

# K-12 Mathematics Data & Statistics Progression



## Standards/Cluster

## Math

## Other Content Areas

Kindergarten

**K.MD.3:** Classify objects and count the number of objects in each category



- Sort objects in multiple ways
- Describe how collections are sorted

- Sort and classify objects
- Count the number in each category

1st Grade

**1.MD.4:** Organize, represent and interpret data with up to three categories

- Ask and answer questions about the data
- Collect data
- Use vocabulary such as total, most, least, more than, less

- Create a table or chart to organize data
- Ask and answer questions about the total number of data points and how many are in each category

2nd Grade

**2.MD.10:** Represent data with a picture graph or bar graph with up to four categories



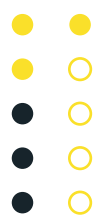
- Draw a picture graph and bar graph with a single-unit scale
- Solve simple put-together, take-apart, and compare problems using information presented in a bar graph



- Collect data with up to four categories
- Represent data in a bar and/or picture graph
- Use a bar graph to compare data

3rd Grade

**3.MD.3:** Draw scaled picture graphs and bar graphs to represent data with several categories



- Create graphs, then analyze and interpret data in them
- Solve one-and two-step "how many more" and "how many less" problems
- Represent the same data with graphs of different scales

- Collect and categorize data to display
- Choose a scale to represent data (ex. 1 square represents 5 pets)
- Draw scaled picture and bar graphs to represent a data set with several categories

4th Grade

**4.MD.4:** Make a line plot to display a data set using fractions of a unit

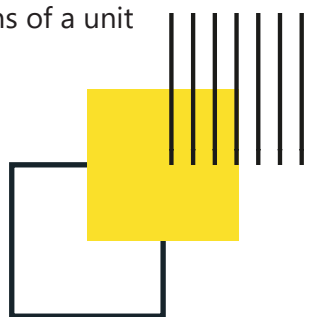


- Solve simple problems involving addition and subtraction of fractions using the information in a line plot
- Arrange measurements, including fractions, on a line plot

- Create a line plot to display data with fractional measurements of  $\frac{1}{2}$ ,  $\frac{1}{4}$ , and  $\frac{1}{8}$
- Compare measurements using a line plot

5th Grade

**5.MD.2:** Make a line plot to display measurements in fractions of a unit



- Solve problems involving operations with fractions using the information in a line plot
- Use line plot displays to consider balancing distributions of amounts

- Use fractional information presented in line plots to make sense of and solve problems



# K-12 Mathematics

## Data & Statistics Progression



### Standards/Cluster

### Math

### Other Content Areas

6th Grade

**6.SP.5:** Summarize numerical data sets in relation to their context



- Describe the nature of the attribute under investigation
- Describe a set of data using its center, spread, and overall shape
- Calculate mean absolute deviation (MAD) and explain what the MAD represents

- Calculate mean, median, mode, and range
- Create a line plot, histogram, and box plot
- Interpret data represented on dot plots, box plots, and histograms

7th Grade

**7.SP.4:** Use measures of center and variability to draw informal comparisons

- Compare two sets of data for variability by comparing graphs
- Select the correct measure (s) of center and/or variability in comparing two data sets

- Compare two or more data sets and justify inferences made
- Generalize characteristics for data sets using measures of center or variability



8th Grade

**8.SP.1:** Construct and interpret scatter plots for bivariate data



- Model bivariate data in a scatter plot showing the different types of associations
- Describe patterns in data such as clustering, outliers, and positive or negative association
- Recognize linear and non-linear association

- Model real-world relationships on a graph
- Understand and use two-way tables to display bivariate categorical data
- Look for relationships in data and classify them as positive or negative

High School

**5.ID.2:** Use statistics appropriate to the data to compare center and spread of two or more data sets



- Find and compare interquartile range and standard deviation of data sets
- Use measures of center and spread to draw inferences about data sets

- Use technology to find measures of center and spread, and to make sense of data



- The standards identified are representative of the focus at each grade level to demonstrate the developmental nature of our Learning Standards
- The math skills listed are applicable within the context of the identified standards but do not offer a comprehensive list of skills they describe
- The other content areas are examples to provide possible uses of the math skills within the listed standards

