

## Proportionality, Grade 6

ACTIVITY	TOPICS	PAGE
<a href="#"><u>Minute to Win It</u></a>	Relationships Between Two Quantities (Graphs, Tables, Proportions, & Verbal Descriptions)	X
<a href="#"><u>Go Fish</u></a>	Ratio as Multiplicative Comparison	X
<a href="#"><u>Social Media—Which do You Prefer?</u></a>	Ratios in Real-Life Situations	X
<a href="#"><u>Golden Ratios &amp; Proportions</u></a>	Ratios in the Human Body	X
<a href="#"><u>Land Surveying in Action</u></a>	Ratios in Land Surveying	X
<a href="#"><u>Rate It</u></a>	Interpret the Meaning of Rate	X
<a href="#"><u>Which is the Better Deal?</u></a>	Represent Rates Using Tables & Graphs	X
<a href="#"><u>Keeping it Real</u></a>	Represent Rates Using Tables & Graphs	X
<a href="#"><u>Wild Measurements</u></a>	Measurement with Conversions	X
<a href="#"><u>Outta This World</u></a>	Measurement with Conversions	X
<a href="#"><u>Gross, but True</u></a>	Unit Conversion	X
<a href="#"><u>Mr. Jones' Benchmark Scores</u></a>	Connecting Fractions & Decimals with Percents	X
<a href="#"><u>Fraction, Decimal, Percent Conversion</u></a>	Recognition of Equivalent Fractions, Decimals, & Percents	X
<a href="#"><u>Find the Mistake</u></a>	Learning from Common Mistakes	X
<a href="#"><u>Connections</u></a>	Part, Whole, & Percent	X
<a href="#"><u>Part, Whole, Percent Match Up</u></a>	Connecting Pictorial/Concrete Models to Equations	X
<a href="#"><u>Part, Whole, Percent Matching Cards</u></a>	Similarities & Differences in Part, Whole, or Percent Problem Situations	X
<a href="#"><u>Find the Mistake</u></a>	Analyzing Common Errors	X

## Content and Instruction Extras

### MEANING BEHIND THE MATH

<a href="#">How Do You Solve a Proportion When You Don't Know How to Solve an Equation?</a>	X
<a href="#">Equivalent Ratios and the Constant of Proportionality</a>	X
<a href="#">Switching the Input &amp; the Output to Extend Students' Thinking</a>	X
<a href="#">More Ratio Fun</a>	X
<a href="#">Keeping Meaning in Tables and Equations</a>	X
<a href="#">Using Tables to Perform Conversions</a>	X
<a href="#">Correcting Student Misconceptions in Conversions: When to Multiply and When to Divide</a>	X
<a href="#">Stopping Mistakes Before They Happen in Problems Where Conversions are Needed</a>	X
<a href="#">The Importance of the Fraction–Decimal–Percent Conversion Connection</a>	X
<a href="#">What are Common Misconceptions that Impact Solving Percent Problems?</a>	X
<a href="#">Using Clues in the Problem to Set up the Proportion (Not Key Words)</a>	X

### READING, WRITING, AND SPEAKING TO IMPROVE CRITICAL THINKING

<a href="#">Deepening Dialogue with Repetition</a>	X
<a href="#">Why Use Percents Instead of Fractions or Decimals?</a>	X
<a href="#">How Does Asking More Than One Question About a Problem Situation Help Students Learn How to Solve Problems?</a>	X

### WORKING THE CLASSROOM

<a href="#">Problem-Based Learning in Math</a>	X
<a href="#">Teaching Students to Find Their Mistakes</a>	X

The activities in **Proportionality, Grade 6** address the following standards.

What mathematical concepts will we be learning? Content Standards		Activity
<b>(6.4) Proportionality.</b> The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:		
<b>6.4B</b>	apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates; <b>Readiness Standard</b>	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a>
<b>6.4C</b>	give examples of ratios as multiplicative comparisons of two quantities describing the same attribute; <b>Supporting Standard</b>	<a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a>
<b>6.4D</b>	give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients; <b>Supporting Standard</b>	<a href="#">1</a> , <a href="#">8</a>
<b>6.4G</b>	generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money; <b>Readiness Standard</b>	<a href="#">13</a> , <a href="#">14</a>
<b>6.4H</b>	convert units within a measurement system, including the use of proportions and unit rates. <b>Readiness Standard</b>	<a href="#">10</a> , <a href="#">11</a>
<b>(6.5) Proportionality.</b> The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to:		
<b>6.5A</b>	represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions; <b>Supporting Standard</b>	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a>
<b>6.5B</b>	solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models; <b>Readiness Standard</b>	<a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
<b>6.5C</b>	use equivalent fractions, decimals, and percents to show equal parts of the same whole. ; <b>Supporting Standard</b>	<a href="#">12</a> , <a href="#">13</a> , <a href="#">14</a>

What kind of mathematical thinking will we use? Process Standards		Activity
<b>(6.1) Mathematical process standards.</b> The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:		
6.1A	apply mathematics to problems arising in everyday life, society, and the workplace;	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">14</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1B	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1C	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">13</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1D	communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1E	create and use representations to organize, record, and communicate mathematical ideas;	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">13</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1F	analyze mathematical relationships to connect and communicate mathematical ideas.	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">14</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>
6.1G	display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	<a href="#">1</a> , <a href="#">2</a> , <a href="#">3</a> , <a href="#">4</a> , <a href="#">5</a> , <a href="#">6</a> , <a href="#">7</a> , <a href="#">8</a> , <a href="#">9</a> , <a href="#">10</a> , <a href="#">11</a> , <a href="#">12</a> , <a href="#">14</a> , <a href="#">15</a> , <a href="#">16</a> , <a href="#">17</a> , <a href="#">18</a>