Glossary

A
- area model

- array model

- average

Average or mean = \( \frac{\text{Total number or amount}}{\text{Number of items}} \)

3 students collect a total of 12 shells. The average number of shells collected by each student is \( 12 \div 3 \), or 4 shells.

B
- benchmark fraction

Numbers used to estimate with fractions.
common benchmarks: 0, \( \frac{1}{2} \), and 1.

\( \frac{1}{3} \) is about \( \frac{1}{2} \).

\( \frac{5}{6} \) is about 1.
• **certain outcome**
  An outcome that will definitely occur is a certain outcome.

It is certain that the spinner will land on blue.

• **column**
  Data in a table is organized vertically by columns.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Italian</th>
<th>Mexican</th>
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<tbody>
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• **common factor**
  A factor that is shared by two or more numbers is a common factor.

Factors of 9: 1, 3, and 9
Factors of 12: 1, 2, 3, 4, 6, and 12
1 and 3 are common factors of 9 and 12.

• **common multiple**
  A number that is a multiple of two or more numbers is a common multiple.

Multiples of 4: 4, 8, 12, 16, 20, 24 ...
Multiples of 6: 6, 12, 18, 24 ...
The common multiples of 4 and 6 are 12, 24 ...

• **composite number**
  A composite number has more than 2 different factors.
  6 is a composite number, because it has 4 different factors: 1, 2, 3, and 6.

• **data**
  A set of data is a set of information, usually numbers.
  Data can be represented in graphs, tables, tally charts, line plots, and stem-and-leaf plots.

• **denominator**
  The denominator of a fraction shows how many equal parts the whole or the set is divided into.

\[
\frac{7}{9} \quad \text{denominator}
\]
There are 9 equal parts.

• **division rule**
  The division rule can be used to rename an improper fraction as a mixed number. \(\frac{9}{4}\) means 9 divided by 4.

\[9 \div 4 = 2 \text{ R } 1\]
There are 2 wholes and 1 fourth in \(\frac{9}{4}\).

\[\frac{9}{4} = 2\frac{1}{4}\]
**equally likely outcomes**
Outcomes which have the same chance or probability of occurring are described as equally likely outcomes.

It is equally likely that the spinner will land on orange or on purple.

**expanded form**
The expanded form of a number shows the number as the sum of the values of its digits. For example, 51,678 is the sum of

\[
50,000 + 1,000 + 600 + 70 + 8
\]

**factor**
12 can be divided exactly by 2. So, 2 is a factor of 12.
The factors of 12 are 1, 2, 3, 4, 6, and 12.

**favorable outcome**
A favorable outcome is a desired result.

Joy wants to land on an even number.
The numbers 2, 4, and 6 are favorable outcomes.

**fraction bar**
The fraction bar means ‘divided by’.

**front-end estimation**
Front-end estimation uses the leading digits in numbers to make an estimate.

\[
\begin{align*}
9,782 & - 5,411 \\
9,000 & - 5,000 = 4,000
\end{align*}
\]

**equivalent fraction**
Equivalent fractions have the same value.

\[
\frac{2}{18} \text{ and } \frac{1}{9} \text{ are equivalent fractions.}
\]

**estimate**
An estimate is a number close to the exact number.
An estimate of the sum of 2,14 and 5,45 is 700.
• **greater than (>)**
The number that is farther to the right on a number line is greater than the other.

\[ 33,450 \text{ and } 28,539 \]

33,450 is greater than 28,539.

33,450 > 28,539

• **greatest**
The number that is farthest to the right on a number line is the greatest of three or more numbers.

\[ 33,450 \text{, } 28,539 \text{, and } 31,707 \]

33,450 is the greatest number.

• **greatest common factor**
Factors of 12: 1, 2, 3, 4, 6, and 12
Factors of 16: 1, 2, 4, 8, and 16

The common factors of 12 and 16 are 1, 2, and 4.
The greatest common factor of 12 and 16 is 4.

