table
- Interpret data (summary stats)

##### 7. Probability

- Calculating probability of events
- Mutually exclusive events
- Independence
- Probability without replacement

##### Interdisciplinary Connection:

- Language Arts - Word Problems
- Science – Word Problems

**Unit 9: Statistics**  
**Geometry**  
8 Class Meetings  
Revised May 2023

**Daily Learning Objectives with *TWPS Activities***

**Students will be able to...**

- Describe a set of data by using summary statistics.
  - *How can you describe a set of data in a more simplistic way?*
- Create a stem and leaf plot from raw data and describe the distribution.
- Analyze a dot plot created from a frequency table.
- Describe how to create a histogram and investigate different trends.
- Create a boxplot with summary statistics, fences, and outliers.
- Read, interpret, and solve problems using contingency tables.
  - *Where do you see contingency tables in the real world?*
- Calculate the probability of events with and without replacement.
  - *Why is calculating probability important?*

**Instructional Strategies/Differentiated Instruction**

- **HLP:** Academically Productive Talk
- **HLP:** Writing to Learn (TWPS)
- **HLP:** Effective Feedback
- Whole-group instruction
- Creating authentic connections for students
- Rephrasing and restatement of information and concepts
- Guided notes
- Student-led instruction
- Independent problem-solving
- Collaborative problem-solving
- Cross-curricular problem solving (independent and collaborative)
- Accountable Talk
- Manipulatives
- Cumulative Homework
- Visuals to support instruction
- Small group instruction
- Pre-teaching and reteaching

**EL DIFFERENTIATED INSTRUCTION:**

- Word Walls with visuals
- TWPS (Think, Write, Pair, Share)
- Pre-reading strategies
- Culturally responsive teaching
- Explicit Modeling

**Unit 9: Statistics**  
**Geometry**  
8 Class Meetings  
Revised May 2023

- Key Vocabulary
- Graphic Organizers
- Strategic Grouping
- Non-verbal Assessments

**Assessments**

**FORMATIVE ASSESSMENTS:**

- Accountable Talk Discussions
- Daily Think-Write-Pair Share (TWPS)
- Daily Do Now
- Whiteboards
- Mid-class check-ins
- Exit Slips
- Cumulative Homework
- Performance Task – Dot Plot Data
  - Problem Solving Rubric

**SUMMATIVE ASSESSMENTS:**

- Edulastic Quiz 1 – EU 1
- Unit 9 Test – EU 1, EU 2
- Performance Task – Dot Plot Data

**Unit Task**

**Unit Task Name:** Dot Plot Data

**Description:** Students will use information learned in this unit about how data can be organized into different types of graphs so that trends can be seen (EU 1) and using surveys to collect important data (EU 2) in order to create a dot plot for shoe sizes and one for heights. Students will then copy the school-wide dot plots on a graph and analyze the graph for summary statistics. From this data, students will create frequency tables, histograms, and boxplots. Student will then analyze the distribution of the data for all of the geometry classes.

**Evaluation:** Problem Solving Rubric

**Unit Resources**

- Worksheets
- Calculator
- Laptops
- SBAC Prep Online
- Edulastic
- Kahn Academy
- Gimkit

## **Unit 9: Statistics**

### **Geometry**

8 Class Meetings

Revised May 2023

- Quizizz
- Individual Whiteboards
- 2 Truths & One Lie
- State Common Core Standards Transition Tasks
- Online resources