

Math DesCartes: Data Analysis, Probability and Statistics

Skills: Statistical Measurements

Students:	DesCartes Skills: (Highlight the skills related to your chosen standard/concept)
	RIT 251-260: <ul style="list-style-type: none"> Solves complex problems involving mean Computes and compares mean, median, mode, and range in simple examples to demonstrate that they may differ for a given set of data Evaluates how adding data to a set of data affects the measures of center Uses the regression line method to make predictions
	RIT 241-250: <ul style="list-style-type: none"> Determines the mean, median, and/or mode of a set of data Determines the range of a complex set of data Predicts from an analysis of data and statistical measures
	RIT 231-240: <ul style="list-style-type: none"> Determines the mean of a complex set of data (e.g., fractions, integers, many data points) Determines the median from a complex set of data (e.g., not in order, many data points) Estimates the mean from a set of data Determines the range of a complex set of data Solves problems with missing data when the mean is known Estimates line of best fit to make predictions Identifies outliers on a data display (e.g., uses interquartile range to identify outliers on a box-and-whisker plot) Predicts from an analysis of data and statistical measures
	RIT 221-230: <ul style="list-style-type: none"> Determines the average (mean) of a simple set of data Determines the middle value (median) from a simple set of data Determines the mean of a complex set of data (e.g., fractions, integers, many data points) Determines the mode of a set of data Estimates the mean from a set of data Solves simple problems involving mean Explains rationale for determining the mean, median, or mode of a set of data Solves problems with missing data when the mean is known
	RIT 211-220: <ul style="list-style-type: none"> Determines the average (mean) of a simple set of data Solves simple problems involving mean

Lesson Title: Mean Group

Standard/Concept for All:

5th Grade: 5.M.5.3.1 Find measures of central tendency - median and mode - with simple sets of data using whole numbers
5.M.5.3.2 Find the range of a set of data using whole numbers.

6th Grade: 6.M.5.3.1 Find measures of central tendency – mean, median, and mode – with simple sets of data.
6.M.5.3.2 Calculate the range of a set of data.

7th Grade: 7.M.5.3.1 Determine the measures of central tendency – mean, median and mode – with sets of data.
7.M.5.3.2 Discuss distribution of data, including range, frequency, gaps, and clusters.

8th Grade: 8.M.5.3.1 Choose and calculate the appropriate measure of central tendency – mean, median, and mode.
8.M.5.3.2 Explain the significance of distribution of data, including range, frequency, gaps, and clusters.

9th-10th Grades: 5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers.

For Students Ready for a Challenge:

Lesson/Activity:

- Choose 3 volunteers. As a Class, determine the mean, median, mode and range for the first names of the 3 volunteers.
- Assign “Mean Worksheet 2”
- Have students work in groups of 10-15. (Possibly split Class in two groups. Then have students make predictions about which group will have the highest mean, mode, median, and the widest range.)
- Choose one of the three data sets from the worksheet and write all of the student’s numbers on the board (anonymously). Define and discuss outliers, frequency, gaps, and clusters.

Resources: “Mean Worksheet 2”

- Optional: Allow students to use calculators to assist w/ Calculations

Means of Assessment: Accuracy of Computations

For Most Students:

Lesson/Activity:

- Choose 3 volunteers. As a Class, determine the mean, median, mode and range for the first names of the 3 volunteers.
- Assign “Mean Worksheet 2”
- Have students work in groups of 5-7.

Resources: “Mean Worksheet 2”

- Optional: Allow students to use calculators to assist w/ Calculations

Means of Assessment: Accuracy of Computations

For Students Needing Extra Support:

Lesson/Activity:

- Choose 3 volunteers. As a Class, determine the mean, median, mode and range for the first names of the 3 volunteers.
- Assign “Mean Worksheet 1”
- Have students work in groups of 3-5.