• **horizontal axis**
The horizontal axis on a graph is the line that runs straight across from left to right.

• **hundred thousand**
10 ten thousands = 1 hundred thousand or 100,000

• **impossible outcome**
An outcome that will definitely not occur is an impossible outcome.

It is impossible that the spinner will land on red.
• **Improper fraction**

An improper fraction has a numerator that is greater than its denominator. It represents a fraction that is greater than 1.

\[
\frac{12}{7} \text{ and } \frac{4}{3} \text{ are improper fractions.}
\]

• **Intersection**

An intersection is the area of a table where a row and column meet.

![intersection diagram]

```
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```

• **Least**

The number that is farthest to the left on a number line is the least of three or more numbers.

\[
33,450 \quad 28,539 \quad 31,707
\]

28,539 is the least number.

• **Least common multiple**

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, ...
Multiples of 4: 4, 8, 12, 16, 20, 24, ...

The common multiples of 3 and 4 are 12, 24, ...

The least common multiple of 3 and 4 is 12.

• **Less likely outcome**

If the probability of an outcome is between 0 and 1/2, it is less likely to occur.

\[
\text{less likely} \quad \text{more likely}
\]

It is less likely that a yellow marble will be drawn from the bag.

• **Less than (<)**

The number that is farther to the left on a number line is less than the other.

\[
56,498 \quad 52,731
\]

52,731 is less than 56,498. 52,731 < 56,498

• **Like fractions**

Fractions with a common denominator.

\[
\frac{3}{5} \text{ and } \frac{7}{5}
\]

\[
\frac{3}{8} \text{ and } \frac{7}{8}
\]

are like fractions.
- **line graph**
  A line graph shows how data changes over time.

- **line plot**
  A line plot shows the frequency of data on a number line.

- **mean**
  See average.

- **median**
  When a set of data is arranged from least to greatest, the median is the middle number, or the mean of the two middle numbers.

- **mixed number**
  A mixed number represents the sum of a whole number and a fraction. $2 \frac{3}{4}$ is a mixed number.

- **mode**
  The mode of a set of data is the number that occurs most often.

- **more likely outcome**
  If the probability of an outcome is between $\frac{1}{2}$ and 1, it is more likely to occur.

  It is more likely that a blue marble will be drawn from the bag.

- **more than**
  17,890 people is more than 17,000 people.
  890 more than 17,000 is 17,890.
• **multiple**
  
  A multiple of a number is the product of the number and any other whole number except zero.
  
  The multiples of 7 are 7, 14, 21, 28, 35...

• **multiplication rule**
  
  The multiplication rule can be used to rename a mixed number as an improper fraction.

  \[
  \frac{3\frac{3}{4}}{4} = \frac{3 + \frac{3}{4}}{4} = \frac{12}{4} + \frac{3}{4} = \frac{15}{4}
  \]

• **numerator**
  
  The numerator of a fraction shows the number of equal parts of the whole or set that you are counting.

  \[
  \frac{7}{9}
  \]

  7 of the 9 equal parts are shaded.

• **order**
  
  Numbers can be ordered from least to greatest.

  28,534 | 31,787 | 33,450

  They can also be ordered from greatest to least.

  33,450 | 31,787 | 28,534

• **outcome**
  
  An outcome is the result in a probability experiment.

  ![Outcome Diagram]

  There are two possible outcomes, green and red.

• **outlier**
  
  A number in a set of data that is much greater than or less than the other numbers in the data is an outlier.

  ![Stem-and-Leaf Plot]

  The stem-and-leaf plot for this set of data shows that the outlier is 97.
**place-value chart**
A place-value chart shows the value of each digit in a number.

<table>
<thead>
<tr>
<th>Ten Thousands</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

36,412 = 3 ten thousands + 6 thousands + 4 hundreds + 1 ten + 2 ones

**prime number**
A prime number has exactly two factors, 1 and itself.
7 is a prime number; its factors are 1 and 7.

