



Bridging for Math Strength Resources

[Standards of Learning Curriculum Framework \(SOL\)](#)

[Bridging Standards of Learning \(SOL\) for Grade 6](#)

Bridging Standard of Learning (SOL) 6.1 Represent relationship between quantities using ratio, and use appropriate notations such as a/b , a to b , and $a:b$.



Student Strengths	Bridging Concepts	Standard of Learning
Students can recognize part to whole relationships and use fractions to represent part to whole relationships.	Students can find equivalencies for part to whole relationships.	Students can represent relationships between quantities using ratio, and use appropriate notations such as “a to b” $a:b$ and a/b .

Understanding the Learning Trajectory

Big Ideas:

- A ratio is a multiplicative comparison of quantities; there are different types of comparisons that can be represented as ratios. (Charles, 2005)
- Ratios give the relative sizes of the quantities being compared, not necessarily the actual sizes.(Charles, 2005)
- The student understands that relationships between quantities can be part to whole or part to part.
- The student understands that ratios can be written in multiple forms.
(Common Core Writing Team, 2019, Ratios and Proportional Relationships p. 3)

Formative Assessment:

- [Just in Time Mathematics Quick Check 6.1 Word](#)
- [Just in Time Mathematics Quick Check 6.1 PDF](#)
- [Just in Time Mathematics Quick Check 6.1 Desmos](#)

Important Assessment Look Fors:

- The student correctly determines if the scenario is a part to part or part to whole relationship.
- The student correctly expresses equivalent ratios for the given situation.
- The student expresses ratios in correct order (ex: $1:3$ vs $3:1$).

- The student expresses ratios using the correct format (a to b, a:b, or a/b).

Purposeful Questions:

- How do you know if you are looking for a part to part or a part to whole relationship?
- What strategies can you use to determine if ratios are equivalent?
- What are the different ways that you can represent a ratio?

Bridging Activity to Support Standard	Instructional Tips
<p>Routine Which One Doesn't Belong, MathStrength</p>	<p>A variety of which one doesn't belong slides to focus on ratios. These can be done in any order based upon student needs. When looking at the shape slides, it may be important to remind students that they make their choice using mathematical reasoning.</p>
<p>Rich Tasks A vase holds red and white roses only. There are 1.5 times as many red roses as white roses. How many flowers might be in the vase? (Good Questions for Math Teaching, 2005, p. 71)</p>	<p>A discussion of how to determine the ratio from the phrase "1.5 times as many" will be an important consideration while students complete this task.</p> <p>Challenge students to come up with multiple solutions for the number of roses that could be in the vase and have them write the ratio of roses in all formats</p> <p>Additionally, this question focuses on a part to part relationship but can be used to revisit to part to whole relationships as well.</p> <p>It also introduces the idea of multiplicative relationships which will be important when working on the proportional reasoning unit.</p>
<p>Games/Tech Math Playground - Ratio Blaster Math Playground - Ratio Martian Desmos 6.1 Visual Ratios</p>	<p>Ratio Blaster gives students practice with determining equivalent ratios in fraction format.</p> <p>Ratio Martian gives students practice with determining if mathematical terms are written correctly in all three possible ratio forms</p> <p>Modeling and recognizing ratios in models</p>

Other Resources:

- [Open Middle](#) slides 2 & 8. Both problems give students the opportunity to practice creating equivalent ratios.
- Kahoot - [Ratios, Ratios, Ratios!](#) Can be played as a class or individually for review.
- Illustrative Mathematics - [Games at Recess](#)
- VDOE Mathematics Instructional Plans (MIPS)
 - [6.1 - Field Goals, Balls, and Nets](#) (Word) / [PDF Version](#)
- VDOE Co-Teaching Mathematics Instruction Plans (MIPS)
 - [6.1 - Ratios](#) (Word) / [PDF Version](#)
- VDOE Algebra Readiness Formative Assessments
 - [SOL 6.1](#) (Word) / [PDF](#)
- VDOE Algebra Readiness Remediation Plans
 - [Ratios with Color Tiles](#) (Word) / [PDF](#)
- VDOE Word Wall Cards: Grade 6 ([Word](#)) | ([PDF](#))
 - Ratio
- Desmos Activity
 - [Visual Ratios](#)

Learning Trajectory Resources:

Charles, R. (2005). Big ideas and understandings as the foundation for elementary and middle school mathematics. *Journal of Mathematics Education Leadership*, 7(3), NCSM.

Common Core Standards Writing Team. (2019). [Progressions for the Common Core State Standards for Mathematics.](#) Tucson, AZ: Institute for Mathematics and Education, University of Arizona.

Van De Walle, J., Karp, K. S., & Bay-Williams, J. M. (2018). *Elementary and Middle School Mathematics: Teaching Developmentally.* (10th edition) New York: Pearson (2019:9780134802084)

VDOE Curriculum Framework for All Grades - [Standard of Learning Curriculum Framework \(SOL\)](#)