

Data: Diagram to Aid Assessment Task Design

learning goal

By the end of 8th grade, students should know that comparison of data from two groups should involve comparing both their middles and the spread around them. 9D/M4

Contexts for the "representations" and "summary measures" idea sets, the "key ideas" and the "learning goal":

- * data presented in any form, e.g. raw, tabular, graphical
- * calculators allowed

key ideas

The learning goal has two ideas embedded in it.

Students should **know that** comparing two sets of data must include both middle and spread. DK1

Students should **know how to** compare two sets of data using both middle and spread. DK2

representations

In order to compare sets of data, students need to know how to represent data in different forms and how to read and interpret various given representations.

summary measures

In order to compare middles and spreads, students need both procedural knowledge and conceptual understanding of the measures used to describe them.

Understand concepts of mean, median, and mode. Recognize the effect of additional data points on measures of central tendency. DS1

Determine the mean, median, mode, and range for a set, or sets, of data, presented in various forms. DS2

Select and use an appropriate measure of central tendency to describe a set of data, including mean, median, and mode. DS3

Describe the spread of a set of data, using measures such as range and quartile, and descriptors such as outliers, clusters ("clumps"), and gaps. DS4

Organize data into meaningful units. DR1

Select and construct an appropriate representation for a set of data to illustrate characteristics of central tendency or dispersions, such as boxplots, lineplots, and, stem & leaf plots. DR2

Read and interpret, various representations of a set, or sets, of data. DR3

Zero is not a data point.

Scaling errors.

Mean, median, and mode are the same.