Resources: “Mean Worksheet”

- Optional: Allow students to use calculators to assist w/ Calculations

Means of Assessment: Accuracy of Computations

Closure/Summary for All:

- Review definitions for words: mean, median, mode, range, others used
- Discuss: How could this info be useful/necessary in “real” life?

MEAN WORKSHEET 1

Mean = average (add the numbers together, and then divide by how many there are)

Mode = the number that appears most often

Median = the number in the middle, after they have all been put in order from least to greatest

Range = lowest and highest numbers

Measure the length of each person's foot to the nearest inch.

What is the mean length? _____

What is the mode? _____

What is the median? _____

What is the range? _____

Count how many letters are in each person's name.

What is the mean? _____

What is the mode? _____

What is the median? _____

What is the range? _____

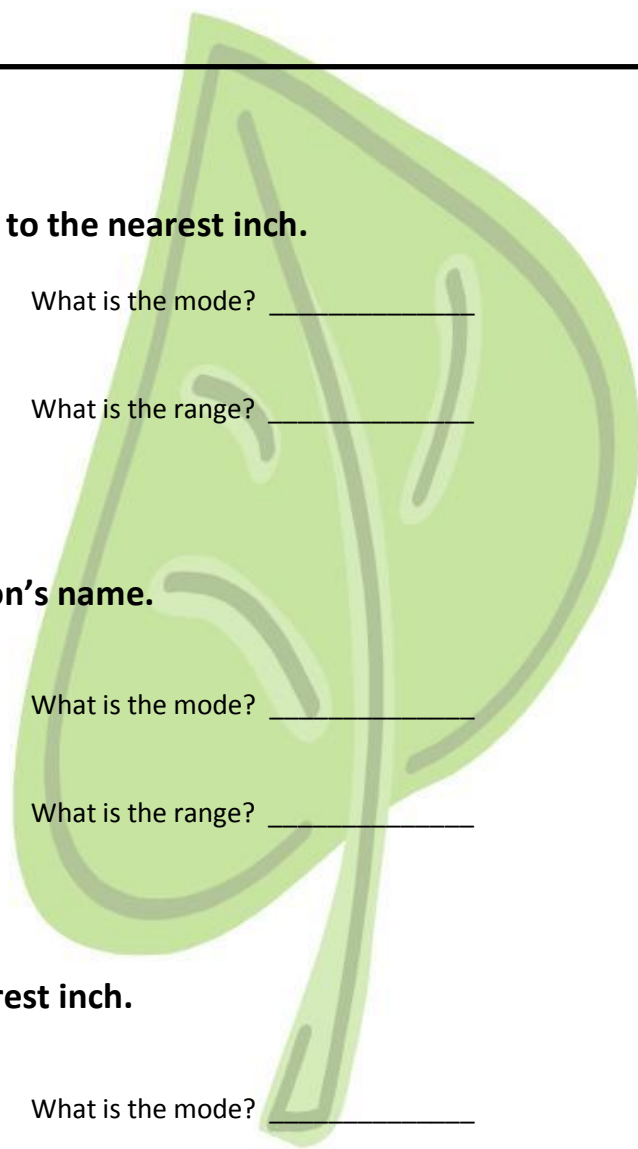
Measure each person's height to the nearest inch.

What is the mean length? _____

What is the mode? _____

What is the median? _____

What is the range? _____



MEAN WORKSHEET 2

Mean = average (add the numbers together, and then divide by how many there are)

Mode = the number that appears most often

Median = the number in the middle, after they have all been put in order from least to greatest

Range = lowest and highest numbers

Measure the length of each person's foot to the nearest $\frac{1}{4}$ inch.

What is the mean length? _____

What is the mode? _____

What is the median? _____

What is the range? _____

Count how many letters are in each person's name.

What is the mean? _____

What is the mode? _____

What is the median? _____

What is the range? _____

Measure each person's height to the nearest $\frac{1}{4}$ inch.

What is the mean length? _____

What is the mode? _____

What is the median? _____

What is the range? _____

