

Grade 4 Target J

Domain, Target, Standards, DOK, Vertical Alignments, Achievement Levels, Evidence Required, Vocabulary, Response Types, Materials, Attributes, Question Types, and Question Banks (Examples)

[Content Domain: Measurement and Data](#)

[Target J \[s\]: 4.MD.B Represent and interpret data.](#)

[Standards included in Target J: 4.MD.B Represent and interpret data.](#)

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Content Domain: Measurement and Data

Target J [s]: 4.MD.B Represent and interpret data.

Standards included in Target J: 4.MD.B Represent and interpret data.

4.MD.B Represent and interpret data.

4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Vertical Alignment

Related Grade 3 standards

3.MD.B Represent and interpret data.

3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

Related Grade 5 Standards

5.MD.B Represent and interpret data.

5.MD.B.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.

Achievement Level Descriptors

Level 1 Students should be able to identify data from a given line plot using whole numbers.

Level 2 Students should be able to use data from a given line plot using fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$ to solve one-step problems.

Level 3 Students should be able to create a line plot to represent a data set using fractions $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$, and interpret data from a line plot to solve problems involving addition and subtraction of fractions with like denominators.

Level 4 No Descriptor

Evidence Required

1. The student completes a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$).
2. The student solves problems involving addition and subtraction of fractions with like denominators by using information presented in line plots.

Vocabulary

line plot, data set, interval, fractions, unit fractions, numerator, denominator, sum, difference, add, subtract

Response Types

Matching Tables; Hot Spot; Equation/Numeric

Materials

line plots, tables, fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$)

Attributes

Fractions of a unit are limited to denominators $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$. All contextual items should refer to objects that can be measured in fractions of a unit.

Claim 1: Concepts and Procedures (DOK 1, 2) Question Banks

Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.

These pages were adapted from open source documents available on the Smarter Balanced Website: <http://www.smarterbalanced.org/assessments/development/> August 2016

Claim 1 4.MD.A.4 DOK Level 1

Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Evidence Required

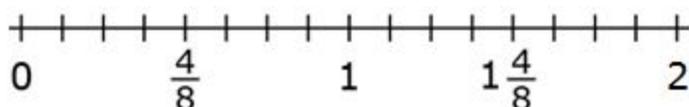
The student creates a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$).

Question Type 1: The student is presented with a data set of measurements in list or table format and a number line.

Michelle measures the mass of the books in her desk. The list shows the mass of each book in pounds.

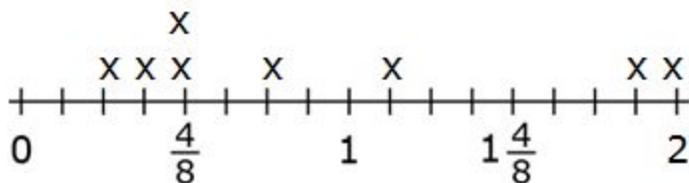
$\frac{4}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{9}{8}$, $\frac{6}{8}$, $1\frac{7}{8}$, 2

Click above a tick mark to complete the line plot that displays the data.



Mass of Books (lb)

Rubric: (1 point) The student places all of the correct data points to complete the line plot with no incorrect or missing points (e.g., as shown below).



Mass of Books (lb)

Response Type: Hot Spot

Claim 1 4.MD.B.4 DOK Level 2

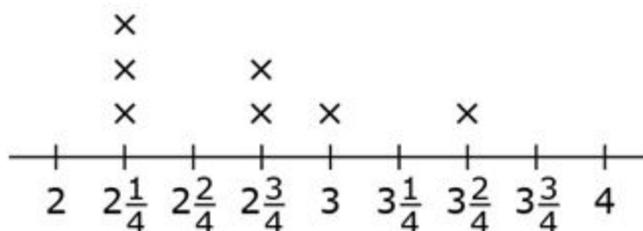
Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.

Evidence Required

The student solves problems involving addition and subtraction of fractions with like denominators by using information presented in line plots.

Question Type 1: The student is presented with a line plot that presents measurement data and a one-step question about that data.

A student measured how much rain fell each week. This line plot shows the amount of rain, in inches, that fell each week.



Amount of Rain That Fell Each Week (in)

How much more rain, in inches, was there during the week with the greatest amount of rain than during the week with the least amount of rain? Enter your answer in the response box.

Rubric: (1 point) The student enters the correct response to solve addition or subtraction problems involving fractions based on the use of information from the line plot (e.g., 114).

Response Type: Equation/Numeric