Bridging for Math Strength Resources

Standards of Learning Curriculum Framework (SOL)

Bridging Standards of Learning (SOL) for Grade 7

Standard of Learning (SOL) 7.10c Determine the *y*-intercept, *b*, in an additive relationship between two quantities and write an equation in the form $y = x + b$ to represent the relationship

Student Strengths	Bridging Concepts	Standard of Learning
Students can determine the slope as a rate of change in a proportional relationship between two quantities and write an equation in the form y=mx to represent the relationship.	Students can determine the difference between a proportional relationship and an additive relationship.	Students can determine the *y*-intercept in an additive relationship between two quantities and write an equation in the form $y = x + b$ to represent the relationship.

Understanding the Learning Trajectory

Big Ideas:

- The y-intercept of a line represents the initial value in a relationship between two variables.
- Two quantities, *x* and *y*, have an additive relationship when a constant value, *b*, exists where $y = x + b$, where $b \neq 0$.
- The y-intercept of an additive relationship can be determined by adding a value to the other quantity.

Formative Assessment:

- Just in Time Mathematics Quick Check 7.10c Word
- Just in Time Mathematics Quick Check 7.10c PDF
- Just in Time Mathematics Quick Check 7.10c Desmos

Important Assessment Look Fors:

- The student is able to determine the *y*-intercept of an additive relationship from a table, graph, and equation.
- The student is able to write the equation of a line of an additive relationship from a table, graph, and equation.
- The student is able to identify the *y*-intercept of an additive relationship by adding a value to the other quantity in a table.

Purposeful Questions:

- How could you represent an additive relationship?
- What is the difference between an additive relationship and a proportional relationship?
- How did you determine the *y*-intercept from the table?
- How did you determine the equation of the line?

Bridging Activity to Support Standard	Instructional Tips
Routine Graphing Stories: Height of Stack by Mark Sloan Graphing Stories Template: Height of Stack	Pass out the handout, play the Height of Stack Video, and have students graph the video. Discuss the difference between this graph and one that has a proportional relationship.
Rich Tasks Pennies in a Jar Task: Additive Relationships From Henrico County Public Schools State Fair↗	Student Sheet Follow-Up Notes Key Task Adapted from 5 Practices in Practices by Margaret (Peg) Smith and Miriam Gamoran Sherin
Games/Tech Additive Functions Marble Slide Desmos Activity Desmos 7.10cd Y-Intercept Investigation	Use the equation y=x+b where b=any number to make the marble pas through all 3 stars This exploration investigates the equation y = x + b. It correlates directly to the new SOL standard 7.10cd.

Other Resources:

- VDOE Mathematics Instructional Plans (MIPS)
  - 7.10cd - Discover y-intercept (b) (Word) / PDF Version
- VDOE Algebra Readiness Formative Assessments
  - SOL 7.10c (Word) / PDF
- VDOE Algebra Readiness Remediation Plans
  - Y-Intercept and Additive Relationships (Word) / PDF
- VDOE Word Wall Cards: Grade 7 (Word) | (PDF)
  - Additive Relationship: y = x + b
  - Additive Relationship
- Desmos Activity
  - SOL 7.10cd Y-Intercept Investigation

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)