



2011 Montana Common Core Standards for Mathematics Document Structure

Grade 4

Number and Operations—Fractions³

Domain

4.NF

Cluster

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.

Standard

4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

- a. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.
- b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)
- c. Solve word problems within cultural contexts, including those of Montana American Indians, involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? As a contemporary American Indian example, for family/cultural gatherings the Canadian and Montana Cree bake bannock made from flour, salt, grease, and baking soda, in addition to $3/4$ cup water per pan. When making four pans, how much water will be needed?



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Grade 7

Statistics and Probability

Domain

7.SP

Cluster

Standard

Investigate chance processes and develop, use, and evaluate probability models.

6. Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. For example, when playing Montana American Indian Hand/Stick games, you can predict the approximate number of accurate guesses.*

High School
Statistics

Interpreting Categorical and Quantitative Data

Domain

S-ID

Cluster

Standard

Summarize, represent, and interpret data on a single count or measurement variable

1. Represent data with plots on the real number line (dot plots, histograms, and box plots).
2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables, and Montana American Indian data sources to estimate areas under the normal curve.



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Office of Public Instruction
Denise Juneau, State Superintendent

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