**probability**
Probability is a number from 0 to 1 that represents the chance or likelihood of an outcome occurring.

\[
\text{Probability} = \frac{\text{Number of favorable outcomes}}{\text{Number of possible outcomes}}
\]

The probability of landing on purple is \(\frac{3}{6}\) or \(\frac{1}{2}\).

**product**
A product is the answer to a multiplication problem.
924 \times 40 = 36,960
The product of 924 and 40 is 36,960.

**quotient**
A quotient is the answer to a division problem.

\[
8,160 \div 6 = 1,360
\]
The quotient of 8,160 divided by 6 is 1,360.

**range**
The range of a set of data is the difference between the greatest and the least number in the set.

\[
\begin{array}{cccccccc}
2 & 4 & 5 & 5 & 6 & 8 & 8 & 9 \end{array}
\]
Range = 10 - 2 = 8

**reasonable**
683 \times 4 = 2,732
683 is about 700.
700 \times 4 = 2,800
2,732 is close to 2,800. So the answer is reasonable.

**regroup**
One or more digits of a number may be regrouped when adding, subtracting, multiplying or dividing.

When you regroup numbers, change:
- 10 ones to 1 ten or 1 ten to 10 ones
- 10 tens to 1 hundred or 1 hundred to 10 tens
- 10 hundreds to 1 thousand or 1 thousand to 10 hundreds
- 10 thousands to 1 ten thousand or 1 ten thousand to 10 thousands

**remainder**
A remainder is the number left over when a number cannot be divided evenly.

\[
6,100 \div 8 = 762 R 4
\]
• **round**
  A number can be rounded to the nearest ten or hundred by looking at the digit to the right of the tens or hundreds place. If it is less than 5, round down. If it is 5 or more than 5, round up.

  4,683 rounded to the nearest ten is 4,680.
  4,683 rounded to the nearest hundred is 4,700.

• **row**
  Data in a table is organized horizontally by rows.

<table>
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<tr>
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• **simplest form**
  A fraction in simplest form has no common factors other than 1 in the numerator and denominator.

  \[ \frac{3}{21} \text{ in simplest form is } \frac{1}{7}. \]

• **skip count**
  - Skip counting by 2s:
    \[ \begin{array}{c}
    0 \\
    2 \\
    4 \\
    6 \\
    8 \\
    10 \\
    \end{array} \]
  - Start at 0, increment by 2s.

  - Skip counting by 5s:
    \[ \begin{array}{c}
    0 \\
    5 \\
    10 \\
    15 \\
    20 \\
    25 \\
    \end{array} \]
  - Start at 0, increment by 5s.

  - Skip counting by 10s:
    \[ \begin{array}{c}
    0 \\
    10 \\
    20 \\
    30 \\
    40 \\
    50 \\
    \end{array} \]
  - Start at 0, increment by 10s.

• **standard form**
  The standard form of a number shows the number written with one digit for each place value.

  Forty-two thousand, eight hundred three in standard form is 42,803.

• **stem-and-leaf plot**
  A stem-and-leaf plot organizes data by place value.

<table>
<thead>
<tr>
<th>Scores on an Art Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stem</strong></td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>6 1 8</td>
</tr>
</tbody>
</table>
• **table**  
  A table organizes and presents data in rows and columns.

<table>
<thead>
<tr>
<th>Type of Fruit Bought</th>
<th>Fruit</th>
<th>Number</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oranges</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Peaches</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td></td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

• **tally chart**  
  A tally chart organizes data in groups of five.

<table>
<thead>
<tr>
<th>Type of Fruit Bought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oranges</td>
</tr>
</tbody>
</table>

• **ten thousand**  
  10 thousands = 1 ten thousand

• **unlike fraction**  
  Unlike fractions have different denominators.

\[
\frac{2}{3} \text{ and } \frac{1}{4} \text{ are unlike fractions.}
\]

• **vertical axis**  
  A vertical axis on a graph runs straight up and down.

• **word form**  
  73,816 in word form is seventy-three thousand, eight hundred sixteen.