



Bridging for Math Strength Resources

Standards of Learning Curriculum Framework (SOL)

Bridging Standards of Learning (SOL) for Grade 8

Bridging Standard of Learning (SOL) 8.15b Determine the domain and range of a function.



Student Strengths	Bridging Concepts	Standard of Learning
Students can identify input and output from rules of one operation.	Students can identify and graph ordered pairs in a coordinate plane. Students can identify functions.	Students can identify the domain and range of a function represented as a set of ordered pairs, a table, or a graph of discrete points.

Understanding the Learning Trajectory

Big Ideas:

- A special rule (function) assigns each member of one set to a unique member of the other set. (Charles, 2005)
- The domain of a function represented as a set of ordered pairs, a table, or a graph of discrete points is the input or x value.
- The range of a function represented as a set of ordered pairs, a table, or a graph of discrete points is the output or y value.
- If a function consists of a discrete set of ordered pairs, then the domain is the set of all the x-coordinates, and the range is the set of all the y-coordinates.

Formative Assessment:

- [Just in Time Mathematics Quick Check 8.15b Word](#)
- [Just in Time Mathematics Quick Check 8.15b PDF](#)
- [Just in Time Mathematics Quick Check 8.15b Desmos](#)

Important Assessment Look Fors:

- The student identifies the x-value in a coordinate as the domain.
- The student identifies the y-value in a coordinate as the range.
- The student can identify the domain using the x-axis and the range using the y-axis of a coordinate plane.

Purposeful Questions:

- What are the values of the domain? How do you know?
- What are the values of the range? How do you know?
- Could two relations have the same domains, but different ranges? Explain or show an example for your reasoning.

Bridging Activity to Support Standard	Instructional Tips
Routine Slow Reveal Graphs	This routine requires students to think about graphs holistically, while slowly revealing new information. Be sure to identify the domain and range during this routine.
Rich Tasks 8.15 - Relations and Functions; Domain and Range (MIP)	Ideally this would be taught in conjunction with covering 8.15a as well. Use the Student/Teacher Actions 2, 3 to focus on domain and range.
Games/Tech SQL 8.15 Domain and Range Match (Desmos) Desmos 8.15b Polygraph: Domain and Range Desmos 8.15b Finding Domain and Range	<p>Students use matching to identify domain and range.</p> <p>This Custom Polygraph is designed to spark vocabulary-rich conversations about domain and range. Key vocabulary that may appear in student questions includes: domain, range, interval, less than, and greater than.</p> <p>In this activity, students describe the domain and range of six relationships. (First verbally and later algebraically.) Later, students use movable points to create three functions whose domain and range match specific criteria.</p>
Other Resources: <ul style="list-style-type: none"> • Desmos <ul style="list-style-type: none"> ◦ Domain and Range on the Coordinate Plane: In this activity, students describe the domain and range of relationships represented on the coordinate plane. • VDOE Mathematics Instructional Plans (MIPS) <ul style="list-style-type: none"> ◦ 8.15 - Relations and Functions; Domain and Range (Word) / PDF Version • VDOE Algebra Readiness Formative Assessments <ul style="list-style-type: none"> ◦ SQL 8.15a,b (Word) / PDF • VDOE Algebra Readiness Remediation Plans <ul style="list-style-type: none"> ◦ Relations, Functions, Tables and Graphs (Word) / PDF • VDOE Word Wall Cards: Grade 8 (Word) (PDF) <ul style="list-style-type: none"> ◦ Domain ◦ Range Learning Trajectory Resources: <p>Charles, R. (2005). <u>Big ideas and understandings as the foundation for elementary and middle school mathematics.</u> <i>Journal of Mathematics Education Leadership</i>, 7(3), NCSM.</p> <p>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.</p>	

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 \(SOL\)](#)